

### UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON D.C. 2069b

ENCLOSURE 1

# RELATED TO THE INSERVICE TESTING PROGRAM REQUESTS FOR RELIEF

GPU NUCLEAR CORPORATION

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NUMBER 50-219

#### 1.0 INTRODUCTION

The Code of Federal Regulations, 10 CFR 50.55a, 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 and applicable addenda, except where specific written relief has been requested by the licensee and granted by the Commission pursuant to Sections (a)(3)(i), (a)(3)(ii), or (g)(6)(i) of 10 CFR 50.55a. In requesting relief, the licensee must demonstrate that: (1) the proposed alternatives provide an acceptable level of quality and safety; (2) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance is impractical for its facility. NRC guidance contained in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provided alternatives to the Code requirements determined to be acceptable to the staff.

The Code of Federal Regulations, 10 CFR 50.55a, authorizes the Commission to grant relief from ASME 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 in this SE covers the third ten year IST interval which started October 14, 1991. GPU Nuclear Corporation (the licensee) submitted the Oyster Creek Nuclear Generating Station third ten year interval in a letter dated October 11, 1991. Additional, agram information was provided in conference calls between the NRC and the licensee on June 17, 1992, and June 22, 1992. The licensee's program is based on the requirements of the 1936 Edition of the ASME Section XI Code.

#### 2.0 EVALUATION

The licensee's IST program requests for relief from the requirements of Section XI have been reviewed by the staff with the assistance of its contractor, Idaho National Engineering Laboratory (INEL). The Technical

the licensee because testing these components could require a plant shutdown for a lengthy period to procure pump test gauges (PR-4) and to determine and implement a test method for stroke timing, or otherwise monitoring for degradation, the main steam safety/relief valves which perform an automatic depressurization function (VR-13 Part 2). Immediate imposition of the Code requirements would not provide a compensating increase in the level of quality and safety. The alternative testing performed in the interim provides an adequate level of assurance of the operational readings of the pumps and valves for the interim period without subjecting the plant to a required shutdown solely to perform inservice testing. The long-term quality and safety of the plant will be improved by allowing the licensee a period to develop testing and procure instrumentation that will comply with the Code requirements. Requiring a plant shutdown for a period of time to effect Code compliance when an adequate alternative exists for an interim period is not warranted and would place unnecessary challenges on equipment which is not in the best interest of quality and safety.

The licensee should refer to the TER, Appendix A, for a discussion of IST program anomalies identified during the review. The licensee should resolve all items in accordance with the guidance therein.

#### 3.0 CONCLUSION

The staff concludes that the relief requests as evaluated and modified by this SE will provide reasonable assurance of the operational readiness of the pumps and valves to perform their safety-related functions. The staff has determined that granting relief, pursuant to 10 CFR 50.55a(a)(3)(i), (a)(3)(ii), or (g)(6)(i), is authorized by law and will not endanger life or property, or the common defense and security and is otherwise in the public interest. In making this determination the staff has considered the alternative testing being implemented, compliance resulting in a hardship without a compensating increase in safety, and the impracticality of performing the required testing considering the burden if the requirements were imposed. The last column of Table 1 identifies the regulation or GL 89-04 guidance under which the requested relief is approved.

During the review of the licensee's IST program relief requests, the staff has identified certain misinterpretations or omissions of 10 CFR 50.55a and Section XI requirements. The items are summarized in the TER, Appendix A.

Principal Contributor: Joe Colaccino

Date: September 24, 1992

RELIEF REQUEST NUMBER	TER SECTION	SECTION XI REQUIREMENT & SUBJECT	EQUIPMENT IDENTIFICATION	ALTERNATE METHOD OF TESTING	ACTION BY USNRC
PR-1	2.1.1.1	IWP-3300: Annual pump bearing temperature measurement.	All pumps in the IST program.	Perform yearly vibration frequency spectrum analysis.	Relief granted. (a)(3)(i)
PR-3	2.1.2.1	IWP-4500 · Vibration amplitude measurement.	All pumps in the IST program.	Measure vibration velocity.	Provisional relief granted. (a)(3)(i)
PR-4	2.2.1.1	IWP-4120: Instrument range requirement.	Core spray pumps: NZO1-A thru -D NZO3-A thru -D Containment spray pumps: 51-A, -B, -C, -C Emergency	Use currently installed gages for testing.	Interim Relief Granted. (a)(3)(ii)
			service water (SW) pumps: 1-1, -2, -3, -4 Condensate transfer pumps: 1-1, -2 SW pumps: 1-1, -2.		
GVR-4.1	3.1.1.1	IWV-3417(a): increased test frequency requirements.	All power operated valves in the IST program.	Declare valve inoperable if the limiting value of full-stroke time is exceeded.	Relief denied.

RELIEF REQUEST NUMBER	TER SECTION	SECTION XI REQUIREMENT & SUBJECT	EQUIPMENT IDENTIFICATION	ALTERNATE METHOD OF TESTING	ACTION BY USNRC
VR-3A	3.3.1.1	IWV-3423: Leak rate testing differential pressure requirements.	Clean-up demineralizer system return line containment isolation check valve to the reactor recirculation system: V-16-62.	Perform leakage testing with a differential pressure that is lower than the functional differential pressure.	Relief not required.
VR-3	3.3.1.2	IWV-3521: Check valve exercising frequency.	Clean-up demineralizer system return line containment isolation check valve to the reactor recirculation system: V-16-62.	Verify closure capability using Appendix J, Type C, leak rate testing during refueling outages.	Relief granted. (g)(6)(i)
VR-9	3.4.1.1	IWV-3521: Check valve exercising frequency.	Control rod drive (CRD) hydraulic system exhaust line check valves to the reactor vessel: V-15-27, -28.	Verify closure ability of these valves by Appendix J, Type C, leak rate testing during refueling outages.	Relief granted. (g)(6)(i)

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PR-1	2.1.1.1	IWP-3300: Annual pump bearing temperature measurement.	All pumps in the IST program.	Perform yearly vibration frequency spectrum analysis.	Relief granted. (a)(3)(i)
PR-3	2.1.2.1	IWP-4500: Vibration amplitude measurement.	All pumps in the IST program.	Measure vibration velocity.	Provisional relief granted. (a)(3)(i)
PR-4	2.2.1.1	IWP-4120: Instrument range requirement.	Core spray pumps: NZO1-A thru -D NZO3-A thru -D Containment spray pumps: 51-A, -B, -C, -D Emergency service water (SW) pumps: 1-1, -2, -3, -4 Condensate transfer pumps: 1-1, -2 SW pumps: 1-1, -2.	Use currently installed gages for testing.	Interim Relief Granted. (a)(3)(ii)
GVR-4.1	3.1.1.1	IWV-3417(a): Increased test frequency requirements	All power operated valves in the IST program.	Declare valve inoperable if the limiting value of full-stroke time is exceeded.	Relief denied.

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RELIEF REQUEST NUMBER	TER	SECTION XI REQUIREMENT & SUBJECT	EQUIPMENT IDENTIFICATION	ALTERNATE METHOD OF TESTING	ACTION BY USIARC
GVR-4.2	3.1.2.1	IKV-3416: Testing for valves in systems out of service.	All valves in systems that are out of service.	Perform testing in accordance with Oyster Creek Technical Specifications and Procedures.	Relief denied.
GVR-4.3	3.1.3.1	IWV-3417(b): Corrective action as a result of cold shutdown testing.	All values in the IST program.	Plant operation be governed by Oyster Creek Technical Specifications and Procedures.	Provisional relief granted. (a)(3)(i)
GVR-4.7	3.1.4.1	IWV-1100: Scope of valve testing.	Valves necessary to establish cold shutdown conditions.	Limit scope of IST to valves which perform a specific function in shutting the reactor down to hot standby condition.	Relief granted. (a)(3)(i)
VR-2	3.2.1.1	IWV-3521: Check valve exercising frequency.	Standby liquid control injection header containment isolation valves: V-19-16 decrease.	Full-stroke exercise to open and closed positions during refueling outages.	Relief granted. (g)(6)(i)
VR-43	3.2.2.1	IWV-3521: Check valve exercising frequency.	Standby liquid control pump discharge check valves: V-19-37, -38.	Not verify closure because diversion of flow through the idle pump train will be prevented by the pump and its discharge relief valve.	Provisional relief granted. (g)(6)(i)

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VR-3A	3.3.1.1	IWV-3423: Leak rate testing differential pressure requirements.	system return line containment	Perform leakage testing with a differential pressure that is lower than the functional differential pressure.	Relief not required.
VR-3	3.3.1.2	IWV-3521: Check valve exercising frequency.	Clean-up demineralizer system return line containment isolation check valve to the reactor recirculation system: V-16-62.	Appendix J, Type C, leak rate testing during refueling outages.	Relief granted. (g)(6)(i)
VR-9	3.4.1.1	IWV-3521: Check valve exercising frequency.	Control rod drive (CRD) hydraulic system exhaust line check valves to the reactor vessel: V-15-27, -28.	Verify closure ability of these valves by Appendix J, Type C, leak rate testing during refueling outages.	Relief granted. (g)(6)(i)

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RELIEF REQUEST NUMBER	TER SECTION	SECTION XI REQUIREMENT & SUBJECT	EQUIPMENT IDENTIFICATION	ALTERNATE METHOD OF TESTING	ACTION BY USNRC
VR-52	3.4.1.2	Method of	Hydraulic control unit (HCU) charging water header stop-check valves to the scram accumulators (one for each HCU): V-15-106.	Peform a pressure decay test on the scram accumulators at least once every two years to verify that leakage through these valves is within acceptable limits.	(9)(6)(1)
VR-44	3.4.2.1	IWV-3413: Valve stroke timing IWV-3415: Valve fail-safe testing.	Control rod drive system scram volume isolation valves: V-15-119, -120, -121, -133, -134, -135, -136, -137.	Exercise every three months but fail-safe test and stroke time during cold shutdowns.	Relief granted. (g)(6)(i).
VR-29	3.4.3.1	IWV-3620: Pressure relief device testing.	HCU scram accumulator nitrogen charging line rupture discs (One for each HCU): V-15-132.	None.	Relief not required.
VR-11	3.5.1.1	IWV-3520: Check valve exercising frequency and method.	Fire protection system to core spray system isolation check valves: V-20-60, -61, -88, -89.	Verify full-stroke capability to the open and closed positions using disassembly and inspection on a sampling basis at a refueling outage frequency.	Interim relief granted for both the open and the closed positions.  (g)(6)(i)

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VR-37	3.5.1.2	IWV-3520: Check valve exercising frequency and method.	Core spray booster pump discharge check valves: V-20-52, -53, -54, -55.	Part-stroke exercise quarterly, verify full-stroke open capability using sample disassembly and inspection at a refueling outage frequency.	Provisional relief granted per GL 89-04, Position 2.
VR-42	3.5.1.3	IWV-3520: Check valve exercising frequency and method.	check valves:	Part-stroke exercise quarterly, verify full-stroke open capability using sample disassembly and inspection at a refueling outage frequency.	Provisional relief granted per GL 89-04, Position 2.
VR-45	3.5.1.4	IWV-3520: Check valve exercising frequency and method.	Core spray booster pump bypass check valves: V-20-50, -51.	Part-stroke exercise quarterly, verify full-stroke open capability using sample disassembly and inspection at a refueling outage frequency.	Provisional relief granted per GL 89-04, Position 2.
VR-12A	3.6.1.1	IWV-3420: Leak rate testing.	Reactor vessel head cooling line containment isolation check valves: V-31-2, -5.	High pressure leak rate testing will not be performed.	Relief Denied.
			V-31-2, -5.		

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v: 30	3.7.1.1	IWV-3415: Fail-safe actuator testing.	valves:	Fail-safe test these valves during cold shutdowns when drywell access is available and during refueling outages.	Relief granted. (g)(6)(i)
VR-13 Part i	3.7.2.1	IWV-3411: Valve exercising frequency.	valves:	Full-stroke exercise these valves during startup from refueling outages with no stroke timing.	Relief granted. (g)(6)(i)
VR-13 Part 2	3.7.2.1	IWV-3413(b): Valve stroke timing.	valves:	full-stroke exercise these valves during startup from refueling outages with no stroke timing.	Interim relief granted. (a)(3)(ii)
VR-14	3.7.3.1	IWV-3521: Check valve exercising frequency.	relief discharge line vacuum breaker	Partially disassemble and mechanically exercise during refueling outages when the drywell is de-inerted.	Provisional relief granted. (g)(6)(i)
VR-15	3.8.1.1	IWV-3521: Check valve exercising frequency.	Main feedwater line containment and pressure isolation check valves: V-2-71, -72, -73, -74.	Verify closure capability using Appendix J, Type C, leak rate testing each refueling outage.	Relief granted. (g)(6)(i)

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VR-15A	3.8.1.2	IWV-3423: Leak rate testing differential pressure.	line containment	Perform Appendix J, Type C, leak rate test each refueling outage in lieu of a leak rate test at functional differential pressure.	Relief not required.
VR-17	3.9.1.1	IWV-3521: Check valve exercising frequency.	Reactor building closed cooling water line containment isolation check valve: V-5-165.	Verify valve closure capability using Appendix J, Type C, leak rate testing each refueling outage.	Relief granted. (g)(6)(i)
VR-38 Part 1	3.9.2.1	IWV-3521: Check valve exercising frequency.	Reactor building closed cooling water pump discharge check valves: V-5-153, -154.	Exercise to the closed position every three months except for those periods when both pumps must be in operation.	Relief granted. (g)(6)(i)
VR-38 Part 2	3.10.1.1	IWV-3521: Check valve exercising frequency.	pump discharge check valves:	Exercise to the closed position every three months except for those periods when both pumps must be in operation.	Relief granted. (g)(6)(i)
VR-53 Part 1	3.11.1.1	IWV-3510: Relief valve testing.	Thermal relief valves on the emergency service water side of the containment spray heat exchangers: V-3-82, -83, -84, -85.	Replace these valves every other refueling outage with fully qualified valves.	Relief granted. (a)(3)(i)

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VR-53 Part 2	3.12.1.1	IWV-3510: Relief valve testing.	valves on the containment	Replace these valves every other refueling outage with fully qualified valves.	Relief granted. (a)(3)(i)
VR-31	3.13.1.1	IWV-3521: Check valve exercising frequency.	Instrument air line containment isolation valve: V-6-393.	Verify the closure capability of this valve using Append Type C, leak rate testing each refueling outage.	Relief granted. (g)(6)(i)
VR-40	3.14.1.1	IWV-3411: Valve exercising frequency IWV-3413: Valve stroke timing IWV-3415: Fail-safe testing frequency.	Hydrogen and oxygen monitoring system containment isolation valves: V-38-9, -10, -16, -17, -22, -23.	Exercise and fail-safe test during refueling outages with no stroke timing.	Interim relief granted for stroke timing requirement. (g)(6)(i) Relief denied for exercising frequency and fail-safe testing requirements.
VR-41	3.14.1.2	IWV 3411: Valve exercising frequency IWV-3413: Valve stroke timing IWV-3415: Fail-safe testing frequency.	Hydrogen and oxygen monitoring system containment isolation valves: V-38-93, -94.	No exercising, stroke timing, or fail-safe testing as long as these category A valves remain unpowered.	Relief not required.

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VR-46 Part 1	3.15.1.1	IWV-3413: Valve stroke timing.	Recirculation system sampling line containment isolation valves:	Exercise quarterly with no stroke timing.	Interim relief granted. (g)(6)(i)
VR-46 Part 2	3.16.1.1	IWV-3413: Valve stroke timing.	Nitrogen inerting line containment isolation valve: V-23-70.	Exercise quarterly with no stroke timing.	Interim relief granted. (g)(6)(i)
VR-48	3.17.1.1	IWV-3521: Check valve exercising frequency.	Condensate transfer pump minimum flow recirculation line check valves: V-11-3, -7.	No exercising to the closed position since condensate transfer pumps can supply the minimum safety-related flow even if the parallel valve fails to close.	Relief not required.
VR-47	3.18.1.1	IWV-3424: Seat leakage measurement.	valves: V-21-15, -18 Drywell vacuum breaker check valves:	during drywell to torus leak test in accornce	Relief granted. (g)(6)(i)

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VR-25	3.18.2.1	IWV-3521: Check valve exercising frequency IWV-3420: Leak rate testing.	Instrument line excess flow check valves.	Demonstrate that these valves are functional in the open and closed positions in accordance with Oyster Creek Technical Specification 4.5.0.	Relief granted. (g)(6)(i)
VR-50	3.18.3.1	IWV-3300: Remote position indication verification.	Numerous containment isolation valves.	Verify remote position indication for these valves in the open position by observing proper system operation and in the closed position by leak rate testing since valve position cannot be verified by local observation.	Relief granted. (g)(6)(i)
VP-51	3.18.3.2	IWV-3300: Remote position indication verfication.	Numerous containment isolation valves.	Verify remote position indicators for these valves in the open position by observing proper system operation and in the closed position by leak rate testing since local observation would result in unnecessary radiation exposure to personnel.	(g)(6)(i)
GVR-4.4	NA	IWV-3427(b): Leak rate testing corrective action.	All containment isolation valves that are six inches or larger.	None.	Approved per GL 89-04, Position 10. Relief request not evaluated in TER.

RELIEF REQUEST NUMBER	TER SECTION	SECTION XI REQUIREMENT & SUBJECT	EQUIPMENT IDENTIFICATION	ALTERNATE METHOD OF TESTING	ACTION E. USNRC
GVR-4.5	NA	IWV-3417(a): Valve stroke time corrective action.	All rapid-acting valves.	Test in accordance with GL 89-04, Polition 6.	Approved per GL 89-04, Position 6. Relief request not evaluated in TER.
GVR-4.7	NA	IWV-3421 through -3425: Leak rate testing.	Containment isolation valves.	Perform Appendix J, Type C, leak rate tests.	Approved per GL 89-04, Position 10. Relief request not evaluated in TER.
VR-1	NA	IWV-3411: Valve exercising frequency.	Shutdown cooling system isolation valves: V-17-1, -2, -3, -19, -54, -55, -56, -57.	Exercise during cold shutdowns.	Cold shutdown justification. Request not evaluated in TER.
VR-5	NA	IWV-3411: Valve exercising frequency. IWV-3413: Valve stroke timing. IWV-3415: Valve fail-safe testing.		Verify that the associated control rods meet scram insertion time limits during reactor startup from cold shutdown and during refueling outages in accordance with Technical Specifications.	Approved per GL 89-04, Position 7. Relief request not evaluated in TER.

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VR-6	NA	IWV-3521: Check valve exercising frequency.	to the scram accumulators: V-15-106 (one	Test during cold shutdowns by depressurizing charging header and monitoring the depressurization rate of the scram accumulators.	Approved per GL 89-04, Position 7. Relief request not evaluated in TER.
VR-8	NA	IWV-3521: Check valve exercising frequency.	valves: V-15-108 (one	Test in accordance with Technical Specifications during startup from cold shutdown and during refueling outages.	Approved per GL 89-04, Position 7. Relief request not evaluated in TER.
VR-10	NA	IWV-3521: Check valve exercising frequency.	Pressure isolation check valves in the core spray injection line to the reactor coolant system: V-20-150, -151, -152, -153.		Cold shutdown justification. Request not evaluated in TER.
VR-18	NA	IWV-3411: Valve exercising frequency.		Full-stroke exercise during cold shutdowns.	Cold shutdown justification. Request not evaluated in TER.

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VR-32	NA	IWV-3411: Valve exercising frequency. IWV-3413: Valve stroke timing.		Full-stroke exercise and stroke time during cold shutdowns and refueling outages.	Cold shutdown justification. Request not evaluated in TER.