

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: S705060268 DOC. DATE: 87/05/01 NOTARIZED: NO DOCKET #  
 FACIL: 50-331 Duane Arnold Energy Center, Iowa Electric Light & Pow 05000331  
 AUTH. NAME AUTHOR AFFILIATION  
 MCGAUGHY, R. W. Iowa Electric Light & Power Co.  
 RECIP. NAME RECIPIENT AFFILIATION  
 MURLEY, T. E. Office of Nuclear Reactor Regulation, Director (Post 870411  
 MURLEY, T. E. Document Control Branch (Document Control Desk)

SUBJECT: Forwards response to NRC 861202 questions re Rev 7 to  
 "Inservice Testing Program for Pumps & Valves" & Rev 8 to  
 "Inservice Testing Program," for review & approval.

*REVISED 05-14-87 D.L.H.*

DISTRIBUTION CODE: A047D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 47+200  
 TITLE: DR Submittal: Inservice Inspection/Testing

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD3-1 LA	1 0	PD3-1 PD	5 5
	CAPPUCCI, A	1 1		
INTERNAL:	AEOD/DOA	1 1	AEOD/DSP/TPAB	1 1
	ARM/DAF/LFMB	1 0	NRR/DEST/ADE	1 0
	NRR/DEST/MEB	1 1	NRR/DEST/MTB	1 1
	NRR/BMAS/ILRB	1 1	OGC/HDS2	1 0
	<u>REG FILE</u> 01	1 1		
EXTERNAL:	LPDR	1 1	NRC PDR	1 1
	NSIC	1 1		

Iowa Electric Light and Power Company

May 1, 1987  
NG-87-1629

Mr. Thomas E. Murley, Director  
Office of Nuclear Reactor Regulation  
Attn: Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Subject: Duane Arnold Energy Center  
Docket No: 50-331  
Op. License No: DPR-49  
Inservice Testing Program for Pumps and  
Valves (Revision 8)

Reference: 1) Letter, R. W. McGaughy (Iowa Electric) to  
H. R. Denton (NRC) dated  
December 31, 1985 (NG-85-5067)  
2) Letter, R. A. Gilbert (NRC) to L. Liu  
(Iowa Electric) dated December 2, 1986  
3) Letter, R. A. Gilbert (NRC) to L. Liu  
(Iowa Electric) dated February 25, 1987  
File: A-286

Dear Mr. Murley:

In Reference 1, we transmitted Revision 7 to the Duane Arnold Energy Center (DAEC) Inservice Testing (IST) Program for Pumps and Valves. In a letter dated December 2, 1986 (Reference 2), the NRC staff informed us that they had reviewed Revision 7 of the DAEC IST Program and had prepared a list of questions which were enclosed as a Request for Additional Information (RAI). Rather than submitting formal responses to the RAI, the Staff suggested a meeting be held between the NRC staff, the NRC's subcontractor, and Iowa Electric personnel. The meeting to discuss our proposed responses to the RAI was held on January 20 and 21, 1987 in Bethesda, MD. Following that meeting, Reference 3 was transmitted to us and reflected the discussions of the meeting. It was agreed by all meeting participants that, upon our receipt of Reference 3, we would revise the IST Program accordingly and submit it for approval.

8705060268 870501  
PDR ADOCK 05000331  
P PDR

A047  
1/1

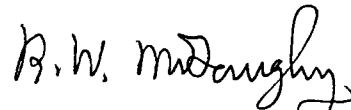
Mr. Murley  
NG-87-1629  
May 1, 1987  
Page Two

Pursuant to 10 CFR 50.55a(g), and the information presented above, we are herewith submitting Revision 8 to the DAEC IST Program. For your convenience, this submittal is separated into several attachments. Attachment 1 provides the NRC's RAI, our responses to the RAI, and the actions taken by Iowa Electric to reflect the discussions which took place during the January, 1987 meeting. Attachment 2 provides a summary of changes between Revisions 7 and 8 of the Program. Attachment 3 consists of Revision 8 to the IST Program. Please note that Attachment 3 consists of several appendices and that Appendix D provides justification for testing certain valves during cold shutdown. The cold shutdown justifications were specifically requested by the NRC staff during our meeting.

As an application fee of \$150 was submitted with Revision 7 of the IST Program and this submittal is a continuation of the Revision 7 licensing action, no additional fees are included in this letter.

If you have any questions regarding the attached information, please contact this office.

Very truly yours,



Richard W. McGaughy  
Manager, Nuclear Division

RWM/MSG/pjv\*

Attachments: 1) Response to NRC RAI  
2) Summary of Changes  
3) IST Program (Revision 8)

cc: M. Grim  
L. Liu  
T. Capucci (NRC-NRR)  
L. Root  
NRC Resident Office  
A. Bert Davis (NRC R-III)  
H. McLamb (Iowa Bureau of Boiler Inspection)  
Commitment Control No. 870030

50-331

INSERVICE TESTING PROGRAM  
FOR  
PUMPS AND VALVES  
(REVISION 8)

Docket # 50-331  
Control # 8705060268  
Date 05/01/87 of Document

REGULATORY DOCKET FILE

— NOTICE —

THE ATTACHED FILES ARE OFFICIAL RECORDS OF THE DIVISION OF DOCUMENT CONTROL. THEY HAVE BEEN CHARGED TO YOU FOR A LIMITED TIME PERIOD AND MUST BE RETURNED TO THE RECORDS FACILITY BRANCH 016. PLEASE DO NOT SEND DOCUMENTS CHARGED OUT THROUGH THE MAIL. REMOVAL OF ANY PAGE(S) FROM DOCUMENT FOR REPRODUCTION MUST BE REFERRED TO FILE PERSONNEL.

DEADLINE RETURN DATE \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RECORDS FACILITY BRANCH

A. GENERAL QUESTIONS AND COMMENTS

NRC Question No. 1

Relief Requests that reference the FSAR, Technical Specifications, and other documents should be expanded to provide a brief discussion of the applicable technical information contained in the applicable document.

Iowa Electric Response

The IST Program will be expanded to provide a brief discussion of the applicable technical information in the referenced document.

Resolution

The written response is satisfactory.

Iowa Electric's Action

The relief requests listed below were expanded to include a brief discussion of the applicable technical information contained in the FSAR or Technical Specification reference.

VR-6	VR-13
VR-8	VR-20
VR-11	VR-25
VR-12	VR-32

NRC Question No. 2

Are all valves that are Appendix J, Type C, leak tested included in the IST Program as Category A or A/C?

Iowa Electric Response

Yes.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

**REGULATORY DOCKET FILE COPY**

NRC Question No. 3

Have all safety related valves that have a required fail-safe position been included in the IST Program?

Iowa Electric Response

Yes.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

**B. NEUTRON MONITORING**

NRC Question No. 1

Is the maximum stroke time given for valves TIP-BAL A, B, and C a typographical error? Page 1 (Appendix B) of the IST Program does not agree with Relief Request VR-34.

Iowa Electric Response

No, the maximum stroke time given for valves TIP-BAL A, B, and C is not a typographical error, nor are the maximum stroke times in conflict with Relief Request VR-34. Although the maximum stroke time is 5 seconds, the reason they are not in conflict is that the valves normally stroke in less than 2 seconds. Relief Request VR-34 changes the requirement for increasing test frequency of valves from that which is delineated in Subparagraph IWV-3417(a) to "if a measured stroke time increase of a 100% or more from a previous test is observed and the stroke time is greater than 2 seconds." The maximum allowable stroke time for the valves are specified by the owner, as required in Subparagraph IWV-3413(a) and are not established by Relief Request VR-34.

Resolution

The NRC will explore the response to this question and review the NRC position on fast acting valves. This is an open item for the NRC.

Iowa Electric's Action

No further action is required.

C. CONDENSATE AND DEMINERALIZED WATER

NRC Question No. 1

Are Category A valves V-09-065 and -111 passive valves? If so, relief from exercising is unnecessary according to IWV-3700.

Iowa Electric Response

Yes, these valves are passive and will be removed from Relief Request VR-36. Since valve V-30-287 is also passive, Relief Request VR-36 will be withdrawn.

Resolution

The written response is satisfactory.

Iowa Electric's Action

VR-36 has been deleted from the IST Program.

D. REACTOR BUILDING COOLING WATER

NRC Question No. 1

Provide a detailed technical justification for not full-stroke exercising valves MO-4841A and B quarterly during power operation.

Iowa Electric Response

These valves are primary containment isolation valves for the reactor building closed cooling water system. During power operation, the RBCCW system supplies cooling water to components inside the drywell, including the reactor recirculation pumps and motors. Exercising the subject valves would interrupt cooling water flow to the reactor recirculating pump and motor heat exchangers. These valves will not be exercised during normal operation because interruption of flow would cause damage to the reactor recirculation pumps and motors.

Resolution

The written response is satisfactory. A cold shutdown justification will be included in the IST Program.

Iowa Electric's Action

A cold shutdown test justification for the above valves has been provided in Appendix D of the IST Program.

E. RHR AND EMERGENCY SERVICE WATER

NRC Question No. 1

Why is a maximum stroke time identified for valves CV-1956A and B and then relief requested from stroke timing?

Iowa Electric Response

Since the valves cannot be timed due to lack of position indication, no maximum stroke time should be identified. The stroke times presently in the Program will be removed.

Resolution

The written response is satisfactory. Relief Request VR-2 will remain in the program.

Iowa Electric's Action

The maximum stroke times have been removed from Page 5, Appendix B of the IST Program.

NRC Question No. 2

Review the safety function of the following valves to determine if they should be included in the IST Program and categorized as indicated.

Category B

MO-1947 (C-6)  
MO-2046 (C-5)  
MO-1998A (B-7)  
MO-1998B (B-7)

Category C

V-13-4 (F-7)  
V-13-15 (G-7)

Iowa Electric Response

- MO-1947 - We will add to the IST Program as a Category B valve. A relief request will be submitted in the near future.
- MO-2046 - We will add to the IST Program as a Category B valve. A relief request will be submitted in the near future.
- MO-1998A - Does not perform any safety function. If the valve is closed, then discharge will flow to radwaste dilution. PSE-2079A and PSE-2079B have had internals removed.
- MO-1998B - See MO-1998A above.
- V-13-04 - The line which contains this valve does not perform a safety function except as a Class 3 pressure boundary. The motor operated valve downstream is the Class 3 to non-class boundary (See UFSAR Section 5.4.7.1).
- V-13-15 - See V-13-04 above.



Resolution

The written response is satisfactory. There are no valves downstream of PSE-2079A and PSE-2079B.

Iowa Electric's Action

MO-1947 and MO-2046 were added to Appendix B of the IST Program. A new Relief Request VR-1 was submitted to provide an alternate method of demonstrating valve operability.

F. NUCLEAR BOILER

NRC Question No. 1

Provide a detailed technical justification for not full-stroke exercising valves CV-4428 and CV-4429 quarterly during power operation. What is the safety-related function of these valves?

Iowa Electric Response

The valves are used to vent the reactor vessel head during startup and shutdown. The safety-function of the valves is to close. Exercising one of these valves during normal operation leaves the other valve as the only barrier between the reactor vessel and the drywell sump. Any leakage through the closed valve could potentially pressurize the drywell. In addition, operating procedures prohibit operation of these valves during power operation.

Resolution

These valves are not safety related and will be deleted from the IST Program.

Iowa Electric's Action

The valves were deleted from Page 8, Appendix B of the IST Program.

NRC Question No. 2

Provide a detailed technical justification for not full-stroke exercising valves MO-4441 and MO-4442 quarterly during power operation.

Iowa Electric Response

Feedwater valves MO-4441 and MO-4442 cannot be exercised during reactor operation because the feedwater system is needed to maintain primary coolant inventory. Also, if a feedwater isolation valve was closed during operation, the feedwater nozzle and spargers would undergo a severe thermal shock when feedwater was restored. This thermal shock could cause cracking and possible failure of the spargers and nozzles.

Resolution

A cold shutdown justification will be included in the IST Program.

Iowa Electric's Action

A cold shutdown test justification has been provided in Appendix D of the IST Program.

NRC Question No. 3

Can valves PSV-4439A, B, C, D, E, and F be exercised during cold shutdown? Are these valves simple check valves?

Iowa Electric Response

No, during a relief valve discharge, these valves must be closed. After a relief valve discharge, the steam remaining in the relief valve discharge line will condense and try to draw a vacuum in the discharge line. These relief valves (vacuum breakers) open to the discharge line thus relieving the vacuum condition. These valves have no external means of actuation for exercising. The only practical method of exercising these valves open and closed is by manually pushing the disk from its seat. Since this requires access to the valves, which are located in the drywell, these valves will be exercised concurrent with the setpoint verification tests, in accordance with Subarticle IWV-3510 to ASME Section XI.

Resolution

The written response is satisfactory. These are spring operated mechanical relief valves.

Iowa Electric's Action

Relief Request VR-7 has been removed from the IST Program and the valves will be tested in accordance with IWV-3510. Note that a new Relief Request for a different issue has been added and was given the Relief Request Number VR-7.

NRC Question No. 4

Provide a detailed technical justification for not full-stroke exercising valves V-14-001 and V-14-003 quarterly during power operation.

Iowa Electric Response

V-14-001 and V-14-003 cannot be exercised during reactor operation because the feedwater system is needed to maintain primary coolant inventory. Also, if a feedwater isolation valve was closed during operation, the feedwater nozzle and spargers would undergo a severe thermal shock when feedwater was restored. This thermal shock could cause cracking and possible failure of the spargers and nozzles.

Resolution

A cold shutdown justification will be included in the IST Program.

Iowa Electric's Action

A cold shutdown test justification has been provided for V-14-3 in Appendix D of the IST Program. Relief Request VR-4 concerning V-14-1 has been expanded to include the cold shutdown test (and refueling) justification.

NRC Question No. 5

Describe the method utilized when exercising the excess flow check valves. (Reference Relief Request VR-8.)

Iowa Electric Response

During refueling outages, a flow path is established in the instrument line downstream of the excess flow check valves to verify the flow check valve closes. The valve handswitch is then operated to verify the excess flow check valve is open.

Resolution

The written response is satisfactory.

Iowa Electric's Action

A description of the method utilized to exercise the excess flow check valves has been added to the Alternate Testing Section of Relief Request VR-8.

**G. REACTOR RECIRCULATION**

NRC Question No. 1

Provide a detailed technical justification for not full-stroke exercising valves MO-4627 and MO-4628 quarterly during power operation.

Iowa Electric Response

Technically, a quarterly test can be performed. However, such testing would require approximately 5 hours of operator action to place the plant in the proper configuration for testing. To prevent automatic runback of the pumps would require reduction of the pump speed to a minimum. This requires operator action to ensure the noise surveillance region of technical specifications is followed. To reduce core power, control rods would be inserted.

When closing the valve(s) the reactor level will increase. This creates the possibility of a reactor feedpump and main turbine trip which would result in a reactor scram. When opening the valve(s), reactor level decreases which could cause a scram due to low reactor water level. Additionally, when opening the valve, a sudden increase in core flow could cause a APRM flow-biased scram.

Resolution

A cold shutdown justification will be included in the IST Program.

Iowa Electric's Action

A cold shutdown test justification has been provided for valves MO-4627 and MO-4628 in Appendix D of the IST Program.

NRC Question No. 2

Provide a detailed technical justification for not full-stroke exercising valves MO-4629 and MO-4630 quarterly during power operation.

Iowa Electric Response

The above valves are currently open during power operation and could be exercised during power operation.

Resolution

A cold shutdown justification will be included in the IST Program and the program will be changed to show that the valves are open during operation. The General Electric Company (Service Information Letter (SIL-104)) has determined that these valves should stay open at power to prevent thermal shock to the bypass line welds.

Iowa Electric's Action

A cold shutdown test justification has been provided for valves MO-4629 and MO-4630 in Appendix D of the IST Program.

## H. CONTROL ROD DRIVE HYDRAULIC

### NRC Question No. 1

Provide the control rod drive scram testing Technical Specification acceptance criteria.

### Iowa Electric Response

Technical Specification 3.3.C states:

- 1) The average scram insertion time, based on the deenergization of the scram pilot valve at time zero, of all operable control rods in the reactor power operation condition shall be no greater than:

<u>Rod Position</u>	<u>Average Scram Insertion Times (SEC)</u>
46	0.35
38	0.937
26	1.86
06	3.41

- 2) The average scram insertion times for the three fastest control rods of all groups of four control rods in a 2 X 2 array shall be no greater than:

<u>Rod Position</u>	<u>Average Scram Insertion Times (SEC)</u>
46	0.37
38	1.01
26	1.97
06	3.62

- 3) Maximum scram insertion time to rod position 04 of any operable control rod should not exceed 7.00 sec.

### Resolution

The written response is satisfactory.

### Iowa Electric's Action

No further action is required. Note: Amendment 141 to the DAEC Technical Specifications was received subsequent to NRC Staff and Subcontractor review. The above information reflects the incorporation of Amendment 141 into the DAEC Technical Specifications.

NRC Question No. 2

Provide a detailed technical justification for not full-stroke exercising valves CV-1859A/B and CV-1867A/B quarterly during power operation.

Iowa Electric Response

To utilize the safety related control system to exercise these valves would require a manual reactor scram.

Resolution

A cold shutdown justification will be included in the IST Program.

Iowa Electric's Action

The above valves will be exercised quarterly in accordance with IWV-3413. SV-1868 and SV-1869 (safety related control system for CV-1859A/B and CV-1867A/B) will be exercised every refueling and when the reactor experiences a SCRAM, in accordance with the alternate testing discussed in VR-13.

NRC Question No. 3

What is the safety related function of valves SV-1851, SV-1852, SV-1853, and SV-1854?

Iowa Electric Response

There are 89 sets of these valves; one for each control rod drive. Normal insertion and withdrawal of the CRDs is accomplished by opening and closing a particular set of valves (only one CRD can be moved at a time). These valves are required to close or remain closed during a scram to allow the accumulator pressure to insert the control rod.

Resolution

These non-safety related valves will be deleted from the IST program.

Iowa Electric's Action

The valves have been removed from Appendix B of the IST Program and Relief Request VR-14 has been deleted from the IST Program.

NRC Question No. 4

How are valves V-18-919 through V-18-1007 and V-18-118 through V-18-206 verified shut individually during testing?

Iowa Electric Response

Valves V-18-919 through V-18-1007 are verified shut during scram time testing. Additionally, weekly testing of the CRDs would detect a failure of these valves to close. (Reference DAEC Technical Specification Surveillance Requirement 4.3.A.2.a.)

Valves V-18-118 through V-18-206 are verified shut during a pressure decay test.

Resolution

The Relief Request for these valves will be modified to discuss that rod movement is inhibited if V-18-919 through V-18-1007 fail open and to describe the test for valves V-18-118 through V-18-206.

Iowa Electric's Action

Relief Request VR-13 has been expanded to include the requested information.

**I. RESIDUAL HEAT REMOVAL**

NRC Question No. 1

Provide a detailed technical justification for not full-stroke exercising valve CV-1906 quarterly during power operation. Does this valve have a maximum stroke time assigned to it?

Iowa Electric Response

This valve serves as a high/low pressure interface. This valve does not have a stroke time associated with it. The valve is stroked in accordance with Paragraph IWV-3522, normally closed check valves and full flow tested to demonstrate operability.

Resolution

A relief request will be provided for testing this valve during refueling outages. One RHR loop will be used for cold shutdown cooling, therefore, this valve may not be exercised each cold shutdown.

Iowa Electric's Action

The valves will be mechanically exercised on a refueling basis in accordance with the alternate testing proposed in Relief Request VR-3. Note the valve number has been changed from CV-1906 to V-19-0149 since the actuators have been removed.

NRC Question No. 2

Provide a detailed technical justification for not full-stroke exercising valves MO-1900 and MO-1901 quarterly during power operation.

Iowa Electric Response

These valves serve as a high/flow pressure interface. These valves are physically prohibited from opening unless reactor pressure is less than 135 psig.

Resolution

A cold shutdown justification will be included in the IST Program.

Iowa Electric's Action

The head spray line, which contains MO-1900 and MO-1901, was flanged between the vessel and the isolation valves during the Cycle 8/9 refueling outage. Power to these valves has also been disconnected, and the valves have been removed from Appendix B of the IST Program. Therefore, the need for a cold shutdown justification is moot.

NRC Question No. 3

Review the safety function of valves MO-1902 and MO-1903 to determine if they should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakage for these valves (penetration X-39B) is not a concern since the outboard valve is water sealed. Line leakage is a consideration for MO-1902, but line leakage does not meet the criteria for considering a valve to be Type A tested per Subparagraph IWV-2200(a).

Valve MO-1902 is the subject of a separate relief request dated December 7, 1984 (copy included). In a NRC SER dated April 8, 1987 (TAC 56809) relief from 10CFR Part 50, Appendix J, Type C testing was granted.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.



NRC Question No. 4

Provide a detailed technical justification for not full-stroke exercising valves MO-1908 and MO-1909 quarterly during power operation.

Iowa Electric Response

These valves serve as a high/low pressure interface. These valves are physically prohibited from opening unless reactor pressure is less than 135 psig.

Resolution

A cold shutdown valve justification will be included in the IST Program.

Iowa Electric's Action

A cold shutdown test justification has been provided in Appendix D of the IST Program.

NRC Question No. 5

Review the safety function of valves MO-1933, MO-1934, and MO-1935 to determine if they should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakage for valves MO-1933 (penetration N-211A), MO-1934 (penetration N-210A) and MO-1935 (penetration N-210B) are not a concern since the valves are water sealed during accident conditions. Line leakage is a consideration for MO-1933, but does not meet the criteria for considering a valve to be categorized Type A per Subparagraph IWV-2200(a).

Valve MO-1933 is the subject of a separate relief request dated December 7, 1984 (copy included). In a NRC SER dated April 8, 1987 (TAC 56809) relief from 10CFR Part 50, Appendix J, Type C testing was granted.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

NRC Question No. 6

Review the safety function of valves MO-1949A/B to determine if they should be categorized A.

Iowa Electric Response

The RHR/Core Spray Fill pump (1P-70) maintains the RHR pressure greater than the maximum drywell accident pressure of 43 psi. In addition, this piping would remain water sealed during accident conditions. (The tail pipe is submerged in the suppression pool.) Therefore, any leakage past valves MO-1949A/B will be inleakage into the suppression pool.

Resolution

The written response is satisfactory. These valves are not Category A.

Iowa Electric's Action

No further action is required. MO-1949A & B are not required to be tested in accordance with 10CFR50, Appendix J, since the tail pipe from the vent valves MO-1949A & B is submerged in the suppression pool and is not in contact with the containment atmosphere.

NRC Question No. 7

Review the safety function of valves MO-1970 and MO-1989 to determine if they should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakages for valves MO-1970 (penetration N-210B) and MO-1989 (penetration N-225B) are not a concern since the valves are water sealed during accident conditions.

Resolution

The written response is satisfactory. These valves are not Category A.

Iowa Electric's Action

No further action is required.

NRC Question No. 8

Review the safety function of relief valve PSV-1952 to determine if it should be categorized A/C.

Iowa Electric Response

The RHR/Core Spray Fill pump (1P-70) maintains the RHR pressure greater than the maximum drywell accident pressure of 43 psi. In addition, this piping would remain water sealed during accident conditions. (The tail pipe is submerged in the suppression pool.) Therefore, any leakage past valve PSV-1952 will be inleakage into the suppression pool.

Resolution

The written response is satisfactory. The valve is not Category A/C.

Iowa Electric's Action

No further action is required. PSV-1952 relief valve is not required to be tested in accordance with 10CFR50, Appendix J, since the tail pipe is submerged in the suppression pool and is not in contact with the containment atmosphere.

NRC Question No. 9

How is the position of valves V-19-14 and V-19-16 individually verified during testing?

Iowa Electric Response

The valve(s) are verified closed by determining if the redundant pump attains reference values for flow and pressure. The valve(s) may be verified open by detection of local flow noise and proper operation of the pump.

Resolution

The licensee will investigate test methods that will indicate valve opening by flow measurement or other positive means and perform the test, if feasible. This is an open item for Iowa Electric.

Iowa Electric's Action

The function of these valves will be evaluated to determine whether or not they may be removed from the system. If these valves serve a necessary function, instrumentation will be installed to verify these valves are operating correctly. The valves will be removed or instrumentation installed by the startup for Cycle 10, next refuel outage. This schedule is necessary to perform the appropriate engineering evaluation and to implement the proper design change verifications. The IST Program will be changed to reflect the design change modifications after their installation.

NRC Question No. 10

Provide a detailed technical justification for not full-stroke exercising valve CV-2002 quarterly during power operation. Does this valve have a maximum stroke time assigned to it?

Iowa Electric Response

This valve serves as a high/low pressure interface. This valve does not have a stroke time associated with it. The valve is stroked at required flow to demonstrate operability.

Resolution

A relief request will be provided for testing this valve during cold shutdowns and/or refueling outages. One RHR loop will be used for cold shutdown cooling, therefore, this valve may not be exercised each shutdown.

Iowa Electric's Action

The valve will be mechanically exercised on a refueling basis in accordance with the alternate testing proposed in Relief Request VR-3. Note the valve number has been changed from CV-2002 to V-20-082 since the actuators have been removed.

NRC Question No. 11

Review the safety function of valves MO-2000 and MO-2001 to determine if they should be categorized A.

Iowa Electric Response

The NRC subcontractor's Technical Evaluation Report (TER) dated January 17, 1984 states that seat leakage for these valves (located on penetration X-39A) is not a concern since the outboard valve is water sealed. Line leakage is a consideration, but line leakage does not meet the criteria for considering a valve to be Type A tested per Subparagraph IWV-2200(a).

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

NRC Question No. 12

Review the safety function of valves MO-2006, MO-2007, and MO-2009 to determine if they should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakage for valves MO-2006 (penetration N-211B), MO-2007 (penetration N-210B), and MO-2009 (penetration N-210A) are not a concern since the valves are water sealed during accident conditions. Line leakage is a consideration for MO-2006, but does not meet the criteria for considering a valve to be categorized Type A per Subparagraph IWV-2200(a).

Valve MO-2006 is the subject of a separate relief request dated December 7, 1984. In a NRC SER dated April 8, 1987 (TAC 56809) relief from 10CFR Part 50, Appendix J, Type C testing was granted.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

NRC Question No. 13

Review the safety function of valves MO-2038 and MO-2069 to determine if they should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakage for valves MO-2038 (penetration N-210A) and MO-2069 (penetration N-225A) are not a concern since the valves are water sealed during accident conditions.

Resolution

The written response is satisfactory. These valves are not Category A.

Iowa Electric's Action

No further action is required.

NRC Question No. 14

Review the safety function of valves MO-2044A/B to determine if they should be categorized A.

Iowa Electric Response

The RHR/Core Spray Fill pump (1P-70) maintains the RHR pressure greater than the maximum drywell accident pressure of 43 psi. In addition, this piping would remain water sealed during accident conditions. (The tail pipe is submerged in the suppression pool.) Therefore, any leakage past valves MO-2044A/B will be inleakage into the suppression pool.

Resolution

The written response is satisfactory. These valves are not Category A.

Iowa Electric's Action

No further action is required. MO-2044A & B are not required to be tested in accordance with 10CFR50, Appendix J, since the tail pipe from the vent valves MO-2044A & B is submerged in the suppression pool and is not in contact with the containment atmosphere.

NRC Question No. 15

Review the safety function of relief valve PSV-2043 to determine if they should be categorized A/C.

Iowa Electric Response

The RHR/Core Spray Fill pump (1P-70) maintains the RHR pressure greater than the maximum drywell accident pressure of 43 psi. In addition, this piping would remain water sealed during accident conditions. (The tail pipe is submerged in the suppression pool.) Therefore, any leakage past valve PSV-2043 will be inleakage into the suppression pool.

Resolution

The written response is satisfactory. This valve is not Category A/C.

Iowa Electric's Action

No further action is required. PSV-2043 relief valve is not required to be tested in accordance with 10CFR50, Appendix J, since the tail pipe is submerged in the suppression pool and is not in contact with the containment atmosphere.

NRC Question No. 16

How is the position of valves V-20-6 and V-20-8 individually verified during testing?

Iowa Electric Response

The valve(s) are verified closed by determining if the redundant pump attains reference values for flow and pressure. The valve(s) may be verified open by detection of local flow noise and proper operation of the pump.

Resolution

The Iowa Electric will investigate test methods that will indicate valve opening by flow measurement or other positive means and perform the test, if feasible. This is an open item for Iowa Electric.

Iowa Electric's Action

The function of these valves will be evaluated to determine whether or not they may be removed from the system. If these valves serve a necessary function, instrumentation will be installed to verify these valves are operating correctly. The valves will be removed or instrumentation installed by the startup for Cycle 10, next refuel outage. This schedule is necessary to perform the appropriate engineering evaluation and to implement the proper design change verifications. The IST Program will be changed to reflect the design change modifications after their installation.

NRC Question No. 17

Review the safety function of the following valves to determine if they should be included in the IST Program and categorized as indicated.

Category A/C

PSV-1953 (C-4)  
PSV-2042 (C-7)

Category A

CV-1963 (D-3)  
CV-1964 (D-3)  
CV-2033 (D-7)  
CV-2034 (D-7)

Category B

SV-1972 (C-3)  
SV-1973 (C-3)  
SV-2051 (C-7)  
SV-2052 (C-7)  
MO-2010 (D-5)

Category C

V-19-19 (C-6)  
V-19-22 (C-6)  
V-19-24  
V-19-124

Iowa Electric Response

- MO-2010 - This valve is a Category B passive valve and will not be added to the IST Program.
- PSV-1953 - This valve is a 3/4" thermal relief and does not perform a function in shutting down the reactor. See also response to Question I.15.
- PSV-2042 - See PSV-1953 above.
- SV-1972 - This valve is a 1" valve to RHR sampling and does not perform a function in shutting down the reactor.
- SV-1973 - See SV-1972 above.
- SV-2051 - See SV-1972 above.
- SV-2052 - See SV-1972 above.
- CV-1963 - This valve would function in the RHR steam condensing mode only. The RHR steam condensing mode is not a safety-related function of RHR nor is it used at the DAEC. Per Article IWV-1000, only valves required to mitigate the consequences of an accident or required for safe shutdown of the reactor should be included in the IST Program.
- CV-1964 - See CV-1963 above.
- CV-2033 - See CV-1963 above.
- CV-2034 - See CV-1963 above.
- V-19-19 - This valve provides for keeping the RHR discharge line full to prevent water hammer during the starting of the RHR pumps. This function is not necessary to shutdown the reactor.
- V-19-22 - This valve provides for keeping the Core Spray discharge line full to prevent water hammer during the starting of the Core Spray pumps. This function is not necessary to shutdown the reactor.
- V-19-24 - See V-19-19 above.
- V-19-124 - See V-19-19 above.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

J. CORE SPRAY

NRC Question No. 1

Has the engineering evaluation concerning replacement or removal of the operators on valves CV-2118 and CV-2138 been completed? Relief Request VR-33 implies that the operators have been removed.



Iowa Electric Response

The review has been completed, and the operators are scheduled to be removed during the current refueling outage which began in mid-March 1987. The operators are presently disconnected from the power source.

Resolution

Relief Request VR-33 will be modified to provide a definite statement on the status of the operator.

Iowa Electric's Action

The operators for the above valves have been removed and the valve numbers have changed (CV-2118 became V-21-072 and CV-2138 became V-21-073). Relief Request VR-33 has been updated to incorporate the new status of the valves.

NRC Question No. 2

Review the safety function of valves MO-2100, MO-2120, MO-2146, and MO-2147 to determine if they should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakages for valves MO-2100 (penetration N-227A), MO-2120 (penetration N-227B), MO-2146 (penetration N-227B), and MO-2147 (penetration N-227A) are not a concern since the valves are water sealed during accident conditions.

Resolution

The written response is satisfactory. These valves are not Category A.

Iowa Electric's Action

No further action is required.

NRC Question No. 3

Review the safety function of valves MO-2104 and MO-2124 to determine if they should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakages for valves MO-2104 (penetration N-210A) and MO-2124 (penetration N-210B) are not a concern since the valves are water sealed during accident conditions.

Resolution

The written response is satisfactory. These valves are not Category A.

Iowa Electric's Action

No further action is required.

NRC Question No. 4

Review the safety function of valves MO-2112 and MO-2132 to determine if they should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakages for valves MO-2112 (penetration N-210A) and MO-2132 (penetration N-210B) are not a concern since the valves are water sealed during accident conditions.

Resolution

The written response is satisfactory. These valves are not Category A.

Iowa Electric's Action

No further action is required.

NRC Question No. 5

Review the safety function of valves PSV-2109, and PSV-2129 to determine if they should be categorized A/C.

Iowa Electric Response

The RHR/Core Spray Fill pump (1P-70) maintains the RHR pressure greater than the maximum drywell accident pressure of 43 psi. In addition, this line remains water sealed during accident conditions. (The tail pipe is submerged in the suppression pool.) Therefore, any leakage past valves PSV-2109 and PSV-2129 would be inleakage into the suppression pool.

Resolution

The written response is satisfactory. These valves are not Category A/C.

Iowa Electric's Action

No further action is required. PSV-2109 and PSV-2129 relief valves are not required to be tested in accordance with 10CFR50, Appendix J, since the tail pipes are submerged in the suppression pool and are not in contact with the containment atmosphere.

NRC Question No. 6

How is the position of valves V-21-9 and V-21-12 individually verified during pump testing?

Iowa Electric Response

Proper operation of each core spray pump individually demonstrates that the check valves operate.

Resolution

Iowa Electric will investigate test methods that will indicate valve opening by flow measurement or other positive means and perform the test, if feasible. This is an open item for Iowa Electric.

Iowa Electric's Action

The function of these valves will be evaluated to determine whether or not they may be removed from the system. If these valves serve a necessary function, instrumentation will be installed to verify these valves are operating correctly. The valves will be removed or instrumentation installed by the startup for Cycle 10, next refuel outage. This schedule is necessary to perform the appropriate engineering evaluation and to implement the proper design change verifications. The IST Program will be changed to reflect the design change modifications after their installation.

**K. HPCI-STEAM SIDE**

NRC Question No. 1

Would an entire safety system be rendered inoperable if valve MO-2238 failed while being tested? Should testing of this valve be done during cold shutdown?

Iowa Electric Response

Yes, MO-2238 is normally open and must remain open in order to operate the HPCI turbine. However, technical specifications require that this valve be cycled each month. (Reference DAEC Technical Specification Surveillance Requirement 4.5.D.1.c.)

Resolution

Iowa Electric will consider changing the Technical Specifications to test this valve during cold shutdown and provide a cold shutdown justification for the valve in the IST program. This is an open item for Iowa Electric.

Iowa Electric's Action

A cold shutdown test justification has been provided in Appendix D of the IST Program.

NRC Question No. 2

Is valve V-22-16 equipped with an external operator? How is this valve exercised shut during cold shutdown?

Iowa Electric Response

No. Pressure is applied to the seat of the valve using the pressure decay method.

Resolution

The written response is satisfactory.

Iowa Electric's Action

A cold shutdown test justification has been provided in Appendix D of the IST Program.

NRC Question No. 3

Does valve V-22-17 perform a safety function in the shut position?

Iowa Electric Response

Yes, the valve will be manually stroked closed during cold shutdown.

Resolution

A cold shutdown justification will be included in the IST Program.

Iowa Electric's Action

A cold shutdown test justification has been provided in Appendix D of the IST Program. Also a CT-CC test has been added to the valve testing list in Appendix B of the IST Program.

NRC Question No. 4

How is valve V-22-21 verified shut during cold shutdown?

Iowa Electric Response

Pressure is applied to the seat of the valve using the pressure decay method.

Resolution

The written response is satisfactory.

Iowa Electric's Action

A cold shutdown test justification has been provided in Appendix D of the IST Program.

NRC Question No. 5

Does valve V-22-22 perform a safety function in the shut position?

Iowa Electric Response

Yes, the valve will be manually stroked closed during cold shutdown.

Resolution

A cold shutdown justification will be included in the IST Program.

Iowa Electric's Action

A cold shutdown test justification has been provided in Appendix D of the IST Program. Also a CT-CC test has been added to the valve testing list in Appendix B of the IST Program.

NRC Question No. 6

Can valves V-22-63 and V-22-64 be verified shut during power operation?

Iowa Electric Response

No. Verifying the valves shut would require HPCI to be inoperable.

Resolution

A cold shutdown justification will be included in the IST Program.

Iowa Electric's Action

A cold shutdown test justification has been provided in Appendix D of the IST Program.

NRC Question No. 7

Is valve PSV-2290 in service as a vacuum breaker? Should this valve be included in the IST Program?

Iowa Electric Response

No. This valve has been capped. The safety related vacuum breaker for the system are valves V-22-64 and V-22-63.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

NRC Question No. 8

Review the safety function of valve CV-2234 to determine if it should be included in the IST Program.

Iowa Electric Response

We will add CV-2234 to the IST Program as a Category B valve and delete CV-2235 since only single valve isolation is needed for this line.

Resolution

The response is acceptable but Iowa Electric will investigate removing both valves from the IST Program. This is an open item for Iowa Electric.

Iowa Electric's Action

These valves are normally open to provide a discharge path for any condensate that may collect in the barometric condenser during idle periods. Upon HPCI initiation, MO-2202 opens which, in turn, causes CV-2234 and CV-2235 to close. If these valves were to fail to close, the condensate discharge from the barometric condenser and the lube oil cooler would be directed to the closed radwaste system. The quantity of water lost from the system would have little effect on the overall system operability and capability. Since these valves do not effect the system operability, CV-2235 was removed from Appendix B of the IST Program, and CV-2234 will not be added to the IST Program.

L. HPCI - WATER SIDE

NRC Question No. 1

Provide a detailed technical justification for not full-stroke exercising valve CV-2313 quarterly during power operation. Should this valve be categorized A/C?

Iowa Electric Response

This valve is equipped with an operator that cannot be cycled with any pressure drop across the valve. The valve serves no containment isolation function since it is a simple check valve. MO-2312 is the containment isolation valve for that line.

Resolution

A cold shutdown justification will be included in the IST Program.

Iowa Electric's Action

A cold shutdown test justification has been provided in Appendix D of the IST Program. Note the name of the valve has changed to V-23-049 after the operator was removed.

NRC Question No. 2

Review the safety function of valve MO-2318 to determine if it should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakage for valve MO-2318 (penetration N-210A) is not a concern since the valve is water sealed during accident conditions.

Resolution

The written response is satisfactory. This valve is not Category A.

Iowa Electric's Action

No further action is required.

NRC Question No. 3

Review the safety function of valve MO-2321 to determine if it should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakage for valve MO-2321 (penetration N-226) is not a concern since the valve is water sealed during accident conditions.

Resolution

The written response is satisfactory. This valve is not Category A.

Iowa Electric's Action

No further action is required.

NRC Question No. 2

Review the safety function of valve MO-2318 to determine if it should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakage for valve MO-2318 (penetration N-210A) is not a concern since the valve is water sealed during accident conditions.

Resolution

The written response is satisfactory. This valve is not Category A.

Iowa Electric's Action

No further action is required.

NRC Question No. 3

Review the safety function of valve MO-2321 to determine if it should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakage for valve MO-2321 (penetration N-226) is not a concern since the valve is water sealed during accident conditions.



Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakage for valve MO-2321 (penetration N-226) is not a concern since the valve is water sealed during accident conditions.

Resolution

The written response is satisfactory. This valve is not Category A.

Iowa Electric's Action

No further action is required.

NRC Question No. 4

Does valve V-23-4 perform a safety function in the closed position while the HPCI suction valves shift to align the pump suction to the suppression pool?

Iowa Electric Response

This valve does not perform a safety function when shifting suction to the suppression pool. V-23-001 is the valve that performs a safety function when shifting suction from the CST to the suppression pool. Refer to Relief Request VR-21.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

NRC Question No. 5

Review the safety function of valves MO-2315 and V-23-14 to determine if they should be included in the IST Program and categorized B and C, respectively.

Iowa Electric Response

MO-2315 (recently changed to CV-2315) will be added to the IST Program as a Category B valve. V-23-14 is already included in the IST Program as a Category C valve.

Resolution

Iowa Electric will investigate the possibility of removing V-23-14 from the Program and, if it cannot be removed, will investigate how the valve is verified to open and whether either MO-2315 or MO-2316 should be in the program. This is an open item for Iowa Electric.

Iowa Electric's Action

MO-2315 (recently changed to CV-2315) has been added to Appendix B of the IST Program as a Category B valve. The function of V-23-14 will be evaluated to determine whether or not it may be removed from the system. If the valve serves a necessary function, instrumentation will be installed to verify the valve is operating correctly. The valve will be removed or instrumentation installed by the startup for Cycle 10, next refuel outage. This schedule is necessary to perform the appropriate engineering evaluation and to implement the proper design change verifications. The IST Program will be changed to reflect the design change modifications after their installation.

**M. RCIC-STEAM SIDE**

NRC Question No. 1

Would an entire safety system be rendered inoperable if valve MO-2400 failed while being tested? Should testing of this valve be done during cold shutdown?

Iowa Electric Response

Yes, MO-2400 is normally open and must remain open in order to operate the RCIC turbine. However, technical specifications require that this valve be cycled each month. (Reference DAEC Technical Specification Surveillance Requirement 4.5.E.1.c.) It should also be noted that RCIC is not considered a safety related system.

Resolution

A cold shutdown justification will be included in the IST Program.

Iowa Electric's Action

A cold shutdown test justification has been provided in Appendix D of the IST Program.

NRC Question No. 2

Does valve V-24-8 perform a safety function in the shut position? How is this valve full-stroke exercised?

Resolution

Iowa Electric will investigate the possibility of removing V-23-14 from the Program and, if it cannot be removed, will investigate how the valve is verified to open and whether either MO-2315 or MO-2316 should be in the program. This is an open item for Iowa Electric.

Iowa Electric's Action

MO-2315 (recently changed to CV-2315) has been added to Appendix B of the IST Program as a Category B valve. The function of V-23-14 will be evaluated to determine whether or not it may be removed from the system. If the valve serves a necessary function, instrumentation will be installed to verify the valve is operating correctly. The valve will be removed or instrumentation installed by the startup for Cycle 10, next refuel outage. This schedule is necessary to perform the appropriate engineering evaluation and to implement the proper design change verifications. The IST Program will be changed to reflect the design change modifications after their installation.

NRC Question No. 3

Is valve V-24-23 equipped with an external operator? How is this valve verified shut during cold shutdowns?

Iowa Electric Response

No. Pressure is applied to the seat of the valve by the pressure decay method.

Resolution

A cold shutdown test justification has been provided in Appendix D of the IST Program.

Iowa Electric's Action

Credit was not taken for the RCIC system in the design accident analyses for DAEC. All of the RCIC system valves and the RCIC pump which are required only for the operation of the system have been removed from the IST Program. CV-2435, V-24-9, and V-24-10 do not mitigate the consequences of an accident nor are they required for safe shutdown of the reactor and will not be included in the IST Program.

NRC Question No. 4

How are valves V-24-46 and V-24-47 verified shut during cold shutdown?

Iowa Electric Response

The valves are verified shut by applying pressure to the seat of each valve by the pressure decay method.

Resolution

A cold shutdown test justification has been provided in Appendix D of the IST Program.

Iowa Electric's Action

Credit was not taken for the RCIC system in the design accident analyses for DAEC. All of the RCIC system valves and the RCIC pump which are required only for the operation of the system have been removed from the IST Program. These components do not mitigate the consequences of an accident nor are they required for safe shutdown of the reactor.

NRC Question No. 5

Review the safety function of the following valves to determine if they should be included in the IST Program and categorized as indicated.

Category B

CV-2435

Category C

V-24-9  
V-24-10

Iowa Electric Response

We will add CV-2435 to the IST Program as a Category B valve and delete CV-2436 since only single valve isolation is needed for this line. Valves V-24-09 and V-24-10 do not perform a function in shutting down the reactor and they are not safety related as RCIC is not considered a safety related system.

Resolution

The response is acceptable, but Iowa Electric will investigate the need to include valves CV-2435 and CV-2436 in the IST Program. Valves V-24-9 and V-24-10 will be investigated to possibly add them to the Program. This is an open item for Iowa Electric.

Iowa Electric's Action

Credit was not taken for the RCIC system in the design accident analyses for DAEC. All of the RCIC system valves and the RCIC pump which are required only for the operation of the system have been removed from the IST Program. CV-2435, V-24-9, and V-24-10 do not mitigate the consequences of an accident nor are they required for safe shutdown of the reactor and will not be included in the IST Program.

NRC Question No. 6

Do valves PCV-2414 and PCV-2427 have a required fail-safe position? If so, they should be included in the IST Program and tested in accordance with Section XI.

Iowa Electric Response

No. These valves are pressure regulating only and therefore are exempt from the requirements of IWV-1200(a).

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

**N. RCIC-WATER SIDE**

NRC Question No. 1

Provide a detailed technical justification for not full-stroke exercising valve CV-2513 quarterly during power operation. Should this valve be categorized A/C?

Iowa Electric Response

This valve is equipped with an operator that cannot be cycled with any pressure drop across the valve. In accordance with General Design Criteria 55 of Appendix A to 10 CFR Part 50, the valve serves no containment isolation function since it is a simple check valve. MO-2512 is the containment isolation valve for that line.

Resolution

A cold shutdown justification will be included in the IST Program. This valve is not Category A/C.

Iowa Electric's Action

Credit was not taken for the RCIC System in the design accident analyses for DAEC. All of the RCIC system valves and the RCIC pump which are required only for the operation of the system have been removed from the IST Program. CV-2513 does not mitigate the consequences of an accident nor is it required for safe shutdown of the reactor and will not be included in the IST Program.

NRC Question No. 2

Review the safety function of valve MO-2510 to determine if it should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakage for valve MO-2510 (penetration N-210A) is not a concern since the valve is water sealed during accident conditions.

Resolution

The written response is acceptable. This valve is not Category A.

Iowa Electric's Action

No further action is required.

NRC Question No. 3

Review the safety function of valve MO-2516 to determine if it should be categorized A.

Iowa Electric Response

On page 3 of the NRC Safety Evaluation Report (SER) dated January 17, 1984, the NRC staff agreed with the subcontractor's Technical Evaluation Report (TER) that seat leakage for valve MO-2516 (penetration N-224) is not a concern since the valve is water sealed during accident conditions.

Resolution

The written response is satisfactory. This valve is not Category A.

Iowa Electric's Action

No further action is required.

NRC Question No. 4

Review the safety function of valve V-25-03 to determine if it should be included in the IST Program. Does this valve perform a safety function in the closed position while the RCIC suction valves shift to align the pump suction to the suppression pool?

Iowa Electric Response

This valve does not perform a safety function when shifting suction to the suppression pool. V-25-001 is the valve designed to prevent backflow into the suppression pool in the event of pump suction shift from the CST to the suppression pool. Refer to Relief Request VR-21. It should be noted that RCIC is not considered to be a safety related system.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required. Relief Request VR-21 has been deleted and V-25-03 has been removed from the IST Program because the RCIC system was not taken credit for in the accident analyses for DAEC.

NRC Question No. 5

Review the safety function of valve MO-2515 to determine if it should be included in the IST Program and categorized B.

Iowa Electric Response

MO-2515 will be added to the IST Program and categorized B.

Resolution

Iowa Electric will investigate whether either MO-2515 or MO-2316 should be included in the IST Program. This is an open item for Iowa Electric.

Iowa Electric's Action

Credit was not taken for the RCIC system in the design accident analyses for DAEC. All of the RCIC system valves and the RCIC pump which are required only for the operation of the system have been removed from the IST Program. MO-2515 does not mitigate the consequences of an accident nor is it required for safe shutdown of the reactor and will not be included in the IST Program. MO-2316 will be included in the IST Program.

0. COMPRESSED AIR

NRC Question No. 1

Is the blind flange installed on the breathing air line at penetration 21? If it is not installed, then should valve V-30-288 be included in the IST Program and categorized A, passive?

Iowa Electric Response

Yes, the blind flange is installed.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

P. DIESEL GENERATOR SYSTEMS

NRC Question No. 1

Review the safety function of the following check valves to determine if they should be included in the IST Program and tested in accordance with Section XI.

V-32-19  
V-32-21  
V-32-43

V-32-45  
V-32-52  
V-32-54

Iowa Electric Response

We subscribe to the ASME Section XI position that the intent of Subarticle IWB-1100 does not pertain to systems containing medium other than steam or water. (See the attached ASME response dated February 16, 1978.)

Resolution

Iowa Electric will review the function of valves V-32-43, V-32-45, V-32-52 and V-32-54 to determine whether they should be included in the Program. The staff expects to see these valves in the program if credit is taken for the accumulators. Iowa Electric will check whether the FSAR takes credit for the AC charged air receivers. If credit is not taken, then the valves do not have to be added to the program provided the diesel generators accumulators can not bleed down. The Staff does not expect the licensee to increase the test frequency of the diesel generators to test valves V-32-43, V-32-45, V-32-52 and V-32-54. This is an open item for Iowa Electric.

Valves V-32-19 and V-32-21 will not be included in the IST Program.



Iowa Electric's Action

Valves V-32-43, V-32-45, V-32-52, and V-32-54 have been added to the program as Type B valves and will be tested in the open and closed direction in accordance with IWV-3522.

Valves V-32-19 and V-32-21 do not mitigate the consequences of an accident nor are they required for safe shutdown of the reactor. These valves will not be included in the IST Program.

NRC Question No. 2

Are the emergency diesel engines equipped with air start solenoids? If so, how many are installed on each engine and can they be tested individually?

Iowa Electric Response

Yes, valves SV-3261A, SV-3261B, SV-3262A and SV-3262B are diesel air start solenoids. There are two air start solenoids for each diesel which can be tested individually. We subscribe to the ASME Section XI position that the intent of Subarticle IWV-1100 does not pertain to systems containing medium other than steam or water. (See the attached ASME response dated February 16, 1978.)

Resolution

Iowa Electric will determine which of the valves should be included in the program. The testing of these valves is not to increase the frequency of diesel generator testing. An NRC staff position on testing of the diesel generator was provided to Iowa Electric. This is an open item for Iowa Electric.

Iowa Electric's Action

Valves SV-3261A, SV-3261B, SV-3262A, and SV-3262B have been added to the IST Program and will be tested in accordance with the alternate testing proposed in Relief Request VR-7.

Q. CONTAINMENT ATMOSPHERE CONTROL

NRC Question No. 1

Why were valves CV-4300, CV-4301, CV-4302, CV-4303, CV-4304, CV-4305, and CV-4306 deleted from Revision 7 of the IST Program?

Iowa Electric Response

The page was inadvertently omitted from your copy of the submittal, as the valves have not been deleted from Revision 7. The missing page is included in this submittal.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

NRC Question No. 2

Provide a detailed technical justification for not full-stroke exercising valves V-43-82, V-43-84, V-43-86, and V-43-88 quarterly during power operation and cold shutdowns.

Iowa Electric Response

Injection of nitrogen would cause pressurization of the containment resulting in unnecessary safety system actuations as the only means to test these valves is by actual injection. Injection of nitrogen would place the plant in a Limiting Condition for Operation (LCO). Also, the containment atmosphere is not necessarily purged of nitrogen every cold shutdown. Refer to Technical Specification 3.7.A.6.b. Relief Request VR-24 proposes alternate testing to that which is required by Code.

Resolution

The relief request will be expanded to discuss that there is no other way to operate the valves except by injecting nitrogen to the containment and that system modifications cannot be made to utilize air flow because that would dilute the nitrogen concentration in the containment during power operation and cold shutdown.

Iowa Electric's Action

The Relief Request VR-24 has been deleted from the IST Program and the above valves will be cycled quarterly at power operation.

NRC Question No. 3

Do valves PCV-4320A/B and PCV-4323A/B have a required fail-safe position? If so, they should be included in the IST Program and tested in accordance with Section XI.

Iowa Electric Response

No. These valves are pressure regulating only and therefore are exempt from the requirements of IWV per IWV-1200(a).

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

R. DRYWELL COOLING WATER

NRC Question No. 1

Review the safety function of valves V-57-58 and V-57-59 to determine if they should be included in the IST Program and categorized C.

Iowa Electric Response

The lines associated with these valves do not perform a safety function.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

S. MSIV LEAKAGE CONTROL

NRC Question No. 1

Review the safety function of valves MO-8401A, B, C, and D to determine if they should be categorized A.

Iowa Electric Response

Leakage through these valves is not a concern as any leakage would be processed through either the standby gas treatment system or closed radwaste system. The system is designed to pass flow following a postulated accident.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

PUMP TESTING PROGRAM

AA. EMERGENCY SERVICE WATER

NRC Question No. 1

IWP-1200(a) excludes pump drivers from the requirements of Section XI unless the pump and driver are an integral unit and the pump bearings are located in the driver, therefore, is Relief Request PR-2 necessary? Are the emergency service water pumps submerged? How are pump vibration readings taken if the pumps are submerged and inaccessible?

Iowa Electric Response

The pumps in question are vertical lineshaft pumps. The bearings are located on the line shaft and are inaccessible; however, the pump is accessible and the pump vibration readings can be taken near the pump motor mount flange.

Resolution

Relief Request PR-14 will be revised to state "all pumps" instead of "various" and Relief Request PR-2 will be deleted.

Iowa Electric's Action

A Relief Request PR-2 has been deleted and Relief Request PR-14 has been revised to incorporate the above comments.

BB. SCREEN WASH

NRC Question No.1

Has the evaluation of the instrumentation requirements for the Screen Wash pumps been completed? The current NRC position is that lack of installed instrumentation is not an acceptable long term technical justification for not measuring the Code required parameters on pumps that perform a safety-related function.

Iowa Electric Response

Yes, the evaluation is complete and instrumentation has been installed to meet the requirements for testing the Screen Wash pumps. The relief request can now be voided.

Resolution

Iowa Electric will review the safety-related function of pumps. This is an open item for Iowa Electric.

Iowa Electric's Action

Iowa Electric considers the Screen Wash pumps necessary in the operation of the River Water system.

CC. RIVER WATER

NRC Question No. 1

How are vibration readings taken if the pumps are submerged and inaccessible?

Iowa Electric Response

The pumps in question are vertical lineshaft pumps. The bearings are located on the line shaft and are inaccessible; however, the pump is accessible and the pump vibration readings can be taken near the pump motor mount flange.

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action is required.

DD. HPCI AND RCIC

NRC Question No. 1

Has the evaluation of the instrumentation requirements for the HPCI and RCIC pumps been completed? The current NRC position is that lack of installed instrumentation is not an acceptable long term technical justification for not measuring the Code required parameters on pumps that perform a safety-related function.

Iowa Electric Response

Yes, the evaluation is completed and instrumentation has been installed to meet the requirements for testing the HPCI and RCIC pumps. The relief request can now be voided.

Resolution

The written response is satisfactory.

Iowa Electric's Action

The Relief Request PR-3 has been deleted.

EE. DIESEL FUEL OIL

NRC Question No. 1

In reference to Relief Request PR-10, IWP-3320(d) allows instrument recalibration and retesting if the results of the previous pump test fall outside the allowable ranges of Table IWP-3100-2.

Iowa Electric Response

We agree.

Resolution

The written response is satisfactory to the reviewer, however, NRC will evaluate the NRC position (including the NRC Region position) on declaring pump inoperability. This is an open item for NRC.

Iowa Electric's Action

No further action is required.

FF. MISCELLANEOUS SYSTEMS

NRC Question No. 1

In reference to Relief Request PR-5, why is it more difficult to duplicate reference flow rates than it is to duplicate a slightly higher and slightly lower flow rate during pump testing?

Iowa Electric Response

In order to duplicate exactly one flow rate and differential pressure, the throttling valve will have to be adjusted slightly more open, then slightly more closed, until the exact point on the pump curve can be duplicated. The valves used in the plant are not designed for precise throttling, but rather, only for demonstrations that the pump can meet its designed criteria. Such valve manipulation can damage valve operator components and valve internals, unnecessarily degrading the valve.

Resolution

Iowa Electric will check to see that the test method allows test results to fall within the test bands of Table 3100-2 and EG&G agrees that using the pump curves is acceptable. This is an open item for Iowa Electric.

Iowa Electric's Action

Iowa Electric uses the interpolation method described in PR-5 to provide a test parameter to compare to the reference value. Pump operability will be determined using the criteria listed in Table 3100-2 and whatever relief requests apply. The test parameters chosen for the interpolation are determined by the shape of the pump curve (linearity), which can be a less than or greater than the ranges listed in Table 3100-2.

NRC Question No. 2

As an alternate to pump vibration amplitude measurement required by IWP-3100, the NRC currently accepts the measurement of vibration velocity using the General Machinery Vibration Severity Chart as criteria for acceptable velocities. Provide specific justification for defining as acceptable any velocity values greater than 0.314 in./sec which are considered to be ROUGH vibration levels on the chart. (Refer to pump Relief Request #8.)

Iowa Electric Response

The relief request will be withdrawn and vibration measurements will be taken per IWP-3100.

Resolution

The written response is satisfactory, however, the NRC will determine the current criteria for vibration velocity. This is an open item for NRC.

Iowa Electric's Action

The Relief Request PR-8 has been deleted from the IST Program.

NRC Question No. 3

Review the safety function of the spent fuel pit cooling pumps to determine if they should be included in the IST Program and tested in accordance with Section XI.

Iowa Electric Response

No, the spent fuel pit cooling pumps are not safety-related. In addition to the makeup capabilities of the RHR systems, emergency makeup and cooling is provided by a manual hose connection to the Emergency Service Water System (UFSAR 9.1.3.3).

Resolution

The written response is satisfactory.

Iowa Electric's Action

No further action was required.

NRC Question No. 4

Iowa Electric will provide the basis for not including the RHR/CS keep fill pump (1P-70) in the program that explains that the associated system fill condition will be maintained by supplemental means if maintenance of a filled discharge pipe becomes questionable.

Iowa Electric's Action

The filled status of the Core Spray and LPCI lines is continuously monitored by measuring the static pressure in the filled lines; annunciation occurs if the pressure decreases below a set limit. On April 30, 1986, Iowa Electric requested an amendment to the DAEC Technical Specifications to add action statements to the Technical Specifications Limiting Condition of Operation (LCO), Maintenance of Filled Discharged Pipe (copy attached). The proposed action statements would require the lines to be filled within one hour after receiving the low static pressure alarm. If this cannot be met, then the affected system would be placed in test mode and the associated system pump would be operated. This would assure the lines are filled. Therefore, the system will be maintained in the filled condition by supplemental means if the RHR/CS keep fill pump does not maintain the lines in a water filled condition. We have been informally notified that approval of the proposed amendment is forthcoming.



NRC Question No. 5

The NRC staff position is that the emergency diesel generators perform a safety-related function and the appropriate pumps and valves in the emergency diesel air start, service water cooling and fuel oil transfer system should be included in the IST Program and be tested in accordance with the Code. Engine mounted pumps are considered to be part of the diesel and need and not be tested separately.

Iowa Electric Response

Iowa Electric currently is testing the above mentioned systems, although they are considered augmented and not required by Code.