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ACCESSION NBR:9205060117 DOC.DATE: 92/04/23 NOTARIZED: NO 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: Updates status & request approval of open issues identified  
 by SE concerning inservice testing program for pumps &  
 valves.Revised Relief Requests VR-13 & VR-6 & new Relief  
 Requests PR-10 & PR-11 encl.

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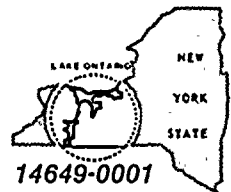
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ROBERT C. MECREDY  
Vice President  
Ginna Nuclear Production

TELEPHONE  
AREA CODE 716 546-2700

April 23, 1992

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

Subject: Inservice Testing (IST) Program for Pumps and Valves  
1990 - 1999 Third 10-Year Interval, Revision 1  
R.E. Ginna Nuclear Power Plant  
Docket No. 50-244

Dear Mr. Johnson:

The purpose of this letter is to update the status and request approval of the open issues identified by the NRC Safety Evaluation (SE) of April 15, 1991. This SE concerns Rochester Gas & Electric (RG&E) Corporation's IST Program for pumps and valves at the R.E. Ginna Nuclear Power Plant. This submittal is made in accordance with the recommendations delineated in NRC Generic Letter 89-04.

By letter dated October 29, 1991, RG&E responded to the SE and the nineteen anomalies identified in the Technical Evaluation Report (TER). Nine anomalies were addressed in the October 29 RG&E letter requesting NRC concurrence and the remaining ten anomalies are addressed herein. It was also requested that the time period for resolution of VR-7, VR-24, CS-12, CS-20 and CS-29 be extended from 6 to 12 months. This extension should have been 12 months or the end of the next refueling outage. Attachment 1 is enclosed to document the status of the IST Program anomalies. In summary, relief requests GR-6, VR-25, VR-23, and cold shutdown justifications CS-5, CS-16, CS-12, CS-20, and CS-29 are withdrawn and the associated components will be tested accordingly. RG&E continues to maintain the need for relief requests PR-6, PR-2, PR-7, GR-7, VR-5, VR-17, VR-6, VR-7, VR-8, VR-9, VR-24, VR-18, and VR-2 as stated in Attachment 1. Relief request VR-13 has been revised (Attachment 2) to perform stroke time testing yearly on its affected valves. Relief request VR-6 has been revised (Attachment 3) to include additional basis for relief.

Additionally, since RG&E continues to upgrade the IST program based on test experience, plant modifications and changes in program administration, new relief requests are submitted to facilitate pump inservice testing. Attachment 4 documents a new relief request, PR-10, which complies with ASME/ANSI OM Standard, Part 6, Table 2 to measure Diesel Generator A and B Fuel Oil Transfer Pumps' discharge pressure rather than differential pressure, for positive displacement type pumps. Attachment 5 documents a new

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Pumps' discharge pressure rather than differential pressure, for positive displacement type pumps. Attachment 5 documents a new relief request, PR-11, which complies with ASME/ANSI OM Standard, Part 6, Table 2 to measure all safety-related pumps vibration in peak velocity rather than peak-to-peak displacement amplitude.

Upon review of the status of IST Program anomalies, RG&E requests NRC concurrence, and revision to the Safety Evaluation for the third interval IST Program, as appropriate.

Very truly yours,

  
Robert C. Mecredy

KAM/217  
Attachments

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



ATTACHMENT 1

Revision 1  
March 20, 1992

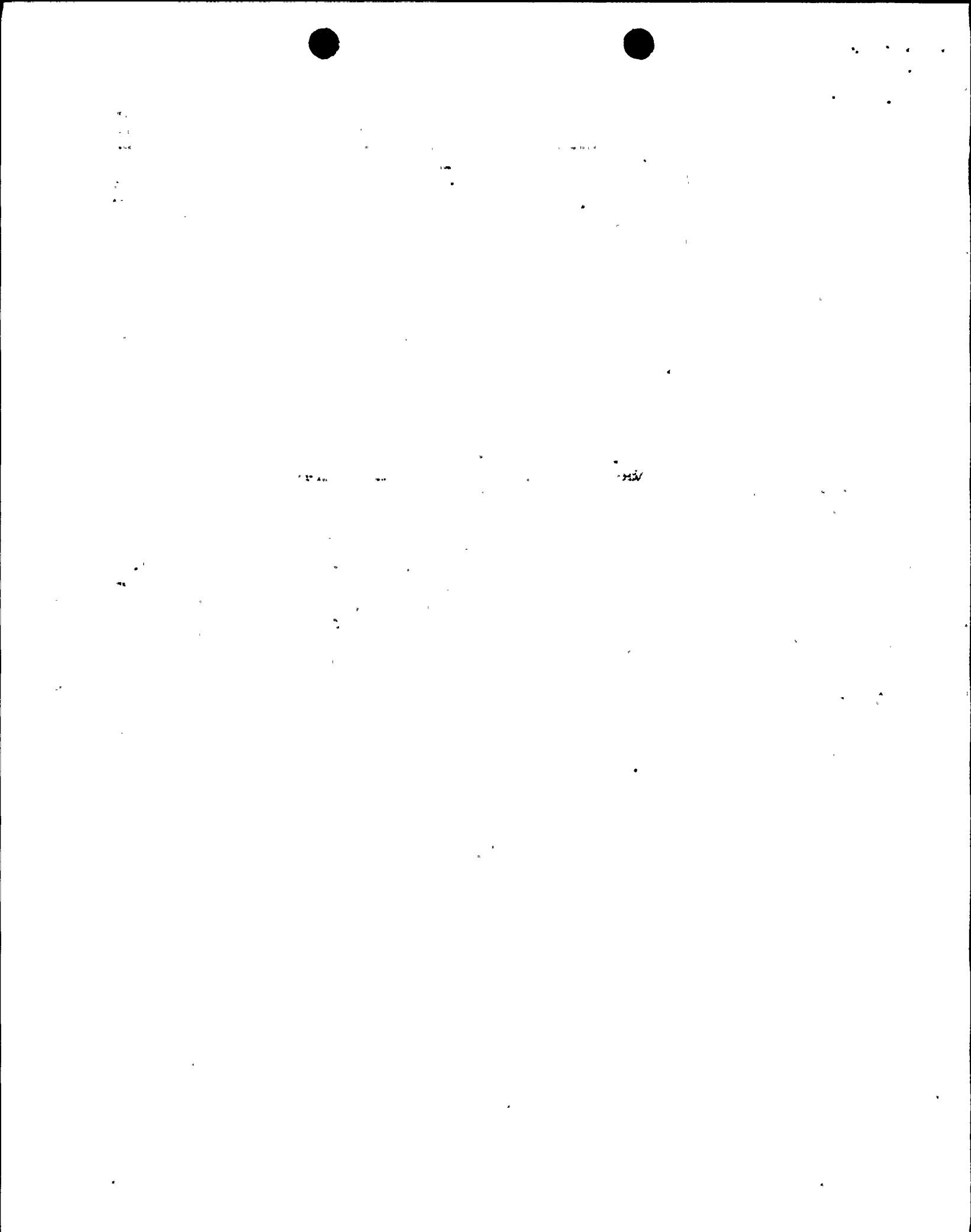
Note: Anomalies are paraphrased from that of Appendix A to the TER.

Status of IST Program Anomalies

Anomaly	Resolution	Date/Rev.
1. Relief requested (PR-6) from instrument full-scale range requirements and to use vibration detectors with multiple overlapping scales for IST of safety-related pumps.  (Refer to TER Section 2.1.2)	The accuracy of the vibration instruments employing multiple overlapping scales used for IST of safety-related pumps is equivalent to that provided by a single scale instrument that complies with the requirements of IWP-4110 and 4120.	9-27-91/0
2. Relief requested (PR-2) from the flow rate measurement requirements for the diesel generator fuel oil transfer pumps (PDG02A and B) and to determine pump flow rate by measuring change in day tank level versus time.  (Refer to TER Section 2.2.1)	The IST of the diesel generator fuel oil transfer pumps (PDG02A and B) involving the determination of pump flow rate by measuring the change in day tank level versus time complies with the Allowable Ranges and Corrective Action requirements specified in IWP-3200 (see new relief request PR-10 Attachment 2).	9-27-91/0
3. Relief requested (PR-7) from the flow rate measurement requirements for the service water pumps (PSW01A, 1B, 1C and 1D) and to measure the flow rate in the containment fan cooler outlet lines.  (Refer to TER 2.4.3)	The measurement of the IST flow rate for the service water pumps (PSW01A, 1B, 1C and 1D) employing flow instrumentation for the containment fan cooler outlet lines has been established as a repeatable test condition providing valid data for detecting pump degradation. Test results are trended and evaluated for indication of degradation.	9-27-91/0

Anomaly	Resolution	Date/Rev.
<p>4. Relief requested (GR-6) from the stroke time measurement requirements for hand control valves which operate using a variable set air signal and to quarterly exercise but not measure the stroke time for these valves.</p> <p>(Refer to TER Section 3.1.6.1)</p>	<p><u>Withdrawn</u> - Stroke time measurement of 4297, 4298, 4480 and 4481 to be performed quarterly. Stroke time measurement of 142 to be performed during cold shutdown per CS-23</p>	<p>3-20-92/0</p>
<p>5. Relief requested (GR-7) from stroke time evaluation and corrective action requirements and to follow a plan based on deviation from a reference stroke time instead of previous stroke time.</p> <p>(Refer to TER Section 3.1.7.1)</p>	<p>The stroke time evaluation and corrective action plan based on deviation from a reference stroke time agrees with the criteria of GL 89-04, Attachment 1, Position 6.</p>	<p>9-27-91/0</p>
<p>6. Relief requested (VR-25) from the exercising frequency and test method requirements for the emergency diesel generator air start accumulator check valves 5941A and 5942A.</p> <p>(Refer to TER Section 3.2.2.1)</p>	<p><u>Withdrawn</u>- Reverse flow closure testing of emergency diesel generator air start accumulator check valve 5941A and 5942A will be performed in accordance with Section XI, Paragraph IWV-3520 as a result of the completion of a piping modification under EWR 3596.</p>	<p>9-27-91/0</p>

Anomaly	Resolution	Date/Rev.
<p>7. Relief requested (VR-13) from the stroke time measurement requirements for the isolation valves in the auxiliary feedwater and standby auxiliary feedwater pump recirculation lines, 4291, 4304, 4310, 9710A and 9710B and to exercise but not measure stroke time. Licensee should develop an adequate means of monitoring valve degradation.</p> <p>(Refer to TER Section 3.4.1.1)</p>	<p><u>Revised</u> - Stroke time measurement of 4291, 4304, 4310, 9710A and 9710B will be performed yearly during calibration testing performed by I&amp;C (see revised relief request VR-13, Attachment 2).</p>	<p>3-20-92/0</p>
<p>8. Relief requested (VRs 5 &amp; 17) from the exercising requirements for 9627A, 9627B, 4601, 4602, 4603 and 4604 and to partially exercise quarterly and to disassemble and manually full-stroke exercise on a sampling basis during refueling outages.</p> <p>(Refer to TER Sections 3.4.2.1 &amp; 3.5.2.2 respectively)</p>	<p>After disassembly and inspection of 9627A, 9627B, 4601, 4602, 4603, and 4604, on a sampling basis a partial flow test of the affected valve is performed per PTs-36Q or 2.7 before returning the valve to service (re. Generic Letter 89-04-Position 2). As part of the Reliability Centered Maintenance Program, RG&amp;E is actively pursuing non-intrusive diagnostic technology which will be employed for the IST Program.</p>	<p>9-27-91/0</p>
<p>9. Relief requested (VR-23) from the exercising requirements for 4023, TDAFW recirculation check valve and to verify full-stroke capability by disassembly and inspection each refueling outage.</p> <p>(Refer to TER Section 3.4.2.2)</p>	<p><u>Withdrawn</u> - Full-stroke open exercising of 4023 will be performed per PT-16Q-T as a result of the installation of flow instrumentation under EWR 4755.</p>	<p>9-27-91/0</p>





Anomaly	Resolution	Date/Rev.
<p>10. Relief requested (VR-6) from the stroke time measurement requirements for 4324, 4325 and 4326, solenoid operated valves in the service water lines to the AFW pump bearings and to exercise quarterly but not measure stroke time. Licensee should develop an adequate means of monitoring valve degradation.</p> <p>(Refer to TER Section 3.5.1.1)</p>	<p><u>Revised</u> - VR-6 (Attachment 3) has been revised to include additional basis for relief.</p>	<p>3-20-92/0</p>
<p>11. Relief requested (VR-7) from the remote position indication verification requirements for 434 and 435, the pressurizer safety relief valves and to verify valve remote position indication during refueling outages by simulating valve actuation by moving the valve's coil. Granted, if valve position indication is verified to accurately reflect obturator position during the valve setpoint testing.</p> <p>(Refer to TER Section 3.6.1.1)</p>	<p>This test methodology is verified to accurately reflect obturator position since position indication actuation is accomplished using a properly-sized mechanical extension rod which simulates actual valve stem position. This testing is not performed simultaneously with setpoint verification, however, displacement attributed to the test rod and the resulting indication directly correlates to valve stem movement during valve operation.</p>	<p>3-20-92/0</p>

Anomaly	Resolution	Date/Rev.
<p>12. Relief requested (VRs 8 &amp; 9) from the exercising requirements for 842A, 842B, 867A and 867B, the accumulator discharge check valves and combined accumulator/ safety injection pump check valves and to partially stroke exercise quarterly and disassemble and inspect to verify full-stroke capability once every 10 years.</p> <p>(Refer to Sections 3.7.1.1 &amp; 3.7.1.2 respectively)</p>	<p>Disassembly of 842A, 842B, 867A and 867B shall occur so that the interval between examining each valve is not longer than once every 6 years as discussed in Generic Letter 89-04 and TER Sections 3.7.1.1.2 &amp; 3.7.1.2.2. Further, these disassembled valves shall be part-stroke exercise after valve disassembly and inspection is completed but before returning the valve to service. Once a non-intrusive diagnostic methodology is incorporated by RG&amp;E, it will be employed while performing a partial flow test each refueling outage.</p>	<p>9-27-91/0</p>

Anomaly	Resolution	Date/Rev.
<p>13. Relief requested (VR-24) from the exercising requirements 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 when the valve is known to be in good condition. Licensee must also continue to measure the running force required to exercise these valves to their fully open position.</p> <p>(Refer to TER Section 3.8.1.1)</p>	<p>RG&amp;E believes that current test methodology meets the requirements of IWV-3522(b) such that disk movement shall be sufficient to prove that the disk moves freely off the seat and ASME/ANSI OMa-1988, Part 10, 4.3.2.4(b) such that the force or torque required to initiate movement (breakaway) shall be measured and recorded. Disk movement to the full open position is verified and monitored for increased friction and signs of wear or hangups during this testing. However, measurement of running force to full open is not performed. This additional requirement imposed by the TER is not practicable and RG&amp;E considers it beyond the intent of the Code. Due to the valve location, valve size, distance of disk travel and style of external indication, a modification would be required to minimize human factor error and allow repeatable measurement of running force for the entire distance of disk travel.</p>	<p>3-20-92/0</p>



Anomaly	Resolution	Date/Rev.
<p>14. Relief requested (VR-18) from the stroke time measurement requirements 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 to verify proper valve operability by observing their operation during quarterly diesel testing without measuring stroke time. Licensee should develop a method to monitor for valve degradation.</p> <p>(Refer to TER Section 3.12.1.1)</p>	<p>These valves are tested on a monthly basis to verify their operability during EDG day tank fill and recirculation. Tank pressure and level is monitored to verify proper operation during each test. These valves have performed satisfactorily, opening and closing, for over twenty years. A reliable method of monitoring for degradation within solenoid-operated valves has not yet been proven. RG&amp;E is actively pursuing non-intrusive diagnostic test methods, however, commitment of this methodology for testing of these valves is not practicable at this time.</p>	<p>3-20-92/0</p>
<p>15. Relief requested (VR-2) from the exercising requirements for 5960A and 5960B, check valves in the diesel day tank overflow lines back to the storage tanks and to perform a simply disassembly and inspect during refueling outages without partial flow test after reassembly. Licensee should be able to adequately test these valves or take other actions.</p> <p>(Refer to TER Section 3.12.2.1)</p>	<p>Partial flow testing is not practicable. To purposely initiate an abnormal condition by overflowing the EDG day tanks in order to partial flow test these check valves is not considered by RG&amp;E to be an acceptable test method. Since flow through these check valves under normal conditions is not possible, the use of non-intrusive diagnostics would be meaningless. Disassembly, mechanical exercise and inspection remains the only feasible test alternative.</p>	<p>3-20-92/0</p>

Anomaly	Resolution	Date/Rev.
16. Cold shutdown justifications CS-5, CS-16 and CS-30 identify test frequencies other than during cold shutdowns. Since the affected valves are included in relief requests VR-21, VR-3, VR-14 and VR-20, delete CS-5, CS-16 and CS-30.	Cold shutdown justifications CS-5 and CS-16 have been deleted from Revision 1 to Appendix C to the Quality Assurance Manual. CS-30 has not been deleted since relief request VR-20 no longer applies to 697A and 697B due to the installation of the RHR mini-flow recirculation piping under EWR 4675.	9-27-91/0
17. The licensee has not provided adequate technical basis in cold shutdown justification CS-12 to demonstrate the impracticality of quarterly exercising 813 and 814. Licensee states exercising these valves could result in thermal stress to the reactor vessel supports. Licensee must exercise quarterly or revise the cold shutdown justification.	<u>Withdrawn</u> - 813 and 814 will be exercised quarterly.	3-20-92/0
18. Cold shutdown justification CS-20 states that 8419 is normally closed during power operation and is not required to change position to perform its safety function. 8419 is listed as an Active Category A/C valve in program. If 8419 were open during power operations it would have to change position. 8419 should be exercised quarterly.	<u>Withdrawn</u> - 8419 will be exercised quarterly.	3-20-92/0

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Anomaly	Resolution	Date/Rev.
<p>19. Cold shutdown justification CS-29 states that 9227 and 9229 are normally closed during power operation and are not required to change position to perform their safety function. 9227 is listed as an Active Category A valve and 9229 is listed as an Active Category A/C valve. If 9227 or 9229 were open during power operation they would have to change position. 9227 and 9229 should be exercised quarterly.</p>	<p><u>Withdrawn</u> - 9227 and 9229 will be exercised quarterly.</p>	<p>3-20-92/0</p>



Attachment 2

RELIEF REQUEST NO. VR - 13

(Revised)

SYSTEM: Auxiliary Feedwater/Standby Auxiliary Feedwater (AFW/SAFW)

VALVES: 4291, 4304, 4310, 9701A, 9701B

CATEGORY: B

SAFETY CLASS: 3

FUNCTION: These valves open to allow recirculation of the AFW/SAFW pumps to prevent pump cavitation, overheating or deadheading upon low flow to the steam generators.

TEST REQUIREMENT: Stroke time of power operated valves shall be measured per IWV-3413 and evaluated per IWV-3417.

BASIS FOR 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 could only be performed by simulating these parameters in a controlled manner.

ALTERNATE TESTING: Measurement and evaluation of stroke times shall be performed yearly during scheduled I&C calibration testing. These valves will be exercised and fail-safe tested quarterly.

Attachment 3

RELIEF REQUEST NO. VR - 6 (Revised)

SYSTEM: Station Service Water System .

VALVES: 4324, 4325, 4326

CATEGORY: B

SAFETY CLASS: 3

FUNCTION: Valves open upon an auxiliary feedwater pump bearing cooling water supply high strainer differential pressure to provide cooling water to the driver's bearings.

TEST REQUIREMENT: Measure stroke time and analyze per IWV-3413.

BASIS FOR RELIEF: These are rapid acting valves. 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. On a monthly basis, these valves are tested during auxiliary feedwater pump testing. This testing includes strainer cleaning, strainer isolation, high differential pressure simulation, verification of valve operation and flow observation. Failure of these valves to stroke in conjunction with a clogged strainer would result in a lack of pressure at the bearing cooler inlet and a high DP alarm, to which an Operator would be dispatched who would manually trip the respective valve. Stroke timing of these valves using conventional methods would be extremely difficult and unrepeatable. RG&E is actively pursuing non-intrusive diagnostic test methods, however, commitment of this methodology for testing of these valves is not practicable at this time.

ALTERNATE TESTING: These valves 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.

Attachment 4

RELIEF REQUEST NO. PR-10 (New)

SYSTEM: D/G Fuel Oil Transfer System

PUMPS: Diesel Fuel Oil Transfer Pumps (PDG02A, PDG02B)

SAFETY CLASS: 3

FUNCTION: Various

TEST REQUIREMENT: The test quantities shown in Section XI, Table IWP-3100-1 (inlet pressure in particular) shall be measured or observed and recorded.

BASIS FOR RELIEF: The D/G fuel oil transfer pumps are positive displacement type pumps. The measurement of pump inlet (suction) pressure provides no useful data for evaluation of pump performance or for detecting pump degradation.

ALTERNATE TESTING: Pump discharge pressure shall be measured in lieu of inlet pressure per OM-1987, Part 6 Table 2.

Attachment 5

RELIEF REQUEST NO. PR-11

(New)

SYSTEM: Various

PUMPS: All safety related pumps

SAFETY CLASS: 2 and 3

FUNCTION: Various

TEST REQUIREMENT: The test quantities shown in Section XI, Table IWP-3100-1 (vibration amplitude in particular) shall be measured or observed and recorded.

BASIS FOR RELIEF: The monitoring of pump vibration by measuring displacement amplitude has been the convention in the past. However, advances made in vibration monitoring technology indicate peak velocity to be a more encompassing indication of pump degradation. Through use of state-of-the-art equipment, peak velocity has shown to be more predictive of pump failure and, subsequently, more cost effective regarding preventive maintenance and spare parts inventory.

ALTERNATE TESTING: Test measurement of vibration using peak velocity (in accordance with OMa-1988, Part 6, Table 2) vice displacement amplitude shall be phased into this program coinciding with the maintenance schedule of pump overhauls. In the interim, prior to the next pump overhaul, pump vibration shall be measured as displacement amplitude.