UNITED STATES
NUCLEAR REGULATORY COMMISSION
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ENCLOSURE

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE INSERVICE TESTING PROGRAM RELIEF REQUESTS

PENNSYLVANIA POWER & LIGHT COMPANY

SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2

DOCKET NOS: 50-387 AND 50-388

1.0 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 and applicable addenda, except where specific written relief has been requested by the licensee and granted by the Commission pursuant to Subsections (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 with certain requirements of the applicable Code edition and addenda is impractical for its facility. Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provided alternatives to certain Code requirements which have been determined by the staff to be acceptable when the requirements are impractical for a facility.

These regulations authorize 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) and are summarized in Table 1.

In Pennsylvania Power & Light Company's (PP&L) December 31, 1991, submittal, Revision 7 (unit 1) and Revision 4 (Unit 2) of the Susquehanna Steam Electric Station Inservice Test (IST) Program were provided. Revisions 7 and 4 incorporated NRC guidance contained in GL 89-04 and included changes necessary to comply with the PP&L response to GL 89-04 (dated October 3, 1989) and the implementation schedule status provided in PP&L's letter dated February 7, 1991. New and revised relief requests were identified which were submitted for NRC review. In addition, several relief requests which did not conflict with the GL 89-04 guidance, and had been submitted prior to issuance of GL 89-04 (April 3, 1989), and therefore, approved by GL 89-04, were included in the program revisions. These relief requests are not evaluated in the SE, but may be discussed in Section 3.0 for further action by PP&L. Additionally, relief requests applicable to non-Code components have not been evaluated, as NRC approval is not within the scope of 10 CFR 50.55a. Relief requests which

provide justification for performing testing of certain components during cold shutdowns rather than quarterly at power conditions have not been evaluated, as delay of testing to cold shutdown is allowed by the Code. The program was developed and the review was performed using the 1980 Edition, with addenda through the Winter 1980 Addenda, of ASME Section XI.

2.0 EVALUATION OF RELIEF REQUESTS

The relief requests which require approval prior to implementation are evaluated below. A summary of the results of the review is provided in Table 1 as noted above.

2.1 VALVE RELIEF REQUEST 24

Relief from the requirements of IWV-3521 to exercise check valves to their closed positions once every three months was requested for residual heat removal (RHR), core spray, high pressure coolant injection (HPCI), and emergency service water (ESW), Class 2 and 3, check valves. These valves provide Condensate Transfer System water flow to their respective headers, while preventing flow of process water in the reverse direction, during operation of the ECCS System.

2.1.1 Licensee's Basis for Relief

The licensee states: "These check valves located in keepfill lines for the RHR, Core Spray, and HPCI Systems provide Condensate Transfer System water flow into their respective headers, while preventing flow of process water in the reverse direction, during operation of the respective ECCS System. In the RHR and HPCI Systems, test connections exist between the two tandem check valves existing in each line, while in the Core Spray System, a single test connection exists upstream of both check valves, which are located very close together. These configurations allow individual testing of the downstream check valve in the RHR and HPCI Systems, but support only dual testing of each pair of Core Spray System check valves in combination. Using these test connections in RHR, Core Spray, and HPCI to monitor essential restriction of reverse flow involves collecting radioactively contaminated seepage while the process system is pressurized, as during flow testing. This creates the potential for spills and spread of contamination. The increase in potential for water hammer in these systems due to isolation of keepfill lines during testing, the increase in personnel radiation exposure required to perform this testing during plant operation, and the increase in potential for contamination of personnel and equipment through this testing justify reduced frequency. The stainless steel construction of each check valve and the series configuration of each pair of check valves reduce the probability of failure to restrict reverse flow through any keepfill line. The relatively small size of each keepfill line minimizes the impact of any such failure. The combination of these mitigating factors warrants reduction in testing frequency.

The single check valves located in the keepfill lines for the ESW System provide Service Water System flow into their respective headers, while preventing flow of process water in the reverse direction, during operation of ESW System. Test connections upstream of each check valve support testing of its reverse flow individually. Using these test connections in ESW to monitor essential restriction of reverse flow involves collecting raw service water seepage, which has the potential to chemically contaminate and degrade the operation of the plant Liquid Radwaste System. The stainless steel construction of each check valve reduces the probability of failure to restrict reverse flow through any keepfill line. The relatively small size of each keepfill line minimizes the impact of any such failure. The combination of these mitigating factors warrants reduction in testing frequency."

2.1.2 Alternative Testing

The licensee proposes: "Demonstrate closure of each check valve in the keepfill lines of the RHR and HPCI Systems by monitoring the essential restriction of its reverse flow, through its upstream test connection, once per refueling outage while the process system is pressurized, as during flow testing.

Demonstrate closure of at least one of the two check valves in each pair in the keepfill lines of the Core Spray System by monitoring the essential restriction of their reverse flow, through their upstream test connections, once per refueling outage while the process system is pressurized, as during flow testing.

Demonstrate closure of each check valve in the keepfill lines of the ESW System by monitoring the essential restriction of their reverse flow, through their upstream test connections, once per 18 months (±3 months) while the process system is pressurized, as during flow testing."

2.1.3 Evaluation

The Code requires quarterly exercising of check valves to allow for a determination of degrading conditions prior to a condition of inoperability. Verification of closure also ensures that no condition or obstruction is causing the disc to remain partially open. Extending the frequency to cold shutdown is allowed by IWV-3522 when operation is not practical during plant operation. The licensee has requested extending the test interval to once per refueling outage, or once per 18 months (± 3 months) for the ESW check valves. The proposed alternative testing meets the Code testing methods, but at an extended interval, and provides an acceptable level of assurance of the operational readiness of the valves, provided the core spray valves which are tested in series are both repaired or replaced when the acceptance criteria are not met. Imposition of the Code required frequency would result in an increase in water hammer potential in RHR, Core Spray, and HPCI during testing, additional radiation exposure, and handling and processing raw or contaminated seepage for RHR, CS, HPCI and ESW systems, and potentially delay plant startup from cold shutdown conditions. These resulting consequences

create a hardship on the licensee without a compensating increase in the level of quality and safety, in that the conditions which could result from the testing could be adverse to safety and the proposed alternative provides an acceptable level of assurance of the operational readiness of the valves. In order to test the valves in accordance with the Code, the licensee would have to subject the systems to unfavorable conditions, subject personnel to additional radiation exposure, process additional quantities of contaminated waste, and potentially delay startup from cold shutdown to complete testing.

2.1.4 Conclusion

Relief is granted, pursuant to 10 CFR 50.55a(a)(3)(ii) to exercise the RHR, Core Spray, HPCI and ESW keepfill check valves in accordance with frequency requested, provided the licensee repairs or replaces the valves tested in series if the acceptance criteria are not met. Imposition of Code requirements would result in a hardship without a compensating increase in the level of quality and safety in that testing creates (1) an increase water hammer potential, (2) additional radiation exposure, and (3) the need to handle and process raw or contaminated seepage. The proposed alternative will provide an acceptable level of assurance of the operational readiness of the valves.

2.2 VALVE RELIEF REQUEST 58

Relief from the requirements of IWV-3300 to verify valve position indication once every 2 years has been requested for a number of containment isolation and instrument gas storage valves in the containment instrument gas system and the containment atmosphere control system.

2.2.1 Licensee's Basis for Relief

The licensee states: "The subject solenoid valves, all of which are manufactured by the Target Rock Corporation, all are constructed in a manner that precludes local verification of valve operation by direct observation. All movements and positions of valve parts are obscured by the valve structure within which they travel and within which they are sealed. A method for indirect observation of valve movement, utilizing ferritic steel objects (steel shot) moved along the surface of each valve's indicating tube by the permanent magnet attached to the valve stem inside, was devised, used for 18 months, and subsequently abandoned because its employment necessitated partial disassembly of the solenoid valve for the test. This disassembly and reassembly, consisting of removal and reinstallation of the reed switch housing assembly, or cover, has been found to cause damage to the wiring and its connections to the reed switches."

2.2.2 Alternative Testing

The licensee proposes: "Confirmation of coincident valve movement and remote indication is accomplished by listening to the valve with a stethoscope, for the audible signal of the valve disk arriving at a new position. Accuracy of remote indication of valve operation is essentially verified for these solenoid valves at least once every 2 years by the combination of containment isolation valve leak testing (LLRT) or instrument gas storage leakdown testing with accomplishment of General Operating Procedures (GO-100-002) for plant

startup and heatup. These activities are completed at least once each refueling shutdown."

2.2.3 Evaluation

The Code requires valves with remote position indicators to be observed at least once every 2 years to verify that valve position, which could be relied upon by the operators or used to measure stroke time, is accurately indicated. The licensee indicates that local verification of valve operation by direct and indirect observations is impractical for these valves in that they are totally sealed and no visual observation of disc position is available. The previous method of testing required disassembling and reassembling of the valve which was determined to cause damage to the wiring and its connection to the reed switches which provide power and control to these valves. Imposition of the Code requirements would be a burden on the licensee in that valve replacement or design modifications would be required. The proposed alternative testing meets the Code frequency requirements and appears to meet the intent of the Code to determine that the valve disc moves to the indicated position. Therefore, the alternative provides an acceptable level of assurance of the operational readiness of the valve position indication.

2.2.4 Conclusion

Relief is granted to verify position indication by the alternative method utilizing a stethoscope and monitoring an audible signal, for the solenoid valves listed in the relief request, pursuant to 10 CFR 50.55a(g)(6)(i) based on (1) the impracticality of verifying the position indication by visual observation at the valves, (2) the burden on the licensee if the Code requirements were imposed, and (3) the alternative testing providing an acceptable level of assurance of the operational readiness of the position indication for these valves.

2.3 VALVE RELIEF REQUEST 60

Relief from the requirements of IWV-3521 to exercise check valves once every three months was requested for main steam isolation valve (MSIV) accumulator, Class 2, check valves. These valves prevent reverse flow from the accumulator to the inlet air line, and therefore, ensure the accumulator maintains air pressure in the event of a loss of instrument air.

2.3.1 Licensee's Basis for Relief

The licensee states: "These check valves, located in MSIV accumulator inlet (air) lines provide Containment Instrument Gas System and Instrument Air System gas flow into their respective MSIV accumulators, while preventing flow of gas stored in the MSIV accumulator in the reverse direction, during closure of their respective MSIV's at the onset of a LOCA. Plant configuration and exclusion of personnel from the purged drywell during operation preclude completion of closure exercise testing throughout the period of each plant operating cycle. Any exercise testing of these check valves requires or causes closure of the associated MSIVs, rendering it impractical except during refueling outages. The design basis of these check valves for the inboard MSIVs is established by PP&L Calculations M-MSS-025 and M-MSS-028, from which testing appropriate to their safety function is derived."

2.3.2 Alternative Testing

The licensee proposes: "Demonstrate closure of each MSIV accumulator check valve by monitoring the essential restriction of its reverse flow of gas, through measurement of the rate of decay of pressure in its respective MSIV accumulator (downstream of the check valve under test) once per refueling outage. This MSIV accumulator pressure decay test provides verification of the closure of the inlet check valve."

2.3.3 Evaluation

The Code requires quarterly exercising of check valves to allow for a determination of degrading conditions prior to a condition of inoperability. Verification of closure also ensures that no condition or obstruction is causing the disc to remain partially open. Extending the frequency to cold shutdown is allowed by IWV-3522 when operation is not practical during plant operation. Extending the frequency to refueling outages requires relief, which is requested in VRR-60. While the licensee has provided a basis for not performing testing during power operations, testing during cold shutdown has not been shown to be impractical. However, immediate imposition of the Code requirements would be a burden without a compensating increase in the level of safety in that a plant shutdown would be required to perform the testing when there is no evidence that the valves would not perform their safety function in the near-term based on the current performance of the valves during MSIV inservice testing. The licensee will need a period of time to determine the appropriate test frequency and develop implementing procedures. During the interim, the licensee should determine if the testing can be performed at a cold shutdown frequency.

2.3.4 Conclusion

Interim relief is granted for a period of one year, or until the next refueling outage of either unit (whichever is later) for the MSIV accumulator check valves, pursuant to 10 CFR 50.55a(a)(3)(ii), based on immediate imposition of the Code requirements resulting in a hardship without a compensating increase in the level of quality and safety. In the interim, the licensee is to determine if the valves can be verified closed at a cold shutdown frequency and implement testing as appropriate, or provide additional justification of the impracticality of testing at this frequency, and revise the relief request accordingly.

2.4 VALVE RELIEF REQUEST 61

Relief has been requested from the requirements of IWV-3417(a) for corrective action when an increase in stroke time from the previous test is observed. The relief request is applicable to the Class 2 control rod drive scram discharge volume vent and drain valves.

2.4.1 Licensee's Basis for Relief

The licensee states: "These globe valves are air operated and have comparatively complex actuation logic schemes sequencing their start and stop times. P&ID M-147 Notes 21 and 22 establish additional restraints, which are satisfied administratively, upon the stroke times and sequencing of these valves. In addition to the common causes of inconsistency in rate of pneumatic actuation of valves, such as variations in air line supply pressure and variations in air regulator output pressure, the pneumatic actuators of these valves have their exhaust airflows metered by needle valves. Their actuation rate is extremely sensitive to the slightest changes in the positions of the needles in these needle valves, as caused by readjustment, by physical shock, or by thermal change. By readjustment of the exhaust needle valve position, these valves are maintained in compliance with the stroke time and sequencing limitations of the P&ID, which, although dissimilar from those of Article IWV-3000, provide a more relevant basis for verifying the operational readiness of these particular valves."

2.4.2 Alternative Testing

The licensee proposes: "Exercise testing of the four valves is to be performed quarterly, per IWV-3410 requirements, except that the IWV-3417(a) stroke time increase limitations (of 25% above 10 seconds and 50% below 10 seconds) will be replaced by P&ID M-147 Notes 21 and 22 limitations that the outboard valves full close > 5 seconds after their respective inboard valves, and start opening > 5 seconds before their respective inboard valves."

2.4.3 Evaluation

The requirements for increased test frequency as specified in IWV-3417(a) are to monitor for any additional increases in stroke times such that if the tested valve stroke time increases to an unacceptable level, corrective action to effect repairs will be taken immediately. When valves exhibit an increase in stroke time, for reasons such as described in the licensee's basis for relief, actions are to be taken to correct the condition(s) causing the increase, or more frequent testing is to be performed to continue to monitor for additional increase until the condition is corrected.

The licensee's basis does not show that the requirements of the code are impractical or that proposed alternative testing will provide an acceptable level of quality and safety. Thus, no basis is shown to warrant relief from the requirements of IWV-3417(a).

2.4.4 Conclusion

Relief is denied.

2.5 VALVE RELIEF REQUEST 63

Relief has been requested for the high pressure coolant injection (HPCI) pumps from the requirements of IWP-3100 to adjust pump speed to a reference speed for inservice testing.

2.5.1 Licensee's Basis for Relief

The licensee states: "These pumps are driven by a steam turbine which exhausts steam into the suppression pool, heating it toward its Technical Specification limit of 105°F. This is a severe limitation on test duration. Frequent test repetition is not desirable due to the strong transient nature of a HPCI quick start. Such quick starts are recommended by INPO and have been adopted as PP&L's test method. These factors make this test uniquely time-dependent. Pump speed is not directly controllable, but can only be achieved through coordinated manipulation of the pump flow controller and the test system throttling valve. Test results are extremely sensitive to variations in pump speed, from all sources."

2.5.2 Alternative Testing

The licensee proposes: "When pump test speed differs from the reference speed by a measurable amount (10 RPM, or greater), the corrective action analysis, permitted by paragraph IWP-3230(c) may include a correction calculation, using the following relationship, to conform the test results at actual test to the reference speed:

$$\frac{\text{Differential Pressure(act)}}{\text{Differential Pressure(ref)}} = \frac{\text{Developed Head(act)}}{\text{Developed Head(ref)}} = [\text{Speed(act)}/\text{Speed(ref)}]^2$$

2.5.3 Evaluation

The Code requires that speed be adjusted to a reference speed for variable speed driven pumps in order to have repeatable conditions for testing. Changes in the speed of a pump are directly proportional to changes in the flow and vary as the square-root of the ratio of the head of the pump. Therefore, the inservice test must be performed at the same value of speed and either flow or differential pressure, with the other being the measured parameter, to monitor for changes in the hydraulic performance of the pump.

The proposed alternative testing indicates that differential pressure is the measured parameter. The licensee has not described how the proposed testing accounts for the difference in the flow reference value (as it would vary along the pump performance curves for different speeds) when performing the testing at variable pump speeds. Potentially, depending on the speed and flow ranges of the pumps, with only a minimum change in the pump speed, flow could be affected greater than the allowable accuracy of the flow instruments, and performing the test at a reference flow, but with a different speed, would not represent repeatable conditions.

Therefore, relief cannot be granted as requested because the licensee has not shown that the requirements of the code are impractical and has not provided justification that the alternative testing provides an acceptable level of quality and safety. Additionally, the licensee has not discussed relief from the test duration of Section XI, IWP-3500(a).

2.5.4 Conclusion

Relief is denied.

2.6 VALVE RELIEF REQUEST 66

Relief from the frequency requirements of IWV-3521 for exercising check valves which provide actuation gas to the automatic depressurization feature of the main steam relief valves has been requested.

2.6.1 Licensee's Basis for Relief

The licensee proposes: "Closure of the subject valves for exercise testing interrupts instrument gas supply to the automatic depressurization system (ADS) solenoids of the safety/relief valves, compromising their ability to provide the opening motive force for the ADS valves, in support of the long-term emergency core cooling system (ECCS) function. Due to the configuration of the containment instrument gas (CIG) system, depressurization and venting of sufficient pipe lines to permit closure exercise testing of these valves further interrupts instrument gas supply to several important valves inside containment, such as the safety/relief valves (non-ADS function) and the main steam isolation valves (MSIV's). This could compromise the ability of the safety relief valves (SRVs) to operate in the relief mode which, while not an ECCS function, is important to safety. Loss of instrument gas supply could also cause the MSIV's to close, resulting in a severe reactor transient if operating, or in an undesirable engineered safety features (ESF) actuation, if shut down. Loss of instrument gas supply could also cause isolation of the drywell cooling lines, resulting in a drywell temperature excursion."

2.6.2 Alternative Testing

The licensee proposes: "Demonstrate closure of each check valve by monitoring the essential restriction of its reverse airflow, through the test connection downstream of the opposite division check valve, once per refueling outage."

2.6.3 Evaluation

These containment instrument gas valves are Category C, Class 2, 1" check valves which function to provide actuating gas to automatic depressurization feature of main steam relief valves. The licensee has not described the safety function of these valves to close, though the IST program and the relief request indicate that testing is required to verify closure rather than opening.

The Code requires quarterly exercising of check valves to allow for a determination of degrading conditions prior to a condition of inoperability. Verification of closure also ensures that no condition or obstruction is causing the disc to remain partially open. When exercising is impractical at normal operating conditions, the Code allows performance during cold shutdown conditions. The licensee has provided a basis for deferring exercising from quarterly to cold shutdown, but states only that an undesirable ESF actuation could result if exercising is performed at cold shutdown. Therefore, long-term relief cannot be granted. The proposed alternative testing frequency

provides an acceptable level of assurance of the operational readiness of these check valves for an interim period, because the testing verfied operation of the valves, though at an extended interval. Immediate imposition of the Code requirements would be a hardship without a compensating increase in the level of quality and safety in that a plant shutdown would be necessary to exercise the valves with the current methods and procedures. An interim period should be allowed for the licensee to investigate exercising the valves during cold shutdown, or provide additional basis for not exercising the valves during cold shutdown conditions.

2.6.4 Conclusion

Interim relief is granted for a period of one year from the date of this SE for exercising containment instrument gas check valves 1/2-26-018 and 1/2-26-029 during refueling outages, pursuant to 10 CFR 50.55a(a)(3)(ii), based on consideration that the immediate imposition of the Code required exercising frequency would be a hardship without a compensating increase in the level of quality and safety. The licensee should investigate exercising these valves during cold shutdown conditions and implement such testing, or provide additional basis for not performing the testing in a revised relief request.

3.0 IST PROGRAM ANOMALIES

Summarized below are inconsistencies and omissions in the IST program noted during this review. The licensee should resolve these items in accordance with the evaluations, conclusions, and guidelines presented in this report.

1. In the introduction of the program document, the licensee indicates that pressure relief valve testing will be conducted using test procedures which incorporate the testing methods of Section 4.09 of ANSI/ASME PTC 25.3-1976. The PTC includes additional sections which are applicable to periodic testing. Any noncompliance with the other applicable requirements of Sections 0, 1, 2, and 3 requires submittal of relief requests. Alternatively, the licensee may elect to implement the requirements of OM-1-1981, which is referenced by the 1986 Edition of Section XI.

2. In the introduction of the program document, the licensee indicates that excess flow check valves will be verified closed at least once per 18 months in accordance with Technical Specification requirements. If these valves are within the scope of 10 CFR 50.55a and ASME Section XI, IWV-1100, relief to test at this extended frequency is required.

3. The licensee's testing definition "CS" for cold shutdown testing is not in accordance with ASME Section XI, IWV-3412 and IWV-3522. Relief is required to implement the definition which is consistent with OM-10 4.2.1.2(g) which has not yet been approved per 10 CFR 50.55a.

4. For pressure isolation valves, the licensee indicates that additional leak rate testing will be performed (water as test medium) at 1000 ±10 psig with an acceptance criterion of 1 gpm. The licensee should ensure that testing meets the requirements of IWV-3420 or relief is required.

5. In pump relief request PRR-49, the licensee has requested relief from the test duration requirements of Section XI, Paragraph IWP-3500(b) and IWP-3500(a). This relief request was preapproved by Generic Letter 89-04. The licensee has proposed that vibration measurements will ensure adequate information concerning potential bearing temperature problems. Additionally, pump flow rate is to be measured by the rate of drainage from the test tank. This method of measuring the flow rate is acceptable for continued use only if the licensee has proceduralized the calculation for converting level to flow rate such that the Code required accuracy is met.

6. In valve relief request VRR-10, the licensee has requested relief from testing per the method and frequency requirements for pressure safety/relief valves. This relief request was preapproved by Generic Letter No. 89-04. The licensee proposes to exercise valves in accordance with Technical Specifications 4.5.1.d.2.b, which provides for manual opening of each ADS valve with reactor dome pressure greater than or equal to 100 psig and observing either control valve or bypass valve response or corresponding change in measured steam flow. This testing will provide an indication of the capability of the valves to function, though, this alternative testing does not monitor the valves for degrading conditions. Therefore, the licensee should propose a method for monitoring these valves for degradation prior to implementation of the updated inservice testing program for the next 10-year interval. No current action is required.

7. In valve relief request VRR-11, the licensee has requested relief from the test frequency requirements for containment isolation valves. The licensee proposes to full stroke exercise valves in Operational Condition 1, 2, or 3 when power level is low enough to prevent transients. Also, no trending of valve stroke times will be measured. The test frequency aspect of this relief request was preapproved per Generic Letter 89-04. GL 89-04, Position 6, provides guidance on valves which stroke in less than 2 seconds. Relief is granted for these valves per GL 89-04, Position 6, provided the licensee assigns a maximum limiting value of full stroke time of 2 seconds to these valves. Trending of stroke times is not required if GL 89-04, Position 6, is implemented.

8. In valve relief request VRR-20, the licensee requested relief from the leak testing requirements for containment isolation valves located in the RCIC, RHR, Core Spray, HPCI, and Containment Atmosphere Control Systems. This relief request was preapproved by Generic Letter 89-04. The licensee proposes to leak test gate valves in the reverse direction. Continued use of this relief request is acceptable provided the reverse leakage testing meets the requirements of Appendix J.

9. In valve relief request VRR-30, the licensee has requested relief from the corrective action requirements for valves specified as tested on a cold shutdown or refueling frequency. This relief request was preapproved by Generic Letter No. 89-04. The licensee has proposed that the testing frequency will remain unchanged and the requirement contained in the Susquehanna Steam Electric Station Technical Specifications will control plant operations with regard to out-of-service valves. However, the staff does not agree with the licensee's statement that the same reasoning for deferring testing to cold shutdown applies to increasing the testing to a monthly frequency when an increase in stroke time is measured. In OM-10, corrective action is required and there is no option for increased frequency. In order to continue to use this relief request, the licensee should implement an additional action to verify that the operation of the valve which is exhibiting degradation is acceptable for continued operation, including a review of the trending of stroke times for the valve.

10. In valve relief request VRR-38, the licensee has requested relief from the corrective action requirements for "Rapid Acting Valves". This relief request is approved per Generic Letter No. 89-04, Position 6, provided the licensee assigns a maximum limiting value of full stroke time of 2 seconds to these valves.

11. In reviewing relief request VRR-40, preapproved by Generic Letter 89-04, an addition of two check valves, 1-11144 and 1-11145, added to the ESW System supply lines to the Control Structure Chillers by a plant modification for ESW System waterhammer abatement, was noted. Nevertheless, the intent of the relief request did not change and approval continues to be acceptable. Pump relief request PRR-50 is related to this alternative testing which verifies the functioning of the components on a system basis. This testing will provide an indication of the capability of the valves and pumps to function on a system level, though, this alternative testing does not monitor the valves and pumps for degrading conditions. Therefore, the licensee should propose a method for monitoring these valves for degradation prior to implementation of the updated inservice testing program for the next 10-year interval. No current action is required.

12. In valve relief requests VRR-27 and VRR-51, the licensee references IE Bulletin (IEB) 83-03, "Check Valve Failures in Raw Water Cooling Systems of Diesel Generators." IEB 83-03 requested licensees to include in the IST program check valves in the flow path of cooling water for diesel generators from the intake to the discharge, and assure integrity of the valve internals by both a forward flow and back flow, by valve disassembly and inspection, or by an equally effective method. The licensee committed to perform valve disassembly and inspection to verify internal integrity in letters dated June 9, 1983, and December 26, 1984. GL 89-04, Position 2, provides guidance for implementing a disassembly and inspection for check valves which should be followed for these valves as well. Alternatively, if the licensee determines that nonintrusive testing methods can be utilized for these valves, the staff could consider a method that meets guidance in GL 89-04, Position 1, to be equally effective for verifying the integrity of the internals of these check valves.

13. In valve relief request VRR-53, the licensee has requested relief from the requirements of Section XI, Paragraph IWV-3411, IWV-3412, and IWV-3413, for the HPCI turbine stop valve. This relief request was preapproved by GL 89-04. The licensee has proposed testing the valve functionally each time the HPCI turbine is tested (quarterly). Additionally, response time testing for the HPCI system will be performed in accordance with Technical Specifications once per 18 months, and stroke time will not be measured or trended. The valve strokes in less than 2 seconds. Therefore, the licensee should investigate measuring that the stroke time is less than 2 seconds and assign a maximum limiting value of full stroke time of 2 seconds to these valves, if practical. This should eliminate concerns with minor variations in the stroke time accuracies, and would be consistent with GL 89-04, Position 6, for detecting degraded conditions.

14. In valve relief request VRR-59, the licensee has requested relief from the frequency requirements of Section XI, Paragraphs IWV-3411 and IWV-3421, for Direction Unit Cooling water flowpath valves. This relief request was preapproved by Generic Letter 89-04. The licensee has proposed verifying operability in conjunction with Emergency Diesel Generator automatic start and Essential Bus energizing on loss of offsite power testing. Initiation and continued normal operation of each Direct Expansion Unit will confirm that its isolation valves and check valves have demonstrated their safety function by actuating. The licensee should actively pursue other means of verifying operational readiness prior to updating the IST program for the next inspection interval, as the current testing does not monitor these valves for degrading conditions. No further action is required at this time.

15. For valve relief request VRR-60, interim relief has been granted for the MSIV accumulator check valves. In the interim, the licensee is to determine if the valves can be verified closed at a cold shutdown frequency and implement testing as appropriate, or provide additional justification of the impracticality of testing at this frequency, and revise the relief request accordingly.

16. For valve relief request VRR-61, relief has been denied. The basis and proposed alternative testing do not provide sufficient justification for not complying with the requirements of IWV-3417(a). In the basis, reference is made to Notes 21 and 22 on P&ID M-147, but the technical justification for these notes is not discussed, nor is there a comparison of the expected stroke time to the 5-second limit in these notes. There is no explanation for the licensee's statement that these provide a more relevant basis for verifying the operational readiness of these particular valves. The licensee must meet the requirements of IWV-3417(a). If it is determined that additional justification should have been included in the relief request, a revised request should be submitted for further evaluation. The licensee should ensure that testing of the MSIVs is performed adequately for demonstration of the functioning of the accumulator check valves. Reference NRC Information Notice 85-084, "Inadequate Inservice Testing of Main Steam Isolation Valves.
17. In relief request VRR-63, the effects of performing testing at variable pump speeds on differential pressure is discussed. Varying the pump speed also impacts flow rates, but no proposals for the effects on flow rates are

discussed. If the licensee develops reference values for various expected pump speeds, the requirements of IWP may be met. Additionally, if testing is performed in accordance with the Code requirements, the analysis may include aspects not accounted for in the testing, as the Code is not specific on how the analysis must be performed. The licensee should review the testing and determine what actions are necessary to meet the Code requirements for testing the HPCI pumps. If tests are performed at different speeds, multiple reference values may need to be established. Testing is to be performed in accordance with IWP, as relief is denied. If the licensee cannot determine a method to meet the Code requirements, additional justification will be required for granting relief.

18. For relief request VRR-66, interim relief has been granted to allow the licensee a period to investigate exercising containment instrument gas check valves 1/2-26-018 and 1/2-26-029 during cold shutdown conditions, or providing additional basis on the impracticality of performing testing at this frequency.

19. The program includes a number of relief requests for testing valves during cold shutdown conditions rather than quarterly. These should be changed from relief requests to cold shutdown justifications. The licensee should refer to the Minutes of the Public Meetings on Generic Letter, dated October 25, 1989, Question 102. Each of these are indicated on Table 1 as cold shutdown justifications.

The approved reliefs are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed.

Principle Contributors: C. Yates
P. L. Campbell

Date: June 23. 1992

SUSQUEHANNA STEAM ELECTRIC STATION
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	SE Sect.	Section XI Requirements	Equipment Identification	Proposed Alternative Method of Testing	Recommended NRC Action
VRR-01		IWV-3411, test frequency	Containment isolation valves	Exercise valves during cold shutdowns.	Cold shutdown justification, Relief not required.
VRR-02	N/A	IWV-3521 and IWV-3522, test frequency and method	Containment isolation check valves	Verify closure capability during 10CFR50, App. J leak tests. Additionally, verify opening capability of valves 1-26-152, 1-26-154 (Unit 1) and 2-26-152, 2-26-154 (Unit 2) with air pressure applied through the outboard test valves, opening the inboard test valves, and observing essentially unrestricted flow.	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-03		IWV-3411, test frequency	SV-12651 (Unit 1) SV-22651 (Unit 2) Containment isolation solenoid valves	Exercise valves during cold shutdowns.	Cold shutdown justification, Relief not required.
VRR-04		IWV-3411, test frequency	SV-12654A, SV-12654B (Unit 1) SV-22654A, SV-22654B (Unit 2) Containment isolation solenoid valves	Exercise valves during cold shutdowns.	Cold shutdown justification, Relief not required.
VRR-05		IWV-3411, test frequency	MSIV Leakage Control Containment isolation valves	Exercise valves during cold shutdowns.	Cold shutdown justification, Relief not required.

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SE TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	SE Sect.	Section XI Requirements	Equipment Identification	Proposed Alternative Method of Testing	Recommended NRC Action
VRR-06		IWV-3411, test frequency	System initiation isolation valves located in the MSIV-Leakage Control System	Exercise valves during cold shutdowns.	Cold shutdown justification, Relief not required.
VRR-07	N/A	IWV-3521 and IWV-3522, test frequency and method	141F010 A,B (Unit 1) 241F010 A,B (Unit 2) Containment isolation check valves	Verify closure capability during 10CFR50, App. J leak tests.	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-08	N/A	Safety/relief valve setpoint test in accordance with ASME PTC 25.3-1976, Section 4.09 (testing schedule per Table IWV-3510-1)	Pressure safety/relief valves discharge pipe vacuum breakers.	Commencing with the first refueling outage, the setpoint will be checked once per refueling outage by pouring water into the valve inlet and measuring the height of water column necessary to activate the valve.	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-09	N/A	IWV-3417(b) and IWV-3523, corrective action requirements	General valves	Susquehanna SES Technical Specifications will control plant operations and testing with regard to out-of-service valves. Valves which are not addressed in the Technical Specifications will be declared inoperable should they fail IST testing.	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-10	N/A	IWV-3511 and IWV-3512, test frequency and method	PSV-141F013 G,J,K,L,M,N (Unit 1) PSV-241F013 G,J,K,L,M,N (Unit 2) Pressure safety/relief valves	Exercise valves in accordance with Technical Specifications 4.5.1.d.2.b, which provides manual opening of each ADS valve with reactor dome pressure greater than or equal to 100 psig and observing either control valve or bypass valve response or corresponding change in measured steam flow.	Preapproved GL 89-04, See Anomaly Item 6.

SUSQUEHANNA STEAM ELECTRIC STATION
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	SE Sect.	Section XI Requirements	Equipment Identification	Proposed Alternative Method of Testing	Recommended NRC Action
VRR-11	N/A	IWV-3411 and IWV-3412, test frequency and method IWV-3413, Stroke Time Measurements	HV-141F022 A,B,C,D (Unit 1) HV-241F022 A,B,C,D (Unit 2) Containment isolation valves	Full stroke exercise valves in Operational Condition 1, 2, or 3 when power level is low enough to prevent transients. No trending of valve stroke times will be measured.	Preapproved GL 89-04, See Anomaly Item 7 Approved per GL 89-04, Position 6
VRR-12	N/A	IWV-3521 and IWV-3522, test frequency and method	HV-141F032 A,B (Unit 1) HV-141F032 A,B (Unit 2) Containment isolation check valves	1. Cycle valves shut during cold shutdowns using stop-check motor operators. 2. Verify closure capability during 10CFR50, App. J leak tests of HV-141F032B as a check valve.	Preapproved per GL 89-04, Relief not evaluated in SE.
VRR-13	N/A	IWV-3521 and IWV-3522, test frequency and method	1-53-071 A,B (Unit 1) 2-53-071 A,B (Unit 2) Fuel Pool Cooling and Cleanup check valves	Verify operability by a pneumatic open flow path test (SE-235-301) as specified by ASME Code Section XI paragraph IWD-2400.	Non-Code, NRC approval not required.
VRR-14	N/A	IWV-3521 and IWV-3522, test frequency and method	XV-143F017 A,B (Unit 1) XV-243F017 A,B (Unit 2) Containment isolation excess flow check valves	Verify closure capability during 10CFR50, App. J leak tests.	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-15	N/A	IWV-3521 and IWV-3522, test frequency and method	143F013 A,B (Unit 1) 243F013 A,B (Unit 2) Containment isolation check valves	Verify closure capability during 10CFR50, App. J leak tests.	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-16		IWV-3411, test frequency	HV-143F031 A,B (Unit 1) HV-243F031 A,B (Unit 2) Recirculation pump discharge isolation valves	Exercise valves in accordance with Technical Specifications 4.4.1.1.1	Cold shutdown justification, Relief not required.

SUSQUEHANNA STEAM ELECTRIC STATION
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	SE Sect.	Section XI Requirements	Equipment Identification	Proposed Alternative Method of Testing	Recommended NRC Action
VRR-17	N/A	IWV-3411 and IWV-3521, test frequency	Scram discharge header check valves, charging water head check valves, scram inlet valves, scram exhaust valves, and cooling water header check valves	1. Verify proper functioning of the scram discharge header check valves, scram inlet valves, and the scram exhaust valves, by periodic scram testing and control rod insertion timing, per Technical Specification 4.1.3.2 and Technical Specification 4.1.3.3. 2. Verify proper closure of the charging water header check valves per Technical Specification 4.1.3.5.b.2. 3. Verify proper closure of the cooling water header check valves per Technical Specification 4.6.1.2.	Approved per GL 89-04, Position 7, Relief not evaluated in SE.
VRR-18	N/A	IWV-3521 and IWV-3522, test frequency and method	HV-148F006 (Unit 1) HV-248F006 (Unit 2) Stop-check valves	Verify opening capability in accordance with Technical Specification 4.1.5.d. Additionally, closure capability of the valve by motor operation will be performed just prior to the injection testing.	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-19	N/A	IWV-3521 and IWV-3522, test frequency and method	HV-148F007 (Unit 1) HV-248F007 (Unit 2) Check valves	Verify opening capability in accordance with Technical Specification 4.1.5.d. Additionally, verify closure capability during 10CFR50, App. J leak tests.	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-20	N/A	IWV-3423(c), differential test pressure	Containment isolation valves located in the RCIC, RHR, Core Spray, HPCI, and CAC	Leak test gate valve in reverse direction.	Preapproved GL 89-04, See Anomaly Item 8
VRR-21	N/A	IWV-3521 and IWV-3522, test frequency and method	149F028, 149F040, 149F021 (Unit 1) 249F028, 249F040, 249F021 (Unit 2) Containment isolation check valves	Verify closure capability during 10CFR50, App. J leak tests.	Preapproved GL 89-04, Relief not evaluated in SE.

SUSQUEHANNA STEAM ELECTRIC STATION
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	SE Sect.	Section XI Requirements	Equipment Identification	Proposed Alternative Method of Testing	Recommended NRC Action
VRR-22	N/A	IWV-3521 and IWV-3522, test frequency and method	149F063, 149F064 (Unit 1) 249F063, 249F064 (Unit 2) Vacuum breaker check valves	Verify opening capability every 24 months by applying air upstream of valve and verifying flow downstream of valve.	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-23		IWV-3411, test frequency	Containment Isolation Valves HV-151F008/009 (Unit 1) HV-251F008/F009 (Unit 2)	Exercise valves during cold shutdowns.	Cold shutdown justification, Relief not required.
VRR-24	2.1	IWV-3521 and IWV-3522, test frequency and method	Check valves located in the RHR, Core Spray, HPCI and ESW Systems	1. Verify closure of each check valve in the keepfill line of the RHR and HPCI Systems once per refueling outage. 2. Verify closure of at least one of the two check valves in each pair in the keepfill lines of the Core Spray System once per refueling outage. 3. Verify closure of each check valve in the keepfill line of the ESW System once per 18 months.	Relief granted per 10 CFR 50.55a(a)(3)(ii)
VRR-25	N/A	N/A	N/A	N/A	Request Withdrawn
VRR-26		IWV-3411 and IWV-3521, test frequency	Containment isolation valves	Exercise valves during cold shutdowns	Cold shutdown justification, Relief not required.
VRR-27	N/A	1. IWV-3521 and IWV-3522, test frequency and method. 2. Valve Internals Integrity Verification of NRC IEB 83-03	Diesel generator cooling flowpath alignment check valves for Unit 1 only	Verify proper valve functioning by valve disassembly. Additionally, commencing with the first refueling outage, two valves will be inspected at least once per 18 months.	Approved per GL 89-04, Position 2, See Anomaly Item 12.
VRR-28	N/A	IWV-3521 and IWV-3522, test frequency	155F049, 155F046 (Unit 1) 255F049, 255F046 (Unit 2) Containment isolation check valves	Verify closure capability during 10CFR50, App. J leak tests.	Preapproved GL 89-04, Relief not evaluated in SE.

SUSQUEHANNA STEAM ELECTRIC STATION
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	SE Sect.	Section XI Requirements	Equipment Identification	Proposed Alternative Method of Testing	Recommended NRC Action
VRR-29		IWV-3411, test frequency	HV-155F006 (Unit 1) HV-255F006 (Unit 2) Containment isolation valves, HPCI Injection	Exercise valves during cold shutdowns	Cold shutdown justification, Relief not required.
VRR-30	N/A	IWV-3417(a), corrective action	All valves specified as tested on a cold shutdown or refueling frequency.	Testing frequency will remain unchanged. The requirement contained in the Susquehanna Steam Electric Station Technical Specifications will control plant operations with regard to out-of-service valves.	Preapproved GL 89-04, See Anomaly Item 9
VRR-31	N/A	IWV-3521 and IWV-3522, test frequency and method	155F045 (Unit 1) 255F045 (Unit 2) Check valves in the HPCI System	Verify operability during valve disassembly. Disassembly will occur once every other refueling outage on an alternating basis.	Approved per GL 89-04, Position 2, Relief not evaluated in SE.
VRR-32	N/A	IWV-3521 and IWV-3522, test frequency and method	155F019 (Unit 1) 255F019 (Unit 2) Check valves in the HPCI System	Verify operability during valve disassembly. Disassembly will occur once every other refueling outage on an alternating basis.	Approved per GL 89-04, Position 2, Relief not evaluated in SE.
VRR-33	N/A	N/A	N/A	N/A	Request Withdrawn
VRR-34	N/A	IWV-3521 and IWV-3522, test frequency and method	155F076, 155F077 (Unit 1) 255F076, 255F077 (Unit 2) Vacuum breaker check valves located in the HPCI System	Verify opening capability every 24 months by applying air upstream of valve and verifying flow downstream of valve.	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-35	N/A	IWV-3427(b), corrective action for valves 6 inches and larger.	All containment isolation valves	Valve leak testing will be performed in accordance with the requirements of 10CFR50 Appendix J and Susquehanna SES Technical Specification 3/4.6.1.2.	Approved per GL 89-04, Position 10, Relief not evaluated in SE.
VRR-36	N/A	N/A	N/A	N/A	Request Withdrawn
VRR-37		IWV-3411, test frequency	Containment isolation valves	Exercise valves during cold shutdowns.	Cold shutdown justification, Relief not required.

SUSQUEHANNA STEAM ELECTRIC STATION
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	SE Sect.	Section XI Requirements	Equipment Identification	Proposed Alternative Method of Testing	Recommended NRC Action
VRR-38	N/A	IWV-3417(a), corrective action	"Rapid-Acting" valves	Verify maximum stroke time.	Approved per GL 89-04, Position 6, See Anomaly Item 10.
VRR-39		IWV-3411, test frequency	Containment isolation valves	Exercise valves during cold shutdowns.	Cold shutdown justification, Relief not required.
VRR-40	N/A	IWV-3411 and 3521, test frequency and method	Condenser and Chilled Water Flowpath valves (Unit 1 only)	Verify that the specified discharge temperature are maintained in conjunction with the chiller pump tests.	Preapproved GL 89-04, See Anomaly Item 11.
VRR-41	N/A	IWV-3415, fail-safe valves	All fail-safe valves	Verify fail-safe function during normal testing.	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-42	N/A	IWV-3100, preservice tests	All pressure relief valves	None	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-45		IWV-3521 and IWV-3522, test frequency and method	Containment isolation valves in the Core Spray System	Exercise valves during cold shutdowns.	Cold shutdown justification, Relief not required.
VRR-46	N/A	Section XI, frequency-requirements	General valves	Testing will be suspended on equipment in operable loop when there is a redundant loop out-of-service.	Preapproved GL 89-04, Relief not evaluated in SE.
VRR-51	N/A	Valve Internals Integrity Verification of NRC IEB 83-03	0-11-001, 0-11-002, 0-11-003, 0-11-004 (Unit 1 only) Pump Discharge Check valves located in the Emergency Service Water System.	Verify proper valve functioning by valve disassembly. Additionally, commencing with the first refueling outage, 1 valve from each loop will be disassembled at least once per 18 months.	Approved per GL 89-04, Position 1 and 2, See Anomaly Item 12.
VRR-53	N/A	IWV-3411 and IWV-3412, test frequency and method IWV-3413, Stroke time measurements	FV-15612 (Unit 1) FV-25612 (Unit 2) flow control valves	Verify operability during HPCI turbine testing (quarterly). Additionally, response time testing for the HPCI system will be performed in accordance with Technical Specifications once per 18 months.	Preapproved GL 89-04, See Anomaly Item 13

SUSQUEHANNA STEAM ELECTRIC STATION
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	SE Sect.	Section XI Requirements	Equipment Identification	Proposed Alternative Method of Testing	Recommended NRC Action
VRR-57	N/A	N/A	N/A	N/A	Request Withdrawn
VRR-58	2.2	IWV-3300, valve position indicator verification	Solenoid valves located in the Containment Instrument Gas System and the Containment Atmosphere Control System.	Verify confirmation of coincident valve movement and remote indication by listening to the valve with a stethoscope, for the audible signal of the valve disk arriving at a new position. Additionally, verify accuracy for these solenoid valves at least once every 2 years by the combination of containment isolation valve leak rate testing (LLRT) or instrument gas storage leakdown testing) with accomplishment of General Operating Procedures (GO-200-002) for plant startup and heat up.	Relief granted per 10 CFR 50.55a(g)(6)(i)
VRR-59	N/A	IWV-3411 and IWV-3521, test frequency	2-11-132, 2-11-133, 2-11-134, 2-11-135, HV-21144A, HV-21144B (Unit 2 only) Direction Unit Cooling Water flowpath valves	Verify operability in conjunction with Emergency Diesel Generator automatic start and Essential Bus energizing on loss of offsite power testing. Initiation and continued normal operation of each Direct Expansion Unit will confirm that its isolation valves and check valves have demonstrated their safety function by actuating.	Preapproved GL 89-04, See Anomaly Item 14.
VRR-60	2.3	IWV-3521, test frequency	Check valves located in the MSIV accumulator inlet (air) lines	Verify closure per pressure decay test.	Interim Relief Granted (a)(3)(ii) for one year or until next refueling outage.
VRR-61	2.4	IWV-3417(a), corrective action	Control rod drive scram discharge volume vent and drain valves	Exercise testing of the four valves is to be performed quarterly, per IWV-3410 requirements, except that the IWV-3417(a) stroke time increase limitations (of 25% above 10 seconds and 50% below 10 seconds) will be replaced by P&ID M-147 Notes 21 and 22 limitations.	Relief Denied

SUSQUEHANNA STEAM ELECTRIC STATION
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	SE Sect.	Section XI Requirements	Equipment Identification	Proposed Alternative Method of Testing	Recommended NRC Action
VRR-62		IWV-3411, test frequency	HV-144F001, HV-144F004 (Unit 1) HV-244F001, HV-244F004 (Unit 2) Containment isolation valves	Exercise valves during cold shutdowns.	Cold shutdown justification, Relief not required.
VRR-64	N/A	1. IWV-3521, test frequency 2. NRC Generic Letter 89-04 Position 1	Check valves located in the ESW, RCIC, RHR, LPCS, and HPCI Systems	1. Perform partial valve stroke exercise testing at quarterly testing frequencies, cold shutdown testing frequencies, or at other frequencies as specified in separate relief requests. 2. Establish and employ a sample disassembly and inspection plan for groups of up to four identical valves in similar applications. 3. Disassemble, inspect, verify structural soundness of internal components, and manually exercise the disk through full stroke for one different valve in each group at each successive refueling outage.	Approved per GL 89-04, Position 2, Relief not evaluated in SE.

SUSQUEHANNA STEAM ELECTRIC STATION
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	SE Sect.	Section XI Requirements	Equipment Identification	Proposed Alternative Method of Testing	Recommended NRC Action
VRR-65	N/A	1. IWV-3521, test frequency 2. NRC Generic Letter 89-04 Position 1	Check valves located in the RCIC, FPC&C, and HPCI Systems	1. Perform partial valve stroke exercise testing at quarterly testing frequencies, cold shutdown testing frequencies, or at other frequencies as specified in separate Relief Requests, specific to each check valve. 2. Establish and employ a sample disassembly and inspection plan for groups of up to four identical valves in similar applications. 3. Disassemble, inspect, verify structural soundness of internal components, and manually exercise the disk through its full stroke for one different valve in each group at every "pair" of refueling outages alternating between two units.	Approved per GL 89-04, Position 2, Relief not evaluated in SE.
VRR-66	2.6	IWV-3521, test frequency	126018, 126029 (Unit 1) 226018, 226029 (Unit 2) Subject valves that provide actuating gas to the Automatic Depressurization Feature of Main Steam Relief Valves	Verify closure of each check valve by monitoring the essential restriction of its reverse airflow, through the test connection downstream of the opposite division check valve, once per refueling outage.	Interim relief granted per 10 CFR 50.55a(a)(3)(ii) for one year.

SUSQUEHANNA STEAM ELECTRIC STATION
SE TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	SE Sect.	Section XI Requirements	Equipment Identification	Proposed Alternative Method of Testing	Recommended NRC Action
PRR-43	N/A	IWP-3100 and Table IWP-3100-1, measure inlet pressure	1P208 A,B (Unit 1) 2P208 A,B (Unit 2) Standby Liquid Control Pumps	Utilize pump discharge pressure reading in lieu of pump delta-p reading. Do not measure inlet pressure prior to or during pump tests.	Preapproved GL 89-04, Relief not evaluated in SE.
PRR-44	N/A	IWP-3400(a), test frequency and method	1P204, 1P209 (Unit 1) 2P204, 2P209 (Unit 2) HPCI Main and Booster Pumps	Verify HPCI flow in accordance with quarterly schedule. Recommence quarterly schedule in accordance with Technical Specifications 4.5.1.b.3 after a shutdown of greater than one quarter.	Preapproved GL 89-04, Relief not evaluated in SE.
PRR-47	N/A	Test in accordance with IWP/IWV	OP514 A thru E and O-20-007/009/012/015/300 (Unit 1 only) located in the Diesel Fuel Oil Transfer System.	Verify operability at least monthly per Technical Specification 4.8.1.1.2.	Non Code, NRC approval not required.
PRR-48	N/A	IWP-4310, bearing temperature measurement	1P204, 1P209 (Unit 1) 2P204, 2P209 (Unit 2) HPCI Main and Booster Pumps	Eliminate bearing temperature measurement. Vibration measurements will ensure adequate information concerning potential bearing temperature problems.	Preapproved GL 89-04, Relief not evaluated in SE.
PRR-49	N/A	1. IWP-3500(b), bearing temperature stabilization 2. IWP-3500(a), five minute minimum run time	1P208 A,B (Unit 1) 2P208 A,B (Unit 2) Injection of sodium pentaborate into Rx vessel pumps.	Vibration measurements will ensure adequate information concerning potential bearing temperature problems. Additionally, pump flow rate will be measured.	Preapproved GL 89-04, See Anomaly Item 5.
PRR-50	N/A	IWP-3400, test frequency and method	OP162 A,B and OP171 A,B (Unit 1 only) Chilled water loop circulating pumps and Emergency condenser water circulating pumps	Monitor the chilled water loop chiller discharge temperature. Additionally, verify that the specified discharge temperature is maintained. Perform quarterly, but not individually test pumps.	Preapproved GL 89-04, See Anomaly Item 11.