ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9104240204 DOC.DATE: 91/04/18 NOTARIZED: YES DOCKET #
FACIL:50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244
AUTH.NAME AUTHOR AFFILIATION
MECREDY,R.C. Rochester Gas & Electric Corp.
RECIP.NAME RECIPIENT AFFILIATION
JOHNSON,A.R. Project Directorate I-3

SUBJECT: Responds to Generic Ltr 90-06, "Resolution of Generic Issue 70 'PORV & Block Valve Reliability' & Generic Issue 94, 'Addl Low Temp Overpressure Protection for LWRs.'" Tech Spec changes will be submitted to address issue.

DISTRIBUTION CODE: A019D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 16
TITLE: Generic Ltr 90-06 Resolution of GE 70N94 PORVs & Block Valve Reliabil

NOTES:License Exp date in accordance with 10CFR2,2.109(9/19/72). 05000244

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD1-3 LA	1	1	PD1-3 PD	1	1
	JOHNSON,A	1	1			
INTERNAL:	KIRKWOOD,R.NLS3	1	1	NRR/EMEB	1	1
	NRR/SRXB	1	1	PICKETT,D 13H15	1	1
	~~REG FILE~~ 01	1	1	RES/DSIR/EIB	1	1
	~~RES/DSIR/RPSIB~~	1	1			
EXTERNAL:	NRC PDR	1	1	NUDOCS-ABSTRACT	1	1

Cert No
1249075077

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 12 ENCL 12

RIDS/ADDS

RIDS/ADDS

RIDS/ADDS

mA4/cw

ROCHESTER GAS AND ELECTRIC CORPORATION ○ 89 EAST AVENUE, ROCHESTER N.Y. 14649-0001

ROBERT C. MECREDY
Vice President
Ginna Nuclear Production

TELEPHONE
AREA CODE 716 546-2700

April 18, 1991

U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Allen R. Johnson
Project Directorate I-3
Washington, D.C. 20555

Subject: Response to Generic Letter 90-06
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Johnson:

The purpose of this letter is to provide Rochester Gas and Electric Corporation's (RG&E's) response to Generic Letter 90-06, "Resolution of Generic Issue 70, 'Power-Operated Relief Valve and Block Valve Reliability,' and Generic Issue 94, 'Additional Low-Temperature Overpressure Protection for Light-Water Reactors," pursuant to 10 CFR 50.54 (f). Generic Letter 90-06 requires RG&E to respond as to whether we intend to follow the staff positions included in Enclosures A and B as applicable, or propose alternative measures, and the proposed schedule for implementation. Enclosures A and B request that the actions identified in Section 3 of each enclosure be implemented. Generic Letter 90-06 specifically requests statements from RG&E addressing the following items:

1. Whether RG&E will commit to incorporate improvements 1, 2, and 3 of Section 3.1 of Enclosure A

2. Specifically with respect to improvement 3 of Section 3.1 of Enclosure A, whether RG&E will commit to use those modified limiting conditions of operation for PORVs and block valves in the Technical Specifications for modes 1, 2, and 3 in Attachment A-1 of Enclosure A for Westinghouse-designed plants with two PORVs.

3. Whether RG&E will submit a license amendment request to modify the Technical Specifications and commit to use the modified Technical Specifications for the low-temperature overpressure protection system concerning the limiting conditions of operation in modes 5 and 6 as identified in Attachment B-1 of Enclosure B to this generic letter for Westinghouse-designed plants.

Cert No 1/24907507

A019
"1

4. For items 2 and 3 above, whether RG&E will submit modifications to our current Technical Specifications by the end of the first refueling outage that starts six months or later after the date of this letter (i.e. after December 25, 1990).

Since each above referenced section of the Generic Letter is composed of multiple specific requirements, RG&E has addressed each specific requirement in the attachment to this letter.

RG&E will propose Technical Specification changes. It should be noted that proposed changes to the Ginna Technical Specifications must be approved by our Plant Operations Review Committee (PORC) and the Nuclear Safety and Audit Review Board (NSARB). Therefore, the actual Technical Specification amendment submittal may differ from the attached information. Any such changes will be specifically identified at that time. Further, the Basis Section for each individual specification will be modified appropriately.

It is presently expected that a proposed Technical Specification amendment, consistent with the intent of our attached response, will be reviewed at our next regularly scheduled NSARB meeting, currently scheduled for (June 4-5, 1991). Nonetheless, present RG&E Technical Specifications are quite similar to the proposed Technical Specifications, for those proposed specifications with which RG&E agrees. The specific differences and our proposed alternatives and compensatory measures are provided in the attachment to this letter.

Very truly yours,

Robert C. Mecredy

Robert C. Mecredy

Subscribed and sworn to before me on this 18th day of April, 1991.

Lynn I. Hauck

LYNN I. HAUCK
Notary Public in the State of New York
MONROE COUNTY
Commission Expires Nov. 30, 1992

RWA/141
Attachment

xc: Mr. Allen R. Johnson (Mail Stop 14D1)
Project Directorate I-3
Washington, D.C. 20555

U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Ginna Senior Resident Inspector

GENERIC LETTER 90-06 SPECIFIC GUIDANCE AND RG&E'S STATUS/PROPOSED ACTION

GL 90-06 SPECIFIC GUIDANCE		RG&E's PROPOSED POSITION	
	ENCLOSURE A		
Section: 3.1.1	Include PORVs and block valves within the scope of an operational quality assurance program that is in compliance with 10 CFR Part 50, Appendix B. This program should include the following elements:		
	a. The addition of PORVs and block valves to the plant operational Quality Assurance List.		a. RG&E presently has the PORVs and block valves in the Ginna Quality Assurance Manual, Appendix A, item 2.1.3.e. They are classified as safety-related. (No further action is required by RG&E.)
	b. Implementation of a maintenance/ refurbishment program for PORVs and block valves that is based on the manufacturer's recommendations or guidelines and is implemented by trained plant maintenance personnel.		b. The PORVs and block valves are presently included in the Ginna maintenance program. Procedure M-1020 schedules the periodic maintenance for the PORVs and was developed based on a variety of factors including the vendor recommendations. Maintenance for PORVs is controlled by procedure M-37.11. They were also reviewed as part of the Ginna Reliability Centered Maintenance project. The block valves are included in the MOV testing program, which provides ongoing periodic maintenance, as suggested in our response to Generic Letter 89-04. Maintenance is controlled by procedure M-1007. New block valves and motor operators were installed in 1989, meeting the conditions for environmental qualification (EQ) of 10 CFR 50.49. Additional work will be performed on the PORVs/control circuits to meet EQ conditions during the 1991 Refueling Outage. The plant maintenance program, implemented by trained maintenance personnel, is considered excellent. (No further action required by RG&E).
	c. When replacement parts and spares, as well as complete components, are required for existing non-safety grade PORVs and block valves (and associated control systems), it is the intent of this generic letter that these items may be procured in accordance with the original construction codes and standards.		c. The PORVs and block valves are considered safety related. This specific requirement is presently practiced at RG&E. Parts that are safety-related are procured safety-related or are dedicated in accordance with the requirements of Generic Letter 89-02. Parts are procured in accordance with the original code requirements or a later code reconciled to the original requirements. Therefore, no further action is required by RG&E.

	GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
3.1.2	Include PORVs, valves in PORV control air systems, and block valves within the scope of a program covered by Subsection IWV, "Inservice Testing of Valves in Nuclear Power Plants," of Section XI of the ASME Boiler and Pressure Vessel Code.	The PORVs, valves in PORV control systems (for Ginna, the safety function is provided by nitrogen accumulators), and block valves are within the IST program as described in Appendix C of the Ginna QA Manual. This program, submitted in response to GL89-04, is presently under NRC review. Therefore, no further action is required by RG&E.
	Stroke testing of PORVs should only be performed during Mode 3 (HOT STANDBY) or Mode 4 (HOT SHUTDOWN) and in all cases prior to establishing conditions where the PORVs are used for low-temperature overpressure protection. Stroke testing of the PORVs should not be performed during power operation.	Our present IST program includes Cold Shutdown Justification CS-10, which specifies that PORV testing should be performed at Cold Shudtown only. However, RG&E agrees with this provision of GL 90-06, and will prepare a revised IST justification consistent with the guidance in the Generic Letter. Note that even though not explicitly stated, PORV testing during "Modes 3 or 4" would only be accomplished with the corresponding PORV block valves closed. Therefore, since this requirement is presently in Ginna's IST program, which is reviewed and approved by the NRC, this proposed requirement is not expected to be addressed in Ginna's Technical Specifications.
	Additionally, the PORV block valves should be included in the licensees' expanded MOV test program discussed in NRC Generic Letter 89-10, "Safety-Related Motor Operated Valve Testing and Surveillance," dated June 28, 1989.	The PORV block valves are included in the MOV test program implemented at Ginna Station. By letter dated July 12, 1989 from Robert C. Mecredy (RG&E) to Thomas T. Martin (NRC), this specific requirement is further supported by RG&E's MOV testing commitment related to PORV block valves. Therefore, no further action is required by RG&E.

GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
3.1.3 For operating PWR plants, modify the limiting conditions of operation of PORVs and block valves in the technical specifications for Modes 1, 2, and 3 to incorporate the position adopted by the staff in recent licensing actions. Attachments A-1 through A-3 are provided for guidance. The staff recognizes that some recently licensed PWR plants already have technical specifications in accordance with the staff position. Such plants are already in compliance with this position and need merely state that in their response. These recent technical specifications require that plants that run with the block valves closed (e.g., due to leaking PORVs) maintain electrical power to the block valves so they can be readily opened from the control room upon demand. Additionally, plant operation in Modes 1, 2, and 3 with PORVs and block valves inoperable for reasons other than seat leakage is not permitted for periods of more than 72 hours.	Inasmuch as Ginna does not have Standard Technical Specifications, which the generic letter is based upon, response to the guidelines established in Generic Letter 90-06 is based on Ginna's Technical Specifications. Attachments A-1 and A-3 are applicable to Ginna and are discussed as follows: Further, Ginna does not use the term Operational Modes or the numerical representation thereof, but rather Reactor Operating Modes as Listed below (from Specification 1.2): Mode — Reactivity ((ΔK/K)%) — T_{AVG} (°F) Operating — >-1 — ~580 Hot Shutdown — ≤-1 — ≥540 Cold Shutdown — ≤-1 — ≤200 Refueling — ≤-5 — ≤140 Amendment 42 (dated May 11, 1981) to the Ginna Technical Specifications made numerous changes in operability requirements of specific systems and components requiring equipment to be operable at a $T_{AVG} \geq 350$. This is comparable to the STS definition of hot standby (mode 3).
Attachment A-1 Modified Standard Technical Specification for Combustion Engineering and Westinghouse Plants REACTOR COOLANT SYSTEM 3/4.4.4 RELIEF VALVES LIMITING CONDITION FOR OPERATION The following is to be used when two PORVs are provided: 3.4.4 Both power-operated relief valves (PORVs) and their associated block valves shall be OPERABLE. APPLICABILITY: MODES 1, 2, and 3.	Ginna Technical Specifications 3.0 Limiting Conditions for Operation 3.1 Reactor Coolant System 3.1.1.4 Relief Valves a. Both pressurizer power operated relief valves (PORVs) and their associated block valves shall be operable whenever the reactor is at or above an RCS temperature of 350°F... This is equivalent to GL90-06 guidance.

GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
ACTION: a. With one or both PORVs inoperable because of excessive seat leakage, within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s) with power maintained to the block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.	Present Ginna Specification 3.1.1.4a(i) is comparable, except that the term excessive seat leakage is not specified, and there is no requirement to maintain power to the block valves. We generally agree with the GL90-06 guidance, and expect to propose such changes. Proposed changes to the Ginna Technical Specifications, when the PORV's are inoperable for other than seat leakage, and actions taken with respect to the block valves, is discussed below.
b. With one PORV inoperable due to causes other than excessive seat leakage, within 1 hour either restore the PORV to OPERABLE status or close its associated block valve and remove power from the block valve; restore the PORV to OPERABLE status within the following 72 hours or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.	Since the PORV's are needed to perform specified functions at power, during hot standby/shutdown, and during cold shutdown, it is not considered advantageous to change modes, thereby putting the plant in a transient condition. RG&E has determined that upgraded (safety-related, environmentally qualified) PORV's and block valves provide an additional measure of safety, such that operability under conditions required for safety are increased. Since the safety function of the valves is to open, RG&E plans to require that, if the PORV's are inoperable due to other than seat leakage, the block valve be closed, but that power be maintained to the valve. Thus, if necessary, the operator could respond to a need for the PORV's more quickly, without the additional actions necessary to restore power to the block valves. RG&E would then concentrate on re-establishing valve operability, rather than initiate a shutdown procedure. We would however inform the NRC, by Special Report, if the valve is not restored to operable status within 72 hours along with our plans for restoration.
c. With both PORVs inoperable due to causes other than excessive seat leakage, within 1 hour either restore at least one PORV to OPERABLE status or close its associated block valve and remove power from the block valve and be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.	Same as b above.

GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
d. With one or both block valves inoperable, within 1 hour restore the block valve(s) to OPERABLE status or place its associated PORV(s) in manual control. Restore at least one block valve to OPERABLE status within the next hour if both block valves are inoperable; restore any remaining inoperable block valve to operable status within 72 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.	The safety function of the PORV is to open to depressurize the RCS (e.g., in the event of a SGTR). There are no safety functions to close and the PORVs or block valves are not credited in the Ginna Chapter 15 accident analyses to perform a safety function. Placing the plant in a transient condition (from power operation to HOT SHUTDOWN) is not considered prudent. RG&E agrees that putting the PORV's in manual control is acceptable. However, we have decided that an additional measure of safety should be provided by making the PORV's and block valves safety-related and environmentally qualified for post-accident conditions, rather than shutting down and placing the plant in a transient mode.
e. The provisions of Specification 3.0.4 are not applicable.	This particular provision of the Generic Letter is not applicable to Ginna, since the Standard Technical Specification 3.0.4 is not addressed in Ginna Technical Specifications.
SURVEILLANCE REQUIREMENTS 4.4.4.1 In addition to the requirements of Specification 4.0.5, each PORV shall be demonstrated OPERABLE at least once per 18 months by:	PORV testing is addressed in Ginna's IST program as described in Appendix C of the QA Manual. The guidance of GL 90-06 Item 4.4.4.1, "In addition to the requirements of Specification 4.0.5" is undesirable inasmuch as credit for previous testing requirements would not be allowed. The purpose of Ginna's IST program is to verify operational readiness of those pumps and valves whose function is required for safety. Further, RG&E considers our current program adequate considering that these test requirements are currently performed every 12 months since Ginna is on an annual refueling cycle rather than 18 months addressed by the generic letter. Therefore, the phrase "In addition to the requirements of Specification 4.0.5" (Ginna Specification 4.2.1.5) are not expected to be included.

GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
a. Operating the PORV through one complete cycle of full travel during MODES 3 or 4, and	Our present IST program includes Cold Shutdown Justification CS-10, which specifies that PORV testing should be performed at Cold Shutdown only. However, RG&E agrees with this provision of GL 90-06, and will prepare a revised IST justification consistent with the guidance in the Generic Letter. Note that even though not explicitly stated, PORV testing during "Modes 3 or 4" would only be accomplished with the corresponding PORV block valves closed. Therefore, since this requirement is presently in Ginna's IST program, which is reviewed and approved by the NRC, this proposed requirement is not expected to be addressed in Ginna's Technical Specifications.
b. Where applicable, operating solenoid air control valves and check valves on associated air accumulators in PORV control systems through one complete cycle of full travel for plants with air-operated PORVs, and	Ginna Plant procedure PT-2.6.5 outlines stroke time test requirements as invoked by Operations Procedure O-7, which establishes the gas lineup from the nitrogen accumulators to perform the test. Therefore, the criterion is met and presently addressed in Ginna's IST program. This proposed requirement is not expected to be addressed in Ginna's Technical Specifications.
c. Performing a CHANNEL CALIBRATION of the actuation instrumentation.	Ginna Technical Specification 4.3.4.1 Each PORV shall be demonstrated operable at least once per 18 months by performance of a CHANNEL CALIBRATION. --- <u>ADDITIONAL RESPONSE</u>: The current specification is essentially identical with the proposed requirement delineated in GL 90-06; therefore, no further action is required by RG&E.

GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
4.4.4.2 Each block valve shall be demonstrated OPERABLE at least once per 92 days by operating the valve through one complete cycle of full travel unless the block valve is closed in order to meet the requirements of ACTION b or c in Specification 3.4.4.	Ginna Technical Specification 4.3.4.2 Except during cold and refueling shutdown each block valve shall be demonstrated operable at least once per 92 days by operating the valve through one complete cycle of full travel unless the valve is already closed. ADDITIONAL RESPONSE: Technical Specification 4.3.4.2 as written requires full stroke cycling of the block valves every 92 days unless already closed. Block valve closure requirements are discussed on Page 4 of this enclosure. (Ginna Technical Specification 3.1.1.4a(i)). No additional action is required by RG&E.
4.4.4.3 The emergency power supply for the PORVs and block valves shall be demonstrated OPERABLE at least once per 18 months by: a. Manually transferring motive and control power from the normal to the emergency power bus, and b. Operating the valves through a complete cycle of full travel.	Ginna Procedure PT 2.6.5 describes the steps to line the PORV gas supply up from the N_2 system. The SOVs associated with this path are powered from the safety related 125 volt DC system. The block valves have their motive power from safety related 480 volt AC busses and their control power from the safety related 125 volt DC system. PT 2.6.5 or O-7 is used to place the overpressure protection in service for each refueling outage (yearly). Both procedures stroke the block valves and PORVs using safety related electrical power and the safety related nitrogen source from the accumulators. Therefore the requirements of the proposed surveillance requirements are met; however, Ginna Technical Specifications do not address this specific requirement. RG&E plans to amend the Ginna Technical Specifications to include these specific requirements.

GL 90-06 SPECIFIC GUIDANCE	RG&E'S PROPOSED POSITION
ENCLOSURE B Attachment B-1 Modified Standard Technical Specification for Combustion Engineering and Westinghouse Plants <u>REACTOR COOLANT SYSTEM</u> <u>OVERPRESSURE PROTECTION SYSTEM</u> <u>LIMITING CONDITION FOR OPERATION</u> 3.4.9.3 Two power-operated relief valves (PORVs) shall be OPERABLE with a lift setting of less than or equal to [450] psig. <u>APPLICABILITY</u>: Mode 4 when the temperature of any RCS cold leg is less than or equal to [275]°F, MODE 5, and MODE 6 when the head is on the reactor vessel and the RCS is not vented through a ___ square inch or larger vent.	Ginna Technical Specifications 3.0 Limiting Conditions for Operation 3.15 Overpressure protection System 3.15.1 Except during secondary side hydrostatic tests in which the RCS pressure is to be raised above the PORV setpoint, at least one of the following overpressure protection systems shall be operable: a. Two pressurizer power operated relief valves (PORVs) with a lift setting of ≤ 435 psig, or b. A reactor coolant system vent of ≥ 1.1 square inches. <u>Applicability</u> Applies whenever the temperature of one or more of the RCS cold legs is ≤ 330°F, or the Residual Heat Removal System is in operation. --- The present Ginna Station Technical Specification LCO and applicability requirement as stated above bounds the requirement proposed by the generic letter; therefore, no further action is required.

GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
ACTION: a. With one PORV inoperable in MODE 4, restore the inoperable PORV to OPERABLE status within 7 days or depressurize and vent the RCS through at least a ___ square inch vent within the next 8 hours.	Ginna Technical Specification (applicable whenever the temperature of one or more of the RCS cold legs is ≤ 330°F, or the RHR system is in operation). ACTION: 3.15.1.1 With one PORV inoperable, either restore the inoperable PORV to operable status within 7 days or depressurize and vent the RCS through a 1.1 square inch vent(s) within the next 8 hours; maintain the RCS in a vented condition until both PORVs have been restored to operable status. Ginna's Technical Specification 3.15.1.1 is consistent with the intent of the generic letter; therefore, no further action is considered necessary.

GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
b. With one PORV inoperable in MODES 5 or 6, either (1) restore the inoperable PORV to OPERABLE status within 24 hours, or (2) complete depressurization and venting of the RCS through at least a ___ square inch vent within a total of 32 hours.	RG&E does not agree with this proposed change, because the proposed Technical Specification change from 7 days to 24 hours to establish a 1.1 in^2 vent with one PORV inoperable will limit Ginna's ability to clean up the RCS in preparation for a refueling outage. In order to clean up the RCS, the system must remain pressurized ~300 psig so the Reactor Coolant Pump can remain in service. The RCP is needed to mix the RCS when adding the Hydrogen Peroxide and must remain in service to provide a means to cleanup the RCS through the mixed bed demineralizers. By forcing the establishment of a 1.1 in^2 vent within 24 hours, no cleanup of the RCS would be possible. This would significantly increase the exposure during the outage and increase the contamination problems inside containment. In addition, it is questionable whether or not the H_2 level in the RCS will be less than the required 4 cc/kg. If the H_2 level can not be reduced below this level prior to opening of the 1.1 in^2 vent, an explosive mixture of H_2 in air may result once the vent is established. These ALARA and safety concerns must be addressed prior to reducing the allowable time with 1 PORV inoperable when overpressure protection is required. Therefore, RG&E considers the present Technical Specification 3.15.1.1 acceptable as written.

GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
c. With both PORVs inoperable, complete depressurization and venting of the RCS through at least a ___ square inch vent within 8 hours.	Ginna Technical Specification 3.15.1.2 With both PORVs inoperable, depressurize and vent the RCS through a 1.1 square inch vent(s) within 8 hours; maintain the RCS in a vented condition until both PORVs have been restored to operable status. --- ADDITIONAL RESPONSE: Ginna Technical Specification 3.15.1.2 bounds the requirement proposed by the generic letter; therefore, no further action is required. Although the potentially negative ramifications stated in the above paragraph still apply, RG&E considers that, on balance, restoration of overpressure protection for the RCS dominates.
d. With the RCS vented per actions a, b, or c, verify the vent pathway at least once per 31 days when the pathway is provided by a valve(s) that is locked, sealed, or otherwise secured in the open position; otherwise verify the vent pathway every 12 hours.	Ginna Technical Specification 4.16.2 The RCS vent(s) shall be verified to be open at least once per 12 hours when the vent(s) is being used for overpressure protection except when the vent pathway is provided with a valve which is locked, sealed, or otherwise secured in the open position. Then verify these valves open at least once per 31 days. --- Ginna Technical Specification 4.16.2 essentially requires similar actions; therefore, no further action is required by RG&E.
e. In the event either the PORVs or the RCS vent(s) are used to mitigate an RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs or the RCS vent(s) on the transient, and any corrective action necessary to prevent reoccurrence.	Ginna Technical Specification 3.15.1.3 Use of the overpressure protection system to mitigate an RCS or RHRS pressure transient shall be reported in accordance with 6.9.2. --- Ginna Technical Specification 3.15.1.3 addresses the same requirements as noted by the generic letter specific requirement; therefore, no further action is required.
f. The provisions of [Standard Technical] Specification 3.0.4 are not applicable.	This particular provision of the Generic Letter is not applicable to Ginna, since the Standard Technical Specification 3.0.4 is not addressed in Ginna Technical Specifications.

GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
SURVEILLANCE REQUIREMENTS 4.4.9.3 Each PORV shall be demonstrated to be OPERABLE by: a. Performance of an ANALOG CHANNEL OPERATIONAL TEST, but excluding valve operation, at least once per 31 days; and	Ginna Technical Specification (Overpressure Protection System) SURVEILLANCE REQUIREMENT 4.16.1 Each PORV shall be demonstrated operable by: a. Performance of a channel functional test on the PORV actuation channel, but excluding valve operation, within 31 days prior to entering a condition in which the PORV is required operable and at least once per 31 days thereafter when the PORV is required operable. ADDITIONAL RESPONSE: Ginna Technical Specification 4.16.1 meets the specific requirements of the generic letter; therefore, no further action is required.
b. Performance of a CHANNEL CALIBRATION at least once per 18 months; and	Ginna Technical Specification SURVEILLANCE REQUIREMENT 4.16.1b Performance of a channel calibration on the PORV actuation channel at least once per 18 months. ADDITIONAL RESPONSE: Ginna Specification 4.16.1b is analogous to the specific requirement of the generic letter; therefore, no further action is required.
c. Verifying the PORV isolation valve is open at least once per 72 hours.	Ginna Technical Specification SURVEILLANCE REQUIREMENT 4.16.1c Verifying the PORV isolation valve is open at least once per 72 hours when the overpressure protection system is required to be operable. ADDITIONAL RESPONSE: Specification 4.16.1c is analogous to the specific requirement of the generic letter; therefore, no further action is required.

GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
ENCLOSURE B Section 3 assumption of Section 1 Administrative controls and Attachment B-3 guidance	
Enclosure B, Section 1; 1. Minimize the time the reactor coolant system (RCS) is maintained in a water solid condition.	Ginna Station Procedure No. O-2.3, "Plant at Cold or Refueling Shutdown" provides administrative controls which minimize the time the RCS is maintained in a water solid condition. --- Based on the above, no further action is required.

GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
Enclosure B, Section 1; 2. Restrict the number of high-pressure safety injection pumps operable to no more than one when the RCS is in LTOP condition. Attachment B-3; A common method has been a footnote...to note that: A maximum of one safety injection [and/or] one charging pump shall be OPERABLE when the temperature of one or more of the RCS cold legs is less than 275°F. With Surveillance requirement: All Safety Injection [and/or] charging pumps, except the above required OPERABLE pump[s], shall be demonstrated to be inoperable by verifying that the motor circuit breakers are secured in the open position at least once per 12 hours whenever the temperature of one or more of the RCS cold legs is less than or equal to 275°F. The preferred method is an LCO and surveillance requirement which states: One Safety Injection [and/or] charging pump shall be operable and all other Safety Injection [and/or] charging pumps shall be secured with their motor circuit breakers in the open position. All Safety Injection [and/or] charging pumps, except the above required OPERABLE pump[s], shall be demonstrated to be secured by verifying that the motor circuit breakers are secured in the open position at least once per 12 hours whenever the temperature of one or more of the RCS cold legs is less than or equal to 275°F.	Ginna Technical Specifications 3.3.1.7 Except during diesel generator load and safeguard sequence testing or when the vessel head is removed, or the steam generator primary system manway is open, no more than one safety injection pump shall be operable whenever the overpressure protection system is required to be operable. 3.3.1.7.1 Whenever only one safety injection pump may be operable by 3.3.1.7, at least two of the three safety injection pumps shall be demonstrated inoperable a minimum of once per twelve hours by verifying that the control switches are in the pull-stop position. --- Note that proposed license amendment, dated February 15, 1991, concerning LTOP setpoint changes, proposes to further limit the number of operable SI pumps when overpressure protection is provided by the PORV's (i.e., all three SI pumps shall be inoperable). Therefore, no further action required by RG&E.

GL 90-06 SPECIFIC GUIDANCE	RG&E's PROPOSED POSITION
Enclosure B, Section 1; 3. Ensure that the steam generator to RCS temperature difference is less than 50°F when a reactor coolant pump (RCP) is being started in a water-solid RCS. Attachment B-3; A reactor coolant pump shall not be started with one or more of the RCS cold leg temperatures less than or equal to 275°F unless the secondary water temperature of each steam generator is less than ___°F above each of the RCS cold leg temperatures.	Ginna Technical Specification 3.1.1.1k A reactor coolant pump shall not be started with one or more of the RCS cold leg temperatures ≤ 330°F unless 1) the pressurizer water volume is less than 324 cubic feet (38% level) or 2) the secondary water temperature of each steam generator is less than 50°F above each of the RCS cold leg temperatures. --- Based on the above, no further action is required.
Enclosure B, Section 1; 4. Set the PORV setpoint (if the particular plant relies on this component for LTOP) to a plant-specific analysis supported value, and have surveillance that checks the PORV actuation electronics and setpoint.	Ginna's Low Temperature Overpressure Protection System (LTOPS) setpoint has most recently been evaluated by Westinghouse Electric Corporation in October 1990. Administrative controlled procedures are in place which ensure surveillance of the PORV actuation electronics and setpoint. --- Based on the above, no further action is required.

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

April 15, 1991

Docket No. 50-244

Mr. Robert C. Mecredy, Vice President
Ginna Nuclear Production
Rochester Gas & Electric Corporation
89 East Avenue
Rochester, New York 14649

Dear Mr. Mecredy:

SUBJECT: R. E. GINNA NUCLEAR POWER PLANT INSERVICE TESTING (IST) PROGRAM FOR PUMPS AND VALVES, 1990-1999 THIRD 10-YEAR INTERVAL (TAC NO. 73380)

By letter dated May 23, 1989, and subsequent letters dated October 27, 1989, February 15, March 14, April 6, April 12, 1990, and January 22, 1991, Rochester Gas and Electric Corporation submitted to the NRC the IST Program and additional information for the IST Program, third 10-year interval, at the R. E. Ginna Nuclear Power Plant. The NRC has reviewed and evaluated the program and additional information provided.

The enclosed Safety Evaluation (SE) was prepared by the NRC to provide the results of the staff review. The Code of Federal Regulations, 10 CFR 50.55a(g), requires certain Class 1, 2, and 3 pumps and valves in water-cooled nuclear power facilities to meet the inservice testing requirements stated in the ASME Boiler and Pressure Vessel Code (Code), Section XI; specifically Subsection IWP, "Inservice Testing of Pumps in Nuclear Power Plants," and Subsection IWV, "Inservice Testing of Valves in Nuclear Power Plants." Each facility is required to establish a program for the inservice testing of pumps and valves which is updated every ten years to meet the requirements in the latest approved edition and addenda to Section XI of the Code. The program is submitted to the NRC for review and approval of the relief requests. The review entails verifying that the program is based on the applicable Code edition and addenda, verifying that all pumps and valves included in the program are subjected to appropriate periodic testing, and verifying the acceptability of the requests for relief from the requirements of Subsections IWP and IWV.

The IST Program and additional information addressed in this evaluation covers the interval from January 1, 1990 through December 31, 1999, and supersedes all previous IST Program submittals.

mA 4 cw

The NRC staff with technical assistance from EG&G Idaho Inc. (EG&G), has reviewed and evaluated the IST Program and requests for relief submitted for the Robert E. Ginna Nuclear Power Plant. The staff adopts the evaluations and conclusions contained in the Technical Evaluation Report (TER) prepared by EG&G. The enclosed SE incorporates the TER which is attached to this SE. We are recommending that relief be granted from the testing requirements which we have determined would be impractical to perform, where compliance would result in a hardship without a compensating increase in safety, and where the proposed alternative testing provides an acceptable level of quality and safety. We have determined that the IST Program relief requests are acceptable for implementation provided the items identified in Appendix A of the TER (Attachment 2 of the Enclosure) are addressed within the time frame specified in the enclosed SE.

The licensee is required to comply with the IST Program defined in the above referenced letters where relief has been granted in the enclosed SE. IST Program changes such as additional relief requests or changes to approved relief requests should be submitted for staff review but should not be implemented prior to review and approval by the NRC. New or revised relief requests meeting the positions in Generic Letter (GL) 89-04 (GL 89-04 Enclosure 1), should be submitted to the NRC staff but can be implemented provided the guidance in GL 89-04, Section D, is followed. IST Program changes that involve additions or deletions of components from the IST Program should be provided to the NRC.

This submittal completes the technical review performed by the NRC staff under TAC Number 73380.

Sincerely,

Original signed by
Allen R. Johnson, Project Manager
Project Directorate I-3
Division of Reaction Projects I/II
Office of Nuclear Reactor Regulation

Enclosure:
As Stated

cc w/enclosure:
See next page

OFC	:PDI-3/LA	:PDI-3/PM	:OGC	:PDI-3/D	:
NAME	:MRushbrook	:AJohnson	:JHoure J.Hull	:SShankman/act	:
DATE	:3/28/91	:3/29/91	:3/29/91	:4/15/91	:

OFFICIAL RECORD COPY
Document Name: TAC 73380

DISTRIBUTION:
Docket File 50-244
NRC PDR
Local PDR
PDI-3 Reading
S. Varga
J. Calvo
M. Rushbrook
A. Johnson
R. Wessman
OGC - 15 B18
E. Jordan - MNBB 3701
J. Norberg, EMEB w/o
T. Sullivan, EMEB
J. Colaccina, EMEB w/o
C. Ransom, EG&G Idaho
ACRS (10) - P-315
E. B. McCabe, Region I

Dr. Robert C. Mecredy

Ginna

cc:

Thomas A. Moslak, Senior Resident Inspector
R.E. Ginna Plant
U.S. Nuclear Regulatory Commission
1503 Lake Road
Ontario, New York 14519

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

Ms. Donna Ross
Division of Policy Analysis & Planning
New York State Energy Office
Agency Building 2
Empire State Plaza
Albany, New York 12223

Charlie Donaldson, Esq.
Assistant Attorney General
New York Department of Law
120 Broadway
New York, New York 10271

Nicholas S. Reynolds
Winston & Strawn
1400 L St. N.W.
Washington, DC 20005-3502

ENCLOSURE

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO THE INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES
(1990-1999 THIRD 10-YEAR INTERVAL) AND REQUESTS FOR RELIEF
ROBERT E. GINNA NUCLEAR POWER PLANT

LICENSE NO. DPR-18

ROCHESTER GAS AND ELECTRIC CORPORATION

DOCKET NO. 50-244

INTRODUCTION

The Code of Federal Regulations, 10 CFR 50.55a(g), requires that inservice testing (IST) of certain ASME Code Class 1, 2, and 3 pumps and valves be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code (Code) and applicable addenda, except where specific written relief has been requested by the licensee and granted by the Commission pursuant to 10 CFR 50.55a(a)(3)(i), (a)(3)(ii), or (g)(6)(i). In requesting relief, the licensee must demonstrate that: (1) the proposed alternatives would provide an acceptable level of quality and safety; (2) compliance with the applicable Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance with the applicable Code requirements is impractical for its facility.

The Regulation, 10 CFR 50.55a(a)(3)(i), (a)(3)(ii), and (g)(6)(i), authorizes the Commission to grant relief from applicable Code requirements upon making the necessary findings. The NRC staff's findings with respect to granting or not granting the relief requested as part of the licensee's IST Program are contained in this Safety Evaluation (SE).

The IST Program addressed in this SE covers the third ten-year inspection interval from January 1, 1990 through December 31, 1999. The licensee's program includes pump IST Program, Revision 0, and valve IST Program, Revision 0, and is described in a letter dated May 23, 1989, which supersedes all previous submittals. Additional changes submitted by letters dated October 27, 1989, February 15, March 14, April 6, April 12, 1990, and January 22, 1991, are included in this review.

The IST Program is based on the requirements of Section XI of the ASME Code, 1986 Edition.

The evaluation described below entailed verifying that the licensee's IST program is based on applicable Code sections, verifying that all pumps and valves included in the program are subjected to appropriate periodic testing, and verifying the acceptability of the relief requests.

EVALUATION

The IST Program and the requests for relief from the requirements of Code Section XI have been reviewed by the staff with the assistance of its contractor, EG&G, Idaho, Inc. (EG&G). In addition, EG&G and staff members met with licensee representatives on November 1 and 2, 1988, in a working session to discuss questions resulting from the review of a previous submittal. (NRC granted interim approval for the licensee's Pre-1990 IST Program, NRC letter of May 3, 1989). The Technical Evaluation Report (TER) provided as Attachment 2 is EG&G's evaluation of the licensee's inservice testing program and relief requests. The staff has reviewed the TER and concurs with and adopts the evaluations, findings and conclusions contained in the TER. A summary of the pump and valve relief request determinations is presented in Table 1 (Attachment 1). The granting of relief is based upon the fulfillment of any commitments made by the licensee in its basis for each relief request and the alternative proposed testing.

No relief requests were denied; however, ten relief requests were granted with certain conditions (TER Sections 2.1.2.1, 2.2.1.1, 2.4.3.1, 3.1.7.1, 3.4.2.1, 3.5.2.1, 3.6.1.1, 3.7.1.1, 3.7.1.2, and 3.8.1.1), and seven relief requests were granted on an interim basis (TER Sections 3.1.6.1, 3.2.2.1, 3.4.1.1, 3.4.2.2, 3.5.1.1, 3.12.1.1 and 3.12.2.1). The licensee should refer to the specific TER section for a detailed discussion of these cases. These conditions are listed in the TER Appendix A, which also lists other IST Program anomalies identified during the review.

The licensee should resolve all the items listed in Appendix A in accordance with the staff guidance therein. Items 4, 6, 7, 10, 14 and 15 in Appendix A should be resolved within one year of receipt of this SE or the next refueling outage, whichever is longer. With respect to Item 9, Relief Request VR-23, the licensee originally committed to install flow rate instrumentation in the turbine driven auxiliary feedwater pump recirculation line during the 1990 refueling outage, as noted in TER Section 3.4.2.2. By letter of January 22, 1991, the licensee revised this commitment to complete installation of flow rate instrumentation during the 1991 refueling outage. The revision and the basis provided are acceptable to the staff. As noted on SE Table 1 (Attachment 1), relief from Code requirements has been granted through the 1991 refueling outage. As necessary, program/procedural changes covered by the remaining items in Appendix A should be made within six months of receipt of this SE.

CONCLUSION

Based on the review of the licensee's IST Program for pumps and valves during the plant's third 10-year interval, January 1, 1990 - December 31, 1999, and related relief requests, the staff concludes that the IST Program and related relief requests provide reasonable assurance of the operational readiness of the pumps and valves to perform their safety related functions, in compliance with applicable sections of 10 CFR 50.55a, and are therefore acceptable. For each relief granted, we have determined that the applicable Code requirements are impractical and relief is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if applicable Code requirements were imposed. The last column of Table 1 (Attachment 1) identifies the regulation under which the requested relief is granted.

During the review of the licensee's inservice testing program, the staff has identified certain misinterpretations or omissions of Code requirements. These items are summarized in the TER Appendix A. The IST Program relief requests for Robert E. Ginna Nuclear Power Plant provided by a submittal dated May 23, 1989, along with additional information provided by submittals dated October 27, 1989, February 15, March 14, April 6 and 12, 1990, and January 22, 1991, are acceptable for implementation provided that the actions described in Appendix A are taken in accordance with the schedule set forth in the last paragraph of the Evaluation Section of this SE. New or revised relief requests meeting the positions in Generic Letter (GL) 89-04 (GL 89-04 Enclosure 1), should be submitted to the NRC staff but can be implemented provided the guidance in GL 89-04, Section D, is followed.

Principal Contributor: J. Norberg

Attachments:
1. Summary of Relief Requests
2. INEL Technical Evaluation Report

ROBERT E. GINNA NUCLEAR POWER PLANT
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

RELIEF REQUEST NUMBER	TER SECTION	SECTION XI REQUIREMENT & SUBJECT	EQUIPMENT IDENTIFICATION	ALTERNATE METHOD OF TESTING	ACTION BY USNRC
PUMP PR-1	2.1.1.1	IWP-3100 Bearing temperature measurements.	All pumps in the IST program	Use quarterly pump vibration measurements.	Relief Granted (g)(6)(i)
PR-2	2.2.1.1	IWP-4600 Flow rate measurements.	Diesel generator fuel oil transfer pumps PDG02A & B	Determine flow rate by measuring change in day tank level.	Relief Granted with provision (a)(3)(ii)
PR-3	2.3.1.1	IWP-3100 Inlet pressure measurements.	Containment spray pumps SIAPCS 1 & 2 and safety injection pumps SIAPSI 1 & 2	Determine inlet pressure by measuring RWST level.	Relief Granted (g)(6)(i)
PR-4	2.4.1.1	IWP-3100 Inlet pressure measurements.	Service water pumps PSWO 1A, 1B, 1C, & 1D	Determine inlet pressure by measuring lake water level.	Relief Granted (g)(6)(i)
PR-5	2.4.2.1	IWP-4520 Vibration measurements.	Service water pumps PSWO 1A, 1B, 1C, & 1D	Measure vibration on the motor bearing housing.	Relief Granted (g)(6)(i)
PR-6	2.1.2.1	IWP-4120 Instrument full-scale range.	All pumps in the IST program	Use vibration detectors with multiple overlapping scales.	Relief Granted with provision (a)(3)(i)
PR-7	2.4.3.1	IWP-4600 Flow rate measurement.	Service water pumps PSWO 1A, 1B, 1C, & 1D	Measure flow rate in the containment fan cooler lines.	Relief Granted with provision (g)(6)(i)
PR-8	2.5.1.1	IWP-3100 Establish reference flow rate or differential pressure.	Residual heat removal pumps ACAPRH-1 & 2	Measure flow, diff. pressure, and vibration quarterly in recirc. path & test at substantial flow at cold shutdowns.	Relief Granted (g)(6)(i)

ROBERT E. GINNA NUCLEAR POWER PLANT
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

RELIEF REQUEST NUMBER	TER SECTION	SECTION XI REQUIREMENT & SUBJECT	EQUIPMENT IDENTIFICATION	ALTERNATE METHOD OF TESTING	ACTION BY USNRC
VALVE GR-1	3.1.1.1	IWV-3412(a) Part-stroke exercising requirements.	All power operated valves	Valves will not be part-stroke exercised.	Relief Granted (g)(6)(i)
GR-2	3.1.2.1	IWV-3420 through -3425 and IWV-3427(b) Leak rate method & trending.	All containment isolation valves	Leak rate test in accordance with 10CFR50, Appendix J and IWV-3426 and -3427(a).	Relief Granted (a)(3)(i)
GR-3	3.1.3.1	IWV-3520 Test frequency.	Containment isolation check valves 5393, 1713, & 7226	Verify closure in conjuntion with Appendix J leak rate testing.	Relief Granted (g)(6)(i)
GR-4	3.1.4.1	IWV-3522 Stroke time trending.	Rapid-acting power operated valves	Assign a limiting value of full-stroke time of 2 seconds.	Relief Granted (a)(3)(i)
GR-5	3.1.5.1	IWV-3420 through -3427 Leak rate testing.	RCS pressure isolation valves	Leak rate test in accordance with Technical Specifications.	Relief Granted (a)(3)(ii)
GR-6	3.1.6.1	IWV-3413 and -3417 Stroke time measurement.	Hand control valves	Stroke times will not be measured.	Interim Relief Granted for 12 months (g)(6)(i)
GR-7	3.1.7.1	IWV-3417(a) Stroke time evaluation and corrective actions.	All power operated valves	Corrective action based on deviation from reference stroke time.	Relief Granted with provision (a)(3)(i)

ROBERT E. GINNA NUCLEAR POWER PLANT
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

RELIEF REQUEST NUMBER	TER SECTION	SECTION XI REQUIREMENT & SUBJECT	EQUIPMENT IDENTIFICATION	ALTERNATE METHOD OF TESTING	ACTION BY USNRC
VR-1	3.2.1.1	IWV-3413 & -3417 Stroke time measurement.	Diesel air start valves 5933A, 5933B, 5934A & 5934B	Observe that diesel monthly start tests are acceptable.	Relief Granted (g)(6)(i)
VR-2	3.12.2.1	IWV-3520 Exercising method and frequency.	Check valves 5960A & 5960B	Sample disassembly and inspection during refueling outages.	Interim Relief Granted for 1 year or next refueling outage (g)(6)(i)
VR-3 VR-14	3.3.1.1	IWV-3520 Exercising and leak rate testing frequency.	Safety injection check valves 853A & 853B	Part-stroke during cold shutdowns and full-stroke at refueling outages.	Relief Granted (g)(6)(i)
VR-4	3.3.2.2	IWV-3520 Exercising frequency.	Check valve 854 in the RHR suction from the RWST	Full-stroke exercise during refueling outages.	Relief Granted (g)(6)(i)
VR-5	3.4.2.1	IWV-3520 Test method and frequency.	Check valves 9627A & 9627B	Part-stroke quarterly and sample disassemble and inspect during refueling outages.	Relief Granted with provisions (g)(6)(i)
VR-6	3.5.1.1	IWV-3413 Stroke time measurement.	Solenoid operated valves 4324, 43325, & 4326	Stroke times will not be measured.	Interim Relief Granted for 12 months (g)(6)(i)
VR-7	3.6.1.1	IWV-3300 Remote position indication verification.	Pressurizer safety relief valves 434 & 435	Simulate valve actuation by moving the valve's coil.	Relief Granted with provision (a)(3)(ii)

ROBERT E. GINNA NUCLEAR POWER PLANT
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

RELIEF REQUEST NUMBER	TER SECTION	SECTION XI REQUIREMENT & SUBJECT	EQUIPMENT IDENTIFICATION	ALTERNATE METHOD OF TESTING	ACTION BY USNRC
VR-8	3.7.1.1	IWV-3520 Test method and frequency.	Accumulator discharge check valves 842A & 842B	Part-stroke quarterly and dissassemble and inspect every 10 year cycle.	Relief Granted with provision (g)(6)(i)
VR-9	3.7.1.2	IWV-3520 Test method and frequency.	Check valves 867A & 867B	Sample disassembly and inspection during refueling outages.	Relief Granted with provision (g)(6)(i)
VR-10	3.7.1.3	IWV-3520 Test frequency.	Check valves 878G & 878J	Full-stroke exercise during refueling outages.	Relief Granted (g)(6)(i)
VR-11	3.7.2.1	IWV-3520 Test frequency.	Discharge check valves 870A, 870B, 889A, & 889B	Part-stroke quarterly and full-stroke at refueling outages.	Relief Granted (g)(6)(i)
VR-12	3.10.1.1	IWV-3410 Test frequency.	Isolation valve 5392	Full-stroke exercise during reactor refueling outages.	Relief Granted (g)(6)(i)
VR-13	3.4.1.1	IWV-3413 & -3417 Stroke time measurement.	Isolation valves 4291, 4304, 4310, 9710A, & 9710B	Valve stroke times will not be measured.	Interim Relief Granted for 12 months (g)(6)(i)
VR-15	3.11.2.1	IWV-3413 & -3417 Stroke time measurement.	Solenoid control valves 8616A, 8616B, 8619A, & 8619B	Verify valve operability by observing operation of the PORVs.	Relief Granted (g)(6)(i)
VR-16	3.9.1.1	IWV-3510 Set pressure and seat tightness requirements.	Relief valve 392A	Verify valve opens at required differential pressure during refueling outages.	Relief Granted (g)(6)(i)

ROBERT E. GINNA NUCLEAR POWER PLANT
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

RELIEF REQUEST NUMBER	TER SECTION	SECTION XI REQUIREMENT & SUBJECT	EQUIPMENT IDENTIFICATION	ALTERNATE METHOD OF TESTING	ACTION BY USNRC
VR-17	3.5.2.1	IWV-3522 Test method and frequency.	Check valves 4601, 4602, 4603, & 4604	Part-stroke quarterly and sample disassemble and inspect during refueling outages.	Relief Granted with provision (g)(6)(i)
VR-18	3.12.1.1	IWV-3413 & -3417 Stroke time measurement.	Solenoid control valves 5907, 5907A, 5908, & 5908A	Observe operation during quarterly diesel testing.	Interim Relief Granted for 12 months (g)(6)(i)
VR-19	3.11.1.1	IWV-3520 Test frequency.	Supply check valves 8606A & 8606B	Verify closure with Section XI leak rate testing during refueling.	Relief Granted (a)(3)(ii)
VR-20	3.3.2.1	IWV-3522 Test frequency.	Pump discharge check valves 697A, 697B, 710A, & 710B	Part-stroke exercise quarterly and full-stroke at refueling outages.	Relief Granted (g)(6)(i)
VR-21	3.13.1.1	IWV-3520 Test frequency.	Check valves 3992 & 3993	Verify closure during cold shutdowns not initiated by plant trip and at refueling.	Relief Granted (g)(6)(i)
VR-23	3.4.2.2	IWV-3522 Test method and frequency.	Check valve 4023	Disassemble and inspect during each refueling outage.	Interim Relief Granted through 1991 outage (g)(6)(i)
VR-24	3.8.1.1	IWV-3520 Measure force or torque.	Check valves 862A & 862B	Exercise with mechanical exerciser measuring breakaway force.	Relief Granted with provision (g)(6)(i)
VR-25	3.2.2.1	IWV-3520 Test method and frequency.	Accumulator check valves 5941A & 5942A	Disassemble and inspect on sampling basis during refueling.	Interim Relief Granted for 1 year or next refueling outage (g)(6)(i)

Attachment 2

EGG-NTA-8975

TECHNICAL EVALUATION REPORT
PUMP AND VALVE INSERVICE TESTING PROGRAM
ROBERT E. GINNA NUCLEAR POWER PLANT

Docket No. 50-244

C. B. Ransom

Published January 1991

Idaho National Engineering Laboratory
EG&G Idaho, Inc.
Idaho Falls, Idaho 83415

Prepared for the
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
Under DOE Contract No. DE-AC07-76ID01570
FIN No. A6812
TAC No. 73380

CONTENTS

ABSTRACT

This EG&G Idaho, Inc., report presents the results of our evaluation of the Robert E. Ginna Nuclear Power Plant Inservice Testing Program for pumps and valves whose function is safety-related.

PREFACE

This report is supplied as part of the "Review of Pump and Valve Inservice Testing Programs for Operating Reactors (III)" being conducted for the U.S. Nuclear Regulatory Commission, Office of Nuclear Reactor Regulation, Mechanical Engineering Branch, by EG&G Idaho, Inc., Regulatory and Technical Assistance Unit.

FIN No. A6812
B&R 920-19-05-02-0
Docket No. 50-244
TAC No. 73380

TECHNICAL EVALUATION REPORT
PUMP AND VALVE INSERVICE TESTING PROGRAM
ROBERT E. GINNA NUCLEAR POWER PLANT

1. INTRODUCTION

Contained herein is a technical evaluation of the pump and valve inservice testing (IST) program submitted by the Rochester Gas and Electric Corporation for its Robert E. Ginna Nuclear Power Plant.

A working session with Rochester Gas and Electric Corporation and Robert E. Ginna Nuclear Power Plant representatives was conducted on November 1 and 2, 1988. The licensee's IST program for the interval from January 1, 1990, through December 31, 1999, (third 120 month inspection interval) transmitted by letter dated May 23, 1989, as amended by their submittals dated October 27, 1989, February 15, 1990, and March 14, 1990, was reviewed to verify compliance of proposed tests of pumps and valves whose function is safety-related with the requirements of the ASME Boiler and Pressure Vessel Code (the Code), Section XI, 1986 Edition. Any IST program revisions subsequent to those noted above are not addressed in this technical evaluation report (TER). Program changes involving additional or revised relief requests should be submitted to the NRC under separate cover in order to receive prompt attention, but should not be implemented prior to review and approval by the NRC. Other IST program revisions should follow the guidance in Section D of Generic Letter No. 89-04, "Guidance on Developing Acceptable Inservice Testing Programs."

In its IST program, Rochester Gas and Electric Corporation has requested relief from the ASME Code testing requirements for specific pumps and valves and these requests have been evaluated individually to determine if the criteria in 10 CFR 50.55a for granting relief are indeed met for the specified pumps or valves. This review was performed utilizing the acceptance criteria of the Standard Review Plan, Section 3.9.6, the Draft Regulatory Guide and Value/Impact Statement titled, "Identification of Valves for Inclusion in Inservice Testing Programs," and Generic Letter No. 89-04, "Guidance on Developing Acceptable Inservice Testing Programs." IST program

testing requirements apply only to component testing (i.e., pumps and valves) and are not intended to provide the basis to change the licensee's current Technical Specifications for system test requirements.

Section 2 of this report presents the Rochester Gas and Electric Corporation bases for requesting relief from the Section XI requirements for the Robert E. Ginna Nuclear Power Plant pump testing program and the reviewer's evaluations and conclusions regarding these requests. Similar information is presented in Section 3 for the valve testing program.

Justifications for exercising Category A, B, and C valves during cold shutdowns and refueling outages instead of quarterly during power operations were reviewed and found acceptable except as noted in Appendix A.

Inconsistencies and omissions in the licensee's IST program noted during the course of this review are listed in Appendix A. The licensee should resolve these items in accordance with the evaluations, conclusions, and guidelines presented in this report.

2. PUMP TESTING PROGRAM

The Robert E. Ginna Nuclear Power Plant IST program submitted by Rochester Gas and Electric Corporation was examined to verify that all pumps that are included in the program are subjected to the periodic tests required by the ASME Code, Section XI, except where specific relief from testing has been requested as identified below. Each Rochester Gas and Electric Corporation basis for requesting relief from the pump testing requirements and the reviewer's evaluation of that request are summarized below.

2.1 All Pumps in the IST Program

2.1.1 Pump Bearing Temperature Measurements

2.1.1.1 Relief Request. The licensee has requested relief from the bearing temperature measurement requirements of Section XI, Paragraph IWP-3100, for all pumps listed in their IST program and proposed to use quarterly pump vibration measurements to determine pump mechanical condition and detect mechanical degradation.

2.1.1.1.1 Licensee's Basis for Requesting Relief--Bearings of certain pumps addressed in this relief request are cooled by their respective process fluid. Thus, bearing temperature measurements would be highly dependent on the temperature of the cooling medium. Bearing temperatures taken at one-year intervals provide little data toward determining incremental degradation of a bearing or providing any meaningful trend information.

All pumps addressed by this relief request are subjected to vibration measurements on a quarterly basis in accordance with IWP-4500. Vibration measurements are a significantly more reliable indication of pump bearing degradation than are temperature measurements.

Alternate Testing: Pump mechanical condition of its bearings will be determined by quarterly vibration monitoring. Bearing temperatures will not be measured.

2.1.1.1.2 Evaluation--The licensee has indicated that a yearly measurement of pump bearing temperature for these pumps is not a meaningful test for detecting pump bearing degradation. There are several factors such as the working fluid temperature, ambient temperature, and lubricant temperature that would affect the measured bearing temperature and may mask any bearing condition change short of a catastrophic bearing failure. The quarterly pump vibration measurement gives a much more accurate indication of pump bearing condition than annual temperature measurements, and the vibration measurement is not substantially affected by any system parameter or other factor that could mask problems or result in erroneous indications of bearing degradation. A yearly bearing temperature measurement is impractical for these pumps because they do not have temperature sensors installed in the bearings and many are inaccessible for temperature measurements such as the deep draft pumps which are submerged in the working fluid. The burden on the licensee if the Code requirements were imposed would not be justified by the limited information that would be provided about pump bearing condition.

Based on the impracticality of complying with the Code requirement of taking pump bearing temperature measurements and the level of quality and safety provided by the proposed quarterly pump vibration measurements that will be taken to determine pump mechanical condition and to detect pump bearing degradation, relief may be granted from the Section XI requirement of annually measuring bearing temperatures.

2.1.2 Full Scale Range of Vibration Instruments

2.1.2.1 Relief Request. The licensee has requested relief from the instrument full scale range requirements of Section XI, Paragraph IWP-4120, for all pumps listed in their IST program and proposed to use vibration detectors with multiple overlapping scales.

2.1.2.1.1 Licensee's Basis for Requesting Relief--Vibration detectors usually have multiple overlapping scales rather than a single full range scale. It is not practical to apply the requirements of three times the reference value or less. When the reference value falls under 0.5 mils,

a detector in the three-times-or-less scale would not allow a measurement in the required action range of 1.5 mils. (e.g., with a 0.3 mil reference value, using a detector with a range of 0.9 mils, determination of "Alert Range" (1-1.5 mils) or "Required Action Range" (>1.5 mils) could not be accomplished.)

Alternate Testing: A vibration detector with multiple overlapping scales will be used. The amplitude of vibration for each test will determine which scale is to be used.

2.1.2.1.2 Evaluation--The purpose of the full-scale range and accuracy requirements of IWP-4110 and -4120 is to ensure that pump test measurements are sufficiently accurate to permit evaluating pump condition and detecting degradation. The accuracy of multiple range instruments is generally based on the measured reading or on the full-scale range of the scale being used and not on the total instrument range, therefore, the three times reference value or less requirement may not be appropriate to instruments with multiple overlapping scales. However, the multiple scale instrument must be set on a scale that produces an indication as close to mid scale as possible and provides an accuracy at least equivalent to the accuracy provided by a single range instrument that complies with both IWP-4110 and -4120.

Current vibration instruments usually have multiple ranges to cover a wide variation of vibration amplitudes. A single range instrument that complies with the full-scale range requirements of the Code could not practicably be used, since its range would not be adequate to measure both the reference value and the required action limit. The accuracy of multiple scale vibration instruments is mainly dependent on how accurately they are calibrated for the vibration frequencies being measured. Except for the vibration frequency extremes, these instruments are generally sufficiently accurate to allow determination of pump mechanical condition and permit the detection of mechanical degradation. Therefore, use of multiple range vibration instruments whose accuracy is equivalent to that provided by a single scale instrument that complies with the requirements of IWP-4110 and -4120, should provide an acceptable level of quality and safety.

Based on the determination that the proposed alternative of using multiple range vibration instruments should provide equivalent vibration data as would be provided by instrumentation that meets the Code range requirements, relief may be granted provided that the accuracy of the vibration instruments, on the scales used for the vibration measurements, is equivalent to that provided by a single scale instrument that complies with the requirements of IWP-4110 and -4120.

2.2 Diesel Generator Fuel Oil Transfer Pumps

2.2.1 Pump Flow Rate Measurements

2.2.1.1 Relief Request. The licensee has requested relief from the flow rate measurement requirements of Section XI, Paragraph IWP-4600, for the diesel generator fuel oil transfer pumps (PDG02A and B) and proposed to determine pump flow rate by measuring the change in day tank level versus time.

2.2.1.1.1 Licensee's Basis for Requesting Relief--Measurement of diesel fuel oil transfer pump flow rate is determined by observing the rate of change in the diesel generator day tanks as they are being filled. A graduated sight glass located on the day tank is the only practical means available to calculate flow rates.

Alternate Testing: Flow rate will be determined by calculation of day tank level increase vs. time.

2.2.1.1.2 Evaluation--IWP-3100 requires the quarterly measurement of pump test quantities including pump flow rate. There are no installed instruments on the diesel fuel oil transfer system that allow a direct measurement of the flow rate when testing these pumps. The pump flow rate can be calculated by measuring the change in day tank level or volume and the pump operation time required to make that change. This method yields a value for pump flow rate that can be used to evaluate pump hydraulic condition and detect degradation provided that it is repeatable and meets the accuracy requirements of Table IWP-4110-1.

Calculated pump flow rates that are sufficiently accurate and repeatable can be used in conjunction with pump differential pressure measurements to monitor pump hydraulic condition and degradation and should provide reasonable assurance of pump operational readiness. Requiring the licensee to install flow rate instrumentation would be costly and result in hardship without a compensating increase in the level of quality and safety.

Based on the determination that requiring the licensee to install flow rate instrumentation would result in hardship without a compensating increase in the level of quality and safety and considering the adequacy of the licensee's proposed alternate testing, relief may be granted from the Code requirement provided that the licensee obtains sufficiently accurate and repeatable data to comply with the Allowable Ranges and Corrective Action requirements specified in IWP-3200.

2.3 Containment Spray and Safety Injection Pumps

2.3.1 Pump Inlet Pressure Measurements

2.3.1.1 Relief Request. The licensee has requested relief from the inlet pressure measurement requirements of Section XI, Paragraph IWP-3100, for the containment spray (CS) (SIAPCS 1 and 2) and safety injection (SI) (SIAPSI 1 and 2) pumps and proposed to determine pump inlet pressure by measuring the refueling water storage tank (RWST) level.

2.3.1.1.1 Licensee's Basis for Requesting Relief--Due to system design, the SI and CS pumps do not have installed local or remote inlet pressure reading devices. The pumps are aligned to the RWST during testing and calibrated level indication is provided in the control room.

Alternate Testing: Pump suction pressure for these systems will be calculated utilizing RWST levels.

2.3.1.1.2 Evaluation--These pumps take a suction from the RWST and their inlet pressure is due to the head of water above the level of the pump inlet. The inlet pressure for an idle pump can easily be determined by

measuring the RWST level and performing a simple calculation. It is impractical to determine the inlet pressure when the pump is operating because there are no installed inlet pressure instruments. However, significant blockage of the pump suction during testing would be indicated by a reduction in the pump flow rate. The licensee can calculate pump inlet pressure by measuring the water level above the pump suction and subtracting it from the measured discharge pressure to determine pump differential pressure. Using the calculated pump differential pressure in conjunction with the pump flow rate should provide adequate information to ascertain the hydraulic condition of the pump and to detect any pump hydraulic degradation.

System modifications would be necessary to allow direct measurement of pump inlet pressure and the additional information provided would have a minimal impact on the licensee's ability to detect pump hydraulic degradation. Requiring the licensee to perform these modifications would be burdensome due to the high cost involved.

Based on the determination that measuring pump inlet pressure when the pump is operating is impractical, that it would be a burden on the licensee if these Code requirements were imposed, and considering the licensee's proposed alternate testing, relief may be granted from the Section XI requirements as requested.

2.4 Service Water Pumps

2.4.1 Pump Inlet Pressure Measurements

2.4.1.1 Relief Request. The licensee has requested relief from the inlet pressure measurement requirements of Section XI, Paragraph IWP-3100, for the service water pumps (PSWO 1A, 1B, 1C, and 1D) and proposed to determine pump inlet pressure by measuring the lake water level above the pump inlet.

2.4.1.1.1 Licensee's Basis for Requesting Relief--Service water pumps are submerged multistage vertical pumps and inlet pressure is assumed to correspond to that of the static head of the medium in which the pumps

reside (lake). Since the lake level remains essentially constant throughout the duration of the test, only one measurement is required.

Alternate Testing: For the Service Water pumps a single suction pressure will be calculated for each test based on submergence of the pump.

2.4.1.1.2 Evaluation--The service water pumps are vertical deep draft pumps that are submerged in and take suction from Lake Ontario, therefore, their inlet pressure is due to the head of water above the level of the pump inlet. The inlet pressure for an idle pump can easily be determined by measuring the lake level and performing a simple calculation. It is impractical to determine the inlet pressure when the pump is operating because there are no installed inlet pressure instruments. However, significant blockage of the pump suction during testing would be indicated by a reduction in the pump flow rate. The licensee can calculate pump inlet pressure by measuring the water level above the pump suction and subtracting it from the measured discharge pressure to determine pump differential pressure. Using the calculated pump differential pressure in conjunction with the pump flow rate should provide adequate information to ascertain the hydraulic condition of the pump and to detect any pump hydraulic degradation.

System modifications would be necessary to allow direct measurement of pump inlet pressure and the additional information provided would have a minimal impact on the licensee's ability to detect pump hydraulic degradation. Requiring the licensee to perform these modifications would be burdensome due to the high cost involved.

Based on the determination that measuring pump inlet pressure when the pump is operating is impractical, that it would be a burden on the licensee if these Code requirements were imposed, and considering the licensee's proposed alternate testing, relief may be granted from the Section XI requirements as requested.

2.4.2 Pump Vibration Measurements

2.4.2.1 Relief Request. The licensee has requested relief from the vibration measurement requirements of Section XI, Paragraph IWP-4510, for the service water pumps (PSWO 1A, 1B, 1C, and 1D) and proposed to measure vibration on the associated pump motor bearing housing.

2.4.2.1.1 Licensee's Basis for Requesting Relief--The Service Water pumps are vertical, multistage pumps submerged in their process fluid and thus are inaccessible. Therefore, vibration measurement is impractical.

Alternate Testing: Vibration measurements will be taken on the pumps' associated motor bearing housing for indication of pump bearing degradation.

2.4.2.1.2 Evaluation--IWP-4510 requires that the vibration measurements be made on the pump bearing housing or its structural support, provided it is not separated from the pump by any resilient mounting. complying with the Code requirements is impractical because the service water pumps are vertical deep draft pumps that are submerged in water and inaccessible for vibration measurements. Major system modifications would be necessary, such as replacing these pumps with ones that are not submerged, to permit meeting the Code requirements. Requiring the licensee to make these modifications would be burdensome due the high costs involved.

Industry experience has shown that vibration measurements made on the pump driver housing near the thrust bearing can provide adequate information about pump condition. Therefore, vibration measurements taken on the motor bearing housing of these pumps should provide a reasonable indication of pump mechanical condition and permit the detection of degradation. The licensee's proposed testing should provide an acceptable alternative to the Code requirements.

Based on the impracticality of taking the service water pump vibration measurements on the pump housing and the determination that vibration measurements taken on the motor bearing housing provide information to evaluate pump mechanical condition and to detect bearing degradation, relief may be granted from the Code requirements as requested.

2.4.3 Pump Flow Rate Measurements

2.4.3.1 Relief Request. The licensee has requested relief from the flow rate measurement requirements of Section XI, Paragraph IWP-4600, for the service water pumps (PSWO 1A, 1B, 1C, and 1D) and proposed to measure the flow rate in the containment fan cooler outlet lines.

2.4.3.1.1 Licensee's Basis for Requesting Relief--The present system configuration and instrument does not provide flow indication at the SW pump discharge lines to provide a positive means of determining full flow during pump tests.

Alternate Testing: SW pump flow testing will utilize calibrated flow instrumentation installed in the Containment Fan Cooler outlet lines. Accident flow rates are utilized to assess pump performance.

2.4.3.1.2 Evaluation--IWP-3100 requires the quarterly measurement of pump test quantities including pump flow rate. There are no installed instruments on the service water headers that permit measurement of full pump flow rate during quarterly testing. The current system configuration makes it impractical to install permanent flow rate instrumentation or use portable flow instruments that meet the Code accuracy requirements which can measure total pump flow rates. The licensee has proposed to use the calibrated flow rate instruments in the cooling lines at the outlet of the containment fan coolers for testing. Using a branch line flow measurement opens up the possibility of test flow being affected by variations in control valve settings in the various parallel flow paths. These variations could mask pump degradation and permit a degraded pump to remain in operation unless caution is taken to ensure repeatable test conditions are always established. If repeatable conditions are established for each test, use of these instruments should provide measurements which can be evaluated with other IST data to determine pump hydraulic condition and detect degradation. The licensee's proposed testing should give reasonable assurance of pump operational readiness provided they ensure that repeatable conditions are established during testing.

System modifications would be necessary to allow measurement of full pump flow rate and the additional information obtained would have a minimal impact on the licensee's ability to detect pump hydraulic degradation. Requiring the licensee to perform these modifications would be burdensome due to the high cost involved.

Based on the determination that it is impractical to measure total pump flow rate during testing, that it would be a burden on the licensee if these Code requirements were imposed, and considering the licensee's proposed alternate testing, relief may be granted from the Section XI requirements provided the licensee establishes repeatable test conditions which permit obtaining data that is meaningful for detecting pump degradation.

2.5 Residual Heat Removal Pumps

2.5.1 Establishing Reference Pump Flow Rate or Differential Pressure

2.5.1.1 Relief Request. The licensee has requested relief from the Section XI, Paragraph IWP-3100, requirement to vary system resistance until the flow rate or differential pressure equals its reference value, for the residual heat removal (RHR) pumps (ACAPRH-1 and 2) and proposed to measure pump flow rate, differential pressure, and vibration quarterly while running in the recirculation flow path and test these pumps during cold shutdowns and refueling outages with the pumps operating at a substantial flow rate.

2.5.1.1.1 Licensee's Basis for Requesting Relief--During power operation RHR pumps can only be tested utilizing minimum-flow return lines. These lines have flow orifices installed and do not allow throttling to an established reference value for either flow or pressure.

Alternate Testing: These pumps shall be tested quarterly measuring observed flow, differential pressure and vibration. The pumps shall be tested using the normal flow path during cold shutdowns and refueling outages. Data from both test frequencies shall be trended as required by IWP-6000. (re, Generic Letter 89-04, Attachment 1, Position 9)

2.5.1.1.2 Evaluation--IWP-3100 requires varying system resistance until pump flow rate or differential pressure is at its respective reference value. The RHR pumps do not develop sufficient head to pump into the RCS during power operations, therefore, they can only be tested by pumping through a minimum flow path. The minimum flow path resistance is fixed and cannot be varied to establish reference flow rate or differential pressure, therefore, it is impractical to comply with this Code requirement. A system modification would be necessary to permit varying system resistance in the minimum flow recirculation line. It would be burdensome to require the licensee to perform this modification since it would be costly.

The licensee has proposed to perform an as found test quarterly with the pump operating in the minimum flow loop. During this testing pump flow rate, differential pressure, and vibration will be measured. The pump test data will also be measured during cold shutdowns and refueling outages with the pump operating in the normal flow path at a substantial flow rate. This testing is in accordance with Generic Letter 89-04, Attachment 1, Position 9, and should provide reasonable assurance of pump operational readiness.

Based on the determination that it is impractical to establish reference pump flow rate or differential pressure during quarterly testing, that it would be burdensome to require the licensee to comply with this Code requirement, and considering the adequacy of the licensee's proposed alternative testing, relief may be granted from the Code requirement as requested.

3. VALVE TESTING PROGRAM

The Robert E. Ginna Nuclear Power Plant IST program submitted by Rochester Gas and Electric Corporation was examined to verify that all valves included in the program are subjected to the periodic tests required by the ASME Code, Section XI, and the NRC positions and guidelines. The reviewer found that, except as noted in Appendix A or where specific relief from testing has been requested, these valves are tested to the Code requirements and established NRC positions. Each Rochester Gas and Electric Corporation basis for requesting relief from the valve testing requirements and the reviewer's evaluation of that request are summarized below and grouped according to system and valve category.

3.1 General Valve Relief Requests

3.1.1 Part-Stroke Exercising Power Operated Valves

3.1.1.1 Relief Request. The licensee has requested relief from the quarterly part-stroke exercising requirements of Section XI, Paragraph IWV-3412(a), for all power operated valves that are identified in the IST program and proposed to full-stroke exercise at cold shutdowns those valves which cannot practically be full-stroke exercised quarterly during power operations. These valves will not be part-stroke exercised quarterly.

3.1.1.1.1 Licensee's Basis for Requesting Relief--All motor operated and air operated valves in the Ginna IST Program have a design logic that prohibits part-stroking of the valve. The circuits are such that when an open or close signal is received, the valve must complete a full-stroke before the relay is released to allow the valve to stroke in the other direction. It is impractical to part-stroke the valves.

Alternate Testing: Valves for which full-stroke exercise is not practical during power operation, will be full-stroke exercised during cold shutdown.

3.1.1.1.2 Evaluation--IWV-3412(a) states that if only limited operation of a power operated valve is practical during plant operation,

the valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdowns. The power operated valves at Ginna have control circuitry that does not permit a part-stroke exercise of these valves. Once valve motion is initiated, it cannot be stopped until the valve completes a full-stroke and the limit or torque switch is actuated to stop valve travel. Therefore, it is impractical to part-stroke exercise power operated valves that cannot be full-stroke exercised quarterly during power operations. System modifications would be necessary to permit these valves to be part-stroke exercised. It would be burdensome to require the licensee to perform these modifications because it would be costly.

Full-stroke exercising power operated valves during cold shutdowns that cannot practically be full-stroke exercised quarterly during power operations should provide reasonable assurance of their operational readiness.

Based on the impracticality of part-stroke exercising the applicable power operated valves, the burden on the licensee if this Code requirement were imposed, and considering the licensees proposal to full-stroke exercise these valves during cold shutdowns and refueling outages, relief may be granted as requested.

3.1.2 Leak Rate Testing Containment Isolation Valves

3.1.2.1 Relief Request. The licensee has requested relief from the leak rate methodology and trending requirements of Section XI, Paragraphs IWV-3421 through -3425 and IWV-3427(b), for all containment isolation valves identified in the IST program and proposed to leak rate test these valves in accordance to the requirements of 10CFR50, Appendix J, and the requirements of Paragraphs IWV-3426 and -3427(a).

3.1.2.1.1 Licensee's Basis for Requesting Relief--It is NRCs staff position as outlined in Generic Letter No. 89-04, Position 10 that leak test procedures and requirements for containment isolation valves specified in 10CFR50, Appendix J are equivalent to requirements of IWV-3421 through 3425.

Industry data shows that the variability of leak rates for valves six inches and larger is excessive. Ginna feels that this excessive variability shows the relative independence of one leak rate test to another. The tendency towards random leak rate data would cause unnecessary testing per IWV-3427(b), with no identifiable increase in benefit to public health and safety.

Alternate Testing: Containment isolation valves will be tested under the requirements of 10CFR50, Appendix J. Leakage shall be analyzed as required by IWV-3426 and corrective action initiated in accordance with IWV-3427 (a).

3.1.2.1.2 Evaluation--The NRC staff position on leak rate testing containment isolation valves is explained in Generic Letter 89-04, Attachment 1, Position 10. The licensee's proposed testing is in accordance with this position and would provide an acceptable level of quality and safety.

Based on the determination that the proposed alternative would provide an acceptable level of quality and safety, relief may be granted as requested.

3.1.3 Verifying Reverse Flow Closure of Containment Isolation Check Valves

3.1.3.1 Relief Request. The licensee has requested relief from the exercising requirements of Section XI, Paragraph IWV-3520, for valves 5393, 1713, and 7226, which are containment isolation check valves, and proposed to verify the reverse flow closure of these valves in conjunction with Appendix J leak rate testing at least once every two years.

3.1.3.1.1 Licensee's Basis for Requesting Relief--When these valves are in operation there is no practical means to test valve closure. Valve closure cannot be verified due to system design. To perform a closure verification constitutes a leak test which presents a significant hardship during cold shutdown. Leak testing requires an extended period of time where nitrogen, service air and instrument air must be secured.

Alternate Testing: Verification of valve closure will be done in conjunction with the 10 CFR 50 Appendix J, Type C, leak tests (LT-J) conducted at least once every two years.

3.1.3.1.2 Evaluation--These are simple check valves which are located at the primary containment boundary and are not equipped with position indication. The only method available to verify closure of these valves is to perform a leak test. Leak testing involves isolating the pneumatic supply, setting up test equipment and performing the actual test. During this time, pneumatic pressure would be lost to the equipment located inside containment that is supplied by the affected system. Loss of pneumatic pressure could cause affected valves to reposition and other components to change state or cease to function. Many of these components are non-safety-related, however, their function may affect plant operation and isolating their pneumatic supply could result in a plant trip or require a plant shutdown. It is not practical to isolate a pneumatic supply to perform valve testing quarterly during power operation if doing so could result in a plant trip or shutdown.

It is impractical to leak test these check valves during cold shutdowns because it would require interruption of pneumatic pressure to equipment essential for plant operation in the shutdown mode. Further, establishing the requisite test conditions and conducting this testing during cold shutdowns could delay returning the plant to power which would be an undue burden on the licensee.

These valves receive an Appendix J, Type C, leak rate test during refueling outages. This testing should provide reasonable assurance of their capability of performing their safety function in the closed position.

Based on the impracticality of complying with the Code requirements, the burden on the licensee if the Code requirements were imposed, and considering the licensee's proposed alternate testing, relief may be granted from the Section XI requirements as requested.

3.1.4 Measuring Stroke Times of Rapid-Acting Power Operated Valves

3.1.4.1 Relief Request. The licensee has requested relief from the stroke time trending requirements of Section XI, Paragraph IWV-3417(a), for rapid-acting power operated valves identified in the IST program and proposed to assign a limiting value of full-stroke time of two seconds to these valves and perform corrective actions when the measured stroke time exceeds this two second limit.

3.1.4.1.1 Licensee's Basis for Requesting Relief--Since these valves are fast acting and stroke rapidly, measurement of the stroke time of these valves to the nearest second per IWV-3413(b) means that a very small increase in stroke time results in an extremely large percentage of change. Verification that test values meet a specified maximum stroke time of a relatively short duration provides adequate assurance of their operability.

Alternate Testing: A maximum stroke time of two (2) seconds will be assigned for these valves. If this limiting stroke time is exceeded, the valve will be declared inoperable and corrective action taken. (re, Generic Letter 89-04, Attachment 1 - Position 6)

3.1.4.1.2 Evaluation--The NRC staff position on evaluating stroke times of rapid-acting valves is explained in Generic Letter 89-04, Attachment 1, Position 6. The licensee's proposed testing is in accordance with this position and would provide an acceptable level of quality and safety.

Based on the determination that the proposed alternative would provide an acceptable level of quality and safety, relief may be granted as requested.

3.1.5 Leak Rate Testing RCS Pressure Isolation Valves (PIVs)

3.1.5.1 Relief Request. The licensee has requested relief from the leak rate testing requirements of Section XI, Paragraphs IWV-3421 through -3427, for the valves identified in the IST program as RCS pressure isolation

valves and proposed to leak rate test these valves in accordance with the plant Technical Specifications.

3.1.5.1.1 Licensee's Basis for Requesting Relief--Leakage testing, including testing requirements is governed by plant Technical Specifications. These valves are adequately tested per Technical Specifications. Testing criteria utilized meets the intent of ASME Section XI leak rate testing. Therefore it is impractical to perform separate leak rate tests.

Alternate Testing: These valves will be leak rate tested in accordance with RCS Pressure Isolation Valve leak rate testing per Technical Specifications.

3.1.5.1.2 Evaluation--The Ginna plant Technical Specifications identify the valves that are leak rate tested as pressure isolation valves and establish the maximum permissible leakage rates, test pressure requirements, test frequency requirements, and required action if the leak rate limit is exceeded. The Technical Specification testing is not conservative in regards to the Section XI Code requirements since in some cases the test method or frequency is less restrictive than the Code requirement. However, the licensee's testing has been reviewed and approved by the NRC in its review of the response to the Event V order and has been determined to adequately verify the leak tight integrity of these valves. It would be burdensome to require the licensee to perform Section XI leakage rate testing of these valves in addition to Technical Specification leak rate testing due to the time, cost, and personnel radiation exposures involved and considering that it would not result in a compensating increase in the level of quality and safety.

Based on the determination that compliance with the Code requirements would result in hardship without a commensurate increase in the level of quality and safety and considering the acceptability of the licensee's proposed alternate testing, relief may be granted from the Code requirements as requested.

3.1.6 Measuring Stroke Times of Hand Control Valves

3.1.6.1 Relief Request. The licensee has requested relief from the stroke time measurement requirements of Section XI, Paragraphs IWV-3413 and -3417, for hand control valves which operate using a variable set air signal and proposed to verify valve operational readiness during quarterly exercising, but the stroke times will not be measured for these valves.

3.1.6.1.1 Licensee's Basis for Requesting Relief--These valves are hand control valves which operate using a variable set air signal. They do not have a typical control switch. Position indication is not directly indicated, only the control air signal is indicated. Therefore, there is no consistent way to measure the stroke time of these valves. Stroke time limiting values are not established by the UFSAR or Technical Specifications for these valves.

Alternate Testing: Operability of these hand control valves is verified during quarterly exercising tests. Measurement and evaluation of stroke time shall not be required for these valves.

3.1.6.1.2 Evaluation--These air operated valves are positioned by varying a control air signal using a manually adjustable controller. There are no control switches that effect a full-stroke open or closed of these valves. The only practical method of obtaining a continuous and repeatable full-stroke exercise is to close the valves and then remove control air so the valves stroke to their open fail-safe position. These valves do not have remote position indication which makes it difficult to obtain stroke time measurements. Stroke timing provides a means of monitoring valve condition and detecting degradation. However, the licensee's proposal provides no means of detecting valve degradation unless it results in failure of the valve to change position. Some means should be developed to measure the full-stroke time of these valves during quarterly fail-safe testing. Since it would be burdensome to require the licensee to make system modifications that permit measurement of valve full-stroke times immediately, an interim relief may be granted for the licensee to develop a method of evaluating the condition of these valves. The licensee's proposal of verifying valve

operational readiness during the quarterly exercising of the hand control valves should provide an acceptable level of quality and safety during the interim period.

Based on the impracticality of measuring valve full-stroke times, the burden on the licensee if the Code requirements were immediately enforced, and considering the licensee's proposed alternate testing, interim relief may be granted for 12 months. During this interim period the licensee should develop an adequate means of monitoring for degradation of these valves.

3.1.7 Trending Stroke Times for Power Operated Valves

3.1.7.1 Relief Request. The licensee has requested relief from the stroke time evaluation and corrective action requirements of Section XI, Paragraph IWV-3417(a), for all power operated valves that are identified in the IST program and proposed to follow a plan that is based on deviation from a reference stroke time instead of the previous test stroke time to identify valves for further evaluation and possibly increase their test frequency.

3.1.7.1.1 Licensee's Basis for Requesting Relief--The intent of the Code requirement is to initiate increased testing to verify a valve can continue to perform its intended function when it has degraded. Due to the variance in testing frequencies some valves may degrade over a period of time.

Measuring changes in stroke time from the reference value (established when the valve is known to be in good condition) is a better indication of valve degradation.

Alternate Testing: Changes in stroke time shall be measured from the reference value when determining increased test frequency requirements and initiation of corrective action per IWV-3417(a). (re, Generic Letter 89-04, Attachment 1 - Position 5)

3.1.7.1.2 Evaluation--The NRC staff position on basing stroke time corrective actions on deviations from reference values is explained in

Generic Letter 89-04, Attachment 1, Positions 5 and 6. The Section XI requirement to compare measured stroke times to the previous values can permit a stair stepping gradual increase in valve stroke times to occur without taking corrective action or could require corrective action due to normal data scatter for a valve that is functioning properly. Basing corrective action on deviation from a reference stroke time determined when the valve is known to be in good condition would not permit a gradual increase in stroke times to continue without taking the appropriate corrective action nor would unwarranted increased testing be required due solely to normal data scatter. Increasing the valve test frequency to monthly when the measured stroke time is greater than 50% above the reference value for valves with stroke times of 10 seconds or less and when the measured stroke time is greater than 25% above the reference value for valves with stroke times greater than 10 seconds would provide equivalent or better protection than provided by the Section XI corrective action requirements. Comparing measured stroke times to reference values as explained above would provide an acceptable level of quality and safety.

Based on the determination that the proposed alternative would provide an acceptable level of quality and safety, relief may be granted to compare measured stroke times to reference values provided that implementation of the monthly test frequency is determined as discussed above.

3.2 Emergency Diesel Generator Air Start System

3.2.1 Category B Valves

3.2.1.1 Relief Request. The licensee has requested relief from the stroke time measurement requirements of Section XI, Paragraphs IWV-3413 and -3417, for the emergency diesel generator air start solenoid operated valves, 5933A, 5933B, 5934A, and 5934B, and proposed to demonstrate operational readiness of these valves by observing that the diesel monthly start tests are acceptable, but the stroke times of these valves will not be measured.

3.2.1.1.1 Licensee's Basis for Requesting Relief--These are rapid-acting solenoid valves whose design prohibits visual observance of stroking as there are no external indicators on these valves. Diesel start times are affected by valve stroke times.

Alternate Testing: Measurement and evaluation of stroke times shall not be performed. Valve exercising is performed monthly in conjunction with diesel generator start testing. Valve stroking parameters will be considered acceptable if the associated diesel generator start is acceptable. If the diesel generator failed to start, due to other identified malfunctions, repairs would be made and the air start valve stroking parameters will be verified during a restart following diesel generator corrective action.

3.2.1.1.2 Evaluation--These valves are totally enclosed solenoid operated valves which have no externally visible indication of valve position. It is impractical to measure the stroke times of these valves because there is no way to determine when a valve receives a signal to open or when it reaches the open position. These valves are rapid-acting valves which normally stroke almost instantly and when they do not operate promptly, they most commonly fail to operate at all.

These valves function to admit starting air to the diesel generator starting motors, therefore, it can be indirectly verified that each valve has opened by monitoring the diesel generator start times to insure that the diesel starts within the Technical Specification limit. Measuring the diesel start times gives an indication of possible valve degradation since any significant change in valve stroke time would result in longer diesel generator start times. Valve full-stroke times cannot be measured unless significant system modifications, such as replacing these diesel air start valves with valves that have valve disk position indication, are made to permit this testing. Replacing these valves to permit stroke time measurements would provide a limited amount of additional information above that generated by the proposed alternate testing. It would be burdensome for the licensee to make such modifications due to the high costs involved and a limited amount of additional information would be provided.

Compliance with the Code requirements would be impractical. The licensee's proposed alternate testing of measuring the diesel generator starting times should verify operation of the air start valves and monitor their degradation. Therefore, considering the burden on the licensee if the Code requirements were imposed, relief may be granted from the Code requirements as requested.

3.2.2 Category C Valves

3.2.2.1 Relief Request. The licensee has requested relief from the exercising frequency and test method requirements of Section XI, Paragraph IWV-3520, for the emergency diesel generator air start accumulator check valves, 5941A and 5942A, and proposed to verify the reverse flow closure capability of these valves by disassembly and inspection on a sampling basis during refueling outages.

3.2.2.1.1 Licensee's Basis for Requesting Relief--During operation there is no practical means to exercise these valves. Valve closure cannot be verified due to system design. To perform a closure verification would require a disassembly of mechanical joints in the piping, which would place the diesel in an inoperable condition.

Alternate Testing: One valve will be disassembled, full-stroke exercised and inspected each refueling outage on a rotating basis. If that valve fails, the remaining valve will be disassembled, full-stroke exercised and inspected during that same outage. (re, Generic Letter 89-04, Attachment 1 - Position 2)

3.2.2.1.2 Evaluation--These are simple check valves without remote or other external indication of disk position. The only non-intrusive method of verifying valve closure is leak testing, such as performing an accumulator pressure decay test. It is impractical to leak test these valves quarterly during power operations because it requires disassembly of mechanical joints in piping which would result in the diesel generator being inoperable for extended periods of time. Performing this testing during cold shutdowns

could result in a delay in returning the plant to power, which would be burdensome to the licensee.

The licensee indicated that a further complication to using an accumulator pressure decay test to verify valve closure is that the diesel air start system contains a number of swage connections and other types of fittings that have significant leakage. This results in high system leakage rates which could prevent detection of a check valve that is not fully closing.

The Minutes of the Public Meeting on Generic Letter 89-04 state that the use of disassembly to verify closure capability may be found to be acceptable depending on whether verification by flow or pressure measurements is practical. The licensee has not adequately shown the impracticality of verifying the reverse flow closure of these valves by leak testing during refueling outages, therefore, disassembly and inspection should not be employed on a long-term basis in this situation. The Minutes of the Public Meeting on Generic Letter 89-04 also state that partial-stroke exercise testing with flow is expected to be performed after valve disassembly and inspection is completed but before returning the valve to service. This post inspection testing provides a degree of confidence that the disassembled valve has been reassembled properly and that the disk moves freely.

Based on the determination that it is impractical to verify the reverse flow closure of these valves quarterly during power operation and during cold shutdowns, relief may be granted from the test frequency requirements of the Code. Considering that the licensee's proposal to disassemble and inspect these valves in accordance with Generic Letter 89-04, Attachment 1, Position 2, should provide reasonable assurance of valve operational readiness, interim relief may be granted from the Code test method requirements for one year or until the end of the next refueling outage, whichever is longer. During this interim period, the licensee should develop a method to verify the reverse flow closure capability of these valves other than disassembly and inspection.

3.3 Residual Heat Removal System

3.3.1 Category A/C Valves

3.3.1.1 Relief Request. The licensee has requested relief from the exercising requirements of Section XI, Paragraph IWV-3520, for the low head safety injection check valves, 853A and 853B, and proposed to part-stroke exercise these valves during cold shutdowns and to full-stroke exercise them during refueling cavity fill at refueling outages. The licensee also proposed to verify the closure of these valves by leak rate testing during refueling outages.

3.3.1.1.1 Licensee's Basis for Requesting Relief--Full or partial stroking during power operation is not possible because RHR pump discharge pressure is insufficient to overcome reactor coolant system (RCS) pressure. Even if pump discharge pressures were high enough, any stroking could cause the injection of cold borated water into the system, resulting in power and thermal transients.

These valves cannot be full-stroke exercised during cold shutdown because establishing required safety analysis flow through them could result in excessive RCS cooldown.

During power operation, there is no practical means to test valve closure. Valve closure cannot be verified due to system design. To perform a closure verification constitutes a leak test which presents significant hardships during cold shutdown, such as excessive radiation exposure to test personnel and extended outage time.

Alternate Testing: These valves will be partial stroke exercised at cold shutdown and full-stroke exercised at refueling during the refueling cavity fill. Verification of valve closure will be made in conjunction with ASME XI leak tests conducted during refueling outages.

3.3.1.1.2 Evaluation--IWV-3520 requires that check valves be exercised to their safety function position(s) quarterly or, if justified,

during cold shutdowns. The only path available to establish flow through these valves to full or part-stroke exercise them is into the RCS. The residual heat removal pumps do not produce sufficient head to overcome RCS pressure during power operations, therefore, there are no sources capable of establishing flow through these valves quarterly during power operations. These valves cannot be full or part-stroke exercised quarterly unless extensive system modifications, such as installing full flow test loops, are made which permit this testing. It would be burdensome for the licensee to make such modifications because of the cost involved. Additionally, reduced system reliability could result from failures that could divert the injection flow away from the RCS.

It is impractical to full-stroke exercise these valves during cold shutdowns because establishing the required flow through them could result in excessive cooldown of the RCS. Excessive cooldown rates result in increased thermal stresses on RCS components which could lead to their premature failure.

These valves are simple check valves located inside containment with no position indication. The only practical method of verifying valve reverse flow closure is to perform a leak test. A containment entry would be required to leak test these valves and due to personnel hazards associated with a containment entry during power operations, it is impractical to perform this testing quarterly. It is impractical to leak test these valves during cold shutdowns because it would subject test personnel to high radiation areas and, due to the involvement of setting up and removing test equipment, could delay startup from cold shutdowns.

The licensee proposed to part-stroke exercise valves 853A and 853B during cold shutdowns, to full-stroke exercise these valves during refueling outages and to verify their reverse flow closure during the Section XI leak rate test at refueling outages. This testing should give reasonable assurance of valve operational readiness and provide a reasonable alternative to the Code requirements.

Based on the impracticality of full-stroke exercising these valves quarterly or during cold shutdowns, the burden on the licensee if the Code requirements were imposed, and considering the licensee's proposed alternate testing, relief may be granted from the Section XI requirements as requested.

3.3.2 Category C Valves

3.3.2.1 Relief Request. The licensee has requested relief from the exercising requirements of Section XI, Paragraph IWV-3520, for the RHR pump discharge check valves, 697A, 697B, 710A, and 710B, and proposed to part-stroke exercise these valves quarterly during power operations and full-stroke exercise them during refueling outages.

3.3.2.1.1 Licensee's Basis for Requesting Relief--These valves cannot be full-stroke exercised during power operation since downstream valves to the RCS cannot open against the higher RCS pressure. These valves cannot be full-stroke exercised during cold shutdown because establishing required safety analysis flow thru them could result in excessive RCS cooldown.

Alternate Testing: These check valves are partial-flow exercised at least quarterly during RHR system testing. Full-stroke testing of these valves shall be performed during each refueling outage.

3.3.2.1.2 Evaluation--IWV-3520 requires that check valves be exercised to their safety function position(s) quarterly or, if justified, during cold shutdowns. The only path available to establish sufficient flow through these valves to full-stroke exercise them is into the RCS. The RHR pumps are the only source of flow through these valves and they do not produce sufficient head to overcome RCS pressure during power operations, therefore, it is impractical to full-stroke exercise these valves quarterly during power operations. Extensive system modifications, such as installing full flow test loops, would be necessary in order to full-stroke exercise these valves quarterly. It would be burdensome for the licensee to make such modifications because of the cost involved. Additionally, reduced system reliability could result from failures that could divert the injection flow away from the RCS.

It is impractical to full-stroke exercise these valves during cold shutdowns because establishing the required flow through them could result in excessive cooldown of the RCS. Excessive cooldown rates result in increased thermal stresses on RCS components which could lead to their premature failure.

The licensee proposed to part-stroke exercise valves 697A, 697B, 710A, and 710B quarterly during RHR system testing and to full-stroke exercise these valves during refueling outages. This testing should give reasonable assurance of valve operational readiness and provide a reasonable alternative to the Code requirements.

Based on the impracticality of full-stroke exercising these valves quarterly or during cold shutdowns, the burden on the licensee if the Code requirements were imposed, and considering the licensee's proposed alternate testing, relief may be granted from the Section XI requirements as requested.

3.3.2.2 Relief Request. The licensee has requested relief from the exercising requirements of Section XI, Paragraph IWV-3520, for 854, the check valve in the RHR suction from the RWST, and proposed to full-stroke exercise this valve during fill of the refueling cavity at refueling outages.

3.3.2.2.1 Licensee's Basis for Requesting Relief--Valve stroking is not possible during power operation because RHR pump discharge pressure is insufficient to overcome RCS pressure. This valve cannot be full-stroke exercised during power operation since downstream valves to the RCS cannot open against the higher RCS pressure.

This valve cannot be full-stroke exercised during cold shutdown because establishing required safety analysis flow through it could result in excessive RCS cooldown.

Alternate Testing: Valve 854 will be full-stroke exercised during the refueling cavity fill at refueling outages.

3.3.2.2.2 Evaluation--IWV-3520 requires that check valves be exercised to their safety function position(s) quarterly or, if justified, during cold shutdowns. The only path available to establish sufficient flow through this valve to full-stroke exercise it is into the RCS. The RHR pumps are the only source of flow through this valve and they do not produce sufficient head to overcome RCS pressure during power operations, therefore, it is impractical to full-stroke exercise valve 854 quarterly during power operations. Extensive system modifications, such as installing full flow test loops, would be necessary in order to full-stroke exercise this valve quarterly. It would be burdensome for the licensee to make such modifications because of the cost involved.

It is impractical to full-stroke exercise this valve during cold shutdowns because establishing the required flow through it could result in excessive cooldown of the RCS. Excessive cooldown rates result in increased thermal stresses on RCS components which could lead to their premature failure.

The licensee proposed to part-stroke exercise valve 854 quarterly during RHR system testing and to full-stroke exercise this valve during refueling outages. This testing should give reasonable assurance of valve operational readiness and provide a reasonable alternative to the Code requirements.

Based on the impracticality of full-stroke exercising this valve quarterly or during cold shutdowns, the burden on the licensee if the Code requirements were imposed, and considering the licensee's proposed alternate testing, relief may be granted from the Section XI requirements as requested.

3.4 Auxiliary Feedwater Systems

3.4.1 Category B Valves

3.4.1.1 Relief Request. The licensee has requested relief from the stroke time measurement requirements of Section XI, Paragraphs IWV-3413 and -3417, for the isolation valves in the auxiliary feedwater and standby auxiliary feedwater pump recirculation lines, 4291, 4304, 4310, 9710A, and

9710B, and proposed to exercise these valves to verify their operational readiness, but valve stroke times will not be measured.

3.4.1.1.1 Licensee's Basis for Requesting Relief--These valves operate based upon a pressure/flow signal only. Manual activation of these valves is not practical in the present configuration. Lifting of leads or jumpers, or installation of new instrumentation or controls would be necessary. Stroke timing during normal valve operation is affected by variations in system parameters, therefore measurement of stroke times for these valves would not produce consistent, meaningful or trendable results.

Alternate Testing: Measurement and evaluation of stroke times shall not be performed. These valves will be exercised and fail-safe tested quarterly.

3.4.1.1.2 Evaluation--These air operated valves are positioned in response to pressure/flow signals. They open to provide a path for recirculation flow to protect the auxiliary feedwater and standby auxiliary feedwater pumps from being damaged when they are running against shut-off head or with restricted flow conditions and close when pump flow into the steam generators is sufficient to prevent pump damage. There are no control switches that effect a full-stroke open or closed of these valves. Also, there is no remote valve position indication or other positive means to determine valve position. Without concise methods of initiating valve movement or to determine when the stroke is completed, it is extremely difficult to obtain repeatable stroke time data to monitor for valve degradation. Due to these limitations in obtaining repeatable stroke times, it is impractical to trend stroke times for these fast acting air operated valves.

In order to obtain trendable stroke times for these valves during normal valve operation it would be necessary to perform system modifications and/or to replace these valves with ones that have position indication. However, the licensee's proposal provides no means of detecting valve degradation.

Some means should be developed to monitor valve condition and detect degradation. Even if system modifications are not performed to permit the

measurement of trendable stroke times, it may be possible for the licensee to develop a method of measuring stroke times and verifying that they remain under a reasonable maximum stroke time limit. Alternatively it may be possible to obtain trendable stroke time data during refueling outages with only limited extra measures. It would be burdensome to require the licensee to immediately develop a means of monitoring for valve degradation, therefore, an interim period should be provided for the licensee to develop a method of performing this testing. The licensee's proposal of verifying valve operational readiness by quarterly exercising and fail-safe testing should provide an acceptable level of quality and safety during the interim period.

Based on the impracticality of measuring and trending valve full-stroke times, the burden on the licensee if the Code requirements are imposed, and considering the licensee's proposed alternate testing, interim relief may be granted for 12 months. During this interim period the licensee should develop an adequate means of monitoring for degradation of these valves.

3.4.2 Category C Valves

3.4.2.1 Relief Request. The licensee requested relief from the exercising requirements of Section XI, Paragraph IWV-3520, for the check valves in the service water line to the standby auxiliary feedwater pump suctions, 9627A and 9627B, and proposed to part-stroke exercise these valves quarterly and to partially disassemble, inspect, and manually full-stroke exercise them on a sampling basis during refueling outages.

3.4.2.1.1 Licensee's Basis for Requesting Relief--Full-stroke exercising cannot be accomplished during power operation or cold shutdown as this could introduce Service Water to the Standby Auxiliary Feedwater system. Service water does not meet water purity requirements for the system or steam generators. Service water would be supplied to steam generators during required monthly pump tests if exercising valves 9627A and B was performed.

Alternate Testing: Partial stroke exercising will be performed each quarter. One valve will be disassembled, full-stroke exercised and inspected each refueling outage on a rotating basis. If that valve fails, the remaining valve will be disassembled, full-stroke exercised and inspected for operability during that same outage. (re. Generic Letter 89-04, Position 2).

3.4.2.1.2 Evaluation--Check valves 9627A and 9627B are in the service water line to the standby auxiliary feedwater pump suctions. The only path available to establish sufficient flow through these valves to full-stroke exercise them is from the service water system into the standby auxiliary feedwater system. Service water comes directly from Lake Ontario and is relatively impure water which does not meet the water chemistry standards for the secondary system. Establishing full flow through these valves would contaminate the standby auxiliary feedwater system. After exercising these valves, an automatic initiation of the standby auxiliary feedwater system would result in low quality water being injected into the steam generators. Contaminating the steam generators with lake water could cause severe damage such as fouling heat transfer surfaces and increasing the likelihood of stress corrosion induced tube failures. The process of draining and flushing the standby auxiliary feedwater system to restore water chemistry standards after exercising these valves is very complex, time consuming, and may not completely remove all contaminants, therefore, full-stroke exercising these valves with service water flow at any time is impractical.

These valves cannot be full-stroke exercised quarterly unless extensive system modifications, such as installing full flow test loops, are made which permit this testing. It would be burdensome for the licensee to make such modifications because of the cost involved. Additionally, reduced system reliability could result from failures that could divert service water flow away from the standby auxiliary feedwater system.

The licensee proposed to part-stroke exercise these valves quarterly during power operations and to verify their full-stroke capability by partial disassembly, inspection, and manual exercise of the valve disk on a sampling basis during refueling outages. The Minutes of the Public Meeting on Generic

Letter 89-04 state that partial-stroke exercise testing with flow is expected to be performed after valve disassembly and inspection is completed but before returning the valve to service. This post inspection testing provides a degree of confidence that the disassembled valve has been reassembled properly and that the disk moves freely.

Disassembly, together with inspection, to verify the full-stroke capability of check valves is an option only where full-stroke exercising cannot practically be performed by flow or by other positive means. The NRC staff considers valve disassembly and inspection to be a maintenance procedure that is not equivalent to the exercising produced by fluid flow. This procedure has risks which may make its routine use as a substitute for testing inappropriate if some method of testing is possible. The licensee should actively pursue the use of non-intrusive diagnostic techniques, such as acoustics, ultrasonics, or magnetics, to demonstrate that these valves open sufficiently during partial flow testing to permit meeting the valves' safety function.

Based on the impracticality of full-stroke exercising these valves quarterly or during cold shutdowns, the burden on the licensee if the Code requirements were imposed, and considering the licensee's proposed alternative, relief may be granted from the Section XI requirements provided the licensee performs a partial flow test of the affected valve after valve disassembly and inspection is completed but before returning the valve to service. The licensee should actively pursue the use of non-intrusive diagnostic techniques to demonstrate that these valves open sufficiently during partial flow testing to permit meeting their safety function. If another method is developed to verify the full-stroke capability of these valves, this relief request should be revised or withdrawn.

3.4.2.2 Relief Request. The licensee has requested relief from the exercising requirements of Section XI, Paragraph IWV-3520, for the check valve in the recirculation flow path of the turbine driven auxiliary feedwater pump, 4023, and proposed to verify its full-stroke capability by disassembly and inspection during each refueling outage.

3.4.2.2.1 Licensee's Basis for Requesting Relief--The present configuration provides no positive means to verify reverse closure capability.

Alternate Testing: Reverse-flow closure capability of check valve 4023 shall be verified by disassembly inspection during each refueling outage. (re, Generic Letter 89-04, Attachment 1 - Position 2).

NOTE: In their letter dated March 14, 1990, RG&E stated that valve 4023 does not perform a safety function in the closed position, therefore, they would delete the reverse flow closure of this valve from relief request VR-23. The relief request is still necessary because there are no flow rate instruments installed in this flow path to verify maximum required accident flow through the valve during testing. The licensee further indicated that instrumentation is to be installed during the 1990 refueling outage that will permit verifying a full-stroke exercise of this valve during quarterly pump testing.

3.4.2.2.2 Evaluation--This check valve is in the minimum flow recirculation line for the turbine driven auxiliary feedwater pump and receives substantial flow through it during the quarterly pump test. Currently maximum required accident flow rate cannot be verified through this valve because there are no installed flow rate instruments. However, the licensee committed to install flow rate instrumentation in this line during the 1990 refueling outage.

The licensee proposed to part-stroke exercise this valve quarterly during pump testing and to verify its full-stroke capability by partial disassembly, inspection, and manual exercise of the valve disk during refueling outages per the guidelines of Generic Letter 89-04, Attachment 1, Position 2. This proposal should provide reasonable assurance of valve operational readiness and give an acceptable level of quality and safety provided the licensee performs a partial flow test of the valve after the disassembly and inspection procedure but before returning the valve to service.

Based on the impracticality of verifying a full-stroke exercise of this valve quarterly or during cold shutdowns and considering the licensee's

proposed alternative, interim relief may be granted from the Section XI requirements for a period of six months.

NOTE: The licensee indicated in a telephone conversation that an Annubar flow instrument that meets the Code accuracy and range requirements has been installed in this system. During that conversation, the licensee stated that relief request VR-23 will be withdrawn following satisfactory testing of the instrument.

3.5 Station Service Water System

3.5.1 Category B Valves

3.5.1.1 Relief Request. The licensee has requested relief from the stroke time measurement requirements of Section XI, Paragraph IWV-3413, for 4324, 4325, and 4326, the solenoid operated valves in the service water lines to the auxiliary feedwater pump bearings, and proposed to exercise these valves quarterly to verify their operational readiness, but the stroke times will not be measured for these valves.

3.5.1.1.1 Licensee's Basis for Requesting Relief--This is a rapid-acting valve. These valves automatically actuate on high differential pressure across the supply strainer. Measurement of stroke times during manual actuation, for testing, is not practical and would not produce consistent, meaningful or trendable results. Failure of the valve to stroke in conjunction with a clogged strainer would result in a lack of pressure at the bearing cooler inlet.

Alternate Testing: This valve will be stroke tested during associated auxiliary feedwater pump testing by closing the valve downstream of the strainer. Acceptable valve operation will be based on acceptable service water pressure at the bearing cooler inlet.

3.5.1.1.2 Evaluation--These solenoid operated valves are positioned in response to differential pressure signals. They are normally closed and are required to open to provide a path of cooling flow to the auxiliary feedwater pump bearings to prevent pump damage when the supply strainer in the normal cooling path becomes clogged. There are no control

switches that effect a full-stroke open or closed of these valves. Also, there is no remote valve position indication or other positive means to determine valve position. Without concise methods of initiating valve movement or of determining when the stroke is completed, it is extremely difficult to obtain repeatable stroke time data to monitor for valve degradation. Due to these limitations in obtaining repeatable stroke times, it is impractical to trend stroke times for these fast acting valves.

In order to obtain trendable stroke times for these valves it would be necessary to perform system modifications and/or to replace these valves with ones that have position indication. It would be burdensome to require the licensee to make the necessary system modifications since they could be costly. Also, these modifications could result in a decrease in system reliability. However, the licensee's proposal provides no means of detecting valve degradation.

Some means should be developed to monitor valve condition and detect degradation. Even if system modifications are not performed to permit the measurement of trendable stroke times, it may be possible for the licensee to develop a method of measuring stroke times and verifying that they remain under a reasonable maximum stroke time limit. Alternatively it may be possible to obtain trendable stroke time data during refueling outages with only limited extra measures. It would be burdensome to require the licensee to immediately develop a means of monitoring for valve degradation, therefore, an interim period should be provided for the licensee to develop a method of performing this testing. The licensee's proposal of verifying valve operational readiness by quarterly exercising should provide an acceptable level of quality and safety during the interim period.

Based on the impracticality of measuring and trending valve full-stroke times, the burden on the licensee if the Code requirements were imposed, and considering the licensee's proposed alternate testing, interim relief may be granted for 12 months. During this interim period the licensee should develop an adequate means of monitoring for degradation of these valves.

3.5.2 Category C Valves

3.5.2.1 Relief Request. The licensee has requested relief from the exercising requirements of Section XI, Paragraph IWV-3520, for 4601, 4602, 4603, and 4604, the service water pump discharge check valves, and proposed to part-stroke exercise these valves open and verify their reverse flow closure quarterly during the service water pump testing and to verify their full-stroke capability by performing sample disassembly and inspection during refueling outages.

3.5.2.1.1 Licensee's Basis for Requesting Relief--The present system configuration and instrumentation does not provide flow indication at the SW pump discharge lines to provide a positive means to verify full-stroke open capability of these check valves.

Alternate Testing: These check valves are exercised at least quarterly during SW system testing during which required service water flow through each loop's containment fan cooler units is established and verified. However, actual SW flow through each check valve is not measured during these tests. The capability of these valves to close upon cessation or reversal of flow is verified at least quarterly during the SW system tests.

The full-stroke open capability of these check valves shall be verified by disassembly inspection on a rotating sample basis each refueling outage. If the sample valve fails, all remaining valves shall be disassembled and inspected for operability during that same outage. (re, Generic Letter 89-04 - Position 2)

3.5.2.1.2 Evaluation--IWV-3520 requires that check valves be exercised to their safety function position(s) quarterly or, if justified, during cold shutdowns. Valves 4601, 4602, 4603, and 4604 are the service water pump discharge checks which have normal operating service water flow through them whenever the associated pump is in operation. Each service water pump is operated at a substantial flow rate at least quarterly, but there is no means of verifying that these check valves are fully open or that maximum required accident flow is established through them. There are no

flow rate instruments installed in the service water headers and the valves are simple check valves which have no position indication. In order to verify the full-stroke capability of these valves using standard test methods it would be necessary to perform extensive system modifications, such as installing flow rate instrumentation or valve position indication. It would be burdensome for the licensee to make such modifications because of the high costs involved.

The licensee proposed to part-stroke exercise and verify the reverse flow closure of these valves quarterly during power operations and to verify their full-stroke capability by partial disassembly, inspection, and manual exercise of the valve disk on a sampling basis during refueling outages. The Minutes of the Public Meeting on Generic Letter 89-04 state that partial-stroke exercise testing with flow is expected to be performed after valve disassembly and inspection is completed but before returning the valve to service. This post inspection testing provides a degree of confidence that the disassembled valve has been reassembled properly and that the disk moves freely.

Disassembly, together with inspection, to verify the full-stroke capability of check valves is an option only where full-stroke exercising cannot practically be performed by flow or by other positive means. The NRC staff considers valve disassembly and inspection to be a maintenance procedure that is not equivalent to the exercising produced by fluid flow. This procedure has risks which may make its routine use as a substitute for testing inappropriate if some method of testing is possible. The licensee should actively pursue the use of non-intrusive diagnostic techniques, such as acoustics, ultrasonics, or magnetics, to demonstrate that these valves open sufficiently during partial flow testing to permit meeting the valves' safety function.

Based on the impracticality of full-stroke exercising these valves quarterly or during cold shutdowns, the burden on the licensee if the Code requirements were imposed, and considering the licensee's proposed alternative, relief may be granted from the Section XI requirements provided the licensee performs a partial flow test of the affected valve after valve

disassembly and inspection is completed but before returning the valve to service. The licensee should actively pursue the use of non-intrusive diagnostic techniques to demonstrate that these valves open sufficiently during partial flow testing to permit meeting their safety function. If another method is developed to verify the full-stroke capability of these valves, this relief request should be revised or withdrawn.

3.6 Reactor Coolant Pressurizer

3.6.1 Category C Valves

3.6.1.1 Relief Request. The licensee has requested relief from the remote position indication verification requirements of Section XI, Paragraph IWV-3300, for 434 and 435, the pressurizer safety relief valves, and proposed to verify valve remote position indication during reactor refueling outages by simulating valve actuation by moving the valve's coil.

3.6.1.1.1 Licensee's Basis for Requesting Relief--These valves are mechanical spring-actuated valves. If these valves were actuated for a position indication test, they would need to be retested to ensure the set relief pressure is correct. This involves increased testing and unnecessary radiation exposure to testing personnel.

Alternate Testing: These valves will be simulated to actuate using existing station calibration procedures. The procedure utilizes movement of the valve's coil (up/down) and verifies position via an alarm in the Control Room. Calibration of these position indicators is governed by Plant Technical Specifications and is performed on a refueling basis.

3.6.1.1.2 Evaluation--IWV-3300 requires that valves with remote position indication be observed once every 2 years to verify that valve operation is accurately indicated. Valves 434 and 435 are the pressurizer safety relief valves which are mechanically actuated in response to pressurizer pressure. They are tested in accordance with IWV-3510 which requires setpoint testing at a frequency determined by Table IWV-3510-1, which is generally longer than once every 2 years. Actuating these valves

for position indication verification every 2 years would necessitate a retest of the valve's set relief pressure, which would be a hardship for the licensee due to the increased costs and radiation exposure to the test personnel.

The licensee proposed to verify valve remote position indication by moving the valve's coil and observing the appropriate response of the control room indication. This position indication calibration is per the plant Technical Specifications and is performed during each refueling outage. Although this procedure does not verify actual valve obturator position, it should give reasonable assurance that valve position is accurately indicated provided that the position indication is verified to accurately reflect obturator position during valve setpoint testing.

Based on the determination that compliance with the Code requirements would be a hardship to the licensee without a compensating increase in the level of quality and safety and considering the licensee's proposed testing, relief may be granted from the Section XI requirements provided that valve position indication is verified to accurately reflect obturator position during the valve setpoint testing.

3.7 Safety Injection System

3.7.1 Category A/C Valves

3.7.1.1 Relief Request. The licensee has requested relief from the exercising requirements of Section XI, Paragraph IWV-3520, for 842A and 842B, the accumulator discharge check valves, and proposed to part-stroke exercise these valves quarterly and to verify their full-stroke capability by disassembling and inspecting each valve once every ten year cycle.

3.7.1.1.1 Licensee's Basis for Requesting Relief--Full-stroke open and close exercising during normal power operation cannot be accomplished as system pressures required to perform the test are not enough to overcome RCS pressure. Full-stroke exercising during cold shutdown requires injection into the RCS which could result in low temperature overpressurization of the

RCS, nitrogen binding of the RHR pumps, or flooding/radiological contamination if the test is conducted with the reactor vessel head removed. Also, additional radiological exposure (3-5 person-rem) would result and the plant would have to be maintained in an unusual condition. Use of freeze-plugs or core off-loading (with consequential additional radiological exposure and increase in potential fuel handling incidents) would be required.

Partial-stroke exercising is performed quarterly using the SI test header. Maintenance history and valve disassembly and inspection have shown these valves to exhibit no evidence of excessive degradation.

Alternate Testing: Disassembly of both valves once every ten year cycle. Each valve shall be disassembled as determined by scheduling and plant conditions. If a valve fails, the remaining valve will be disassembled and inspected for operability at that same time.

3.7.1.1.2 Evaluation--IWV-3520 requires that check valves be exercised to their safety function position(s) quarterly or, if justified, during cold shutdowns. Valves 842A and 842B cannot be full-stroke exercised during power operations because the only full flow path through these valves is from the SI accumulators into the RCS and the accumulators cannot establish flow into the RCS when at normal operating pressures. It is impractical to full-stroke exercise these valves quarterly during power operations unless extensive system modifications, such as installing full flow test loops, are made to permit this testing. It would be burdensome to require the licensee to make such modifications because of the cost involved. Additionally, reduced system reliability could result from failures that could divert the injection flow away from the RCS.

These check valves cannot be full-stroke exercised by discharging the accumulators into the RCS during cold shutdowns because there is not an adequate expansion volume and injecting into the RCS could cause or contribute to a low-temperature overpressurization of the RCS. Because of this concern and administrative controls to prevent its occurrence, it is impractical to full-stroke exercise valves 842A and 842B during cold

shutdowns. Establishing the maximum required accident flow through these valves into the RCS during refueling outages when the vessel head is removed to provide an adequate expansion volume is not practical since this could cause hydraulic damage to the reactor and core components.

The licensee will part-stroke exercise these check valves using flow through the SI test header quarterly. This flow rate is less than the maximum required accident flow rate for these valves due to the small diameter piping in this flow path. The licensee has also proposed to disassemble, inspect, and manually exercise the valve disks once each ten year cycle.

Disassembly of each valve once each ten year cycle is a substantial extension of the disassembly frequency which may not be justified from the standpoint of valve reliability and plant safety. Generic Letter 89-04, Attachment 1, Position 2, states that extension of the valve disassembly/inspection interval should only be considered in cases of extreme hardship where the extension is supported by actual in-plant data from previous testing. This Generic Letter position also identifies information that licensees should develop to support extending disassembly/inspection intervals. It is not clear that RG&E has complied with this Generic Letter position, nor have they justified their proposed ten year interval. Therefore, relief should not be granted which extends the disassembly and inspection interval between examining each valve in this group to longer than once every 6 years as discussed in Generic Letter 89-04.

The Minutes of the Public Meeting on Generic Letter 89-04 state that partial-stroke exercise testing with flow is expected to be performed after valve disassembly and inspection is completed but before returning the valve to service. This post inspection testing provides a degree of confidence that the disassembled valve has been reassembled properly and that the disk moves freely.

The NRC staff considers valve disassembly and inspection to be a maintenance procedure that is not equivalent to exercising produced by fluid flow. This procedure has risks which make its routine use as a substitute

for testing inappropriate if some method of testing is possible. The licensee should actively pursue the use of non-intrusive diagnostic techniques, such as acoustics, ultrasonics, or magnetics, to demonstrate that these valves open sufficiently to pass maximum required accident condition flow during a partial flow test at a refueling outage frequency.

Based on the impracticality of full-stroke exercising these valves quarterly or during cold shutdowns, the burden on the licensee if the Code requirements were imposed, and considering the licensee's proposed alternative, relief may be granted from the Section XI requirements provided the licensee disassembles and inspects these valves at least once every 6 years in accordance with the guidelines of Generic Letter 89-04, Attachment 1, Position 2. Also, the licensee should part-stroke exercise the disassembled valve after valve disassembly and inspection is completed but before returning the valve to service. The licensee should actively pursue the use of non-intrusive diagnostic techniques to demonstrate that these valves open sufficiently during partial flow testing to permit meeting their safety function. If another method is developed to verify the full-stroke capability of these valves, this relief request should be revised or withdrawn.

3.7.1.2 Relief Request. The licensee has requested relief from the exercising requirements of Section XI, Paragraph IWV-3520, for 867A and 867B, the combined SI and accumulator discharge line to RCS cold leg check valves, and proposed to verify the full-stroke capability of these valves by performing a sample disassembly and inspection during refueling outages.

3.7.1.2.1 Licensee's Basis for Requesting Relief--Full-stroke or part-stroke exercising during normal power operation cannot be accomplished since system pressures required to perform the test are not enough to overcome RCS pressure. Full-stroke exercising during cold shutdown requires injection into the RCS, which could cause low temperature overpressurization of the RCS, nitrogen binding of the RHR pumps, or flooding/radiological contamination if the test is conducted with the reactor vessel head removed. Also, additional radiological exposure (3-5 person-rem) would result and the plant would have to be maintained in an unusual condition. Use of

freeze-plugs or core off-loading (with consequential additional radiological exposure and increase in potential fuel handling incidents) would be required.

Partial-flow exercising is accomplished each refueling by actual safety injection flow into the RCS. Maintenance history and valve disassembly and inspection have shown these valves to exhibit no evidence of excessive degradation.

Alternate Testing: Disassembly of both valves once every ten year cycle. Each valve shall be disassembled as determined by scheduling and plant conditions. If a valve fails, the remaining valve will be disassembled and inspected for operability at that same time.

3.7.1.2.2 Evaluation--IWV-3520 requires that check valves be exercised to their safety function position(s) quarterly or, if justified, during cold shutdowns. Valves 867A and 867B cannot be full or part-stroke exercised during power operations because the only flow path through these valves is from the SI pumps and accumulators into the RCS and neither of these sources is capable of establishing flow into the RCS when at normal operating pressures. It is impractical to full-stroke exercise these valves quarterly during power operations unless extensive system modifications, such as installing full flow test loops, are made to permit this testing. It would be burdensome for the licensee to make such modifications because of the cost involved. Additionally, reduced system reliability could result from failures that could divert the injection flow away from the RCS.

These check valves cannot be full-stroke exercised by establishing SI pump flow and discharging the accumulators into the RCS during cold shutdowns because there is not an adequate expansion volume and injecting into the RCS could cause or contribute to a low-temperature overpressurization of the RCS. Because of this concern and administrative controls to prevent its occurrence, it is impractical to full or part-stroke exercise valves 867A and 867B during cold shutdowns. Establishing the maximum required accident flow through these valves into the RCS during refueling outages when the vessel head is removed to provide an adequate expansion volume is not

practical since this could cause hydraulic damage to the reactor and core components.

The licensee will part-stroke exercise these check valves using SI pump flow during refueling outages. This flow rate is less than the maximum required accident flow rate for these valves because only one of the two flow sources is utilized. The licensee has also proposed to disassemble, inspect, and manually exercise the valve disks once each ten year cycle.

Disassembly of each valve once every ten year cycle is a substantial extension of the disassembly frequency which may not be justified from the standpoint of valve reliability and plant safety. Generic Letter 89-04, Attachment 1, Position 2, states that extension of the valve disassembly/inspection interval should only be considered in cases of extreme hardship where the extension is supported by actual in-plant data from previous testing. This Generic Letter position also identifies information that licensee's should develop to support extending disassembly/inspection intervals. It is not clear that RG&E has complied with this Generic Letter position, nor have they justified their proposed ten year interval. Therefore, relief should not be granted which extends the disassembly and inspection interval between examining each valve in this group to longer than once every 6 years as discussed in Generic Letter 89-04.

The Minutes of the Public Meeting on Generic Letter 89-04 state that partial-stroke exercise testing with flow is expected to be performed after valve disassembly and inspection is completed but before returning the valve to service. This post inspection testing provides a degree of confidence that the disassembled valve has been reassembled properly and that the disk moves freely.

The NRC staff considers valve disassembly and inspection to be a maintenance procedure that is not equivalent to exercising produced by fluid flow. This procedure has risks which make its routine use as a substitute for testing inappropriate if some method of testing is possible. The licensee should actively pursue the use of non-intrusive diagnostic techniques, such as acoustics, ultrasonics, or magnetics, to demonstrate that

these valves open sufficiently to pass maximum required accident condition flow during a partial flow test at a refueling outage frequency.

Based on the impracticality of full-stroke exercising these valves quarterly or during cold shutdowns, the burden on the licensee if the Code requirements are imposed, and considering the licensee's proposed alternative, relief may be granted from the Section XI requirements provided the licensee disassembles and inspects these valves at least once every 6 years in accordance with the guidelines of Generic Letter 89-04, Attachment 1, Position 2. Also, the licensee should part-stroke exercise the disassembled valve after valve disassembly and inspection is completed but before returning the valve to service. The licensee should actively pursue the use of non-intrusive diagnostic techniques to demonstrate that these valves open sufficiently during partial flow testing to permit meeting their safety function. If another method is developed to verify the full-stroke capability of these valves, this relief request should be revised or withdrawn.

3.7.1.3 Relief Request. The licensee has requested relief from the exercising frequency requirements of Section XI, Paragraph IWV-3520, for 878G and 878J, the check valves in the SI headers to the RCS cold legs, and proposed to full-stroke exercise these valves during refueling outages.

3.7.1.3.1 Licensee's Basis for Requesting Relief--Full or partial stroking during power operation is not possible because safety injection pump discharge pressure is insufficient to overcome reactor coolant system pressure. Exercising during cold shutdowns could cause low temperature overpressurization of the reactor coolant system.

Alternate Testing: These valves will be full-stroke exercised during refueling outages.

3.7.1.3.2 Evaluation--IWV-3520 requires that check valves be exercised to their safety function position(s) quarterly if practical or during cold shutdowns. Valves 878G and 878J cannot be full or part-stroke exercised with flow during power operations because the only flow path

through these valves is into the RCS and the SI pumps do not produce sufficient head to overcome normal operating RCS pressure. These valves cannot be full-stroke exercised quarterly during power operations unless extensive system modifications, such as installing full flow test loops, are made which permit this testing. It would be burdensome for the licensee to make such modifications because of the cost involved. Additionally, reduced system reliability could result from failures that could divert injection flow away from the RCS.

Valves 878G and 878J cannot be exercised by pumping into the RCS with the SI pumps during cold shutdowns because the pump shutoff head exceeds the allowable RCS pressure limits for low temperatures and there is not an adequate expansion volume to accommodate the necessary flow. Thus pumping into the RCS with the SI pumps to full-stroke exercise these valves could cause or contribute to a low-temperature overpressurization of the RCS. Because of this concern and administrative controls to prevent its occurrence, it is impractical to full-stroke exercise valves 878G and 878J during cold shutdowns.

The licensee proposed to full-stroke exercise these check valves during refueling outages when an adequate expansion volume exists to accommodate the flow required to exercise them. This testing should give reasonable assurance of the operational readiness of these valves and provide an acceptable level of quality and safety.

Based on the impracticality of exercising valves 878G and 878J quarterly or during cold shutdowns, the burden on the licensee if these Code requirements were imposed, and considering the licensee's proposed alternate testing, relief may be granted from the Section XI requirements as requested.

3.7.2 Category C Valves

3.7.2.1 Relief Request. The licensee has requested relief from the exercising frequency requirements of Section XI, Paragraph IWV-3520, for 870A, 870B, 889A, and 889B, the SI pump discharge check valves, and proposed

to part-stroke exercise these valves quarterly and to full-stroke exercise them during refueling outages.

3.7.2.1.1 Licensee's Basis for Requesting Relief--During operation, the safety injection pump discharge pressure is insufficient to overcome RCS pressure. SI pump recirculation test line size is insufficient to allow full-stroke exercising during operation. Exercising during cold shutdowns could cause low temperature overpressurization of the Reactor Coolant System.

Alternate Testing: These valves will be part-stroke exercised every three months during operation and full-stroke exercised during refueling outages.

3.7.2.1.2 Evaluation--IWV-3520 requires that check valves be exercised to their safety function position(s) quarterly if practical, or during cold shutdowns. Valves 870A, 870B, 889A, and 889B cannot be full-stroke exercised with flow during power operations because the only full flow path through them is into the RCS and the SI pumps do not produce sufficient head to overcome normal operating RCS pressure. There is a flow path to establish flow through these valves quarterly during power operations, however, that flow path incorporates small diameter piping that will not permit the passage of sufficient flow to full-stroke exercise the valves. Valves 870A, 870B, 889A, and 889B cannot be full-stroke exercised quarterly during power operations unless extensive system modifications, such as installing full flow test loops, are made to permit this testing. It would be burdensome for the licensee to make such modifications because of the cost involved. Additionally, reduced system reliability could result from failures that could divert injection flow away from the RCS.

Valves 870A, 870B, 889A, and 889B cannot be exercised by pumping into the RCS with the SI pumps during cold shutdowns because the pump shutoff head exceeds the allowable RCS pressure limits for low temperatures and there is not an adequate expansion volume to accommodate the required flow. Thus pumping into the RCS with the SI pumps to full-stroke exercise these valves could cause or contribute to a low-temperature overpressurization of the RCS. Because of this concern and administrative controls to prevent its

occurrence, it is impractical to full-stroke exercise valves 870A, 870B, 889A, and 889B during cold shutdowns.

The licensee will part-stroke exercise these check valves quarterly and full-stroke exercise them during refueling outages when an adequate expansion volume exists to accommodate the flow required to exercise them. This testing should provide a reasonable assurance of the operational readiness of these valves.

Based on the impracticality of full-stroke exercising valves 870A, 870B, 889A, and 889B quarterly or during cold shutdowns, the burden on the licensee if these Code requirements were imposed, and considering the licensee's proposed alternate testing, relief may be granted from the Section XI requirements as requested.

3.8 Containment Spray System

3.8.1 Category A/C Valves

3.8.1.1 Relief Request. The licensee has requested relief from the exercising requirements of Section XI, Paragraph IWV-3520, for 862A and 862B, the check valves in the containment spray headers, and proposed to exercise these valves quarterly using a mechanical exerciser and measuring the breakaway force and comparing this force to a reference value established when the valve was known to be in good condition.

3.8.1.1.1 Licensee's Basis for Requesting Relief--The existing system configuration does not allow for measurement of pressure differential acting on the disk.

Alternate Testing: Verification of valve movement will be conducted quarterly by measuring and recording the breakaway force of the valve and comparing it to a reference value established when the valve was known to be in good condition. This method is consistent with guidelines in paragraph 4.3.2.4(b) of ASME/ANSI OMa-1988, Part 10.

3.8.1.1.2 Evaluation--It is impractical to full-stroke exercise valves 862A and 862B with flow during power operations or any plant operating mode because the only full flow path through these valves is into the containment spray rings. Establishing flow through these valves for testing would spray water inside containment which would wet down equipment and structures inside containment and cause damage necessitating extensive repairs and cleanup. The licensee has proposed to verify the full-stroke capability of these valves by exercising them with a mechanical operator. The Code allows this test method if the force or torque delivered to the disk is measured and compared to the specified acceptance criteria.

The licensee proposed to record the breakaway torque when exercising these valves and compare the measurement to a reference value established when the valve was known to be in good condition. Section XI, Paragraph IWV-3522(b), states that the measured force or torque must be limited to 10% of the equivalent force or torque represented by the minimum emergency condition pressure differential acting on the disk, or to 200% of the actual observed force or torque required to perform the exercise on the valve when the valve is new and in good operating condition, whichever is less. The licensee stated that they cannot measure the pressure differential acting on the valve disk, therefore, it is not practicable to determine the proper acceptance criteria and comply with the Code requirements. To meet the Code requirements would necessitate making system modifications such as installing test taps and instrumentation. It would be burdensome to require the licensee to make these modifications.

The licensee's proposal to measure breakaway torque for these valves provides some information about valve condition, but it does not provide assurance that the valves stroke freely through their full travel. The licensee indicated that they measure the force required to exercise these valves to the fully open position by using a calibrated spring gauge attached to the valve position pointer during valve testing. The licensee has not established acceptance criteria for the spring gauge measurement, however, when combined with the breakaway torque measurement with its associated acceptance criteria, this testing should provide reasonable assurance of valve operational readiness and a method of detecting degradation.

Based on the determination that it is impractical for the licensee to comply with the Section XI requirements, the burden on the licensee if these requirements were imposed, and considering the adequacy of the proposed alternate testing when complemented by the spring gauge force measurements, relief may be granted provided the licensee continues to measure the running force required to exercise these valves to their fully open position.

3.9 Chemical and Volume Control System

3.9.1 Category B/C Valves

3.9.1.1 Relief Request. The licensee has requested relief from the set pressure and seat tightness testing requirements of Section XI, Paragraph IWV-3510, for 392A, an air operated relief valve in the line from the charging pump discharge to RCS loop B hot leg, and proposed to verify that this valve will open at the required differential pressure across the disk and full-stroke open during reactor refueling outages.

3.9.1.1.1 Licensee's Basis for Requesting Relief--Valve 392A is a welded, in line valve and will open with a 250 pound differential pressure across the disc. Due to its design, set pressure and seat tightness testing is not appropriate.

Alternate Testing: Valve 392A will be tested in place each refueling outage by verifying that it will open and pass the required flow at design differential pressures.

3.9.1.1.2 Evaluation--Valve 392A functions as a pressure relief valve to protect the charging header from overpressure. It opens at a set differential pressure across the valve to provide a flow path from the charging system into the RCS loop B hot leg. The valve will reclose after the differential pressure has decreased below the setpoint. Although this valve functions as a relief valve, it is welded into the system piping and cannot be removed from the system to be bench tested as a relief valve in accordance with ANSI/ASME OM-1-1981.

The licensee's proposal to verify that this valve strokes open at the proper differential pressure and that it passes the required flow rate during each refueling outage should provide reasonable assurance of valve operational readiness. It would be burdensome to require the licensee to replace this valve or make system modifications that permit valve removal for bench testing to comply with the Code requirements. These modifications would be costly and would not result in a compensating increase in the level of quality and safety.

Based on the impracticality of testing this valve as specified by ANSI/ASME OM-1-1981, the burden on the licensee if these Code requirements were imposed, and considering the licensee's proposed alternate testing, relief may be granted from the Section XI requirements as requested.

3.10 Instrument Air System

3.10.1 Category A Valves

3.10.1.1 Relief Request. The licensee has requested relief from the exercising frequency requirements of Section XI, Paragraph IWV-3410, for the instrument air line containment isolation valve, 5392, and proposed to full-stroke exercise this valve during reactor refueling outages.

3.10.1.1.1 Licensee's Basis for Requesting Relief--Stroking valve 5392 during operation and cold shutdown is impractical because it would interrupt instrument air to containment and be disruptive to air-operated valves inside containment.

Loss of instrument air would cause all air-operated valves to be actuated to their fail-safe position. During power operation, this would lead to a reactor trip and during cold shutdowns, this would compromise plant operation due to the loss of various components used in maintaining the reactor in a cold shutdown condition.

Alternate Testing: This valve will be full-stroke exercised during refueling outages.

3.10.1.1.2 Evaluation--This is an air operated valve in the instrument air header that performs a containment isolation function. It would be necessary to isolate the instrument air supply to all equipment inside containment to exercise this valve closed. It is impractical to exercise valve 5392 during power operation because isolating instrument air would result in supplied air operated valves going to their fail-safe positions which could lead to a plant trip. It is impractical to perform this testing during cold shutdowns because many components that must function to maintain the reactor in the cold shutdown condition would loose instrument air supply. Further, this testing could result in a delay in returning the plant to power which would be burdensome to the licensee.

The licensee proposed to full-stroke exercise this valve during refueling outages. This testing should give reasonable assurance of valve operational readiness and provide a reasonable alternative to the Code requirements.

Based on the impracticality of complying with the Code requirements, the burden on the licensee if the Code requirements were imposed, and considering the licensee's proposed alternate testing, relief may be granted from the exercising interval requirements of Section XI as requested.

3.11 Overpressure Protection Nitrogen Supply System

3.11.1 Category A/C Valves

3.11.1.1 Relief Request. The licensee has requested relief from the exercising frequency requirements of Section XI, Paragraph IWV-3520, for 8606A and 8606B, the supply check valves for the overpressure protection system nitrogen accumulators, and proposed to verify their reverse flow closure in conjunction with the ASME Section XI leak rate testing during refueling outages.

3.11.1.1.1 Licensee's Basis for Requesting Relief--When these valves are in operation, there is no practical means to test valve closure. Valve closure cannot be verified due to system design. To perform a closure

verification constitutes a leak test which presents a significant hardship during cold shutdown. Leak testing requires an extended period of time where the overpressure protection system would be out of service.

Alternate Testing: Valve closure verification will be performed in conjunction with ASME XI leak tests conducted during refueling outages.

3.11.1.1.2 Evaluation--8606A and 8606B are simple check valves which are not equipped with position indication. The only practical method available to verify closure of these valves is to perform a leak test. Leak testing would require isolation of the nitrogen supply to the RCS overpressure protection system accumulators. This system is only in service during cold shutdowns to prevent exceeding the RCS pressure limits for low-temperature operation so the reactor vessel and other system components do not suffer brittle fracture. Isolating the nitrogen supply to test these valves during cold shutdowns could result in the pressurizer power operated relief valves (PORVs) being unable to perform their safety-related function. These valves are located inside containment and leak testing them requires access to the containment and could result in high radiation exposures and other safety hazards to test personnel. It would be burdensome to require the licensee to comply with the Code requirements due to the high costs involved and the potential safety hazards to test personnel.

The licensee proposed to verify closure of these valves during performance of leak rate testing at reactor refueling outages. This testing should provide reasonable assurance of the ability of these valves to perform their safety function in the closed position.

Based on the determination that compliance would result in hardship to the licensee without a compensating increase in the level of quality and safety and considering the licensee's proposed alternate testing, relief may be granted from the exercising interval requirements of Section XI as requested.

3.11.2 Category B Valves

3.11.2.1 Relief Request. The licensee has requested relief from the stroke time measurement requirements of Section XI, Paragraphs IWV-3413 and -3417, for 8616A, 8616B, 8619A, and 8619B, the solenoid control valves that provide nitrogen to cycle the PORVs, and proposed to verify valve operational readiness by observing proper operation of the PORVs when they are tested during plant shutdown.

3.11.2.1.1 Licensee's Basis for Requesting Relief--These are rapid-acting valves whose design prohibits visual observance of stroking. These valves do not have remote position indicators. PORV stroke times are affected by stroke times of 8616A, 8616B, 8619A and 8619B.

Alternate Testing: Valve stroke testing is performed during plant shutdown in conjunction with PORV overpressure protection testing. Valve stroking parameters will be considered acceptable if the associated PORV cycling is acceptable. If the PORV failed to operate, due to other identified malfunctions, nitrogen valve stroking parameters will be considered acceptable and reverified during a retest following PORV corrective action.

3.11.2.1.2 Evaluation--These valves are totally enclosed solenoid operated valves which have no externally visible indication of valve position. It is impractical to measure the stroke times of these valves because there is no way to determine when a valve receives an actuation signal or when it completes its travel. These valves are rapid-acting valves which normally stroke almost instantly and when they do not operate promptly, they most commonly fail to operate at all.

These valves function to admit nitrogen to the pressurizer PORVs to open them, therefore, it can be indirectly verified that each valve has actuated by monitoring the operation of the pressurizer PORVs. Measuring the stroke times of a PORV provides indication of solenoid operated valve degradation since any significant increase in solenoid valve stroke time would result in longer PORV stroke times and may result in the PORV exceeding its stroke time limit.

The full-stroke times of these solenoid valve cannot be measured unless significant system modifications, such as replacing the valves with ones having disk position indication, are made to permit this testing. Replacing these valves to permit stroke time measurements would provide little additional information above that generated by the proposed alternate testing. It would be burdensome for the licensee to make such modifications due to the high costs involved and the minimal amount of additional information that would be obtained.

Based on the determination that it is impractical to measure the stroke times of these rapid-acting solenoid valves, that compliance with the Code requirements would be burdensome to the licensee, and considering the licensee's proposed alternate testing of measuring the PORV stroke times, relief may be granted from the Code requirements as requested.

3.12 Emergency Diesel Generator Fuel Oil Transfer System

3.12.1 Category B Valves

3.12.1.1 Relief Request. The licensee has requested relief from the stroke time measurement requirements of Section XI, Paragraphs IWV-3413 and -3417, for 5907, 5907A, 5908, and 5908A, the solenoid control valves that direct diesel fuel oil flow either to the day tanks or back to the diesel oil storage tanks, and proposed to verify proper valve operability by observing their operation during quarterly diesel testing, but stroke times will not be measured for these valves.

3.12.1.1.1 Licensee's Basis for Requesting Relief--These are rapid-acting solenoid valves whose design prohibits visual observation of stroking as there are no external indicators on these valves. These valves are automatically actuated as necessary based upon diesel oil day tank levels. These valves do not have control switches. Diesel generators are tested monthly (per Tech. Specs.), during which these valves actuate for filling the day tanks and for diesel oil recirculation. No history of diesel generator testing failure has been attributed to performance of these valves.

Alternate Testing: Measurement and evaluation of stroke time shall not be performed. These valves shall be exercised and fail-safe tested at least quarterly during diesel generator testing. Valve stroking parameters will be considered acceptable based upon satisfactory actuation as demonstrated by adequate fuel flow during the D/G tests.

3.12.1.1.2 Evaluation--These valves are totally enclosed solenoid operated valves which have no externally visible indication of valve position. It is impractical to measure the stroke times of these valves because there is no way to determine when a valve receives an actuation signal or when it completes its travel. These are rapid-acting valves which normally stroke almost instantly and when they do not operate promptly, they most commonly fail to operate at all.

In order to obtain meaningful stroke times for these valves it would be necessary to replace them with valves having position indication or to develop some other means of determining valve position. It would be burdensome to require the licensee to replace these valves since it would be costly. However, the licensee's proposal provides no means of detecting valve degradation. Some means should be developed to measure the full-stroke time of these valves to monitor valve condition and detect degradation. Even if these valves are not replaced with ones having position indication, it may be possible for the licensee to develop a method of measuring stroke times, such as using non-intrusive diagnostic techniques. If stroke times determined by such an alternate method are not sufficiently repeatable to permit trending, the licensee could classify these valves as rapid-acting valves or, if that isn't practical, establish an appropriate maximum stroke time limit using the guidelines of Generic Letter 89-04, Attachment 1, Position 5, and verify that stroke times remain under this limit. It would be burdensome to require the licensee to immediately develop a means of monitoring for valve degradation, therefore, an interim period should be provided for the licensee to develop a method of performing this testing. The licensee's proposal of verifying valve operational readiness by quarterly exercising and fail-safe testing should provide an acceptable level of quality and safety during the interim period.

Based on the impracticality of measuring valve full-stroke times, the burden on the licensee if the Code requirements are imposed, and considering the licensee's proposed alternate testing, interim relief may be granted for 12 months. During this interim period the licensee should develop a method of adequately monitoring for degradation of these valves.

3.12.2 Category C Valves

3.12.2.1 Relief Request. The licensee has requested relief from the exercising requirements of Section XI, Paragraph IWV-3520, for 5960A and 5960B, the check valves in the diesel day tank overflow lines back to the diesel oil storage tanks, and proposed to verify valve operational readiness by performing a sample disassembly and inspection during refueling outages.

3.12.2.1.1 Licensee's Basis for Requesting Relief--During operation there is no practical means to exercise these valves. Valve closure cannot be verified due to system design. To perform a closure verification would require disassembly of mechanical joints in the piping, which would place the diesel in an inoperable condition.

NOTE: In their letter dated March 14, 1990, the licensee stated that the safety function performed by valves 5960A and 5960B is to provide overpressure protection for the fuel oil day tank and that disassembly will be performed to verify forward flow.

Alternate Testing: One valve will be disassembled, full-stroke exercised and inspected each refueling outage on a rotating basis. If that valve fails, the remaining valve will be disassembled, full-stroke exercised and inspected for operability during that same outage. (re, Generic Letter 89-04, Attachment 1 - Position 2)

3.12.2.1.2 Evaluation--These are 1 1/2 inch swing check valves located in the overflow lines for the diesel generator fuel oil day tanks. Exercising these valves open with flow requires overfilling the day tank to establish flow through the overflow line. To overfill the day tank, it would be necessary to install jumpers or otherwise defeat the day tank level controller. It may not be prudent to override plant control functions and

challenge the operation of safety equipment in order to perform this testing. Failure of one of these check valves to open during this postulated test could result in rupture of the day tank which could render the diesel generator inoperable. Therefore, it is impractical to exercise these valves open with flow at any frequency. In order to test these valves to the Code requirements the licensee would have to make system modifications such as installing test operators on these valves or replacing them with testable valves. It would be burdensome to require the licensee to make these modifications due to the high costs involved.

Generic Letter 89-04, Attachment 1, Position 2, states that valve disassembly and inspection can be used as a means of determining that a valve will full-stroke exercise open. The Minutes of the Public Meeting on Generic Letter 89-04 further state that part-stroke exercise testing with flow is expected to be performed after the disassembly and inspection is completed but before returning the disassembled valve to service. The part-stroke exercise is important after disassembly to provide an indication that the valve has been reassembled correctly and that the valve is operable. In this situation, it is impractical to establish flow through these valves or to leak test them, therefore, there is no practicable method to obtain an indication that the valves have been reassembled properly. For this reason, the licensee should not continue disassembly and inspection of these valves as a long-term alternative to the requirements of Section XI unless they can determine a practical method of exercising these valves after they have been reassembled.

Based on the determination that it is impractical to full-stroke exercise these valves with flow at any frequency and considering that the licensee proposed to disassemble and inspect them in accordance with Generic Letter 89-04, Attachment 1, Position 2, interim relief may be granted for one year or until the next refueling outage, whichever is longer. This relief is acceptable on an interim basis since the disassembly and inspection does provide a form of valve exercising and the likelihood of improper reassembly in the interim is low. During this interim period, the licensee should take actions to allow Code testing or at least part-stroke exercising of these valves after reassembly, or the licensee should take other actions to remedy this situation.

3.13 Main Feedwater System

3.13.1 Category C Valves

3.13.1.1 Relief Request. The licensee has requested relief from the exercising frequency requirements of Section XI, Paragraph IWV-3520, for 3992 and 3993, the main feedwater header check valves, and proposed to verify the reverse flow closure of these valves during the shutdown process for those cold shutdowns that are not initiated by a plant trip and during refueling outages.

3.13.1.1.1 Licensee's Basis for Requesting Relief--During operation there is no practical means to exercise these valves. During normal plant shutdown to cold shutdown, these valves are tested when feedwater flow is transferred to the auxiliary feedwater system. During cold shutdowns resulting from a plant trip, valves 3992 and 3993 cannot be exercised due to system operating conditions.

Alternate Testing: If the valves cannot be testing during normal cold shutdown they will be tested for closure during refueling outages.

3.13.1.1.2 Evaluation--IWV-3520 requires that check valves be exercised to their safety function position(s) quarterly, if practical, or during cold shutdowns. It would be necessary to isolate feedwater to a steam generator in order to exercise one of these valves closed, and isolating feedwater flow during power operations would result in loss of steam generator level control which could cause a plant trip. Since this testing would cause a plant transient which could lead to a plant trip, it is not considered to be practical during power operations.

These valves do not have position indication or a means to force the obturator to the closed position. Therefore, the only practical non-intrusive methods available to verify valve closure during cold shutdowns and refueling outages are leak testing and observing a differential pressure across the valves. A system modification such as replacing these valves with ones that have position indication would be necessary to comply with the Code

requirements. It would be burdensome to require the licensee to make the necessary modifications due to the high costs involved.

The licensee has proposed to verify valve closure during normal cold shutdowns and during refueling outages. Due to the time required to get personnel in place and set up special test equipment, it is not practical to perform this testing during those cold shutdowns initiated by a plant trip. The licensee's proposed testing should give reasonable assurance of the ability of these valves to perform their safety function and provide an acceptable alternative to the Code required testing.

Based on the impracticality of exercising valves 3992 and 3993 quarterly or during those cold shutdowns that are initiated by a plant trip, the burden on the licensee if these Code requirements were imposed, and the licensee's proposed alternate testing, relief may be granted from the Section XI requirements as requested.

APPENDIX A

IST PROGRAM ANOMALIES IDENTIFIED DURING THE REVIEW

APPENDIX A

IST PROGRAM ANOMALIES IDENTIFIED DURING THE REVIEW

Inconsistencies and omissions in the licensee's program noted during the course of this review are summarized below. The licensee should resolve these items in accordance with the evaluations, conclusions, and guidelines presented in this report.

1. The licensee has requested relief from the instrument full-scale range requirements of Section XI for the vibration instruments used for IST of safety-related pumps and proposed to use vibration detectors with multiple overlapping scales. Relief may be granted provided that the accuracy of the vibration instruments, on the scales used for vibration measurements, is equivalent to that provided by a single scale instrument that complies with the requirements of IWP-4110 and -4120. (Refer to TER Section 2.1.2)

2. The licensee has requested relief from the flow rate measurement requirements of Section XI for the diesel generator fuel oil transfer pumps (PDG02A and B) and proposed to determine pump flow rate by measuring the change in day tank level versus time. Relief may be granted from the Code requirement as requested provided that the licensee complies with the Allowable Ranges and Corrective Action requirements specified in IWP-3200. (Refer to TER Section 2.2.1)

3. The licensee has requested relief from the flow rate measurement requirements of Section XI for the service water pumps (PSWO 1A, 1B, 1C, and 1D) and proposed to measure the flow rate in the containment fan cooler outlet lines. Relief may be granted from the Section XI requirements provided the licensee establishes repeatable test conditions which permit obtaining data that is meaningful for detecting pump degradation. (Refer to TER Section 2.4.3)

4. The licensee has requested relief from the stroke time measurement requirements of Section XI for hand control valves which operate using a

variable set air signal and proposed to verify valve operability during quarterly exercising, but the licensee has proposed to not measure the stroke times for these valves. The licensee's proposal provides no means of detecting valve degradation. Interim relief may be granted for 12 months, during which the licensee should develop an adequate means to monitor for degradation of these valves. (Refer to TER Section 3.1.6.1)

5. The licensee has requested relief from the stroke time evaluation and corrective action requirements of Section XI and proposed to follow a plan based on deviation from a reference stroke time instead of the previous test stroke time. Generic Letter 89-04, Attachment 1, Position 6, states the NRC staff position on basing stroke time corrective actions on deviations from reference values. The licensee's proposed testing appears to be in compliance with this position, therefore, relief may be granted provided the licensee follows all of the criteria of the Generic Letter position. (Refer to TER Section 3.1.7.1)

6. The licensee has requested relief from the exercising frequency and test method requirements of Section XI for the emergency diesel generator air start accumulator check valves, 5941A and 5942A, and proposed to verify the reverse flow closure capability of these valves by disassembly and inspection on a sampling basis during refueling outages. The licensee has not shown the impracticality of verifying the reverse flow closure of these valves by leak testing during refueling outages, therefore, disassembly and inspection should not be employed on a long-term basis in this situation. Interim relief may be granted for one year or until the end of the next refueling outage, whichever is longer. During this interim period, the licensee should develop a method to verify the reverse flow closure capability of these valves other than disassembly. (Refer to TER Section 3.2.2.1)

7. The licensee has requested relief from the stroke time measurement requirements of Section XI for the isolation valves in the auxiliary feedwater and standby auxiliary feedwater pump recirculation lines, 4291, 4304, 4310, 9710A, and 9710B, and proposed to exercise these

valves to verify their operability, however, valve stroke times will not be measured. The licensee's proposal provides no means of detecting valve degradation. Interim relief may be granted for 12 months, during which the licensee should develop an adequate means of monitoring for degradation of these valves. (Refer to TER Section 3.4.1.1)

8. The licensee requested relief from the exercising requirements of Section XI for 9627A and 9627B, the check valves in the service water line to the standby auxiliary feedwater pump suctions, and for 4601, 4602, 4603 and 4604, the service water pump discharge check valves, and proposed to part-stroke exercise these valves quarterly and to partially disassemble, inspect, and manually full-stroke exercise them on a sampling basis during refueling outages. Relief may be granted from the Section XI requirements provided the licensee performs a partial flow test of the affected valve after valve disassembly and inspection is completed but before returning the valve to service. The licensee should actively pursue the use of non-intrusive diagnostic techniques to demonstrate that these valves open sufficiently during partial flow testing to permit meeting their safety function. If another method is developed to verify the full-stroke capability of these valves, this relief request should be revised or withdrawn. (Refer to TER Sections 3.4.2.1 and 3.5.2.1)

9. The licensee has requested relief from the exercising requirements of Section XI for 4023, the check valve in the recirculation flow path of the turbine driven auxiliary feedwater pump, and proposed to verify the full-stroke capability of this valve by disassembly and inspection during each refueling outage. The licensee committed to installing flow rate instrumentation in the turbine driven auxiliary feedwater pump recirculation flow path during the 1990 refueling outage which will permit verifying a full-stroke exercise of valve 4023 quarterly. Interim relief may be granted from the Section XI requirements until the system modification to install flow rate instrumentation has been completed. (Refer to TER Section 3.4.2.2)

10. The licensee requested relief from the stroke time measurement requirements of Section XI for 4324, 4325, and 4326, the solenoid operated valves in the service water lines to the auxiliary feedwater pump bearings, and proposed to exercise these valves quarterly to verify their operational readiness, but the stroke times will not be measured for these valves. The licensee's proposal provides no means of detecting valve degradation. Interim relief may be granted for 12 months, during this period the licensee should develop an adequate means to monitor for degradation of these valves. (Refer to TER Section 3.5.1.1)

11. The licensee requested relief from the remote position indication verification requirements of Section XI for 434 and 435, the pressurizer safety relief valves, and proposed to verify valve remote position indication during reactor refueling outages by simulating valve actuation by moving the valve's coil. This position indication calibration is per the plant Technical Specifications. Although this procedure does not verify actual valve obturator position, it should give reasonable assurance that valve position is accurately indicated provided that the position indication is verified to accurately reflect obturator position during valve setpoint testing. Therefore, relief may be granted from the Section XI requirements provided that valve position indication is verified to accurately reflect obturator position during the valve setpoint testing. (Refer to TER Section 3.6.1.1)

12. The licensee requested relief from the exercising requirements of Section XI for 842A, 842B, 867A, and 867B, the accumulator discharge check valves and combined accumulator/safety injection pump check valves, and proposed to part-stroke exercise these valves quarterly and to verify their full-stroke capability by disassembling and inspecting each valve once every ten year cycle. Generic Letter 89-04, Attachment 1, Position 2, states that extension of the valve disassembly/inspection interval should only be considered in cases of extreme hardship where the extension is supported by actual in-plant data from previous testing. This Generic Letter position identifies information that licensee's should develop to support extending

disassembly/inspection intervals. It is not clear that RG&E has complied with this Generic Letter position, nor have they justified their proposed ten year interval. Therefore, these valves should be disassembled and inspected so that the interval between examining each valve is not longer than once every 6 years as specified in Generic Letter 89-04, or the licensee should verify that these valves move to their fully open position by use of non-intrusive diagnostic techniques while performing a reduced flow test at least once every refueling outage. (Refer to TER Sections 3.7.1.1 and 3.7.1.2)

13. The licensee has requested relief from the exercising requirements of Section XI for 862A and 862B, and proposed to exercise these valves quarterly using a mechanical exerciser and measuring the breakaway force and comparing this force to a reference value established when the valves were known to be in good condition. The licensee's proposal does not provide assurance that these valves stroke freely through their full travel. The licensee indicated that they measure the force required to exercise these valves to the fully open position by using a calibrated spring gauge attached to the valve position pointer during valve testing. Relief may be granted as requested provided the licensee continues to measure the running force required to exercise these valves to their fully open position. (Refer to TER Section 3.8.1.1)

14. The licensee requested relief from the stroke time measurement requirements of Section XI for 5907, 5907A, 5908, and 5908A, and proposed to verify proper valve operability by observing their operation during quarterly diesel testing, but stroke times will not be measured for these valves. The licensee's proposal provides no means of detecting valve degradation. Interim relief may be granted for 12 months, during this period the licensee should develop a method to monitor for valve degradation. (Refer to TER Section 3.12.1.1)

15. The licensee requested relief from the exercising requirements of Section XI for 5960A and 5960B, the check valves in the diesel day tank overflow lines back to the diesel oil storage tanks, and proposed to verify valve operational readiness by performing a sample disassembly

and inspection during refueling outages. The Minutes of the Public Meeting on Generic Letter 89-04 state that partial stroke exercise testing with flow is expected to be performed after disassembly and inspection is completed. In this situation, it is impractical to establish flow through these valves or to leak test them, therefore, there is no practicable method to obtain an indication that the valves have been reassembled properly. For this reason, the licensee should not disassemble and inspect these valves to meet the requirements of Section XI unless they can determine a practical method of exercising these valves after they have been reassembled. Interim relief may be granted until the next refueling outage. After this interim period, the licensee should either be able to adequately test these valves or take other actions to remedy this situation. (Refer to TER Section 3.12.2.1)

16. Cold shutdown justifications CS-5, CS-16, and CS-30 identify test frequencies other than during cold shutdowns which makes the cold shutdown justifications inappropriate for the affected valves. The valves addressed in these justifications are all included in relief requests (VR-21, VR-3, VR-14, and VR-20) which are evaluated in the body of this TER. Since the affected valves are all covered by relief requests, it is not necessary nor appropriate to include them in these cold shutdown justifications.

17. The licensee has not provided an adequate technical basis in cold shutdown justification CS-12 to demonstrate the impracticality of quarterly exercising valves 813 and 814, the component cooling water supply and return valves to the reactor support coolers. The licensee stated that exercising these valves would isolate cooling flow which could result in thermal stress to the reactor vessel supports. It is not clear that the time required to exercise these 6 inch motor operated valves would be sufficient to cause thermal stress in the supports. The licensee should exercise these valves quarterly or revise this cold shutdown justification to demonstrate that valve stroking is indeed impractical.

18. In cold shutdown justification CS-20 the licensee stated that valve 8419 is normally closed during power operation and is not required to change position to perform its safety function. The licensee listed 8419 as an "Active" Category A/C valve in their IST program. If this valve is ever open during power operations, it would have to change position to perform its containment isolation safety function in the closed position and would be correctly classified as "Active." In this case valve 8419 should be exercised quarterly to demonstrate its operational readiness.

19. In cold shutdown justification CS-29 the licensee stated that valves 9227 and 9229 are normally closed during power operation and are not required to change position to perform their safety function. The licensee listed 9227 as an "Active" Category A valve and 9229 as an "Active" Category A/C valve in their IST program. If these valves are ever open during power operations, they would have to change position to perform their containment isolation safety function in the closed position and would be correctly classified as "Active." In this case these valves should be exercised quarterly to demonstrate their operational readiness.