Florida Power & Light Company, 6351 S. Ocean Drive, Jensen Beach, FL 34957

FPL

March 15, 2000

L-2000-66
10 CFR 50.55a

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Inservice Test Program
Response to NRC Safety Evaluation Recommendations

By letter dated March 16, 1999, NRC transmitted the Safety Evaluation (SE) and Technical Evaluation Report (TER) for the ASME Code Relief Requests (R/R) related to the Inservice Test (IST) Program for Pumps and Valves for the St. Lucie Units 1 and 2. (NRC TAC Nos. MA0664, MA0665, MA4303, and MA4304) The program is based on the ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition and ASME/ANSI OM Code, including OMA-88 Addenda, *Operation and Maintenance of Nuclear Power Plants*.

Section 6 of the TER provided a discussion of action items identified during the review. Florida Power & Light Company (FPL) was requested to address each action item in accordance with the guidance therein. FPL was requested to address the action items within one year of the date of the SE unless otherwise specified in the TER. In addition, R/Rs VR-02, VR-05, VR-06, VR-19 required additional information. Enclosure 1 provides the FPL response to each of the TER open items.

Enclosure 2 includes new R/Rs PR-13 and VR-8 and revised R/Rs PR-7, VR-5, VR-6, VR-17, and VR-19 for NRC consideration. These requests are submitted in accordance with 10 CFR 50.55a(a)(3) as alternatives to the IST requirements of the ASME Code Section XI. The text of each R/R is self-explanatory and stands alone with respect to the justification for Code deviation or variance.

Authorization is requested pursuant to 10 CFR 50.55a(a)(3)(i) for R/R PR-13 in that the proposed alternative provides an acceptable level of quality and safety. Relief is requested for requests PR-7, VR-5, VR-6, VR-8, VR-17 and VR-19 pursuant to 10 CFR 50.55a(a)(3)(ii) since compliance with the requirements of the ASME Code would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

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Enclosure 3 is a copy of revision 4 of St. Lucie Units 1 and 2 IST Program, ADM-29-01. Please contact us if there are any questions about this submittal.

Very truly yours,

Rajiv S. Kundalkar
Vice President
St. Lucie Plant

RSK/GRM

Enclosures (3)

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

ENCLOSURE 1

St. Lucie Plant Responses To Recommended Actions Contained In Brookhaven National Laboratories Technical Evaluation Report (TER), Section 6

St. Lucie Plant Responses To Recommended Actions Contained In Brookhaven National Laboratories Technical Evaluation Report (TER), Section 6

IST PROGRAM RECOMMENDED ACTION ITEMS TER SECTION 6

Inconsistencies, omissions, and required licensee actions identified during the review of the licensee third interval for Unit 1 and second interval for Unit 2 Inservice Testing Program are summarized below. The licensee should resolve these items in accordance with the evaluations presented in this report.

A. General Recommended Actions

General Recommended Action A.1:

The Unit 1 third interval dates do not correspond to the date of commercial operation. The basis for the interval dates should be provided in future IST Program revisions and may be subject to NRC inspector reviews.

FPL Response A.1:

The basis for the interval dates not corresponding to the date of commercial operation has been included into Section 6.5 of ADM 29.01. The basis is as follows:

By letter L-85-431 dated November 13, 1985, Florida Power & Light Company (FPL) requested NRC approval to extend the first ten-year inspection interval for St. Lucie Unit 1 to February 11, 1988. By letter dated November 20, 1985 (Denton to Williams), the NRC staff approved the extension and, as a result, the second ten-year inservice testing interval for St. Lucie Unit 1 began February 11, 1988, and the third interval began February 11, 1998.

General Recommended Action A.2:

Page 18 of 225 of ADM-29.01 states that the combined IST Program will be in effect through the end of each unit third 10-year interval. This program is for the second interval for Unit 2. The procedure should be corrected.

FPL Response A.2:

The IST Program, procedure ADM-29.01 has been revised to specify the correct interval for Unit 2.

General Recommended Action A.3:

Valves V-1402 and 1404 in the Reactor Coolant System are fail closed solenoid valves. There is no fail-safe (FS) test specified in Table 2. The licensee should review the function of the valves and correct the table as necessary.

FPL Response A.3:

Fail-safe (FS) test for V1402 and V1404 has been included in Table 2 of ADM-29.01.

B. Recommended Actions for Relief Requests

Recommended Action B.1:

As noted in NUREG-1482, ¶5.5.1, when using portable instruments as proposed in PR-01, the staff recommends that the licensee include in the IST records an instrument number for tracing each instrument and a calibration data sheet for verifying that the instruments are accurately calibrated. Additionally, if instrumentation becomes commercially available which meets the Code requirements that the full scale of each analog instrument shall not be greater than three times the reference value, and the licensee is procuring replacement speed instruments, the licensee should withdraw R/R PR-01 and procure instruments which meet the Code requirements.

FPL Response B.1:

R/R PR-01 has been deleted. Further review has determined that portable analog speed instruments are not used for IST at St. Lucie. St. Lucie uses accurately calibrated digital instrumentation for measuring pump speed, which meet Code requirements. The procedures for testing the AFW and Hydrazine pump include provisions for recording the instrument numbers, which are traceable to the instrument calibration sheets.

Recommended Action B.2:

It is recommended that long term relief of PR-07 be denied. An interim period of one year has been allowed to allow the licensee to either procure new equipment that meets the Code requirements or revise and resubmit the R/R. If the R/R is revised, it should address the specific hardship of complying with the Code and how the proposed alternative provides an acceptable level of safety. The licensee is referred to TER Section 2.1.2.

FPL Response B.2:

New vibration test instrumentation has been procured which more closely meets the Code requirements. These Computational Systems Inc. (CSI) model 2120 Machinery Analyzers with Wilcoxon model 793 accelerometer probes are fully qualified to detect vibration frequencies down to 2 Hz which envelops synchronous vibration levels for the charging pumps. Additionally, they will measure frequencies down to 1 Hz adequately detecting one-half and one-third running speed vibration levels. R/R PR-07 has been revised to describe the specific hardship of completely complying with the Code and how the proposed alternative provides an acceptable level of safety. Revised R/R PR-07 is included in Enclosure 2 of this submittal for NRC review and approval.

Recommended Action B.3:

The licensee has not specified in R/R PR-08 the specific inspections and maintenance proposed (other than oil analysis) for the hydrazine pumps, or their periodicity. The licensee would need to document these, as well as the acceptance criteria and the maintenance/inspection results. This documentation would be subject to NRC inspector review.

FPL Response B.3:

Recommendations for preventative maintenance of the Hydrazine pumps were provided to St. Lucie by the David Brown Union Pump Company and have been incorporated into the St. Lucie Preventative Maintenance Program. The St. Lucie Preventative Maintenance Program now specifies these frequency, inspection guidelines, acceptance criteria, and corrective action recommendations for the pump inspections. Specifically, St. Lucie Maintenance Procedure No. 2-M-0018P, "Mechanical Maintenance Safety-Related Preventive Maintenance Program (Pumps), File #s PM 3901 and PM 3902, "Hydrazine Storage Tank Pump Coupling-Lubrication", and File #s PM 3906 and PM 3906, "Hydrazine Storage Tank Pump Bearings and Bolting-Inspection" detail these inspections. These procedures document the inspection results and are permanent plant records available for NRC inspector review.

Recommended Action B.4:

The licensee should revise Table 1 Unit 2 Pump Table to properly indicate that pump discharge pressure is being measured quarterly and during refueling outages for the hydrazine pumps, and revise R/R PR-09 to be consistent with the new PR-08.

FPL Response B.4:

Corrected in revision to IST Program, ADM-29.01.

Recommended Action B.5:

The licensee should review the guidance on the contents of an analysis provided in TER Section 2.3.1

FPL Response B.5:

The guidance on the contents of an analysis provided in TER Section 2.3.1 has been reviewed by the Inservice Testing personnel responsible and accountable for establishing pump reference values and acceptance limits. St. Lucie administrative procedures pertaining to the establishment of pump reference values and acceptance limits are considered consistent with the guidance provided in TER Section 2.3.1.

Recommended Action B.6:

It is recommended that R/R VR-02 be denied. See TER Section 3.1.2 for the evaluation.

FPL Response B.6:

R/R VR-02 has been deleted. St. Lucie is developing and implementing plans to resolve the issues concerning certification and documentation of safety related relief set pressure temperature correlation to meet ASME OM-1987 Part 1 requirements.

Recommended Action B.7:

The use of non-intrusive techniques interchangeably with disassembly and inspection has not been recommended, as requested in VR-05 and VR-06. See TER Section 3.2.2 and 3.2.3 for the evaluation.

FPL Response B.7:

The allowance for the use disassembly and inspection in place of non-intrusive techniques has been removed from R/Rs VR-05 and VR-06. R/Rs VR-5 and VR-6 are now consistent with the guidance of GL 89-04 and are included in Enclosure 2 of this submittal for NRC review and approval.

Recommended Action B.8:

It appears that the licensee has considered using acoustical monitoring to determine full opening of the RWT discharge check valves (VR-14). While this is the most common technique, other non-intrusive techniques methods have been used to provide indications of obturator position, including radiography, magnetic flux, and ultrasonic testing. The licensee may wish to evaluate these techniques and remain cognizant of developments with these techniques as a possible future alternative to valve disassembly and inspection.

FPL Response B.8:

R/R VR-14 discusses in its basis for relief that these valves will not travel to the full open position when subjected to the maximum flow achievable during the test. Although IST personnel are, and endeavor to remain, cognizant of other non-intrusive testing techniques, FPL is not aware of non-intrusive techniques that can be used to demonstrate that the valves have reached their full open position during testing. Non-intrusive techniques including radiography and magnetic flux testing have been evaluated and are used for testing of other valves in the IST Program.

Recommended Action B.9:

In the previous submittal of R/R VR-16, the licensee stated that each of the valves would be part-stroke exercised quarterly in conjunction with the testing of the containment spray pumps without measuring flowrate through the valves. This partial stroke exercising is not addressed in the revised R/R. The licensee should ensure that this testing is still performed, and revise the request accordingly. In addition, if at a later time the licensee determines that quarterly testing using a non-intrusive method becomes less difficult (e.g., through the use of permanently installed equipment); the licensee should reevaluate and resubmit this request.

FPL Response B.9:

This recommended Action was identified in Section 3.6.2 of the TER and applies to R/R VR-15. The above reference to VR-16 appears to be a typographical error. The function of the Unit 1 containment spray to spray additive eductors check valves has been reviewed. The check valves were found to be not required for preventing reversal of flow. Subsequently the disc and associated internals of the check valves have been removed. With their obturators removed these valves and R/R VR-15 have been deleted from the IST Program.

Recommended Action B.10:

The licensee has not demonstrated in R/R VR-17 the impracticality of performing a partial-flow test with air following valve disassembly and inspection. It appears that the containment spray discharge header must be drained to perform the disassembly and inspection. The value of performing a partial-stroke test following valve disassembly and inspection is that it provides assurance of proper re-assembly and operation of the valve. The licensee should, therefore, perform a partial-stroke exercise after re-assembly or revise the request to include in the basis additional information supporting the determination of impracticality. The revised R/R need not be resubmitted, but is subject to NRC inspection.

FPL Response B.10:

R/R VR-17 has been revised to require a partial-stroke exercise following valve disassembly and inspection.

Recommended Action B.11:

The licensee has stated in VR-20 that the subject valves are "simple" check valves. Provided that they are not capacity certified in accordance with Section III or the construction Code, use of the clarification provided in the Code committee proposal is acceptable and relief is not required. The licensee should continue to document this approach in the IST Program. The licensee should revise and resubmit the request if the valves are capacity certified.

FPL Response B.11:

FPL has verified that the sodium hydroxide and hydrazine storage tank vacuum breaker check valves are not capacity certified in accordance with Section III or the construction Code. R/R VR-20 has been deleted. Additionally the sodium hydroxide storage tank vacuum breaker check valves for Unit 1 no longer have a safety function and will be removed from the IST Program. These valves are not currently required to open or close because the tank vent has been opened and the tank is operated at atmospheric pressure. These valves are to be physically removed from the tank when an alternate method for venting the tank is permanently installed. The Unit 2 hydrazine storage tank vacuum breaker check valves will continue to be exercised quarterly per Part 10, ¶4.3.2 as designated in the IST Program.

Recommended Action B.12:

The licensee states that it is impractical to test the containment vacuum breaker valves during power operation based on their location inside containment and the need for local access in VR-19. There is not sufficient information to support the basis of impracticality. The licensee should provide additional information on why entering the containment and gaining local access to the valves is impractical and resubmit the request.

FPL Response B.12:

Additional information on the impracticality of entering the containment and gaining local access to the valves has been provided in the R/R VR-19. This R/R included in Enclosure 2 of this submittal for NRC review and approval.

C. Recommended Actions for Deferral Justifications

Recommended Action C.1:

In RFJ-01 and RFJ-20, the licensee should consider establishing a schedule to account for extended cold shutdown outages when the RCPs are stopped for a sufficient length of time to allow for testing of the RCP seal leakoff CIVs and the RCP suction check valves.

FPL Response C.1:

Refueling Justification RFJ-01 has been revised, and RFJ-20 has been deleted. Cold Shutdown Justifications have been included into the IST Program requiring testing of the RCP seal leakoff CIVs and the RCP suction check valves during cold shutdown outages when the RCPs are stopped for a sufficient length of time.

Recommended Action C.2:

The licensee has proposed to use RWT level changes to determine flowrate for the HPSI minimum flow check valves (RFJ-03) and the LPSI minimum flow check valves (RFJ-07). The instrument accuracy must be adequate to demonstrate that the check valves are open to the position necessary for the check valves to fulfill their safety function.

FPL Response C.2:

The method used for determining the flowrate for the HPSI minimum flow check valves (RFJ-03) and the LPSI minimum flow check valves (RFJ-07) is adequate for demonstrating that the check valves are open to the position necessary for the valves to fulfill their safety function. The test methodology uses a sight gauge for determining level in the RWT, which is capable of measuring RWT level change to +/- 1/16th of an inch. The test duration is extended to include allowance for RWT volume inaccuracy within this 1/16th of an inch level span. The combination of sight gauge accuracy and leakage monitoring interval facilitates accurate flowrate measurements including allowance for measurement uncertainties.

Recommended Action C.3:

RFJ-04 refers to the HPSI pump suction check valves. However, the justification refers to the LPSI pumps. The licensee should review this and modify the justification as needed.

FPL Response C.3:

Refueling Justification RFJ-04 has been corrected to reference the HPSI pumps.

Recommended Action C.4:

In RFJ-05 and 09, the licensee proposes to partial-stroke exercise the HPSI pump discharge valve during cold shutdowns. However, the justification provided for each discusses issues, which make exercising during cold shutdowns impractical. The licensee should review this and revise the justifications as necessary.

FPL Response C.4:

Refueling Justifications RFJ-05 and RFJ-09 have been revised to provide additional discussion explaining how it is practical to partial-stroke exercise these valves during cold shutdown. The limited capacity flowpath utilized for the partial-stroke exercise of these valves does not involve injecting HPSI discharge into the RCS as is required for full flow testing of the valves. The Refueling Justifications do not apply to the partial-stroke tests; they are only applicable to the full flow tests where flow is injected into the RCS.

Recommended Action C.5:

In RFJ-10, the licensee has discussed the impracticality of partial-stroking HPSI pump PIVs V3524 and V3526. The licensee should also include an explanation for valves V3523 and V3527.

FPL Response C.5:

Statement that partial-stroke exercising V3525 and V3527 is also not possible because the HPSI pumps can not develop sufficient discharge pressure to overcome reactor coolant system pressure has been added to the discussion section of RFJ-10. Reference to valve V3523 above appears to be a typographical error.

Recommended Action C.6:

In RFJ-13, the licensee discusses the impracticality of full-stroke exercising the AFW pump bearing cooling water discharge valves during operation. However, as discussed in PR-02, the turbine driven AFW pump is minimum flow tested quarterly, and full-flow tested during cold shutdowns. The licensee should investigate why partial stroking is not possible during the quarterly and cold shutdown testing.

FPL Response C.6:

Partial stroking of the AFW pump bearing cooling water discharge valve is not practical during the quarterly and cold shutdown testing. There is no flowrate instrumentation available to quantify any flow through the valve. Qualitative means of detecting flow through the valve such as by temperature increase and flow noise have proven to be inconclusive due to the close proximity of the valves to the steam driven AFW pump and minimal heat load transferred through the valve.

Recommended Action C.7:

In RFJ-17, the licensee has not provided a justification for deferring verification of closure for the normally closed containment spray pump suction header check valves.

FPL Response C.7:

R/R RFJ-17 has been revised to provide justification for deferring the verification of closure for the spray additive tank supply check valves to the containment spray pump suction header.

Recommended Action C.8:

The licensee should review Table 3 (Unit 2 Valve Table) and correct the following: - Table 3, Page 4 of 44, the RFJ-02 entry for V2191 applies to the partial-stroke exercising at cold shutdowns, not the closure testing performed during operation as indicated.

FPL Response C.8:

Corrected in revision to IST Program, ADM-29.01

Recommended Action C.9:

The cold shutdown deferral for the Unit 1 LPSI pump discharge minimum flow/recirculation line isolation valves V3659 and V3660 is based upon the potential of LPSI pump damage which could occur if the valves were exercised quarterly. The licensee should ensure that the same justification is not applicable to Unit 2 as well. Per the Unit 2 Valve Table, these valves are exercised quarterly.

FPL Response C.9:

The cold shutdown deferral justification for the Unit 1 LPSI pump discharge minimum flow/recirculation line isolation valves is not applicable to Unit 2. The Unit 1 "A" and "B" Train safety injection pumps share a common minimum flow/recirculation line. Closure of valves V3659 or V3660 will isolate minimum recirculation flow to both trains of safety injection pumps potentially disabling all safety injection. The Unit 2 safety injection system design utilizes separate common minimum flow/recirculation lines for each train of safety injection. Isolation of minimum flow/recirculation line to one train of safety injection can be performed quarterly during normal plant operation on Unit 2.

Recommended Action C.10:

The cold shutdown deferral for the Unit 2 Nitrogen gas supply CIV (valve V6792) is based upon the impracticality of entering the containment to perform leakage test. The licensee should include in the deferral additional information on why it is impractical to exercise this valve quarterly. The licensee should also correct the drawing reference for this deferral request in the Unit 2 Valve Table to correctly indicate drawing number 2998-G-078, Sheet 163B.

FPL Response C.10:

Due to system configuration and location of test connections, the only method to verify closure requires installation of test equipment inside containment and performance of a seat leakage test. NUREG-1482, Section 4.1.4 states, "...The NRC has determined that the need to setup test equipment is adequate justification to defer backflow testing until a refueling outage..." Therefore, based on this guidance FPL considers closure testing during cold shutdown as well as normal operation to not be practicable. The IST Program procedure ADM 29.01 has been revised to include a new Refueling Justification and delete the Cold Shutdown Justification for the testing of this valve. The drawing reference in the Unit 2 Valve Table has been revised to correctly indicate drawing number 2998-G-078, Sheet 163B.

D. Recommended Actions for System Review

Recommended Action D.1:

The Unit 2 containment fan coolers' component cooling water motor-operated containment isolation valves are identified in the IST Program as passive. As containment isolation valves per Table 6.2-52 in the SAR, they would appear to have an active safety function to close. The licensee should review the safety function and classification of these valves.

FPL Response D.1:

The Unit 2 containment fan coolers' component cooling water motor-operated valves are normally locked open. They are not required to close for containment isolation since they need to be open to supply component cooling water to the containment fan coolers during accident conditions. SAR Tables 6.2.53 and 3.9-9 identify these valves as being required to be open for normal, cold shutdown, and accident conditions. Therefore, the classification of these valves as being passive in regard to the IST Program is considered correct.

Recommended Action D.2:

Check valves V07266, V07267 (Unit 1); and V29431 and 29432 (Unit 2) in the containment spray nitrogen supply to the hydrazine storage tanks are not included in the IST Program. These valves isolate the non-safety related nitrogen supply to the hydrazine tanks. Their failure may compromise the tank integrity. The licensee should review the safety function of these valves.

FPL Response D.2:

The function of the check valves on the nitrogen supply to the iodine removal system sodium hydroxide tank for Unit 1 and hydrazine tank for Unit 2 have been reviewed. The valves for either Unit are not required to open since nitrogen cover pressure is not required for injection of fluid to the containment spray system. Unit 2 valves V29431 and 29432 have been included in the IST Program and Refueling Justification RFJ-24 prepared to justify refueling frequency non-intrusive testing using radiography. These valves may be required to close in order to maintain hydrazine tank inventory in the event of a rupture upstream of the check valves. In this event the internal pressure in the tank could expel fluid from the bottom of the tank through the nitrogen sparger through the rupture, reducing hydrazine inventory below the level required by Technical Specifications. This is not a required function for the Unit 1 sodium hydroxide storage tank nitrogen supply check valves, V07266 and V07267. These valves are not currently required to open or close because the tank vent has been opened and the tank is operated at atmospheric pressure. With the tank vented there is not any motive force to expel fluid up through its sparger and out a postulated rupture. Additionally, these valves are to be normally isolated from the tank by closed manual valves when an alternate method for venting the tank is permanently installed. Therefore, the Unit 1 valves are not included in the IST Program.

Recommended Action D.3:

Check valves V07133 and 7141 are the containment spray min-flow valves back to the RWT. These valves are not included in the IST Program. The licensee should ensure that these valves do not have a safety function in the event that the containment spray valves are inadvertently isolated following the start of the pumps.

FPL Response D.3:

The containment sprays minimum flow line and check valves are not credited with any required safety function. Additionally, the Unit 1 containment spray minimum flow line is isolated during normal plant operation. System design only requires minimum flow capability during minimum flow testing of the containment spray pumps. During accident operation of the pumps the minimum flow recirculation line is not required because the pumps will be injecting flow into containment which is always lower than containment spray pump discharge pressure. Likewise, although the system is operated with the minimum recirculation line unisolated, minimum flow capability for the Unit 2 pumps is not required. Administrative controls and system design features such as valve locks, remote valve position indication, and valve position alarm are credited to preclude misposition of pump isolation valves. Isolation of a train of containment spray would only affect one train of containment spray. The FSAR discusses such single failures and credits the opposite separate and redundant train of containment spray as fulfilling the required safety function. Therefore, these valves are not included in the IST Program.

Recommended Action D.4:

The Unit 2 containment isolation valve table in the SAR (Table 6.2-52) identified valve IV-07-1553 as the inboard containment isolation valve for penetrations 34 and 35. Based on a review of drawing 2998-G-088, Sheet 2, it would appear that the inboard containment isolation valves are V0192 and V01933. These valves are discussed in R/R VR-14 and are only identified with an open safety function. If these are the containment isolation valves, the licensee should review their closed safety function.

FPL Response D.4:

R/R VR-17 discusses Unit 2 inboard containment isolation valves V07192 and V07193 for penetrations 34 and 35. Reference to VR-14 and valves V0192 and V01933 above appear to be typographical errors. R/R VR-17 has been revised to include discussion as to why closure testing of the valves is impractical. The disassembly and inspection requirements proposed in lieu of the open verification are also proposed to be performed as an alternative for the closure verification of the valves. This revised R/R is considered pre-approved in accordance with 10CFR50.55a(a)(3)(ii) and is hereby resubmitted, for NRC review.

Recommended Action D.5:

The HPSI pump suction and min-flow line discharge check valves and LPSI pump discharge and suction check valves are not exercised closed. Additionally, the sump discharge check valves are only exercised open. The licensee should evaluate whether these valves have a safety function to close in order to prevent draining the RWT to the sump.

FPL Response D.5:

The Unit 1 HPSI pump suction valves, min-flow recirculation line discharge check valves, and LPSI pump discharge check valves have been evaluated to determine whether these valves have a safety function to close in order to prevent draining the RWT to the sump. The Unit 1 HPSI pump min-flow line discharge check valves and LPSI pump discharge check valves are included in the IST Program. The HPSI suction check valves for Unit 1 have no closure function as this function is redundant to the closure performed by the pump discharge and min-flow line check valves.

The Unit 2 HPSI pump suction valves, min-flow recirculation line discharge check valves, and LPSI pump discharge check valves are not required to close to prevent draining the RWT to the sump or to fulfill any other safety function. Due to the separation and independence of the safety injection trains on Unit 2, the only downstream source of pressure and flow which these valves would be required to close against would be from the Containment Spray or LPSI pump recirculation flow on the same header. The flow restriction orifices in the pump recirculation lines would limit any flow diverted through this recirculation flow path. This recirculation flow is excluded from the total flow delivered to the RCS or containment in all applicable safety analyses. The diverted flow inventory would in any creditable case not be lost to the sump or cause overpressurization of HPSI or ECCS suction piping and would be available for HPSI, LPSI, and Containment Spray applications. For all credible scenarios where there are other downstream source of flow and pressure there are other tested isolation valves which are credited for performing the isolation function. Therefore, the Unit 2 HPSI pump suction valves, min-flow recirculation line discharge check valves, and LPSI pump discharge check valves closure function is not included in the IST Program.

ENCLOSURE 2

NEW AND REVISED PUMP AND VALVE RELIEF REQUESTS

Pump Relief Request PR-07

Pump Relief Request PR-13

Valve Relief Request VR-05

Valve Relief Request VR-06

Valve Relief Request VR-08

Valve Relief Request VR-17

Valve Relief Request VR-19

APPENDIX A

PUMP PROGRAM RELIEF REQUESTS

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RELIEF REQUEST NO. PR-07

COMPONENTS

Reactor Coolant Charging Pumps 1A, 1B and 1C (8770-G-078, Sh 120B)
Reactor Coolant Charging Pumps 2A, 2B and 2C (2998-G-078, Sh 122)

PART 6 REQUIREMENT

Frequency Response Range. The frequency response range of the vibration measuring transducers and their readout system shall be from one-third minimum pump shaft rotational speed to at least 1000 Hz. (Paragraph 4.6.1.6)

BASIS FOR RELIEF

The reactor coolant charging pumps operate at approximately 205-210 rpm which equates to a rotational frequency of 3.41 Hz. The one-third minimum speed frequency response required for the vibration instrumentation correlates to 1.13 Hz (68 cpm).

The vibration instrumentation used at St. Lucie are the Computational Systems Inc. (CSI) model 2120 Machinery Analyzer with Wilcoxon model 793 accelerometer probes. The CSI 2120 Machinery Analyzer integrator frequency response is essentially flat down to DC. Wilcoxon model 793 accelerometer probe frequency response range meets the Code accuracy range requirement of +/-5% down to 1.5 Hz. The probes rated accuracy drops to only +/-10% down to a frequency of 1 Hz. This the instrumentation capability meets the Code frequency specifications for one-half pump running speed but has a frequency response accuracy specification of less than +/-5% for the one-third minimum speed. Actual vibration frequency response accuracy for the instrumentation will be better than the nominal minimum ratings specified by the manufacturer for the probes. /R4

Additionally, the calibration of the instrumentation will be to a minimum frequency of only 2 Hz. The provider of the calibration services for PSL is unable to qualify calibration to frequencies less than 2 Hz. This is due to the unavailability of suitable vibration measurement standards for performing the calibration. The NIST Calibration Service Users Guide lists the lowest frequency NIST standard pickup (24010C) available is calibrated at 2 Hz. FPL Quality Assurance Program requires this instrumentation to be calibrated and traceable to NIST standards. Again, actual vibration frequency response capability for the instrumentation will be better than the qualified calibration requirements specified above. /R4

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RELIEF REQUEST NO. PR-07
(continued)

BASIS FOR RELIEF (continued)

This frequency response range of this instrumentation adequately envelops all potential noise contributors that could indicate degradation of the charging pumps. The instrumentation is fully qualified to measure synchronous vibration levels. Additionally, it is capable of and will be used for measuring vibration frequencies at one-half and one-third running speed. Qualification of the accuracy of the readings at these frequencies is considered unnecessary and would impose undue hardship. This is considered acceptable since there are virtually NO mechanical degradation scenarios where only a sub-synchronous vibration component would develop on the charging pumps. For example:

1. Oil whirl (0.38X - 0.48X) is NOT applicable to a horizontal, triplex, reciprocating pump.

2. A light rub/impact could generate 0.5X (102.5 cpm) vibration components, but would also usually generate a sequence of integer and half-integer running speed components. A heavy rub generates increased integer values of multiple running speed components, as well as processing the 1X phase measurement. In either case the overall vibration level would still show an increase from both the attenuated sub-synchronous and 1X vibration components as well as the higher harmonic vibration components.

3. Looseness in the power train would likely be indicated by increasing 1X and 2X vibration components.

Based on the above information, the use of Computational Systems Inc. (CSI) model 2120 Machinery Analyzer with Wilcoxon model 793 accelerometer probes provides sufficiently reliable data to identify changes from baseline readings to indicate possible problems with the pumps.

ALTERNATE TESTING

During testing of these pumps, the vibration instrumentation used will be the of Computational Systems Inc. (CSI) model 2120 Machinery Analyzer with Wilcoxon model 793 accelerometer probes, or equivalent. Calibration of the instrumentation will be qualified to a minimum frequency of only 2 Hz.

/R4

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RELIEF REQUEST NO. PR-13

COMPONENTS

Low Pressure Safety Injection (LPSI) Pumps 1A and 1B (8770-G-078, Sh 130B)
Low Pressure Safety Injection (LPSI) Pumps 2A and 2B (2998-G-078, Sh 130B)

PART 6 REQUIREMENT

The full scale range of each analog instrument shall be not greater than three times the reference value (Part 6, Para. 4.6.1.2).

BASIS FOR RELIEF

Part 6, Table 1 requires the accuracy of instruments used to measure differential pressure to be equal to or better than ± 2 percent based on full-scale reading of the instrument. This means that the accuracy of the actual measurement can vary as much as ± 6 percent, assuming the range of the instrument is extended to the maximum allowed deviation (3 times the reference value).

An example of calculating indicated instrument accuracy is as follows (from NUREG-1482, Paragraph 5.5.1):

> This example uses a reference pressure value of 20 psig and an analog pressure gauge with full scale range of 60 psig that is calibrated to ± 2% of full scale.
>
> Code requirement:
>
> Reference value = 20 psig
> 3 x reference value = 60 psig
> Instrument tolerance = 1.2 psig (± 2% x 60 psig)
>
> Indicated accuracy:
>
> Instrument tolerance / Reference value x 100 = Indicated accuracy
>
> ± 1.2 psig / 20 psig x 100 = ± 6%

/R3

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RELIEF REQUEST NO. PR-13
(continued)

Following the methodology used in NUREG-1482 and the example above, the indicated instrument accuracy can be calculated for each pressure instrument in this relief request. The following table provides the calculated indicated instrument accuracies:

Table 1: Calculated Instrument Accuracies for Selected Pressure Instruments

PUMP ID	INSTR NUMBER	PARAMETER	REF VALUE	INSTR RANGE	INSTR ACCUR	INSTR TOL	IND ACCUR
1A LPSI	PI-3314	Discharge Pressure	200 PSIG	0-600 PSIG	± 0.5%	± 3 PSIG	± 1.5%
1B LPSI	PI-3315	Discharge Pressure	195 PSIG	0-600 PSIG	± 0.5%	± 3 PSIG	± 1.5%
2A LPSI	PI-3314	Discharge Pressure	190 PSIG	0-600 PSIG	± 0.5%	± 3 PSIG	± 1.6%
2B LPSI	PI-3315	Discharge Pressure	185 PSIG	0-600 PSIG	± 0.5%	± 3 PSIG	± 1.6%

Where:

REF VALUE = reference value established by the procedure

INSTR ACCUR = accuracy to which instrument is calibrated

INSTR TOL = maximum INSTR RANGE times INSTR ACCUR

IND ACCUR = INSTR TOL divided by REF VALUE times 100

/R3

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RELIEF REQUEST NO. PR-13
(continued)

As shown on Table 1, the indicated accuracy for all the instruments is less than ± 6% of the reference value. These accuracy's are the same or better than those allowed by the Code. Therefore, there is no overall impact on the capability to detect and monitor degradation during pump tests based on use of these instruments. Continued use of the existing installed instruments is supported by NUREG-1482, Paragraph 5.5.1 which states that when the range of an installed analog instrument is greater than 3 times the reference value but the accuracy of the instrument is more conservative than the Code, NRC staff will grant relief when the combination of the range and accuracy yields a reading at least equivalent to the reading achieved from instruments that meet the Code requirements (i.e., up to ± 6%).

ALTERNATE TESTING

Since the indicated accuracy of each permanently installed is less than the ± 6 percent allowed tolerance, FPL requests approval for continued use of the instruments listed in this relief request.

END OF APPENDIX A

APPENDIX B
REQUESTS FOR RELIEF - VALVES
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RELIEF REQUEST NO. VR-05

SYSTEM

Safety Injection (2998-G-078 Sh 132; 8770-G-078 Sh 131B)

COMPONENTS

V3215
V3225
V3235
V3245

CATEGORY

A/C

FUNCTION

These valves open to provide flowpaths from the respective safety injection tanks (SITs) to the reactor coolant system (RCS) and close to isolate the tanks from the high pressure of the RCS and the safety injection headers providing RCS integrity and preventing diversion of safety injection flow.

PART 10 REQUIREMENT

Check valves shall be exercised nominally every 3 months, except as provided by Paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)

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REQUESTS FOR RELIEF - VALVES
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RELIEF REQUEST NO. VR-05
(continued)

BASIS FOR RELIEF

These are simple check valves with no external means of exercising or for determining disc position. Consequently, the only practical method for stroke testing of the SIT discharge check valves is to discharge the contents of the SITs to the RCS. Performing a full flow test of the SIT discharge check valves during any plant operating mode is impractical because the maximum flowrates attainable by discharging the contents of the SIT to the RCS can not meet the valves' maximum required accident condition flowrate as required by Generic Letter 89-04, Position 1. The maximum flowrate achievable during an SIT discharge test is restricted by the long stroke time of the SIT discharge isolation valves - motor-operated valves with a nominal stroke time of 52 seconds and limitations on SIT pressure during testing. Under large break LOCA accident conditions, the maximum (peak) flowrate through these valves would be approximately 20,000 gpm as compared to typical test values of approximately 8,000 gpm.

Although the flowrate attained during these SIT discharge tests does not qualify as "full flow", it is sufficient to fully stroke the check valve discs to their fully open position. Verification of this is possible using non-intrusive testing techniques. Due to system configuration, however, full-stroke exercising of the SIT discharge check valves can not be performed in any plant operating mode other than refueling when the reactor vessel head is removed.

The SIT discharge check valves are identical with respect to size and design and they are installed in essentially identical orientations exposed to similar operating conditions. Each has been disassembled and inspected several times during previous refueling outages with no abnormal wear or deterioration noted. Additionally, FPL has reviewed the operating and maintenance history of similar valves used throughout the industry under comparable conditions. Based on these reviews and inspections, there has been no evidence of valve degradation with respect to their ability to open and satisfactorily pass the required flow needed to fulfill their safety function. This along with the observation that the SIT flowrate and pressure drop traces obtained during the 1994 refueling outage testing are nearly identical, indicate that this baseline data was taken when each valve was in good working condition.

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RELIEF REQUEST NO. VR-05
(continued)

BASIS FOR RELIEF (continued)

Partial-stroke (open) of these valves requires discharging from the SITs to either the reactor coolant system (RCS) or the SIT drain header and RWT. Flow directed to the reactor coolant system during normal plant operation is impossible since the pressure in the SIT cannot overcome RCS pressure to establish flow. Verification of flow via the drain lines to the RWT requires opening two manual containment isolation valves for Unit 1 and an outside manual containment isolation valve and an inside solenoid-operated containment isolation valve for Unit 2. In both cases the potential risk of the loss containment integrity in the event of an accident due to single active failure or dependence on operator action makes this unacceptable and impractical. (Reference NUREG-1482, Paragraph 3.1.1)

In addition to flow testing, each valve is confirmed to be closed under cold shutdown conditions and is subjected to periodic leakage tests. Note that, for this type of valve, the prescribed leakage testing is especially sensitive to internal valve degradation.

ALTERNATE TESTING

Each SIT discharge check valve will be partial-stroke exercised at cold shutdown and full-stroked in the open direction during refueling outage by discharging all four SIT to the reactor vessel.

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RELIEF REQUEST NO. VR-05
(continued)

ALTERNATE TESTING (continued)

Each SIT discharge check valve will be verified closed and leakrate tested in accordance with Relief Request VR-04. During each refueling outage, under a sampling program on a rotating schedule, at least one of the check valves will be non-intrusively tested to verify its disc fully strokes to its backstop.

Should a valve be found to be inoperable and incapable of performing its function to open, then the remaining three valves will be non-intrusively tested during the same outage, after which the rotational inspection schedule will be reinitiated.

This alternative testing as outlined is consistent with the requirements and recommendations of NRC Generic Letter 89-04, Position 1 and NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants", Paragraph 4.1.2.

RELIEF REQUEST NO. VR-06

SYSTEM

Safety Injection (2998-G-078 Sh 132; 8770-G-078 Sh 131B)

COMPONENTS

V3217
V3227
V3237
V3247

CATEGORY

A/C

FUNCTION

These valves open to provide flowpaths from the safety injection headers to the reactor coolant system (RCS) and close to isolate the headers from the high pressure of the RCS.

PART 10 REQUIREMENT

Check valves shall be exercised nominally every 3 months, except as provided by Paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)

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RELIEF REQUEST NO. VR-06
(continued)

BASIS FOR RELIEF

These are simple check valves with no external means of exercising nor determining disc position. Consequently, the only practical method for stroke testing of these check valves is by injection via the safety injection pumps or discharging the contents of the safety injection tank (SIT) to the RCS.

During plant operations at power, partial flow exercising these valves is not practical because neither the SITs nor the safety injection pumps are capable of overcoming reactor coolant system pressure.

Performing a full-flow test of these check valves by SIT discharge is impractical because the maximum flowrates attained by discharging the contents of the SITs to the RCS do not meet the valves' maximum required accident condition flow as required by Generic Letter 89-04, Position 1. The maximum flowrate achievable during an SIT discharge test is restricted by the long stroke time of the SIT discharge isolation valve. This is based on the motor-operated valves nominal stroke time of 52 seconds and limitations on SIT pressure during testing.

Under large break LOCA accident conditions, the maximum (peak) flowrate through these valves would be approximately 20,000 gpm as compared to test values of approximately 8,000 gpm. Note also that normal shutdown cooling system flow is incapable of full stroking these valves based on the requirements of Generic Letter 89-04.

Although the flowrate attained during these SIT discharge tests does not qualify as "full flow," it is sufficient to fully stroke the check valve discs to the fully open position and verification of this is practical using non-intrusive testing techniques. Due to system configuration, however, full-stroke exercising of the SIT discharge check valves can not be performed in any plant mode other than refueling shutdown when the reactor vessel head is removed.

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REQUESTS FOR RELIEF - VALVES
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RELIEF REQUEST NO. VR-06
(continued)

BASIS FOR RELIEF (continued)

The safety injection header check valves are identical with respect to size and design and they are installed in essentially identical orientations exposed to similar operating conditions. Each has been disassembled and inspected several times during previous refueling outages with no abnormal wear or deterioration noted. FPL has additionally reviewed the operating and maintenance history of similar valves used throughout the industry under comparable conditions. Based on these reviews and inspections, there has been no evidence of valve degradation with respect to their ability to open and satisfactorily pass the required flow needed to fulfill their safety function. This, along with the observation that the SIT flowrate and pressure drop traces obtained during the 1994 refueling outage testing are nearly identical, indicate that this baseline data was taken when each valve was in similar good working condition.

In addition to flow testing, each valve is confirmed to be closed under cold shutdown conditions and is subjected to periodic leakage tests. Note that, for this type of valve, leakage testing is especially sensitive to internal valve degradation.

ALTERNATE TESTING

Each safety injection header check valve will be partial-stroke exercised at cold shutdown and full-stroked in the open direction during refueling outages by discharging all four SITs to the reactor vessel.

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REQUESTS FOR RELIEF - VALVES

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RELIEF REQUEST NO. VR-08

SYSTEM

Main Steam (2998-G-079, Sh 1; 8770-G-079, Sh 1)

COMPONENTS

V08130
V08163

CATEGORY

C

FUNCTION

These valves open to provide flowpaths for steam from the stem generators to AFW Pumps 1C and 2C turbine drivers. They close under accident conditions to isolate the unaffected steam generator and prevent the uncontrolled blowdown of both steam generators.

DISCUSSION

These are simple check valves with no external means of exercising or determining obturator position. Verifying closure of these valves during plant operation at normal operating pressures would require isolating the associated steam generator from the steam supply lines and venting the piping between the closed isolation valve and the check valve. It is considered to be imprudent to isolate a steam supply to the AFW pumps during operation and, in addition, it is undesirable to subject plant personnel to the hazards associated with venting live steam at these operating conditions. Furthermore, it is likely that testing in this manner would provide inconclusive results.

The physical configuration of piping and valves in the steam supply line differs between Unit 1 and Unit 2.

/R4

RELIEF REQUEST NO. VR-08
(continued)

DISCUSSION (continued)

For Unit 1, an isolation valve and vent/drain valve is available so that backflow testing of one of the steam supply check valves is possible. In this case, the other steam supply check valve must be disassembled to provide a connection for a dedicated air compressor for the backflow test. As a result, testing during normal operation or cold shutdown is not practicable. NUREG-1482, Section 4.1.4 states, "...The NRC has determined that the need to setup test equipment is adequate justification to defer backflow testing until a refueling outage..."

For Unit 2, piping immediately upstream of the steam supply check valves has no telltale vent or drain with sufficient vent path capacity to adequately test the valve for closure without imposing overly restrictive leakage limits on the valve well below those required by any safety analyses. To expand the tested system boundary upstream of the valve to encompass a telltale vent or drain with sufficient vent path capacity would impose an undue hardship for the utility. This testing would require all maintenance activities associated with the pressure boundary of the steam generators and significant portions of main steam and feedwater piping to be stopped and the system secured to safely perform the testing. Since this test should only be performed during a refueling outage, much of these systems are undergoing maintenance. As a result, this test could significantly increase outage scope, cost and duration. This is considered an undue burden to the utility when disassembly and inspection of the valves would involve considerably less resources and is an approved alternative in accordance with the guidelines of NRC Generic Letter 89.04, Position 2.

ALTERNATE TESTING

Unit 1

During each reactor refueling outage one of the Unit 1 valves will be verified to close while the other will be disassembled and inspected and manually stroked to verify operability in accordance with OM Part 10, Paragraph 4.3.2.4(c). Following valve reassembly forward flow operation of the valve will be observed during the ensuring startup.

/R4

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RELIEF REQUEST NO. VR-08
(continued)

ALTERNATE TESTING (continued)

Unit 2

During each reactor refueling outage, at least one of these valves will be disassembled, inspected and manually stroked to verify operability. Should a valve under inspection be found to be inoperable, then the other valve in that unit will be inspected during that same outage, after which the rotational inspection schedule will be reinitiated. During activities associated with valve disassembly and inspection and prior to system closure, appropriate precautions will be applied and inspections performed to ensure internal cleanliness standards are maintained and foreign materials are excluded from valve and system internals. These measures may include creating controlled work areas, maintaining a tool and equipment accounting system, installation of covers during non-working periods and final close-out inspections. Following re-assembly, each valve will be partial-flow exercised to verify operability.

This alternate testing agrees with the guidelines of NRC Generic Letter 89-04, Position 2 and, as such, is considered to be approved upon submittal.

/R4

APPENDIX B
REQUESTS FOR RELIEF - VALVES
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RELIEF REQUEST NO. VR-17

SYSTEM

Containment Spray (2998-G-088 Sh 2; 8770-G-088, Sh 2)

COMPONENTS

V07192
V07193

CATEGORY

C

FUNCTION

These check valves open to provide flowpaths from the containment spray pumps to the containment spray headers in containment. They close to isolate the containment spray system from the containment atmosphere and thus prevent gross leakage in the event of a passive failure outside the containment building.

PART 10 REQUIREMENT

Check valves shall be exercised nominally every 3 months, except as provided by Paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4 and 4.3.2.5. (Paragraph 4.3.2)

As an alternative to the testing in (a) or (b) above, disassembly every refueling outage to determine operability of check valves may be used.
(Paragraph 4.3.2.4(c))

APPENDIX B
REQUESTS FOR RELIEF - VALVES
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RELIEF REQUEST NO. VR-17
(continued)

BASIS FOR RELIEF

These are simple swing check valves with no external means of exercising or determining obturator position. Exercising to the open position with system flow would require operating each containment spray pump at nominal accident flowrate. Since no recirculation flowpath exists downstream of these valves, flow would necessarily be directed into the containment spray headers with the undesirable result of dousing personnel and equipment in the containment with radioactive contaminated borated water. Such a test is obviously impractical. Closure testing of the valves could only be performed by a back-leakage test. This is also impractical since back pressure cannot be applied to the valves due to the multiple open spray nozzles downstream of the vales. Due to their location inside containment and associated access difficulties, disassembly and inspection can only be performed during extended unit outages (refueling). Partial-flow testing using compressed air is possible but requires draining the entire containment spray discharge header. The partial-stroke air flow test for determining valve operability is only warranted after the headers have been drained following valve disassembly and inspection. /R4

Currently, and for the last eight years, these valves have been disassembled and inspected during each refueling on an alternating schedule in accordance with NRC Generic Letter 89-04 - one valve each unit outage. Although it is possible to continue this activity, it has proven to be an extreme burden, potential personnel safety hazard, and undue hardship on the plant staff where the cost in plant resources to perform the inspections is not commensurate with any potential gain in plant safety derived from these inspections.

Each of these valves is located within the containment building in a horizontal run of pipe immediately upstream of the respective containment spray header at an elevation of approximately 148'. This is approximately 86 feet above the containment building operating deck. Since there is no permanent means of access to these valves (e.g., decking, grating, ladders), in order to gain access to each valve, the containment polar crane must be parked and locked in position below the subject valve and a scaffold approximately 25 feet high must be erected resting on the crane girders. Note that the working surface at the crane girders is approximately 60 feet above the operating deck. Working under these conditions poses significant safety concerns to labor and inspection crews during scaffold erection and disassembly as well as valve disassembly and inspection activities. Furthermore, the total cost in resources to perform this evolution, including scaffolding and inspection activities, is typically 75-80 man-hours.

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REQUESTS FOR RELIEF - VALVES

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RELIEF REQUEST NO. VR-17

(continued)

BASIS FOR RELIEF (continued)

The containment building polar crane is typically a critical element with respect to the overall refueling outage schedule and duration. During the period of time that the scaffolding is being erected, installed, or being disassembled and removed the polar crane must be locked in place and disabled. Because of this, disassembly and inspection of these valves has a high probability of negatively impacting the unit outage with a potential for extending the outage duration without a commensurate increase is safety.

These valve normally remain idle in a dry condition with no mechanism, environmental or otherwise, that could damage a valve or cause any significant inservice deterioration. Indeed, the most probable cause of failure, albeit small, is probably related to the potential personnel error associated with the repeated unnecessary disassembly and re-assembly activities. Since the inspection effort has been in effect, each of these valves has been inspected several times and each time, no significant degradation or deterioration has been noted. The inspection history of these valves is provided below. Based on the results of the past inspections, it is clear that these valves are not subject to deterioration. In addition, an exhaustive search of the INPO NPRDS database indicates that there have been no relevant service failures of similar valves subject to similar operating conditions and environment.

Table: Test/Inspection Summary

UNIT 1				UNIT 2		
VALVE	INSP. DATE	RESULTS		VALVE	INSP. DATE	RESULTS
V07192	11/91	SAT		V07192	11/90	SAT
	11/94	SAT			3/94	SAT
	11/97	SAT			5/97	SAT
V07193	4/93	SAT		V07193	8/92	SAT
	6/96	SAT			11/95	SAT

APPENDIX B
REQUESTS FOR RELIEF - VALVES
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RELIEF REQUEST NO. VR-19

SYSTEM

Heating, Ventilation and Air Conditioning (2998-G-878; 8770-G-878)

COMPONENTS

V-25-20
V-25-21

CATEGORY

AC

FUNCTION

These valves open as required to limit containment internal vacuum and close for containment isolation.

PART 10 REQUIREMENT

1. Within every 6 month period operability tests shall be performed unless historical data indicates a requirement for more frequent testing.

2. Leak tests shall be performed every 2 years unless historical data indicates a requirement for more frequent testing.

BASIS FOR RELIEF

These check valves are tested in such a way that immediate access to each valve is required. Since these valves are located inside the primary containment building, routine access during power operation is considered to be impractical. At 100% power, the dose rates on 62' reactor containment building in the vicinity of the vacuum relief valves are 42 mrem/hour gamma and 300 mrem/hour neutron. These dose rates are documented at floor level and the vacuum relief valves are located 11 feet off the floor at the 73' elevation. The source of radiation streaming in this area is the gap between the 6 foot high bio-wall and the reactor head missile shield which would suggest that dose rates would be slightly higher at the actual vacuum relief valve location. Thus, operational testing can only be performed during cold shutdown conditions.

APPENDIX B
REQUESTS FOR RELIEF - VALVES

RELIEF REQUEST NO. VR-19
(continued)

BASIS FOR RELIEF (continued)

Leakrate testing of these valves is performed in accordance with the St. Lucie Containment Leakage Rate Testing Program (Technical Specification, Paragraph 6.8.4 h.). This Program allows extension of leakrate testing beyond the 2-year interval based on 10 CFR 50 Appendix J, Option B. There is no overriding justification nor engineering issue that demands more frequent testing than that required by Appendix J and the St. Lucie Containment Leakrate Testing Program.

ALTERNATE TESTING

Each of these valves will be subjected to an operability test (opened and closed) during plant cold shutdown periods. Testing during cold shutdowns will be on a frequency determined by intervals between shutdowns as follows:

- For cold shutdown periods occurring at intervals of 6 months or longer - each shutdown.
- For cold shutdown periods occurring at intervals of less than 6 months - testing is not required unless 6 months have passed since the last cold shutdown test.

Cold shutdown testing of pumps and valves will commence within 48 hours of entering cold shutdown and continue until testing of all pumps and valves designated for cold shutdown testing during the outage is complete or the unit is ready to return to power. For extended outages, testing need not be commenced within 48 hours provided all required testing is completed prior to startup. If pump and valve testing is not begun within the 48-hour period then both of these valves will be tested prior to startup. Where plant conditions or other circumstances arise that preclude testing of a valve, a unit will not be retained in Mode 3 for the sole purpose of completing testing.

Leakrate testing will be performed on a schedule as set forth in the St. Lucie Containment Isolation Valve Leakrate Testing Program.

/R4