ATTACHMENT 2

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TECHNICAL EVALUATION REPORT
PUMP AND VALVE INSERVICE TESTING PROGRAM
WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2

Docket No. 50-397

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ABSTRACT

This EG&G Idaho, Inc., report presents the results of our evaluation of the Washington Public Power Supply System, Nuclear Project No. 2, Inservice Testing Program for pumps and valves whose function is safety-related.

PREFACE

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

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1. INTRODUCTION

Contained herein is a technical evaluation of the pump and valve inservice testing (IST) program submitted by Washington Public Power Supply System (WPPSS) for their Nuclear Project No. 2 (WNP-2).

By a letter dated October 20, 1983, WPPSS submitted the WNP-2 pump and valve IST program for their first 10 year IST program interval, which started December 13, 1984. This was reviewed and a working meeting was held with WPPSS representatives on April 16 and 17, 1985. WPPSS's IST program submittal, Revision 3, dated June 10, 1985, supplemented by Revisions 3a, dated December 20, 1985, 3b, dated October 12, 1987, and an additional submittal dated December 7, 1990, was reviewed to verify compliance of proposed tests of pumps and valves whose function is safety-related with the requirements of the ASME Boiler and Pressure Vessel Code (the Code), Section XI, 1980 edition through winter 1981 addenda. Any IST program revisions after those noted above are not addressed in this technical evaluation report (TER). Program changes involving additional or revised relief requests should be submitted to the NRC separately to receive prompt attention, but should not be implemented before review and approval by the NRC. Other IST program revisions should follow the guidance of NRC Generic Letter No. 89-04 (GL 89-04), "Guidance on Developing Acceptable Inservice Testing Programs."

In their submittal, WPPSS has requested relief from the ASME Code testing requirements for specific pumps and valves and these requests have been evaluated individually against the requirements of 10 CFR 50.55a. This review was performed utilizing the acceptance criteria of the Standard Review Plan, Section 3.9.6, the Draft Regulatory Guide and Value/Impact Statement titled "Identification of Valves for Inclusion in Inservice Testing Programs," and GL 89-04. The IST program testing requirements apply

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

Section 2 of this report presents the Washington Public Power Supply System relief requests and EG&G's evaluations and conclusions regarding these requests for the pump testing program. Section 3 presents similar information for the valve testing program.

Appendix A contains a listing of the P&IDs and Figures used during this review.

Appendix B lists inconsistencies and omissions in the licensee's IST program noted during the course of this review. The licensee should resolve these items according to the evaluations, conclusions, and guidelines presented in this report.

2. PUMP TESTING PROGRAM

The Washington Nuclear Project No. 2 (WNP2) IST program submitted by Washington Public Power Supply System (WPPSS) was examined to verify that all pumps that are included in the program are subjected to the periodic tests required by the ASME Code, Section XI, 1980 Edition through the Winter 1981 Addenda, the NRC regulations, positions, and guidelines. The reviewers found that, except as noted in Appendix B or where specific relief from testing has been requested, these pumps are tested to the Code requirements, the NRC regulations, positions, and guidelines. Each WPPSS basis for requesting relief from the pump testing requirements and the reviewers' evaluation of that request are summarized below and grouped according to system.

2.1 General Pump Relief Requests

2.1.1 General Program Implementation Relief Request

2.1.1.1 Relief Request. The licensee has requested relief in RG-1 from the requirements of 10CFR50.55a(g)(5)(iii), regarding submittal of proposed IST program changes affecting safety-related pumps or valves. The licensee has proposed to implement certain program changes and to notify the NRC in their next IST program submittal. For program changes that require Code interpretation and/or relief, changes will be reviewed internally and provided to the NRC Resident Inspector for concurrence and be submitted to the Commission after implementation.

2.1.1.1.1 Licensee's Basis for Requesting Relief--This relief applies to all pumps and valves within the scope of this program. ASME Code requirements from which relief is requested, to be determined.

References:

a. 10CFR50.55a(g)(5)(iii) That the licensee request relief from Code requirements determined to be impractical.
b. 10CFR50.55a(g)(6)(i) That the Commission evaluate requests for relief.
c. WNP-2 Technical Specification 4.0.5.a.
d. 10CFR50.59 Evaluation of unreviewed safety questions.

The licensee is required to comply with all the requirements of Section XI of the ASME Code unless specific written relief has been granted by the Commission (Ref. a, b, c). Compliance with this requirement imposes an undue burden on the licensee when the Commission does not respond in a timely manner. History has shown that compliance with this requirement is not practical as the Commission is not able to respond in a timely manner.

The operation of a power plant is a dynamic process requiring changes to plant and system design in the interest of safety and/or efficiency. The number, frequency, and details of such changes are difficult to foresee. As modifications to plant systems proceed, it is sometimes necessary to change this Program Plan. When such changes to the Program Plan occur, relief from certain Code requirements may become necessary. The relief requests already included in the Program Plan and reviewed by the Commission establish a precedence which the licensee may wish to apply to additional pumps or valves. It is essential that the licensee have a means of obtaining relief from impractical test requirements in a timely manner pending review by the Commission, since the system cannot be declared operational until satisfactory completion of the specified test requirements. For example: A power operator may be installed on an existing manual valve (Category B, passive) which then functions as a containment isolation valve (Category A, active). This change requires the valve now be tested per IWV-3410 and 3420. The precedence established by two existing relief requests apply to this valve. First, that the stroke time acceptance criteria be based on a reference value specified by the licensee instead of changing it each time it is tested based on the preceding test (Relief Request RV-20). Second, that the valve be leak rate tested according to the provisions of Appendix J requirements in lieu of IWV-3420 (Relief Request RV-4).

The Commission is responsible for evaluating requests for relief from Code requirements per reference b). This ensures that relief from the Code requirements and compliance with any alternative requirements will not endanger life or property or the common defense and security and is otherwise in the public interest.

Recognizing the need of a timely third party review, the proposed alternative actually enhances the quality of this program and the safety of

the general public. Because, not only does it afford the Commission the opportunity to change or reject the Licensee's request for relief, but introduces a third party which may change or reject the Licensee's relief request. The majority of the changes to the program involving requests for relief are expected to follow established precedence and may be accomplished via the amendment of an existing relief request. For those changes that require new relief requests, the Licensee will evaluate the safety consequences of such a change in conformance with 10CFR50.59 and will obtain Resident Inspector concurrence which will provide adequate assurance of program quality and public safety.

The proposed alternative presents a practical approach to the administration of changes to this Program Plan and benefits not only the Licensee, but the Commission and the general public. It relieves the Licensee of the burden of trying to comply with impractical Code requirements or being forced to be in a state of non-compliance. The Commissions's burden is lightened in that it need only respond to changes that may be unacceptable. The proposed alternative complies with the intent of referenced requirements while reconciling the exigencies of time, money, and manpower constraints experienced by both the commission and the licensee. The proposed alternative provides adequate assurance of program quality and public safety.

Proposed Alternative: The licensee proposes the following procedure for processing future changes to the Program Plan involving a request for relief from certain Code requirements.

The proposed change will be evaluated to determine if the precedent established by an existing relief request is applicable. If so, the Authorized Nuclear Inspector (ANI) will review the proposed change for concurrence prior to its incorporation in the Program Plan. Such changes will be included in the next Program Plan submittal to the Commission.

For the rare cases that an applicable precedent has not been established by an existing relief request, a new relief request will be prepared. A documented evaluation of the proposed change will be completed to determine if an unreviewed safety question exists per 10CFR50.59. Again,

the ANI will review the proposed change for concurrence. Additionally, the proposed change will be submitted to the NRC Resident Inspector for concurrence. The Resident Inspector concurrence is not to set NRC precedence, but to insure that the licensee has a good technical basis for the unprecedented relief request. This change to the Program Plan will then be submitted to the Commission for review and concurrence. Meanwhile, the licensee will implement the change to the overall Program Plan.

2.1.1.1.2 Evaluation--The licensee has requested to change the method by which relief requests are evaluated and how relief from the ASME Code, Section XI, requirements is granted by the NRC. The method proposed by the licensee would allow the exemption of pumps or valves from testing to the Code requirements where the licensee determines that a precedent exists that is applicable for that component. This precedent may be a previously granted relief request. The method proposed by the licensee could possibly result in delaying NRC review of significant changes to the scope of the licensee's IST program plan for an unspecified interval until the licensee submits an updated program to NRC. The effects of granting such relief cannot be evaluated for these reasons.

This issue has been discussed in the minutes of the public meetings on NRC Generic Letter No. 89-04 (GL 89-04). Responses to questions 61, 62, 64, and 85 from this document provide guidance on this subject. Neither the Commission regulations in 10 CFR 50.55a(g), in general, nor GL 89-04, in particular, require the licensee to obtain NRC approval on each test on every component in the IST program. As long as the program is consistent with the regulations, the ASME Code, and GL 89-04, relief is not required. However, where an IST program change is proposed that is outside the scope of the positions in GL 89-04 and does not meet the Section XI requirements, the licensee must submit a relief request to the NRC for review. The program change may not be implemented prior to staff approval. Relief requests requiring immediate attention should indicate the date by which approval is needed. GL 89-04 provides another method of receiving approval for deviations from the Code requirements. Additionally, the licensee may prepare a case to justify postponement of a particular test on the basis of exigency when this is necessary.

Since the effects of the licensee's proposal cannot be fully evaluated and since this proposal could result in significant changes to the licensee's IST program plan, relief should not be granted as requested.

2.1.2 Pump Vibration Measurements

2.1.2.1 Relief Request. The licensee has requested relief in RP-1 from the requirements of Section XI, Paragraph IWP-3100, for measurement of pump bearing vibration displacement for all pumps in the IST program and has proposed to measure pump bearing vibration velocity.

2.1.2.1.1 Licensee's Basis for Requesting Relief--Measurement of vibration velocity provides more concise and consistent information with respect to pump and bearing condition. The usage of vibration velocity measurements can provide information as to a change in the balance of rotating parts, misalignment of bearings, worn bearings, changes in internal hydraulic forces, and general pump integrity prior to the condition degrading to the point where the component is jeopardized.

Alternate Testing: All pumps will be tested at approximately the design flow rate of the pump. Hydraulic parameters will be taken in accordance with ASME Section XI, and the hydraulic acceptance criteria of Section XI will be used. Vibration velocity measurements will be taken at the locations specified in OM-6. Vibration alert levels and required action levels in accordance with OM-6 will be individually established for each pump and will be specified in the surveillance procedures. An exception is for DO-P-1A, -1B, and 2 and FPC-1A, and -1B (see Evaluation in Section 2.1.5.1.2 of this report).

The proposed testing will result in the maximum meaningful data regarding pump bearing condition.

2.1.2.1.2 Evaluation--Utilizing vibration velocity measurements rather than vibration displacement measurements has been demonstrated to provide better indication of pump degradation. ANSI/ASME OM-6, "An American National Standard In-Service Testing of Pumps" provides guidelines for

measuring vibration velocity and determining the allowable ranges and action levels and has been determined by the NRC as an acceptable alternative to the requirements of Section XI, Paragraph IWP-4510 provided the licensee complies with all of the OM-6 vibration measurement requirements except where relief has been requested and granted.

The licensee has proposed to test all pumps in the IST program near their design flow rates and to measure pump vibration velocity rather than vibration displacement. This proposal provides a reasonable alternative to the Code requirements provided it is performed in accordance with the vibration measurement requirements of ASME/ANSI OMa-1988, Part 6. The Part 6 vibration measurement program represents a significant improvement over the Code vibration program and gives adequate assurance of operational readiness.

Based on the determination that the licensee's proposed alternate testing method provides equivalent protection as provided by the Code, relief should be granted provided the licensee performs vibration testing in accordance with all the vibration measurement requirements of ASME/ANSI OMa-1988, Part 6 except where relief has been requested and granted.

2.1.3 Vibration Measurements for Inaccessible Pumps

2.1.3.1 Relief Request. The licensee has requested relief in RP-1 from the requirements of Section XI, Paragraph IWP-3100, for pump bearing vibration measurement locations for the following pumps and proposed to measure vibration velocity at the locations specified in OM-6.

Pump	Description
HPCS-P-1 & 2	High pressure core spray pumps
LPCS-P-1	Low pressure core spray pump
RHR-P-2A, 2B, & 2C	Residual heat removal pumps
SW-P-1A & 1B	Standby service water pumps
DO-P-1A, 1B, & 2	Diesel generator fuel oil transfer pumps

2.1.3.1.1 Licensee's Basis for Requesting Relief--These pumps are vertical turbine ("deep well") type pumps and are immersed in the fluid

being pumped.- This precludes measuring pump bearing vibration except for inboard bearings or pump motor bearings as specified in OM-6.

Alternate Testing: Vibration velocity measurements will be taken at the locations specified in OM-6.

The proposed alternate testing will result in the maximum meaningful data regarding pump bearing condition.

2.1.3.1.2 Evaluation--These pumps are deep well type pumps. They are immersed in the fluid being pumped, and except for the inboard bearing, the pump bearings are inaccessible for vibration measurements. Therefore, measurement of pump vibration in all Code required locations is impractical. Installation of instrumentation to measure vibration on these pump bearings would require significant system redesign and modification and would be costly and burdensome to the licensee. The licensee's proposal to measure vibration at the locations specified in OM-6 gives adequate assurance of the operational readiness of these pumps and provides a reasonable alternative to the Code requirements.

Based on the determination that compliance with the Code requirements is impractical, that the licensee's proposal provides a reasonable alternative to the Code requirements, and considering the burden upon the licensee if the Code requirements were imposed, relief should be granted as requested for the location of vibration measurements.

2.1.4 Pump Bearing Temperature Measurements

2.1.4.1 Relief Request. The licensee has requested relief in RP-1 from the Section XI, Paragraph IWP-4300, requirement for annual measurement of pump bearing temperature for all pumps in the WNP-2 IST program and has proposed to determine pump bearing condition by measurement of pump vibration velocity quarterly.

2.1.4.1.1 Licensee's Basis for Requesting Relief--IWP-4300 only requires temperature measurement of "centrifugal pump bearings outside the main flow path." The outboard and intermediate bearings of all pumps are in

the main flow path. Therefore, temperature measurement of these bearings is not required. The inboard bearings of the RHR pumps, LPCS-P-1 and HPCS-P-1, are cooled by the seal injection water which returns internally to the discharge flow. The inboard bearing on HPCS-P-2, SW-P-1A and 1B, and DO-P-1A, 1B, and 2 are cooled by the pumped fluid which returns to the discharge flow with no provision for temperature measurement.

Although the bearings for the fuel pool circulation (FPC), standby liquid control (SLC), emergency chilled water (CCH), and reactor core isolation cooling (RCIC) pumps are accessible, bearing housing temperature is not necessarily an accurate predictor of bearing condition. Hence, temperature measurement is an unnecessary requirement with unreliable results.

Measurement of vibration velocity provides more concise and consistent information with respect to pump and bearing condition. The usage of vibration velocity measurements can provide information as to a change in the balance of rotating parts, misalignment of bearings, worn bearings, changes in internal hydraulic forces and general pump integrity prior to the condition degrading to the point where the component is jeopardized. Bearing temperature does not always predict such problems. An increase in bearing temperature may not occur until the bearing has deteriorated to a point where additional pump damage may occur. Bearing temperatures are also affected by the temperatures of the medium being pumped, which could yield misleading results. Vibration readings are not affected by the temperature of the medium being pumped, thus the readings are more consistent.

Alternate Testing: Vibration alert levels and required action levels in accordance with OM-6 will be individually established for each pump and will be specified in the surveillance procedures.

The proposed alternate testing will result in the maximum meaningful data regarding pump bearing condition. Since vibration velocity analysis is more predictive in nature than bearing temperature measurement, the alternate testing serves to increase levels of safety and quality.

2.1.4.1.2 Evaluation--The bearings for the RHR pumps, LPCS-P-1, and HPCS-P-1 are cooled by seal injection water which flows internally to the pump's discharge flow path and the measurement of bearing temperature is not required. A portion of the flow for the HPC-P-2, SW-P-1A and 1B, and DO-P-1A, 1B, and 2 pumps is diverted and directed to the inboard bearings for cooling and returns to the pumps' discharge flow with no provision in the present system configuration for temperature measurement.

A pump testing program using quarterly measurement of pump vibration velocity in lieu of vibration displacement provides more information about the mechanical condition of pump bearings than would yearly measurement of pump bearing temperature. Therefore, the licensee's proposal to measure vibration velocity quarterly to determine mechanical condition (see Section 2.1.2 of this report) for all pumps in the IST program gives an acceptable level of quality and provides a reasonable alternative to the Code requirements.

Based on the determination that the licensee's proposal would be essentially equivalent to the Code requirements relief should be granted as requested.

2.1.5 Pump Vibration Velocity Acceptance Criteria

2.1.5.1 Relief Request. The licensee has requested relief in RP-1 from the vibration acceptance criteria of OM-6 for the fuel pooling cooling and diesel fuel oil transfer pumps, FPC-1A and -1B and DO-P-1A, -1B, and 2, respectively, and proposed the limits described below.

2.1.5.1.1 Licensee's Basis for Requesting Relief--Measurement of vibration velocity provides more concise and consistent information with respect to pump and bearing condition. The usage of vibration velocity measurements can provide information as to a change in the balance of rotating parts, misalignment of bearings, worn bearings, changes in internal hydraulic forces, and general pump integrity prior to the condition degrading to the point where the component is jeopardized.

The Fuel Pool Cooling (FPC) and Diesel Fuel Oil (DO) transfer pumps have a history of operating at high vibration levels. These pumps are currently being evaluated by the supply system to try to reduce vibration levels to the OM-6 upper limits. The limits established in Alternate Testing Proposed, Item 4 (of this relief request) will ensure that required action is taken if vibration levels increase, and ensure the pump isn't prematurely declared inoperable. The Supply System will use these higher limits until the vibration is decreased and new limits, or those of OM-6 can be used. These limits are based on a reasonable deviation from the reference valve.

Alternate Testing: All pumps will be tested at approximately the design flow rate of the pump. Hydraulic parameters will be taken in accordance with ASME Section XI, and the hydraulic acceptance criteria of Section XI will be used. Vibration velocity measurements will be taken at the locations specified in OM-6. Vibration alert levels and required action levels in accordance with OM-6 will be individually established for each pump and will be specified in the surveillance procedures. An exception is for DO-P-1A, -1B, and 2 and FPC-1A, and -1B. The upper limit for vibration velocity for these pumps shall not exceed:

PUMPS	ALERT	REQUIRED ACTION
FPC-1A and -1B	.55 in/sec	.7 in/sec
DO-P-1A, -1B, and 2	1.4 in/sec	1.6 in/sec

The proposed testing will result in the maximum meaningful data regarding pump bearing condition.

2.1.5.1.2 Evaluation--Utilizing vibration velocity measurements has been shown to provide better indication of pump degradation. ANSI/ASME OM-6 provides guidelines for measuring vibration velocity and determining the allowable ranges and action levels and has been determined by the NRC to be an acceptable alternative (see Section 2.1.2.1 of this report).

The licensee's proposed alternate vibration velocity acceptance ranges for these pumps exceed those listed in OM-6. These pumps have historically

shown high vibration levels at the motor, however, these high levels complicate the process of evaluating the pump's performance and determining operational readiness. Therefore, the licensee's proposed limits do not provide an acceptable long-term alternative. Requiring the licensee to use the OM-6 acceptance criteria might result in prematurely declaring these pumps inoperable, which would be a hardship on the licensee that would not be offset by a compensating increase in quality or safety.

The licensee is currently evaluating these pumps to determine if the vibration levels can be reduced to allow compliance with the acceptance criteria of OM-6. The licensee has also proposed to operate the pumps near pump design flow during testing and to use vibration velocity for evaluating these pumps. This should allow adequate evaluation of operational readiness and provides a reasonable alternative to the Code requirements for an interim period of one year or until the next refueling outage, whichever is longer. During this period the licensee should evaluate methods for reducing the measured vibration levels to allow use of OM-6 criteria or otherwise adequately evaluating the mechanical condition of these pumps to determine their operational readiness.

Based on the determination that the licensee's proposal provides a reasonable alternative to the Code requirements and that the hardship associated with compliance with the Code requirements would not be offset by a compensating increase in the level of safety, interim relief should be granted for one year or until the next refueling outage, whichever is longer.

2.2 Standby Liquid Control Pumps

2.2.1 Relief Request The licensee has requested relief in RP-2 from the Section XI, Paragraph IWP-3100, requirement to measure inlet pressure and differential pressure for the standby liquid control (SLC) pumps, SLC-P-1A and 1B, and has proposed to measure pump discharge pressure and flow rate to demonstrate proper operation of these pumps.

2.2.1.1 Licensee's Basis for Requesting Relief. The SLC pumps are positive displacement pumps which, at a constant speed, deliver essentially

the same capacity at any pressure within the capability of the driver and the strength of the pump. The SLC pumps are directly coupled to constant speed drive motors.

Surveillance requirements specify system alignments which assure adequate net positive suction head (NPSH) for the pumps. There is no provision for suction pressure instrumentation. Pump discharge pressure and flow rate will be measured and recorded during testing. Acceptable discharge pressure and flow rate will suffice as proof of adequate suction pressure.

Alternate Testing: Pump discharge pressure and flowrate will be measured and recorded during testing. Measurement of these parameters assures an acceptable level of quality and safety since inadequate suction pressure would be indicated by erratic discharge pressure indication, subnormal flow rates and increased pump vibration and noise. These abnormal indications will be investigated and corrected as required by IWP-3200.

2.2.1.2 Evaluation--These are positive displacement pumps. Their outlet pressure is dependant on the pressure of the system into which they are pumping and is not affected significantly by either inlet pressure (providing adequate net positive suction head exists) or flow rate. For these pumps, differential pressure and flow rate are not dependant variables as they are for centrifugal type pumps. For this reason, calculating or measuring inlet or differential pressure would not contribute meaningful data to utilize in monitoring pump degradation. The licensee's proposal to evaluate pump discharge pressure when used with flow rate should provide sufficient information to adequately monitor the hydraulic condition of these pumps and provides an acceptable level of quality.

Based on the determination the licensee's proposed alternative is essentially equivalent to the Code requirements, relief should be granted as requested.

2.3 Standby Service Water and HPCS Diesel Cooling Water Pumps

2.3.1 Relief Request The licensee has requested relief in RP-3 from the requirements of Section XI, IWP-3100, for the standby service water pumps, SW-P-1A and 1B, and HPCS diesel cooling water pump, HPCS-P-2, for measurement of pump inlet pressure and differential pressure, and proposed to verify proper spray pond level and to measure pump discharge pressure and flow rate to demonstrate pump operability.

2.3.1.1 Licensee's Basis for Requesting Relief. SW-P-1A, 1B, and HPCS-P-2 are vertical turbine type pumps that are immersed in their water source. They have no suction line which can be instrumented. Technical Specifications will state minimum allowable spray pond level to assure adequate NPSH and cooling water supplies. The difference between allowable maximum and minimum pond level is only six (6) inches of water or 0.2 psi. This small difference will not be significant to the test program and suction pressure will be considered essentially constant.

Alternate Testing: Spray pond level and pump discharge pressure will be recorded during the testing of these pumps. Acceptable flow rate and discharge pressure will suffice as proof of adequate suction pressure.

The effect of granting this request will be to introduce an error of 0.5 ft/500 ft = 0.1% at rated discharge flow for SW-P-1A and 1B and an error of 0.5 ft/135 ft = 0.37% for HPCS-P-2. These small errors will not significantly impact the quality of test results nor jeopardize the safety of the public.

2.3.1.2 Evaluation. These vertical turbine type pumps are immersed in the spray pond with no intake piping or installed inlet pressure measurement instrumentation. Therefore, direct measurement of pump inlet pressure is not practical. To obtain dynamic pump inlet pressure measurements would require significant system design changes. The licensee has proposed to measure spray pond level each test and to use pump discharge pressure measurements for assessing the operational readiness of these pumps rather than calculated or measured values of pump differential pressure.

Inlet pressure for these pumps results from the head of water provided by the spray pond. Plant Technical Specifications place strict controls on spray pond level allowing it to vary by no more than six inches. The difference in discharge pressure measurements caused by changes in pond level is not significant.

Changes in pump hydraulic performance should be indicated by changes in pump differential pressure (dp) measurements taken at a specific flow rate. The Code specified acceptance criteria for pump hydraulic performance are based on dp. A change in pump discharge pressure at a given flow rate can also indicate a change in pump performance. However, the same magnitude of change in pump hydraulic performance constitutes a larger percentage of dp than of discharge pressure. Therefore, acceptance criteria should not be based on discharge pressure.

Acceptance criteria that is based on reference dp could, however, be applied to discharge pressure measurements. For instance, for a pump with a constant inlet pressure of 20 psig, a reference dp of 80 psig, and a reference discharge pressure of 100 psig the maximum allowable decrease in hydraulic performance or dp would be 0.90 * 80 psig or 7.2 psig. This acceptance criteria could be as effectively applied to either pump dp or discharge pressure measurements as long as the inlet pressure is constant i.e., action would be required at either a dp of 72.8 psig or a discharge pressure of 92.8 psig since both indicate the same amount of hydraulic degradation.

The licensee's proposal to evaluate pump discharge pressure in lieu of dp would be essentially equivalent to the Code requirements provided acceptance criteria are assigned equivalent to the Code requirements. An acceptable approach for assigning acceptance criteria would be to calculate the maximum inlet pressure available to these pumps, since it might vary slightly with pond level changes allowed by Technical Specifications. This value should be subtracted from the reference discharge pressure and the Code acceptance ranges should be used with the resultant value to determine the amount of change in discharge pressure that is acceptable.

Based on the determination that the licensee's proposal provides an acceptable level of quality and safety as provided by the Code requirements, relief should be granted provided the licensee assigns acceptance criteria to discharge pressure that gives protection equivalent to that provided by the Code as described above.

2.4 Diesel Fuel Oil Transfer Pumps

2.4.1. Relief Request The licensee has requested relief in RP-5 from the requirements of Section XI, Paragraph IWP-4600, for the diesel fuel oil transfer pumps, DO-P-1A, 1B, and 2, for measurement of flow rate using an installed rate or quantity meter and proposed to determine pump flow rate based on day tank level volumetric difference divided by pump run time.

2.4.1.1 Licensee's Basis for Requesting Relief. A rate or quantity meter is not installed in the test circuit. To have one installed would be costly and time consuming with few compensating benefits.

The day tanks are horizontal cylindrical tanks with elliptical ends. The tank fluid volume is approximately 3,200 gallons. Fluid level measurement is accurate to a quarter inch which corresponds to an average volume error of approximately 11 gallons. The test methodology used to measure pump flow rate will provide results consistent with Code requirements. This will provide adequate assurance of material quality and public safety.

Alternate Testing: Pump flow rate will be determined by measuring the volume of fluid pumped and dividing by the corresponding pump run time. The volume of fluid pumped will be determined by the difference in fluid level in the day tank at the beginning and ending of the pump run time (day tank fluid level corresponds to volume of fluid in the tank).

2.4.1.2 Evaluation. It is impractical to directly measure the flow rate through these pumps since there is no flow rate instrumentation currently installed in the pump test circuit. Installation of such instrumentation would require significant system design changes and be

costly and burdensome to the licensee. The flow rate for these diesel fuel oil transfer pumps can be derived by determining the volume, in gallons, pumped and dividing this quantity by the total operating time of the pump. This pump flow rate can then be utilized in conjunction with other measured parameters in the determination of pump operability. Provided the calculated flow rate meets the accuracy criteria of Table IWP-4110-1, the licensee's proposal will provide reasonable assurance of pump operability and presents a reasonable alternative to the Code requirements.

Based on the determination that compliance with the Code requirements is impractical, that the licensee's proposal provides a reasonable alternative to the Code requirements, and considering the burden on the licensee if the Code requirements are imposed, relief should be granted provided the calculated pump flow rate meets the accuracy requirements of Table IWP-4110-1 for flow rate.

2.4.2 Relief Request .The licensee has requested relief in RP-6 from the requirements of Section XI, Paragraph IWP-3100, for the diesel fuel oil transfer pumps, DO-P-1A, 1B, and 2, for direct measurement of pump inlet pressure and proposed to determine pump inlet pressure based on diesel fuel oil storage tank level measured prior to starting the transfer pump.

2.4.2.1 Licensee's Basis for Requesting Relief. The storage tanks from which these pumps take suction are horizontal cylindrical tanks twelve feet in diameter, and a volume of 60,000 gallons (except for DO-TK-2 which is 50,000 gallons). The storage tanks are significantly larger than the 3200 gallon capacity day tanks to which these pumps discharge. The change in storage tank level during the course of a pump operability test results in an insignificant change to suction pressure. Since the system is not instrumented for suction pressure measurement, suction pressure is determined by measuring storage tank level. Storage tank level increases when the pump starts, so accurate suction pressure measurements cannot be determined while the pump is running.

Alternate Testing: Suction pressure will only be determined prior to pump startup. This will contribute to uniform fluid density and accurate level measurements resulting in an accurate suction pressure measurement.

Not measuring pump inlet pressure during test for these pumps will have no adverse effect on determining the operational readiness of these pumps. The relevant pump operability parameters are measured and evaluated consistent with Code requirements. This will provide adequate assurance of material quality and of the operational readiness of these pumps in the interest of public safety.

2.4.2.2 Evaluation It is impractical to directly measure the inlet and differential pressure for these diesel fuel oil pumps since there is no instrumentation currently installed. Installation of such instrumentation would require significant system design changes and be costly and burdensome to the licensee. Further, the inlet pressure for these pumps can be determined by measuring the height of fluid above the pump's suction. This will allow the calculation of pump differential pressure for use in conjunction with flow rate to evaluate the pump's hydraulic performance. Calculation of pump suction pressure based on the height of fluid above the suction point prior to pump start-up provides adequate information for use with discharge pressure in evaluating pump operational readiness and presents a reasonable alternative to the Code requirements as long as the calculation meets the accuracy requirements of Table IWP-4110-1 for the parameter being determined.

Based on the determination that compliance with the Code requirements is impractical, considering the licensee's proposal, and the burden on the licensee if the Code requirements are imposed, relief should be granted provided pump inlet pressure is calculated based on the height of the fluid level above the pump suction and the calculation meets the accuracy requirements of Table IWP-4110-1 for the affected parameters.

3. VALVE TESTING PROGRAM

The WNP-2 IST program submitted by WPPSS was examined to verify that all valves included in the program are subjected to the periodic tests required by the ASME Code, Section XI, and the NRC positions and guidelines. The reviewers found that, except as noted in Appendix B or where specific relief from testing has been requested, these valves are tested to the Code requirements and established NRC positions. Each WPPSS basis for requesting relief from the valve testing requirements and the reviewers' evaluation of that request is summarized below and grouped according to system and valve Category.

3.1 General Valve Relief Requests

3.1.1 Stroke Time Measurements

3.1.1.1 Relief Request. The licensee has requested relief in RV-1 from the stroke time trending requirements of Section XI, Paragraph IWV-3417(a), for rapid acting solenoid valves (those with normal stroke times of 2 seconds or less) identified in the licensee's IST program Table RV-1, and proposed to perform corrective action on these valves when the 2 second stroke time limit is exceeded.

3.1.1.1.1 Licensee's Basis for Requesting Relief--Some valves (generally solenoid valves) are very rapid acting. Since stroke times are measured to the nearest second, a 50% increase in stroke time cannot be consistently measured with present methodology.

Alternate Testing: A limiting stroke time of 2 seconds will be assigned to these valves. Valves exceeding this limit will be corrected in accordance with IWV-3417(b).

The corrective action based on an increase in stroke time (per IWV-3417(a)) is in this case an impractical requirement due to the rapid-acting nature of these valves. Measured stroke times in excess of the two second limit will identify valves with operability problems in a

consistent and timely manner. Hence, the proposed testing will provide adequate assurance of material quality and public safety.

3.1.1.1.2 Evaluation--The licensee has proposed placing a maximum limiting stroke time of 2 seconds on rapid-acting valves which normally stroke in 2 seconds or less and has committed to declare these valves inoperable if the maximum stroke time of 2 seconds is exceeded. Obtaining accurate stroke times for these rapid acting valves, and trending the results in accordance with IWV-3417(a) is impractical. The licensee's proposal is in accordance with GL 89-04, Position 6, stroke time measurements for Rapid-Acting Valves, and provides a reasonable alternative to the Code requirements.

The licensee's proposal is in accordance with GL 89-04, Position 6, and therefore, relief should be granted from the Code requirements as requested.

3.1.1.2 Relief Request. The licensee has requested relief in RV-20 from the stroke time trending requirements of Section XI, Paragraph IWV-3417(a), for all power operated valves in their IST program, and proposed to establish fixed acceptance ranges for these valves based on their baseline stroke times and to perform corrective action when the fixed acceptance range is exceeded.

3.1.1.2.1 Licensee's Basis for Requesting Relief--WNP-2 administrative procedures require specific acceptance criteria to be included in technical specification surveillance procedures, of which the valve stroke timing procedures are a part. Since the recorded stroke times may vary slightly as a result of plant conditions or test personnel, the requirement to compare the results with the previous value implies that the acceptance criteria may have to be changed each time the surveillance is performed. This is administratively unwieldy and unnecessary.

Alternate Testing: The WNP-2 valve stroke time acceptance criteria are founded on empirically obtained baseline values unless constrained by the FSAR, the technical specifications, or other commitments. The acceptance range for valves with stroke times between 2 and 10 seconds is the baseline time plus and minus 50%, and for valves with stroke times greater than 10 seconds it is the baseline time plus and minus 25%. This approach allows

stability of acceptance criteria and ensures that the valves remain within a reasonable range around an established baseline. WNP-2 administrative procedures require engineering evaluation if the stroke times fall outside of the established acceptance ranges.

The proposed method of establishing acceptance criterion is consistent with the intent of the Code in that the stroke times are evaluated against an established baseline value. The possibility of erratic valve stroke times (slow one time and fast the next) has been considered. Review of the past year's data for 50 motor operated valves (approximately 37% of the MOVs in the program), 26 air operated valves (89.6%), and 14 hydraulic operated valves (57.5%) showed no evidence of erratic action. The proposed acceptance criteria method adequately ensures quality of testing and public safety.

3.1.1.2.2 Evaluation--The licensee's proposed valve stroke timing method establishes fixed acceptance ranges for each valve, which are plus or minus the Code specified percentage of an empirically developed baseline valve stroke time; where the Code acceptance criteria is based on the previous reading. The Code method can allow a significant increase or decrease of a valve's measured stroke time as long as it is gradual and remains within the allowable percentage restrictions for that valve. The licensee's method is tied to an established baseline value and would not permit a significant deviation before the corrective actions of IWV-3417(a) must be followed. Therefore, the licensee's proposed testing is more conservative than the Code trending requirements in all cases where there is a departure from the normally measured stroke times. Additionally, the licensee's program takes action on increases or decreases in stroke times, where as the Code requires action only on an increase in stroke time. Therefore, the licensee's proposed alternate testing method is more conservative than the Code trending requirements and provides an acceptable level of quality and safety.

Based on the determination that the licensee's proposal provides a reasonable alternative to the Code requirements and equivalent protection as provided by the Code, relief should be granted as requested.

3.1.2 Leak Testing Containment Isolation Valves

3.1.2.1 Relief Request. The licensee has requested relief in RV-4 from leak rate testing all WNP-2 containment isolation valves in accordance with the requirements of Section XI, Paragraph IWV-3420, and proposed to leak test these valves according to Appendix J of 10CFR50, the WNP-2 technical specifications, and the WNP-2 FSAR.

3.1.2.1.1 Licensee's Basis for Requesting Relief--The purpose of leak rate testing is, ultimately, to assure that the limits of 10CFR100 are not exceeded. Hence the overall leakage from the containment is the critical parameter in leak rate testing, not individual valve leak rates. Appendix J leak test requirements specifically address leakage requirements for valves functioning as containment isolation valves.

Alternate Testing: These valves will be leak tested according to 10 CFR 50, Appendix J, as detailed in the WNP-2 Technical Specifications and FSAR in lieu of IWV-3420. WNP-2 will specify a target leak rate based on valve type and size for those valves being type C leak tested. This target leak rate is generally much more conservative than the limits proposed in IWV-3426, however, the target leak rate is usually not a fixed limit.

A technical evaluation of leakage in excess of the target value will be performed to determine if leakage is acceptable. This facilitates the timely identification of problem valves and provides WNP-2 with some flexibility in scheduling repair or replacement of the problem valve. The Appendix J limit of 0.60 La will be met (0.60 La is equivalent to 68,020 SCCM).

These valves are all Category A valves and whether active or passive perform a common safety function of containment isolation. The Appendix J and Technical Specification requirements recognize this safety function and provides leak test requirements based on this safety function. The proposed alternate testing provides adequate assurance of quality and public safety.

3.1.2.1.2 Evaluation--The licensee has proposed to establish target leak rate values, usually not fixed, based on valve type and size for those valves being Appendix J, Type C, leak rate tested. These target values are for use in evaluating the leak tightness of their Category A containment isolation valves. Leak-rate testing is to be performed in accordance with 10 CFR 50, Appendix J, and WNP-2 Technical Specification requirements.

NRC GL 89-04 addresses containment isolation valve testing in Position 10 and describes the testing that must be performed to obtain relief from the Code requirements. The leak test procedures and requirements for containment isolation valves identified by 10 CFR 50, Appendix J, are essentially equivalent to those contained in Section XI, Paragraphs IWV-3421 through -3425. Appendix J, Type C, leak rate testing adequately determines leak-tight integrity of these valves. Leak testing containment isolation valves in accordance with the requirements of both Appendix J and Section XI, Paragraphs IWV-3421 through -3425, is impractical since it would result in duplication with little or no increase in quality or safety and would be a significant burden on the licensee. However, the 10 CFR 50, Appendix J, leak testing does not trend or establish corrective actions based on individual valve leakage rates as required by Paragraphs IWV-3426 and -3427.

Neither the licensee's Technical Specifications limits nor the collective criteria of Appendix J has been shown to provide adequate assurance of individual component operational readiness as provided by Paragraph IWV-3426. The collective criteria of Appendix J have not been demonstrated more appropriate since those may allow a single valve to be significantly degraded. Technical Specification leakage rate limits are assigned to limit site boundary radiation doses to within the limits of 10 CFR 100 during and following an accident and are not intended to evaluate degradation of single components. Those limits are not adequate to replace the ASME Code specified limits, which are component oriented and designed to monitor and take corrective actions based on changes in component performance. The licensee's proposed limits, which when exceeded may initiate corrective action, have not been shown to be more conservative or equivalent to the Code requirements. Therefore, the licensee must comply with the requirements of Paragraph IWV-3426.

The licensee has not demonstrated that the Paragraph IWV-3427(a) requirements are impractical. However, the NRC staff agrees that an acceptable level of safety will be achieved if the requirements of IWV-3427(b) are not imposed for containment isolation valves since IWV-3427(b) does not provide useful information for evaluating valve condition. Therefore, the licensee must test the listed containment isolation valves to Appendix J, Type C, requirements and comply with IWV-3426 and -3427(a) to obtain relief from the Code requirements.

Based on the determination that compliance with the Code requirements is impractical and leak testing in accordance with 10 CFR 50, Appendix J, provides a reasonable alternative to the requirements of Paragraphs IWV-3421 through -3425 and considering the burden on the licensee of leak testing these valves to both Section XI and Appendix J, relief should be granted from the requirements of Paragraphs IWV-3421 through -3425, provided the licensee complies with the requirements of Paragraphs IWV-3426 and -3427(a), Analysis of leakage Rates and Corrective Actions, as described in GL 89-04, Position 10.

3.1.3 Leak Testing Pressure Boundary Isolation Valves

3.1.3.1 Relief Request. The licensee has requested relief in RV-4 from trending leakage rates for the pressure boundary isolation valves identified in the WNP-2 IST program in accordance with the corrective action requirements of Section XI, Paragraph IWV-3427(b), and proposed to repair or replace a valve when its leakage rate exceeds the identified limiting leak rate.

3.1.3.1.1 Licensee's Basis for Requesting Relief--The WNP-2 Technical Specification establishes limiting leak rates for each valve and describes the necessary corrective action if these limits are exceeded.

Alternate Testing: These valves will be leak tested at least once every 18 months and if the leakage exceeds the specified limit, the corrective actions specified in the WNP-2 Technical Specification will be followed.

These valves perform a dual safety function. They are identified in the WNP-2 FSAR as containment isolation valves and in the WNP-2 Technical

Specification as reactor coolant system pressure isolation valves. Compliance with the WNP-2 Technical Specification test requirements provides adequate assurance of material quality and public safety.

3.1.3.1.2 Evaluation--Valve leakage rate fluctuations from test to test make it impractical to comply with the trending requirements of IWV-3427(b). In GL 89-04, the NRC stated that the usefulness of this requirement does not justify the burden of this testing. Meeting the leakage rate limits established in the plant Technical Specifications should provide an adequate indication of valve leak tight integrity.

The NRC staff's position is that when a valve serves both a containment isolation function and a pressure boundary isolation function it must be tested to both the Appendix J requirements, to assure its CIV function, and to the IWV-3420 and plant Technical Specification requirements to assure its PIV function. Request for Relief No. RV-4 does not make it clear that WNP-2 is adhering to this position. The licensee's proposal to perform the corrective action of IWV-3427(a) when the leakage rate of any pressure boundary isolation valve exceeds the Technical Specification established limiting leakage rate provides a reasonable alternative to the Code requirements to assure that these valves can perform their pressure boundary isolation function. Any PIVs that also perform a containment isolation function must be leak rate tested to the Appendix J and IWV-3426 and -3427(a) requirements to verify their ability to perform a CIV function.

Based on the determination that compliance with the Code requirements is impractical, the licensee's proposed testing provides a reasonable alternative to the Code requirements, and considering the burden on the licensee if the Code requirements were imposed, relief should be granted as requested from the requirements of IWV-3427(b). These valves must be tested to verify their containment isolation function in accordance with Appendix J, IWV-3426 and IWV-3427(a).

3.1.4 Testable Check Valves Inside Containment

3.1.4.1 Relief Request. The licensee has requested relief in RV-9 from the test frequency requirements of Section XI, Paragraph IWV-3522, for the

following listed testable check valves and have proposed to exercise these valves during cold shutdowns when the containment is de-inerted and during refueling outages.

Valve	Category	Function
RCIC-V-65, 66	A/C	RCIC discharge to the reactor vessel head
LPCS-V-6	A/C	LPCS discharge to the reactor vessel
HPCS-V-5	A/C	HPCS discharge to the reactor vessel
RHR-V-41A, B, C	A/C	RHR Loop A, B, C discharge to the reactor vessel
RHR-V-50A, B	A/C	RHR Loop A, B discharge to the recirculating pump discharge

3.1.4.1.1 Licensee's Basis for Requesting Relief--The Velan operation and maintenance manual for the testable check valves used in the RCIC, LPCS, HPCS, and RHR systems specifies that the valves are not to be operated with greater than 5 psi differential pressure across the valve disk. To achieve this condition during shutdown with any substantial level in the vessel will require that the manual isolation valve downstream be operated and pressure equalized across the disc prior to valve stroking. It is not possible to perform this task with the containment inerted.

These valves are normally closed and while in the closed position function as 1) containment isolation valves and 2) high-low pressure interface valves between the reactor coolant and portions of the emergency core cooling system. These valves must open to facilitate operation of part of the emergency core cooling system. The valves will normally only be operated in the event of an emergency during normal power operations. Lengthening the interval between tests as recommended will not preclude the timely evaluation of valve operability and thus provides adequate assurance of material quality and public safety.

Alternate Testing: These check valves will be exercised with the reactor at cold shutdown and the containment de-inerted.

3.1.4.1.2 Evaluation--These testable check valves are located inside the containment vessel and should not be operated using the air operators when there is greater than 5 psi differential pressure across the valve disks. This requires personnel entry into containment to perform an equalization procedure and is impractical during power operations and cold

shutdowns when the containment remains inerted. De-inerting the drywell every cold shutdown would likely result in a delay of plant start-up which would be costly and burdensome on the licensee. The licensee's proposal to exercise these check valves during cold shutdowns when the containment is de-inerted and during refueling outages provides a reasonable alternative to the Code requirements.

Based on the determination that compliance with the Code required test frequency is impractical, that the licensee's proposed testing provides a reasonable alternative to the Code requirements and considering the burden on the licensee if the Code requirements were imposed, relief should be granted from the Code test frequency requirements as requested.

3.1.5 Excess Flow Check Valves

3.1.5.1 Relief Request. The licensee has requested relief in RV-15 from exercising the instrument line excess flow check valves in accordance with the test frequency requirements of Section XI, Paragraph IWV-3521, and proposed to exercise these valves in accordance with WNP-2 Technical Specifications at least once every 18 months.

3.1.5.1.1 Licensee's Basis for Requesting Relief--These are instrument line excess flow check valves that are tested per WNP-2 Technical Specifications at least once every 18 months. Quarterly testing or cold shutdown testing requires more frequent tests which would be a hardship on WNP-2 with little compensating benefits.

Testing the excess flow check valves as specified by WNP-2 Technical Specifications will provide timely identification of valve or equipment failure and/or degradation. This provides adequate assurance of material quality and public safety.

Alternate Testing: These valves shall be exercised at least once every 18 months per WNP-2 Technical Specifications. It will be verified that the valve checks flow at greater than 10 psid differential pressure in hydraulic service and 15 psid differential pressure in pneumatic service.

3.1.5.1.2 Evaluation--These are excess flow check valves on instrument sensing lines which penetrate the primary containment. Their function is to close in case of excessive flow to perform a containment isolation function. The testing specified by WNP-2 Technical Specifications is a modified leak test which is performed once each reactor refueling outage. Performance of valve closure verification on a quarterly or cold shutdown basis is impractical since this would isolate various instruments and could result in loss of control signals to vital instrumentation and subsequent unnecessary initiation of automatic safety systems. Given these concerns, testing these valves each quarter or during cold shutdowns would be burdensome to the licensee. The licensee's proposal to leak test these valves each reactor refueling outage utilizing the procedures and acceptance criteria outlined in the plant Technical Specifications gives adequate assurance of operational readiness and provides a reasonable alternative to the Code requirements.

Based on the determination that compliance with the Code requirements is impractical, the licensee's proposal provides a reasonable alternative to the Code requirements, and considering the burden on the licensee if the Code requirements were imposed, relief should be granted as requested.

3.1.6 Water Leg Fill and Pressurization Valves

3.1.6.1 Relief Request. The licensee has requested relief in RV-17 from exercising valves RHR-V-84A, 84B, and 84C, HPCS-V-7, and LPCS-V-33, water leg fill and pressurization checks, in accordance with the requirements of Section XI, Paragraph IWV-3521 and proposed to full-stroke exercise these valves open, verify at least one valve of the series shuts, and operate the stop-check manually, quarterly.

3.1.6.1.1 Licensee's Basis for Requesting Relief--These valves cannot be verified to be closed without either installing a test connection or dismantling the valve and inspecting the internals (which requires grinding out the seal weld). The associated stop-check valve is located in series with the check valve. Closure of the stop-check is verified quarterly. The overpressure protection function is provided by the two valves and in addition

a low pressure relief valve is installed should both the check and stop-check valves fail or leak excessively.

Alternate Testing: These check valves will be tested in the open position quarterly per IWV-3522. The stop and check valve will be tested in combination and verified closed (one or both) during quarterly surveillance test. In addition, the stop-check will be shut manually to ensure no binding exists.

The proposed alternate testing verifies valve operability in the open position, but not the closed. However, the stop check valve is verified to open and close quarterly. The required testing would be a hardship on WNP-2 with little compensating benefits. The alternate testing will provide adequate assurance of material quality and public safety.

3.1.6.1.2 Evaluation--Valves RHR-V-84A, 84B, and 84C, HPCS-V-7, and LPCS-V-33 are in series with stop check valves and function in the closed position to prevent diversion of ECCS flow. It is impractical to individually verify these valves closed either quarterly or during cold shutdown since they have no provision for external verification of valve position (i.e., position indicators, pipe taps). Requiring the installation of instrumentation to verify valve position would involve system redesign and be costly and burdensome to the licensee, but, it may be prudent at some later date to install test taps or some apparatus to allow individually testing these valves to the closed position.

The licensee has proposed to verify the reverse closure capability of these check valves series by leak testing each pair quarterly during pump surveillance testing. The licensee has also proposed to verify that the downstream in-line stop check valves operate to the closed position without binding quarterly using the handwheel. The licensee's proposed testing of the series pair would give reasonable assurance of component operational readiness and provide a reasonable alternative to the Code requirements provided that, if excessive leakage is noted, both valves in the pair are declared inoperable and repaired or replaced prior to their return to service.

Based on the determination that compliance with the Code requirements is impractical, the burden on the licensee if the Code requirements were imposed, and considering the licensee's proposal, relief should be granted provided the pair of series check valves are verified closed quarterly and if excessive leakage is noted, both valves are repaired or replaced prior to their return to service.

3.1.7 Valves Tested During Cold Shutdowns

3.1.7.1 Relief Request. The licensee has requested relief in RV-25 from the test frequency requirements for valves that can be tested only during cold shutdowns according to the requirements of Section XI, Paragraph IWV-3412 and -3522, and proposed to test these valves during cold shutdowns at the frequency described below.

3.1.7.1.1 Licensee's Basis for Requesting Relief--It is a hardship to test all cold shutdown valves at each cold shutdown. To require all valves to be tested would mean the primary containment would have to be deinerted each cold shutdown. Additionally, requiring all cold shutdown testing each outage would mean a significant delay in plant startup for cold shutdowns of short duration.

The industry has recognized that cold shutdown testing, as specified in 1980W80 of Section XI is excessive. The 1989 edition of Section XI references ASME/ANSI OM, Part 10 for valve testing. Part 10 does not require all cold shutdown valves to be tested each cold shutdown.

The NRC has also recognized that testing all cold shutdown valves at each cold shutdown is a significant burden. Many SERs contain an appendix which states (similar to OM-10) that cold shutdown testing needs to continue only until the plant is ready to start up.

The effect of granting this relief will have no adverse effect on plant safety. The alternate testing as described herein is currently being followed at WNP-2. The industry and NRC have, by the actions previously described, considered this method of cold shutdown testing appropriate.

Alternate Testing: Cold shutdown testing shall commence immediately (within 48 hours) following establishment of cold shutdown conditions. Testing shall continue only as long as the plant is scheduled to be in cold shutdown. Cold shutdown testing will continue in a manner which will not impede plant startup. Cold shutdown tested valves are tested in groups by several different procedures. The decision whether to start cold shutdown testing on any procedure will depend on the estimated length of the cold shutdown period, system outages/conditions, time interval from the last cold shutdown testing, or other particular conditions. For example, if containment is not deinerted during a particular cold shutdown then valves which require a deinerted containment would not be tested. All cold shutdown valves will be tested during each refueling outage. Testing is not required if the time period since the previous test is less than three months. For extended outages, cold shutdown testing does not need to start within 48 hours as long as all valves are tested before startup.

The alternate testing is in accordance with OM-10 which will be required in the future.

3.1.7.1.2 Evaluation--Due to the hardship that delaying plant startup places on a licensee, the NRC staff does not require licensees to complete all testing identified for the cold shutdown frequency prior to startup from each cold shutdown. Requiring completion of all cold shutdown testing prior to startup could delay the return to power, which would be costly. The staff has previously approved alternatives to the Code requirement to test all cold shutdown valves during each cold shutdown but not more frequently than once every three months. The licensee's proposed testing is similar to the staff approved alternatives, however, this approval is limited to valves that can be tested during any cold shutdown. Therefore, the licensee's proposal provides a reasonable alternative to the Code test frequency requirements for valves that can be tested during any cold shutdown.

The licensee has identified certain valves for testing only during cold shutdowns when the primary containment is deinerted and during refueling outages (see Sections 3.1.4.1, 3.6.2.1, and 3.11.1.1 of this report). For any other valve, or class of valves, that cannot be tested during each cold shutdown of sufficient duration to complete all testing (such as, valves that

cannot be tested when reactor recirculation pumps are operating), a relief request must be submitted and approved by NRC prior to implementation since the test interval for these valves could exceed that allowed by Section XI.

Based on the determination that the licensee's proposal provides a reasonable alternative to the Code requirements for valves that can be tested during any cold shutdown, and considering the hardship that would be placed on the licensee without a compensating increase in safety if the Code test frequency requirements were imposed, relief should be granted only for those valves that can be tested during any cold shutdown.

3.2 Reactor Core Isolation Cooling System

3.2.1 Category C Valves

3.2.1.1 Relief Request. The licensee has requested relief in RV-16 from exercising valves RCIC-V-111 and 112, vacuum reliefs for the reactor core isolation cooling (RCIC) turbine exhaust, in accordance with the requirements of Section XI, Paragraph IWV-3522, and proposed to full-stroke exercise both valves open and at least one of these valves shut quarterly and of each valve at refueling outages.

3.2.1.1.1 Licensee's Basis for Requesting Relief--These valves are exercised quarterly. Both valves are shown to open and at least one of the valves is shown to close. Seating of each check valve is not independently verified.

Alternate Testing: Both valves will be shown to open and at least one of the valves will be shown to close quarterly. At refueling outages, valve closure of each valve will be verified.

The proposed alternate testing will verify the operability of the valves to perform their safety function and will identify valve failure or degradation in a timely manner. This provides adequate assurance of material quality and public safety.

3.2.1.1.2 Evaluation--To obtain relief from the frequency requirements of the Code the licensee must demonstrate that the Code required frequency is impractical or unreasonable or that it imposes an unreasonable burden. The licensee has proposed to demonstrate both valves open and at least one valve closed quarterly and verify closure of each valve on a refueling outage frequency. These valves are located outside the containment vessel and are equipped with test taps which can be utilized to individually verify the closure of these valves.

Whereas testing these valves closed individually on a quarterly basis may be inconvenient, it is clearly not impractical and should not be excessively burdensome. The licensee's proposed testing could allow the undetected failure of either valve, RCIC-V-111 or 112, in the open position until refueling outage testing (18 month frequency) is performed.

Based on the determination that the licensee has not demonstrated the impracticality of testing these valves to the Code required frequency, that the licensee's proposed alternative does not provide a reasonable alternative to the Code requirements, and considering the burden on the licensee if the Code requirements were imposed, relief should not be granted as requested.

3.3 Residual Heat Removal System

3.3.1 Category A/C Valves

3.3.1.1 Relief Request. The licensee has requested relief in RV-8 from exercising RHR-V-209, pressure relief valve check for the piping between valves RHR-V-8 and 9, in accordance with the test frequency requirements of Section XI, Paragraph IWV-3521 and proposed to full-stroke exercise this valve at refueling outages.

3.3.1.1.1 Licensee's Basis for Requesting Relief--This check valve is located inside the containment and does not have valve position indication or an operator of any type. It cannot be tested without interrupting RHR shutdown cooling flow. During power operations, access is prohibited. During cold shutdown conditions, RHR cannot be out of service for

more than 2 hours in an 8 hour interval (per WNP-2 Technical Specification). Additionally, containment will not be de-inerted during all cold shutdowns.

This valve is normally closed and is verified to be adequately seated by leak tests at least once every 18 months. This valve performs the passive safety functions of containment isolation and reactor coolant system pressure isolation. Its active function of relieving pressure between valves RHR-V-8 and RHR-V-9 is a very unlikely situation and could only occur during time periods where both RHR-V-8 and RHR-V-9 are shut and containment temperature is significantly above normal (i.e., LOCA condition).

Alternate Testing: This check valve will be exercised at refueling outages. Furthermore, this check valve is verified to shut by being leak tested at least once every 18 months in compliance with IWV requirements.

The proposed alternate testing avoids extraordinary testing efforts with inherent potential for violations of the WNP-2 Technical Specification. This will provide adequate assurance of material quality and public safety.

3.3.1.1.2 Evaluation--Valve RHR-V-209 is located inside containment and is inaccessible for testing during power operations and during cold shutdowns when the containment is inerted, and therefore would be impractical to perform this test in these plant conditions. Requiring the licensee to de-inert containment during cold shutdown could delay start-up, which would be costly and burdensome. An acceptable method for verifying closure of this valve is to perform leak-rate testing on the valve, which the licensee has committed to perform at least once every 18 months. The licensee's proposal to full-stroke exercise this valve each refueling outage and verify closure by leak rate testing it every 18 months provides reasonable assurance of operational readiness as required by the Code.

Based on the impracticality of testing this valve in accordance with the Code requirements, the determination that the licensee's proposed testing provides a reasonable alternative to the Code requirements, and considering the burden on the licensee if the Code requirements were imposed, relief should be granted from the test frequency requirements as requested.

3.4 Standby Liquid Control System

3.4.1 Category A/C Valves

3.4.1.1 Relief Request. The licensee has requested relief in RV-2 from exercising SLC-V-6 and 7, check valves in the standby liquid control (SLC) discharge header to the reactor vessel, in accordance with the test frequency requirements of Section XI, Paragraphs IWV-3521, and proposed to full-stroke exercise these valves at least once every 18 months by establishing flow into the reactor vessel through these valves.

3.4.1.1.1 Licensee's Basis for Requesting Relief--These valves have no operator with which they may be stroked. Exercising these valves requires the initiation of the SLC system and full flow injection into the reactor vessel. Initiation of SLC flow involves the discharge of Category D explosively activated valves.

Alternate Testing: At least once per 18 months, one of the standby liquid control system loops, including the associated explosive valve, will be initiated. A flow path to the reactor vessel will be verified by pumping demineralized water to the vessel. Valve closure capability for SLC-V-7 will be verified in conjunction with 10CFR50 Appendix J (Type C) testing.

The proposed testing complies fully with the intent of the Code (IWV-3522). Additionally it is noted that the SLC system will be required to perform its safety function only under very infrequent circumstances (ATWS). The proposed testing provides adequate assurances of quality and public safety.

3.4.1.1.2 Evaluation--Exercising check valves SLC-V-6 and 7 would require the firing of an explosive valve, which destroys the valve, and establishing flow into the reactor vessel from the standby liquid control system. This is an impractical evolution to perform during reactor operation or cold shutdowns since it could result in the addition of chemical poison to the reactor vessel. During power operation, the injection of chemical poison would necessitate shutting down the reactor. Poison injection during cold

shutdown would require extensive clean-up of the reactor coolant to remove all traces of the poison. Therefore, it would be burdensome to require these valves to be tested quarterly or during cold shutdown. Furthermore, it would require frequent replacement of the explosive charges in the explosively activated valves, which would also be costly and burdensome to the licensee. Additionally, these valves are not frequently cycled and should not experience a high rate of degradation associated with cycling, such as hinge or seating surface wear. The licensee's proposal to full-stroke exercise valves SLC-V-6 and 7 with flow at least once every 18 months gives adequate assurance of operational readiness and provides a reasonable alternative to the Code test frequency requirements.

Based on the impracticality of testing these valves in accordance with the Code frequency requirements, the determination that the licensee's proposed testing provides a reasonable alternative to the Code requirements, and considering the burden on the licensee if the Code requirements were imposed, relief should be granted from the test frequency requirements as requested.

3.5 Service Water System

3.5.1 Category B Valves

3.5.1.1 Relief Request. The licensee has requested relief in RV-21 from the stroke time measurement requirements of Section XI, Paragraph IWV-3413, for valves SW-V-214, 215, 216, and 217, the inlet valves for cooling water flow to the emergency diesel generators heat exchangers, and proposed to full-stroke exercise these valves quarterly but not measure stroke times.

3.5.1.1.1 Licensee's Basis for Requesting Relief--These are air operated butterfly valves furnished as part of the emergency diesel generator. They do not have a manual control switch or any remote position indicators. Attempts to monitor the stroke times have provided inconsistent and misleading results.

Alternate Testing: Valve exercising per IWV-3412 will provide adequate assurance of valve operability. Verification that the valve opens and closes is based on local observation of the valve actuator.

Valve operability is adequately evaluated by the tests associated with IWV-3410 with the exception of IWV-3413 noted above. This testing provides adequate assurance of material quality and public safety.

3.5.1.1.2 Evaluation--These valves are not equipped with remote position indication. The valves have no manual control switches but instead are controlled by system demand for diesel cooling water. This makes obtaining accurate stroke times for these valves very difficult. Also, direct observation of these valves to determine stroke times has not yielded useful results. System modifications might be necessary to directly measure the stroke times of these valves and would be expensive and burdensome to the licensee, but, it may be prudent at some later date to install provisions to allow stroke time testing these valves. However, some method of stroke timing or otherwise adequately evaluating these valves' condition is necessary for determining their operational readiness.

The licensee should actively pursue an alternate method for stroke time testing these valves. Methods employing magnetics, acoustics, ultrasonics, or other technologies should be investigated for their suitability. The licensee's proposal to verify that the valves are opening and closing quarterly during surveillance testing should be acceptable on an interim basis, but, it does not adequately evaluate the valve condition and does not present a reasonable long term alternative to the Code requirements.

Based on the determination that complying with the Code requirements is impractical and considering the licensee's proposal, relief should be granted for an interim period of one year or until the next refueling outage, whichever is longer. During this period, the licensee should develop a method of measuring the stroke times or some other means to adequately monitor the condition of these valves.

3.6 Main Steam System

3.6.1 Category B/C Valves

3.6.1.1 Relief Request. The licensee has requested relief in RV-13 from exercising valves MS-RV-3D, 4A, 4B, 4C, 4D, 5B, and 5C, the automatic depressurization system (ADS) valves, in accordance with the requirements of Section XI, Paragraphs IWV-3411 and 3413 and proposed to exercise these valves at least once every 18 months in accordance with WNP-2 Technical Specification 4.5.1.e.

3.6.1.1.1 Licensee's Basis for Requesting Relief--Valve exercise on a quarterly basis during power operation could cause power transients resulting in a reactor shutdown. Valve testing at cold shutdown conditions is not desirable because of the increased potential for damaging the valve seat. It is not desirable to test more frequently than refueling outages to reduce the number of challenges to the valves. These valves are not equipped with position indicators based on the valve obturator or valve actuator position. Thermocouples are installed in the exhaust piping to provide indication as to whether or not the valve is properly seated. Acoustic monitors are also installed on the exhaust piping to provide indirect valve position indication. This indication lags actual valve position and is not accurate at reduced pressures.

Alternate Testing: These valves will be exercised at least once every 18 months in accordance with WNP-2 Technical Specification. The valves will be verified fully open and closed based on available instrumentation and appropriate system response.

The proposed testing adequately evaluates the operational readiness of these valves commensurate with their safety function. This will help reduce the number of challenges and failures of safety relief valves and still provide timely information regarding operability and degradation. This will provide adequate assurance of material quality and public safety.

3.6.1.1.2 Evaluation--It is impractical to test these ADS valves quarterly during power operation as this would result in the release of steam

from the main steam lines causing power fluctuations and possibly resulting in a reactor shutdown. Exercising these valves during cold shutdowns would result in excessive wear on valve seating surfaces and an increased number of challenges to these valves, which is undesirable (see NUREG-0737, Section II.K.3.16). These valves are not equipped with external or remote position indication based on valve obturator or actuator position. Verification of valve position changes is based on system response (i.e., thermocouple indication or acoustic monitors) which loses accuracy at reduced pressures and lags actual valve position. Installation of instrumentation to directly indicate valve position would require system redesign and modification, which would be costly and burdensome to the licensee. The licensee's proposal to verify the operational readiness of these valves at least once every 18 months in accordance with WNP-2 Technical Specification and verify full opening and closing based on available instrumentation and appropriate system response provides a reasonable alternative to the Code requirements.

Based on the determination that testing these valves to the Code required frequency is impractical, that the licensee's proposal provides a reasonable alternative to the Code requirements, and considering the burden on the licensee if the Code requirements were imposed, relief should be granted as requested.

3.6.2.1 Relief Request. The licensee has requested relief in RV-18 from exercising the vacuum breaker valves in the main steam relief valve downcomers, listed in the following table, in accordance with the test frequency requirements of Section XI, Paragraph IWV-3521, and proposed to exercise these valves during cold shutdowns when the containment is de-inerted and during refueling outages.

VALVE	CATEGORY	FUNCTION
MS-V-37A--H, J--N P, R, S, U, and V.	B/C	Main steam relief valve downcomer vacuum breakers
MS-V-38A--H, J--N, P, R, S, U, and V.	B/C	Main steam relief valve downcomer vacuum breakers

3.6.2.1.1 Licensee's Basis for Requesting Relief--Testing requires personnel access to the containment. This requires the reactor be shutdown and the containment be de-inerted.

Alternate Testing: These valves will be exercised when the reactor is shutdown and the containment is de-inerted. The valves will be manually operated and visually verified to open and reseat.

The proposed testing will provide accurate and timely information regarding valve operability and will provide adequate assurance of material quality and public safety.

3.6.2.1.2 Evaluation--Testing these MS-V-37 and -38 series valves is impractical with the reactor operating or the containment inerted as this testing requires personnel entry into the containment building. It would be costly and burdensome to the licensee to require de-inerting containment every cold shutdown because of the delay it could cause in plant start-up and the expense associated with inerting containment. The licensee's proposal to exercise these valves during reactor shutdowns when the containment is de-inerted by manual operation and visual verification that the valves open and properly reseat provides a reasonable alternative to the Code test frequency requirements.

Based on the determination that testing these valves in accordance with the Code frequency requirements is impractical, that the licensee's proposal provides a reasonable alternative to the Code requirements, and considering the burden on the licensee if the Code requirements are imposed, relief should be granted from the Code test frequency requirements as requested.

3.7 Control Rod Drive System

3.7.1 Category B Valves

3.7.1.1 Relief Request. The licensee has requested relief in RV-14 from the stroke time measurement requirements of Section XI, Paragraph IWV-3413, for CRD-V-10, 11, 180, and 181, the vent and drain valves for the scram discharge volume, and proposed to measure a combined stroke time for each pair, CRD-V-10 and 180, and CRD-V-11 and 181.

3.7.1.1.1 Licensee's Basis for Requesting Relief--CRD-V-10 and 180 as well as CRD-V-11 and 181 are located in series, share the same position indication, and the same actuating source (air). Valve indication indicates shut when either valve closes. Valve indication indicates open only when both valves are open. These valves are always operated in pairs and cannot be operated individually without modifying the valve control system.

Alternate Testing: The combined stroke-time of both valves will be measured in lieu of individual valve stroke-times. Valve closure will be verified by local observation.

Valve operability is adequately evaluated by the proposed alternate testing. This provides adequate assurance of material quality and public safety.

3.7.1.1.2 Evaluation--Valves CRD-V-10, 11, 180, and 181 operate in pairs and cannot be operated individually. These valves share position indication with their paired series valve making individual valve stroke timing impractical. The licensee's proposal to measure these valves' stroke times during operation in pairs to provide an indication when one or both of the valves in the pair is degraded would give a reasonable alternative to the Code requirements. If the stroke time limit is exceeded both valves should be declared inoperable and be repaired or replaced prior to their return to service. Direct measurement of individual valve full-stroke times may require significant system modifications and be costly and burdensome to the licensee. However, the licensee should investigate alternate techniques for measuring stroke time or otherwise equivalently evaluating the operational readiness of these valves individually.

Based on the determination that the licensee's proposed testing provides a reasonable alternative to the Code requirements, considering the impracticality of testing these valves in accordance with the Code requirements, and the burden on the licensee if the Code requirements were imposed, relief should be granted as requested.

3.8 Hydraulic Control System

3.8.1 Category A Valves

3.8.1.1 Relief Request. The licensee has requested relief in RV-19 from performing individual stroke time measurements for the following power operated hydraulic control system valves in accordance with the requirements of Section XI, Paragraph IWV-3413, and proposed to measure their stroke times as a group based on the slowest valve of each group.

Group 1	HY-V-17A, 18A, 19A, 20A
Group 2	HY-V-33A, 34A, 35A, 36A
Group 3	HY-V-17B, 18B, 19B, 20B
Group 4	HY-V-33B, 34B, 35B, 36B

3.8.1.1.1 Licensee's Basis for Requesting Relief--These valves are divided into four groups. Each group is operated by a single switch. Cycling the control switch four successive times in order to record the individual valve stroke times causes unnecessary wear on the valves with little compensating benefit.

Alternate Testing: These valves will have their stroke times measured as a group based on valve indication of the slowest valve in the group.

The proposed alternate testing will verify that the valves respond in a timely manner and provide information for signs of material degradation. This provides adequate assurance of material quality and public safety.

3.8.1.1.2 Evaluation--Due to system design, these valves must be operated in groups of four. The licensee has proposed to record only the stroke time of the slowest acting valve of each group. However, this testing may not provide the information required to adequately assess the condition of and determine the operational readiness of individual group valves. The licensee's proposed testing may not detect a gradual change in a valve's stroke time, which could be indicative of valve degradation of any but the slowest valve in the group. The slowest valve in the group may differ from test to test. Therefore, the licensee's proposal does not adequately evaluate

group valves=individually and does not provide an adequate alternative to the Code requirements.

The licensee has not demonstrated that testing in accordance with the Code requirements is impractical nor excessively burdensome. Individually testing these valves using a single timer, might cause additional cycling of these valves, however, an additional timer or some other alternate method for stroke timing these valves could greatly reduce the number of valve strokes. Also, the licensee is testing these valves only during cold shutdowns which are expected to be infrequent. This should not result in an excessive number of valve cycles from testing.

Based on the determination that the licensee's proposed testing does not provide a reasonable alternative to the Code requirements, that the licensee has not demonstrated the impracticality of performing this testing in accordance with the Code requirements, and considering the burden on the licensee if the Code requirements were imposed, relief should not be granted as requested.

3.9 Containment Instrument Air System

3.9.1 Category A/C Valves

3.9.1.1 Relief Request. The licensee has requested relief in RV-3 from exercising instrument air supply check valves CIA-V-21 and CIA-V-31A and -31B in accordance with the test frequency requirements of Section XI, Paragraph IWV-3521, and has proposed to full-stroke exercise these valves closed per 10 CFR 50, Appendix J, leak rate testing.

3.9.1.1.1 Licensee's Basis for Requesting Relief--There is no local or remote position indication for these check valves.

Alternate Testing: Closure ability of CIA-V-21, 31A, and 31B will be verified by normal 10 CFR 50, Appendix J, Type C testing.

The proposed testing qualitatively verifies valve closure on the most practical regular basis. This satisfies the intent of the Code (IWV-3412).

Valve opening is verified when the accumulators are pressurized in preparation for the pressure decay test. These valves are in the pneumatic supply to the auto-depressurization system valves, a safety related system. However, the proposed alternative testing together with the redundancy of the pneumatic supplies and the individual accumulators, of the ADS valves themselves and of the high pressure injection systems assures an acceptable level of quality and public safety.

3.9.1.1.2 Evaluation--Valves CIA-V-31A and 31B, which are nitrogen valves, and the test connection for instrument air valve, CIA-V-21, are located inside containment and are inaccessible during power operations and during cold shutdowns when the containment is inerted. These valves do not have remote or other external position indication and can be verified in the closed position only by performing a leak-rate test. This requires reconfiguring the system, hook-up, and disconnection of leak test apparatus. Due to system design, no practical method exists to perform this testing during power operations and during cold shutdowns when the containment is inerted. De-inerting containment for valve testing each cold shutdown would likely result in delaying the return to power and would be costly and burdensome to the licensee. The licensee's proposal to verify closure by performing valve leak rate testing during refueling outages for these containment isolation valves gives adequate alternative to the Code requirements and provides a reasonable alternative to the Code requirements.

Based on the determination that the licensee's proposal provides a reasonable alternative to the Code requirements, considering the impracticality of performing the testing in accordance with the Code requirements, and the burden on the licensee if the Code requirements are imposed, relief should be granted from the Code test frequency requirements as requested.

3.9.1.2 Relief Request. The licensee has requested relief in RV-3 from exercising check valves in the instrument air supply lines to valve accumulators CIA-V-40M, N, P, R, S, U, and V in accordance with the test frequency requirements of Section XI, Paragraph IWV-3521, and proposed to full-stroke exercise these valves and verify closure by performing a pressure decay test on the accumulators at least once every two years.

3.9.1.2.1 Licensee's Basis for Requesting Relief--The 40 series valves are located inside the containment and are inaccessible during power operations. There is no way to remotely isolate the valves and observe the pressure decay of the accumulators.

Alternate Testing: During refueling outages, pressure decay tests will be performed for the accumulators associated with the main steam safety/relief valves in order to verify closure ability of the 40 series valves. Each accumulator will be tested at least every two years.

The proposed testing qualitatively verifies valve closure on the most practical regular basis. This satisfies the intent of the Code (IWV-3412). Valve opening is verified when the accumulators are pressurized in preparation for the pressure decay test. These valves are in the pneumatic supply to the auto-depressurization system valves, a safety related system. However, the proposed alternative testing together with the redundancy of the pneumatic supplies and the individual accumulators, of the ADS valves themselves and of the high pressure injections systems assures an acceptable level of quality and public safety.

3.9.1.2.2 Evaluation--These 40 series nitrogen valves and test connections needed to test these valves are located inside containment and are inaccessible during power operations and cold shutdowns when the primary containment is inerted. Therefore, it is impractical to test these valves in the closed position in these modes. These valves are not equipped with external or remote position indication.

Leak rate testing which ensures that the leakage back through these valves into a depressurized header is within the assigned limits adequately verifies the closure of these valves. Section 3.9.3.1.2 of this report contains an evaluation of the licensee's proposed method for leak testing these check valves. Leak rate testing these valves at least once every two years gives adequate assurance or operational readiness and provides a reasonable alternative to the Code requirements.

Based on the determination that the licensee's proposal provides a reasonable alternative to the Code requirements, considering the burden on the

licensee if the Code requirements are imposed, and the impracticality of complying with the Code requirements, relief should be granted as requested.

3.9.1.3 Relief Request. The licensee has requested relief in RV-7 from the seat leakage measurement requirements of Section XI, Paragraph IWV-3424, for check valves in the instrument air supply lines to valve accumulators CIA-V-40M, N, P, R, S, U, and V and proposed to leak test these valves using the pressure decay method.

3.9.1.3.1 Licensee's Basis for Requesting Relief--These check valves can only be tested by the method specified in IWV-3424(b) with much more difficulty than using the pressure decay method. The test methods for measuring seat leakage past a valve as specified in the Code requirements imposes an undue burden on the owner without commensurate compensating benefits. The pressure decay method of measuring leakage rates is recognized as an accurate method of measuring leakage rates and is accepted by OM-10 (Draft copy as of March 1987).

Alternate Testing: These check valves will be leak tested during a pressure decay test on the accumulators. Acceptance criteria will be based on the values specified in OM-10.

3.9.1.3.2 Evaluation--The licensee has requested relief from performing seat leakage measurements in accordance with IWV-3424 and has proposed to test these valves with an accumulator pressure decay test. A pressure decay test in a known test volume which accurately determines the leak rate through these check valves using ideal gas law principals, which are based on the relationship between gas volume, pressure, and temperature is essentially equivalent to the testing per IWV-3424 and gives an acceptable level of quality and safety. Using acceptance criteria based on the guidance of OM-10 should give adequate assurance of operational readiness of these valves provided the acceptance criteria requires corrective action prior to exceeding the rate of leakage that would prevent the accumulator from performing its safety function.

Since the licensee's proposed alternate testing method, to determine leak rate based on the rate of accumulator pressure decay, provides an

acceptable level of quality, safety, and equivalent protection as provided by the Code, relief should be granted as requested.

3.9.2 Category B Valves

3.9.2.1 Relief Request. The licensee has requested relief in RV-24 from the stroke time measurement requirements of Section XI, Paragraph IWV-3413, for the emergency nitrogen bottle isolation valves, CIA-SPV-1A through 15A and CIA-SPV-1B through 19B, and has proposed to exercise these valves open and closed without measuring stroke time.

3.9.2.1.1 Licensee's Basis for Requesting Relief--These valves have neither a manual control switch nor suitable valve position indicators. The proposed alternate testing will confirm valve operability and detect any defective valves which will provide adequate assurance of material quality and public safety.

Alternate Testing: The alternative will be to test these valves per IWV-3410 with the exception of IWV-3413. Verification that the valve opens and closes is based on observation of appropriate system responses.

3.9.2.1.2 Evaluation--It is difficult to accurately measure the stroke time of these power operated solenoid valves as they are not equipped with position indication or manual control switches. Installation of new valves (34 valves) with position indication would require system modifications, which would be costly and burdensome to the licensee. These valves receive a control signal to actuate from a pressure switch/pressure programmer. There are multiple nitrogen bottles involved, each with a solenoid valve. A controller sequentially opens these valves to place the bottles in service as a pressure setpoint is reached. Stroking of these valves can be verified by observing system pressure changes, however, accurate timing of the valve stroke for trending purposes is impractical.

Though it is difficult to accurately measure the stroke time of these valves, some method and acceptance criteria is needed to ensure that a severely degraded valve is declared inoperable and repaired or replaced. The licensee should develop a method of timing these valves or otherwise

evaluating their condition to adequately determine their operational readiness. Industry experience with solenoid valves has shown that they generally operate immediately or fail to operate at all. The common degradation mechanisms for these valves generally do not produce measurable changes in valve stroke times prior to valve failure. Therefore, the licensee's proposal to verify these valves change position via proper system response gives adequate assurance of operational readiness for an interim period of one year or until the next refueling outage, whichever is longer. However, this proposal does not provide an acceptable alternative to the Code requirements for the long-term.

During the interim period the licensee should consider methods, such as ultrasonics, magnetics, and acoustics for stroke timing or otherwise monitoring the condition of these valves, and should determine appropriate acceptance criteria so that a severely degraded valve is identified for corrective action.

Based on the determination that compliance with the Code requirements is impractical, considering the burden on the licensee if the Code requirements are imposed and the licensee's proposed testing, interim relief should be granted for one year or until the next refueling outage, whichever is longer. During the interim period the licensee should evaluate alternatives and identify a method for adequately assessing the operational readiness of these valves.

3.10 Primary Containment Cooling and Purge System

3.10.1 Category A/C Valves

3.10.1.1 Relief Request. The licensee has requested relief in RV-6 from exercising the following suppression chamber to drywell vacuum breaker valves in accordance with the requirements of Section XI, Paragraphs IWV-3426 and 3427, and proposed to full-stroke exercise valves CVB-V-1A thru H, J thru N, and P thru T, suppression chamber to drywell vacuum breaker valves, at least once every 18 months by opening each valve using a torque wrench and verifying closure of all of these valves by conducting a drywell-to-suppression chamber bypass leak test.

3.10.1.1.1 Licensee's Basis for Requesting Relief--These check valves cannot be tested individually, therefore, assigning a limiting leakage rate for each valve is not practical. The purpose of this leak rate test is to assure that the leakage from the suppression pool chamber to the drywell does not exceed Technical Specification limits. The WNP-2 Technical Specification specifies conservative corrective actions commensurate with the importance of the safety function being performed by these valves.

Alternate Testing: These valves will be leak tested according to WNP-2 Technical Specifications, at least once per 18 months by conducting a drywell-to-suppression chamber bypass leak test. These valves are verified closed by redundant position indicators, tested in the open direction using a torque wrench, and each valve seat is visually inspected. Corrective actions will be as specified in the Technical Specification.

The leakage criteria and corrective actions specified in the WNP-2 Technical Specifications is the most practical approach to assessing the adequacy of these valves in performing their specified safety function. Following the WNP-2 Technical Specifications provides adequate assurance of material quality and public safety.

3.10.1.1.2 Evaluation--The suppression chamber to drywell vacuum breaker valves are installed in pairs which are in series with each other with all of the outboard valves being directly in the suppression chamber air space and all inboard valves connected to a drywell to suppression pool downcomer. All pairs have a common upstream and downstream volume and it is impractical to leak test these valves individually quarterly, during cold shutdowns, or during refueling outages. Modifications to allow testing these valves individually would require significant system redesign and would be costly and burdensome to the licensee. The licensee has proposed to measure a combined leakage rate through these valves during the drywell-to-suppression chamber bypass leak test, to perform a visual inspection of each valve seat, to test the valve in the open direction measuring torque, and to verify valve closure by redundant position indication every 18 months. This testing should provide adequate assurance that these valves can perform their safety function in the closed position and provides a reasonable alternative to the Code requirements.

Based on the determination that testing these valves in accordance with the Code requirements is impractical, that the licensee's proposed testing provides a reasonable alternative to the Code requirements, and considering the burden on the licensee if the Code requirements were imposed, relief may be granted as requested.

3.11 Process Instrumentation System

3.11.1 Category A/C Valves

3.11.1.1 Relief Request. The licensee has requested relief in RV-11 from exercising check valves PI-EFCX-72f, 73e, and TIP-V-6 on the discharge of the radiation leak detection monitors and on the purge system for the TIP, in accordance with the test frequency requirements of Section XI, Paragraph IWV-3521, and has proposed to exercise these valves during cold shutdowns when the containment is de-inerted and during refueling outages.

3.11.1.1.1 Licensee's Basis for Requesting Relief--These containment isolation valves are located inside the containment and can only be observed/tested during cold shutdown conditions when the containment is de-inerted.

Alternate Testing: These valves will be tested at cold shutdown conditions when the containment is de-inerted.

Lengthening the time interval between tests as recommended will not preclude the timely evaluation of valve operability and thus provides adequate assurance of material quality and public safety.

3.11.1.1.2 Evaluation--Valves PI-EFCX-72f, 73e, and TIP-V-6 are located inside the containment. They are inaccessible for testing during power operations and during cold shutdowns when the containment remains inerted because the oxygen deficient atmosphere would present a personnel safety hazard. Therefore, it is impractical to test these check valves quarterly during power operations or during cold shutdowns when containment remains inerted. Requiring the licensee to de-inert containment each cold

shutdown solely for the purpose of valve testing would delay start-up and be costly and burdensome to the licensee. The licensee's proposal to exercise these valves during cold shutdowns when the containment is de-inerted and during refueling outages provides a reasonable alternative to the Code requirements.

Based on the determination that testing these valves in accordance with the Code requirements is impractical, that the licensee's proposed alternative provides a reasonable alternative to the Code requirements, and considering the burden on the licensee if the Code requirements were imposed, relief should be granted as requested.

3.12 Diesel Oil Transfer System

3.12.1 Category B Valves

3.12.1.1 Relief Request. The licensee has requested relief in RV-12 from the stroke time measurement requirements of Section XI, Paragraph IWV-3413, for valves DO-V-40A and 40B, day tank overfill prevention solenoid valves in the diesel oil transfer lines, and proposed to full-stroke exercise these valves quarterly but not measure valve stroke times.

3.12.1.1.1 Licensee's Basis for Requesting Relief--These valves do not have a manual control switch or valve position indication. The speed with which the valve responds is not critical, only that the appropriate system response is observed in a timely manner.

Alternate Testing: The full stroke exercise of the valve will verify the timely response time of the valve (i.e., the valve shuts before the day tank overflows).

The status of valve operability and material quality is adequately evaluated by the tests associated with IWV-3410 with the exception of IWV-3413 noted above. This provides adequate assurance of material quality and public safety.

3.12.1.1.2 Evaluation--Valves DO-V-40A and 40B are day tank overfill prevention valves in the diesel fuel oil transfer system. It is difficult to accurately measure the stroke time of these valves as they are not equipped with position indication or manual control switches. Installation of new valves with position indication would require system modifications, which would be costly and burdensome to the licensee. It would also be burdensome to require the licensee to immediately employ an alternate method of measuring valve stroke times for detecting valve degradation. Stroking of these valves can be verified by observing system operational parameter changes, however, accurate timing of the valve stroke for trending purposes is impractical.

Though it is difficult to accurately measure the stroke time of these hydraulically operated valves, some method and acceptance criteria is needed to ensure that a severely degraded valve is declared inoperable and repaired or replaced. The licensee should develop a method of timing these valves or otherwise evaluating their condition to adequately determine their operational readiness. The licensee's proposal to verify these valves change position via proper system response gives adequate assurance of operational readiness for an interim period of one year or until the next refueling outage, whichever is longer. However, this proposal does not provide an acceptable alternative to the Code requirements for the long-term since it is not likely to detect valve degradation, short of complete failure.

During the interim period the licensee should consider methods, such as ultrasonics, magnetics, and acoustics for stroke timing or otherwise monitoring the condition of these valves, and should determine appropriate acceptance criteria so that a severely degraded valve is identified for corrective action.

Based on the determination that compliance with the Code requirements is impractical, considering the burden on the licensee if the Code requirements are imposed and the licensee's proposed testing, interim relief should be granted for one year or until the next refueling outage, whichever is longer. During the interim period the licensee should evaluate alternatives and identify a method for adequately assessing the operational readiness of these valves.

3.13 Emergency Chilled Water System

3.13.1 Category B valves

3.13.1.1 Relief Request. The licensee has requested relief in RV-22 from the stroke time measurement requirements of Section XI, Paragraph IWV-3413, for valves SW-TCV-11A, 11B, 15A, and 15B, temperature control valves for cooling water flow to the chiller heat exchangers, and proposed to full-stroke exercise these valves quarterly but not measure valve stroke times.

3.13.1.1.1 Licensee's Basis for Requesting Relief--These are hydraulically operated globe valves used for control of chillwater temperature. They do not have a manual control switch or any remote position indicators.

Alternate Testing: Valve exercising per IWV-3412 will provide adequate assurance of valve operability. Verification of valve position is based on observing the appropriate system response or locally observing stem position.

Valve operability is adequately demonstrated by the tests associated with IWV-3410 with the exception of IWV-3413 noted above. This testing provides adequate assurance of material quality and public safety.

3.13.1.1.2 Evaluation--Power operated valves SW-TCV-11A, 11B, 15A, and 15B are temperature control valves for cooling water flow to the chiller heat exchangers. It is difficult to accurately measure the stroke time of these hydraulically operated valves as they are not equipped with position indication or manual control switches. Installation of new valves with position indication would require system modifications, which would be costly and burdensome to the licensee. Stroking of these valves can be verified by observing system operational parameter changes, however, accurate timing of the valve stroke for trending purposes is impractical.

Though it is difficult to accurately measure the stroke time of these hydraulically operated valves, some method and acceptance criteria is needed to ensure that a severely degraded valve is declared inoperable and repaired

or replaced. The licensee should develop a method of timing these valves or otherwise evaluating their condition to adequately determine their operational readiness. The licensee's proposal to verify these valves change position via proper system response gives adequate assurance of operational readiness for an interim period of one year or until the next refueling outage, whichever is longer. However, this proposal does not provide an acceptable alternative to the Code requirements for the long-term.

During the interim period the licensee should consider methods, such as ultrasonics, magnetics, and acoustics for stroke timing or otherwise monitoring the condition of these valves, and should determine appropriate acceptance criteria so that a severely degraded valve is identified for corrective action.

Based on the determination that compliance with the Code requirements is impractical, considering the burden on the licensee if the Code requirements are imposed and the licensee's proposed testing, interim relief should be granted for one year or until the next refueling outage, whichever is longer. During the interim period the licensee should evaluate alternatives and identify a method for adequately assessing the operational readiness of these valves.

3.14 Post Accident Sampling System

3.14.1 Category A Valves

3.14.1.1 Relief Request. The licensee has requested relief in RV-23 from the stroke time measurement requirements of Section XI, Paragraph IWV-3413 for valves PSR-VX-73-1, 77A1, 77A3, 80-1, 82-1, 82-7, 83-1, 84-1, and 88-1, the inboard containment isolation valves for post accident sampling system penetrations, and proposed to full-stroke exercise these valves quarterly and measure the stroke times of only the slowest acting of these nine valves.

3.14.1.1.1 Licensee's Basis for Requesting Relief--These nine post accident sampling system solenoid valves are the inboard containment isolation valves for nine different penetrations and are operated from a

single keylock control switch. It is impractical to measure the individual valve stroke times. To do so would require repetitive cycling of the control switch causing unnecessary wear on the valves and control switch with little compensating benefit.

Alternate Testing: The stroke time of the slowest valve will be measured by terminating the stroke time measurement when the last of the nine indicating lights becomes illuminated. If the stroke time of the slowest valve is in the acceptance range, then the stroke times of all valves will be considered acceptable.

3.14.1.1.2 Evaluation--These are rapid-acting power operated valves with a limiting value of full-stroke time of 2 seconds as described in Section 3.1.1.1 of this report. Relief has been recommended from the trending requirements of the Code for these valves and corrective action would not be required to be taken unless the measured stroke time of a valve in the group exceeds the 2 second limit. If the measured stroke time of the slowest acting valve is shorter than two seconds, then all nine valves are stroking in less than 2 seconds. If the slowest solenoid valve strokes in longer than 2 seconds, then the appropriate corrective action should be taken and it should be verified that the remainder of the valves are stroking in less than 2 seconds. This testing method is in accordance with GL 89-04, Position 6, and provides a reasonable alternative to the Code requirements.

Based on the determination that the licensee's proposal provides an acceptable level of quality and protection as provided by the Code, relief should be granted.

APPENDIX A
P&ID AND FIGURE LIST

The P&IDs and Figures listed below were used during the course of this review.

System	P&ID No.	Revision
Diesel Oil & Miscellaneous System	M 512	32
Reactor Core Isolation Coolant System	M 519	37
HPCS and LPCS Systems	M 520	38
Residual Heat Removal System	M 521 SH 1	44
Residual Heat Removal System	M 521 SH 2	44
Standby Liquid Control System	M 522	18
Reactor Water Clean-up System	M 523	50
Standby Service Water System	M 524 SH 1	42
Standby Service Water System	M 524 SH 2	42
Closed Cooling Water System	M 525	36
Fuel Pool Cooling and Clean-up System	M 526	46
Control Rod Drive System	M 528	32
Main Steam System	M 529	40
Nuclear Boiler Recirculation System	M 530	36
Equipment Drain System	M 537	41
Floor Drain System	M 539	46
Containment Cooling and Purging System	M 543	39
Containment Atmosphere Control System	M 554	29
Containment Instrument Air System	M 556	26
MSIV Leakage Control System	M 557	16
Steam and Liquid Sampling System	M 607 SH 2	12

APPENDIX B

IST PROGRAM ANOMALIES IDENTIFIED DURING THE REVIEW

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

1. The licensee has requested to change the method by which relief requests are evaluated and relief from the ASME Code, Section XI, requirements is granted by the NRC (see Section 2.1.1.1 of this report). The method proposed by the licensee would allow the exemption of pumps or valves from testing to the Code requirements where the licensee determines that a precedent exists that is applicable for that component. This method could result in delaying NRC review of significant changes to the IST program plan scope for an unspecified interval until the licensee submits an updated program to NRC. Relief should not be granted as requested.

2. The licensee has proposed (see Section 2.1.2.1 of this report) to use pump vibration velocity measurements rather than vibration displacement measurements. This method has been demonstrated to provide better indication of pump degradation. Relief should be granted provided the licensee complies with all of the OM-6 vibration measurement requirements.

3. The licensee has requested relief (see Section 2.1.5.1 of this report) from the vibration acceptance criteria of OM-6 for the fuel pooling cooling and diesel fuel oil transfer pumps and proposed alternate limits and to evaluate the feasibility of reducing the vibration levels to the OM-6 upper limits. The licensee's proposed limits do not provide an acceptable long-term alternative. Interim relief should be granted for one year or until the next refueling outage, whichever is longer.

4. The licensee has requested relief (see Section 2.3.1 of this report) from the Code inlet and differential pressure measurement requirements for the standby service water and HPCS diesel cooling water pumps and proposed to verify proper spray pond level and to measure pump discharge pressure and flow rate to demonstrate pump operational readiness. Relief should be granted provided the licensee assigns acceptance criteria to discharge pressure that gives protection equivalent to that provided by the Code as described.

5. The licensee has requested relief from the Section XI requirements for flow rate measurement for the diesel fuel oil transfer pumps (see Section 2.4.1 of this report) and proposed to derive this value by determining the volume, in gallons, pumped and dividing this quantity by the total operating time of the pump. Relief should be granted provided the pump flow rate calculation meets the accuracy requirements of Table IWP-4110-1.

6. The licensee has requested relief from the Section XI requirements for differential pressure measurement for the diesel fuel oil transfer pumps (see Section 2.4.2 of this report) and proposed to derive this value by measuring the height of fluid above the pump's suction. Relief should be granted provided the pump differential pressure calculation meets the accuracy requirements of Table IWP-4110-1.

7. The licensee has proposed to establish target leak rate values, usually not fixed, based on valve type and size for those valves being Appendix J, Type C, leak rate tested (see Section 3.1.2.1 of this report). These target values are for use in evaluating the leak tightness of Category A containment isolation valves. Leak-rate testing is to be performed in accordance with 10 CFR 50, Appendix J, and WNP-2 Technical Specifications requirements. The 10 CFR 50, Appendix J, leak testing does not trend or establish corrective actions based on individual valve leakage rates as required by Paragraphs IWV-3426 through -3427. Neither the licensee's Technical Specifications limits nor the collective criteria of Appendix J has been shown to provide adequate assurance of individual component operational readiness as provided by

Paragraph IWV-3426. The collective criteria of Appendix J have not been demonstrated to be more appropriate since those may allow a single valve to be significantly degraded. Relief should be granted from IWV-3421 thru -3425 provided the licensee complies with the requirements of Paragraph IWV-3426 and -3427(a).

8. The NRC staff's position is that when a valve serves both a containment isolation function and a pressure boundary isolation function it must be tested to both the Appendix J requirements, to assure its CIV function, and to the IWV-3420 and plant Technical Specification requirements to assure its PIV function (see Section 3.1.3.1 of this report). Request for Relief No. RV-4 does not make it clear that WNP-2 is adhering to this position. Any PIVs that also perform a containment isolation function must be leak rate tested to the Appendix J and IWV-3426 and -3427(a) requirements to verify their ability to perform a CIV function. Relief should be granted as requested from the requirements of IWV-3427(b).

9. The licensee has requested relief from exercising the water leg fill and pressurization check valves (see Section 3.1.6.1 of this report) in accordance with the Section XI test method requirements and proposed to full-stroke exercise these series valves open, verify at least one valve of the series shuts, and operate the stop-check manually, quarterly. Relief should be granted provided the pair of series check valves is verified closed quarterly and if excessive leakage is noted, both valves are repaired or replaced prior to their return to service.

10. The licensee has requested relief (see Section 3.1.7.1 of this report) from the Code test frequency requirements for valves that can be tested only during cold shutdowns and proposed to test these valves during cold shutdowns at the frequency described in their relief request. For any valve, or class of valves, that cannot be tested during each cold shutdown of sufficient duration to complete all testing a relief request must be submitted and approved by NRC prior

to implementation. Relief should be granted only for those valves thatcan be tested during any cold shutdown.

11. The licensee has requested relief from exercising the vacuum relief valves for the reactor core isolation cooling (RCIC) turbine exhaust (see Section 3.2.1.1 of this report) in accordance with the Code test frequency and method requirements and proposed to full-stroke exercise both valves open and at least one of these valves shut quarterly and to verify closure of each valve at refueling outages. Since the licensee has not demonstrated the impracticality of testing these valves to the Code required frequency and the licensee's proposed alternate testing does not provide a reasonable alternative to the Code requirements, and considering the burden on the licensee if the Code requirements were imposed, relief should not be granted as requested.

12. The licensee has requested relief from the Section XI stroke time measurement requirements (see Sections 3.5.1.1, 3.9.2.1, 3.12.1.1, and 3.13.1.1 of this report) for various power operated valves and proposed to verify these valves stroke quarterly but not measure stroke times. The licensee's proposal to verify valve operation observing various system or component indications should demonstrate these valves operate but is not likely to detect valve degradation, short of complete failure. Therefore, the proposed testing does not provide a reasonable long term alternative to the Code requirements. Interim relief should be granted for one year or until the next refueling outage, whichever is longer. During this interim period, the licensee should consider methods, such as ultrasonics, magnetics, and acoustics for stroke timing or otherwise adequately monitoring the condition of these valves, and should determine appropriate acceptance criteria so that a severely degraded valve is identified for corrective action.

13. The licensee's proposed test method for the identified hydraulic control system valves (see Section 3.8.1.1 of this report) does not provide an adequate demonstration of valve operability since it only

monitors the stroke time of the slowest valve of the group for an indication of degradation. The proposed testing does not provide a reasonable alternative to the Code requirements, the licensee has not demonstrated the impracticality of performing this testing in accordance with the Code requirements and the Code requirements are not considered excessively burdensome, therefore, relief should not be granted as requested. These valves should be stroke time tested individually each cold shutdown in accordance with the Code requirements.

14. The operability of the emergency diesel generator (EDG) is considered to be safety related. Due to the designed system redundancy, the diesel air start valves are not individually verified operable during routine EDG testing. Emergency diesel generator air start system valves perform a function important to safety and it is recommended they be included in the IST program and individually tested to the Code requirements.

15. The following Control Rod Drive System valves (typical of 185 valves) perform a function important to safety and should be tested in accordance with the guidelines of GL 89-04, Attachment 1, Position 7.

Valve	Category	P&ID M528 Coord.	Function
HCU-114	B	C-2	Check vlv to scram hdr
HCU-115	B	C-5	Charging wtr ck vlv
HCU-126	B	C-4	Drive water AOV
HCU-127	B	C-3	Withdraw AOV
HCU-138	B	C-4	Cooling wtr ck vlv

16. There appears to be some discrepancy between the P&ID and the valve test tables for valves CIA-V-104A & B. The P&ID, M556 F-9 and G-9, shows these valves as manual operated globe valves. The valve test tables indicate these valves are Category C check valves. The Code required testing differs depending on the type and Category of these valves. This discrepancy should be corrected and these valves should be tested in accordance with the applicable Code requirements.

17. The containment isolation valves, which are relief valves, listed in Section 9.b., page 4.4-56, of the WPPSS/WNP2 IST program submittal, are categorized as A/C valves. Although these valves are being tested per IWV-3510, they should also be tested per IWV-3420 because of the containment isolation function they serve. Furthermore, containment isolation valves are required to be leak rate tested once every two years instead of once every five years. These valves should be leak rate tested in accordance with the applicable Code requirements.

18. The containment atmosphere control system valves CAC-TCV-4A and B, appear to perform a function important to safety. If it is determined that they do, they should be included in the IST program and be tested to the applicable Code requirements.

April 19, 1991

Docket No. 50-397

Mr. G. C. Sorensen, Manager
Regulatory Programs
Washington Public Power Supply System
3000 George Washington Way
P.O. Box 968
Richland, Washington 99352

Dear Mr. Sorensen:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING REQUEST FOR AMENDMENT TO THE TECHNICAL SPECIFICATION SAFETY LIMIT: THERMAL POWER, HIGH PRESSURE AND HIGH FLOW (TAC NO. 79884)

By letter dated February 28, 1991 (G02-91-040), you requested an amendment to the technical specifications modifying the safety limit: thermal power, high pressure and high flow rate for the Cycle 7 reload.

By letter dated March 21, 1991 (G02-91-054), you notified us of corrections to your original submittal. During the review of your corrected amendment request, we have identified additional information needed to complete our review.

On page A-1 of Attachment II of your February 28, 1991, submittal, you refer to "Reference 5," as describing the ANF MCPR safety limit methodology and the incorporation of channel bow effects. Please identify the document which is referred to as "Reference 5."

This information is required in a timely manner to complete our review of your request. Please contact me if you have any questions on this matter.

This request for information affects fewer than ten respondents; therefore, OMB clearance is not required under Public Law 96-511.

Sincerely,
Original Signed By;
Patricia L. Eng, Project Manager
Project Directorate V
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

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April 18, 1991

Docket No. 50-397

Mr. G. C. Sorensen, Manager
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3000 George Washington Way
P. O. Box 968
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Dear Mr. Sorensen:

SUBJECT: 10 CFR 73 RECORDS RETENTION PERIOD

By letter dated January 2, 1991, (GO2-91-001), you requested clarification of the records retention requirements contained in 10 CFR 73, Appendix B, Paragraph II.B. The paragraph in question states:

> "The licensee shall retain this documentation of each individual's qualifications as a record for three years after the employee ends employment in the security-related capacity and for three years after the close of period for which the licensee possesses the special nuclear material under each license, and superseded material for three years after each change."

Following discussion with members of the Reactor Safeguards Branch and the Office of the General Counsel, we agree with your understanding that Paragraph II.B imposes a maximum records retention period for individual qualification records of three years after the employee ends employment in a security-related capacity or three years after the close of period of possession of special nuclear material, whichever comes first.

Should you have further questions, please contact me.

Sincerely,

Original Signed By:

Patricia L. Eng, Project Manager
Project Directorate V
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

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Dear Mr. Sorensen:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING REVIEW OF REQUEST FOR AMENDMENT TO THE TECHNICAL SPECIFICATIONS REGARDING REMOVAL OF CYCLE SPECIFIC PARAMETER LIMITS (TAC 77311)

By letter dated August 2, 1990 (GO2-90-132), you requested an amendment to the Washington Public Power Supply System Nuclear Project 2 (WNP-2) technical specifications (TS). This amendment requested removal of cycle specific parameter limits from the TS as discussed in Generic Letter (GL) 88-16, "Removal of Cycle-Specific Parameter Limits from Technical Specifications."

In order to complete our review of your request, additional information, as stated below, is required in a timely manner.

> In a boiling water reactor, the fuel bundles rest on the core support plate in such a way that if dislodged by an uplifting force, fuel bundles could interfere with control blade insertion during a combined seismic and LOCA event. For cycle 6, WNP-2 will have a mixed core including both 8x8 and 9x9 fuel of different fuel designs and corresponding pressure drops. Please demonstrate that for the WNP-2 mixed core, the fuel bundles will not interfere with control blade insertion during a combined seismic and LOCA loading.

Please contact me if you have any questions on this matter.

This request for information affects fewer than ten respondents; therefore, OMB clearance is not required under Public Law 96-511.

Sincerely,
Original Signed By:

Patricia L. Eng, Project Manager
Project Directorate V
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

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