

NOTICE OF VIOLATION
AND
PROPOSED IMPOSITION OF CIVIL PENALTY

Florida Power and Light Company
St. Lucie Unit 1

Docket No. 50-335
License No. DPR-67
EA 95-180

During an NRC inspection conducted on August 9-30, 1995, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (60 FR 34381; June 30, 1995/NUREG-1600), the Nuclear Regulatory Commission proposes to impose a civil penalty pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 CFR 2.205. The particular violations and associated civil penalty are set forth below:

- A. Technical Specification 3.4.13 requires, in part, that two Power Operated Relief Valves (PORVs) be operable in Mode 4 when the temperature of any RCS cold leg is less than or equal to 304°F, in Mode 5 and Mode 6 when the head is on the reactor vessel; and the RCS is not vented through a greater than 1.75 square inch vent. Technical Specification 3.4.13, Action Statement (c), requires that, with both PORVs inoperable, at least one PORV be returned to an operable status or that the RCS be completely depressurized and vented through a minimum 1.75 square inch vent within 24 hours.

Contrary to the above, from November 22 through 27, 1994, and from February 27 through March 6, 1995, while St. Lucie Unit 1 was in one of the conditions specified in Technical Specification 3.4.13 requiring operable PORVs, PORVs V-1404 and V-1402 were inoperable because the main disc guide had been installed upside down and the provisions of Technical Specification 3.4.13, Action Statement (c) were not met. (01013)

- B. 10 CFR Part 50, Appendix B, Criterion XI, requires, in part, that a test program be established to ensure that all testing required to demonstrate that components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents and that the test program shall include proof tests prior to installation.

10 CFR 50.55a(f)(4)(ii) requires, in part, that inservice tests to verify operational readiness of valves, whose function is required for safety, conducted during successive 120-month intervals, must comply with requirements of the latest edition and addenda of the ASME Code.

Section XI of the 1983 ASME Boiler And Pressure Vessel Code, article IWV-3000, Test Requirements, Section IWV-3200, Valve Replacement, Repair, and Maintenance, requires, in part, that when a valve or its control system has been replaced or repaired or has undergone

Enclosure 1

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maintenance that could affect its performance, and prior to the time it is returned to service, it shall be tested to demonstrate that the performance parameters, which could be affected by the replacement, repair, or maintenance are within acceptable limits.

Contrary to the above, after maintenance performed on November 4, 1995, the licensee failed to adequately identify and perform post-maintenance testing of Power Operated Relief Valves V-1404 and V-1402 to demonstrate that the valves would perform satisfactorily in service after valve maintenance was performed. Specifically, the post-maintenance test performed did not include a verification that the valve would change state under pressure prior to return to service. (01023)

- C. 10 CFR 50.55a(f)(4)(ii) requires, in part, that inservice tests to verify operational readiness of valves, whose function is required for safety, conducted during successive 120-month intervals, must comply with requirements of the latest edition and addenda of the ASME Code.

Florida Power and Light Second Ten-year Inservice Inspection Interval Inservice Testing Program For Pumps and Valves, Document Number JNS-PSI 203, Revision 5, states, in part, that, between February 11, 1988 and February 10, 1998, the St. Lucie Unit 1 ASME Inservice Inspection (IST) Program will meet the requirements of the ASME Boiler and Pressure Vessel Code (the Code), Section XI, 1983 Edition.

Section XI of the 1983 ASME Boiler And Pressure Vessel Code, article IWV-3000, Test Requirements, Section IWV-3400, Inservice Tests, requires, in part, that Category A valves shall be full-stroke exercised at least once every three months. Category A valves that cannot be exercised during plant operation shall be full-stroke exercised during cold shutdowns.

Contrary to the above, on November 25, 1994, and February 27, 1995, the licensee failed to adequately full-stroke exercise ASME Category A Power Operated Relief Valves V-1404 and V-1402. Specifically, operational surveillance testing, performed on the above dates to satisfy ASME Section XI full-stroke exercise requirements, under Administrative Procedure 1-0010125A, "Surveillance Data Sheets" (revision 39), Data Sheet 24, "Valve Testing Procedures," did not include an adequate test to detect that the main disc guides in valves V-1404 and V-1402 were misoriented causing the valves to fail to stroke open. (01033)

These violations represent a Severity Level III problem (Supplement I). This problem is applicable to Unit 1 only.
Civil Penalty - \$50,000.

Pursuant to the provisions of 10 CFR 2.201, Florida Power and Light Company is hereby required to submit a written statement or explanation to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, within 30 days of

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the date of this Notice of Violation and Proposed Imposition of Civil Penalty (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each alleged violation: (1) admission or denial of the alleged violation, (2) the reasons for the violation if admitted, and if denied, the reasons why, (3) the corrective steps that have been taken and the results achieved, (4) the corrective steps that will be taken to avoid further violations, and (5) the date when full compliance will be achieved.

If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked or why such other action as may be proper should not be taken. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, the Licensee may pay the civil penalty by letter addressed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, with a check, draft, money order, or electronic transfer payable to the Treasurer of the United States in the amount of the civil penalty proposed above, or the cumulative amount of the civil penalties if more than one civil penalty is proposed, or may protest imposition of the civil penalty in whole or in part, by a written answer addressed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission. Should the Licensee fail to answer within the time specified, an order imposing the civil penalty will be issued. Should the Licensee elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalty, in whole or in part, such answer should be clearly marked as an "Answer to a Notice of Violation" and may: (1) deny the violation(s) listed in this Notice, in whole or in part, (2) demonstrate extenuating circumstances, (3) show error in this Notice, or (4) show other reasons why the penalty should not be imposed. In addition to protesting the civil penalty in whole or in part, such answer may request remission or mitigation of the penalty.

In requesting mitigation of the proposed penalty, the factors addressed in Section VI.B.2 of the Enforcement Policy should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate parts of the 10 CFR 2.201 reply by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. The attention of the Licensee is directed to the other provisions of 10 CFR 2.205, regarding the procedure for imposing a civil penalty.

Upon failure to pay any civil penalty due which subsequently has been determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalty, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282c.

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Imposition of Civil Penalty

The response noted above (Reply to Notice of Violation, letter with payment of civil penalty, and Answer to a Notice of Violation) should be addressed to: Mr. James Lieberman, Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852-2738, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region II and a copy to the NRC Resident Inspector at the St. Lucie facility.

Because your response will be placed in the NRC Public Document Room (PDR), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction. However, if you find it necessary to include such information, you should clearly indicate the specific information that you desire not to be placed in the PDR, and provide the legal basis to support your request for withholding the information from the public.

Dated at Atlanta, Georgia
this 13th day of November 1995

LIST OF ATTENDEES

Licensee

- J. Goldberg, President, Nuclear Division
- D. Sager, Vice President, St. Lucie Site
- J. Geiger, Vice President, Florida Power and Light company (FPL)
- W. Bohlke, Vice President, Engineering
- L. Bradow, Nuclear Assurance Manager
- L. Rogers, Systems and Component Engineering Manager
- J. Marchese, Maintenance Manager
- J. West, Operations Manager
- R. Golden, Nuclear Information Coordinator, FPL

Nuclear Regulatory Commission

- S. Ebnetter, Regional Administrator, Region II
- E. Merschhoff, Director, Division of Reactor Projects (DRP)
- A. Gibson, Director, Division of Reactor Safety (DRS)
- B. Uryc, Director, Enforcement and Investigation Coordination Staff
- K. Landis, Branch Chief, Reactor Projects Branch 3, DRP
- D. Prevatte, Senior Resident Inspector, St. Lucie Nuclear Plant
- C. Evans, Regional Attorney
- L. Watson, Enforcement Specialist
- B. Schin, Project Engineer, DRP
- E. Lea, Project Engineer, DRP
- G. Hopper, Reactor Engineer, DRS
- M. Satorius, Enforcement Coordinator, Office of Enforcement (by telephone)

PREDECISIONAL ENFORCEMENT CONFERENCE AGENDA

**ST. LUCIE
SEPTEMBER 25, 1995, AT 10:00 A.M.
NRC REGION II OFFICE, ATLANTA, GEORGIA**

- I. OPENING REMARKS AND INTRODUCTIONS
 S. Ebnetter, Regional Administrator

- II. NRC ENFORCEMENT POLICY
 B. Uryc, Director
 Enforcement and Investigation Coordination Staff

- III. SUMMARY OF THE ISSUES
 S. Ebnetter, Regional Administrator

- IV. STATEMENT OF CONCERNS / APPARENT VIOLATIONS
 E. Merschoff, Director
 Division of Reactor Projects

- V. LICENSEE PRESENTATION
 W. Goldberg, President
 St. Lucie Nuclear Plant

- VI. BREAK / NRC CAUCUS

- VII. NRC FOLLOWUP QUESTIONS

- VIII. CLOSING REMARKS
 S. Ebnetter, Regional Administrator

ISSUES TO BE DISCUSSED

1. 10 CFR 50, Appendix B, Criterion XI required, in part, that a test program be established to ensure that all testing required to demonstrate that components will perform satisfactorily in service be performed and that the program include proof tests prior to installation. FPL Topical Quality Assurance Report TQR 11.0, revision 4, "Test Control," stated, in part, that a test program shall be established to assure that testing required to demonstrate that structures, systems and components will perform satisfactorily in service and that the program shall include proof tests prior to installation.

In November, 1994, valve maintenance was performed under a work package, which directed the rebuilding of Power Operated Relief Valves V-1404 and V-1402 per licensee procedure 1-M0037, Revision 6, "Power Operated Valve Relief Valve Maintenance. The post-maintenance testing was limited to a bubble test for seat leakage prior to reinstallation. The procedure contained a note explaining that lift set point testing was not required, as the valve was lifted based upon solenoid valve input. The procedure did not require a verification that the valve would change state under pressure prior to installation.

NOTE: The apparent violations discussed in this predecisional enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

ISSUES TO BE DISCUSSED

2. 10 CFR 50, Appendix B, Criterion XI required, in part, that a test program be established to ensure that adequate test instrumentation is available and used. FPL Topical Quality Assurance Report TQR 11.0, revision 4, "Test Control," stated, in part, that a test program shall be established to assure that testing required to demonstrate that structures, systems and components will perform satisfactorily in service is performed and that the program shall include operational tests. TQR 11.0 further states that test procedures shall incorporate requirements and acceptance limits in the applicable design and procurement documentation.

On November 25, 1994, and on February 27, 1995, operational surveillance testing, performed under Administrative Procedure 1-0010125A, revision 39, Data Sheet 24, did not employ adequate test instrumentation to detect the inoperability of both valves and did not employ test acceptance limits derived from the valves' design documentation. Specifically, the use of acoustic data, as opposed to system pressure reduction derived from valve capacity, to indicate valve position was insufficient to discern the difference between bypass flow through the PORV pilot valves and actual changes in main valve position.

NOTE: The apparent violations discussed in this predecisional enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

ISSUES TO BE DISCUSSED

3. Technical Specification 3.4.13 requires, in part, that two Power Operated Relief Valves be operable in "Mode 4 when the temperature of any RCS cold leg is less than or equal to 304°F, Mode 5 and Mode 6 when the head is on the reactor vessel; and the RCS is not vented through a greater than 1.75 square inch vent." TS 3.4.13 AS (c) required that, "with two inoperable PORVs, at least one PORV be returned to an operable status or that the RCS be completely depressurized and vented through a minimum 1.75 square inch opening within 24 hours."

From November 22 through 27, 1994, and from February 27 through March 6, 1995, St. Lucie Unit 1 was in conditions requiring operable Power Operated Relief Valves but no operable relief valves were in service. The inoperability of the Power Operated Relief Valves resulted from a combination of personnel error during maintenance and inadequate post-maintenance and surveillance testing.

NOTE: The apparent violations discussed in this predecisional enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

ST. LUCIE NUCLEAR PLANT

**NRC
PRE-DECISIONAL ENFORCEMENT
CONFERENCE**

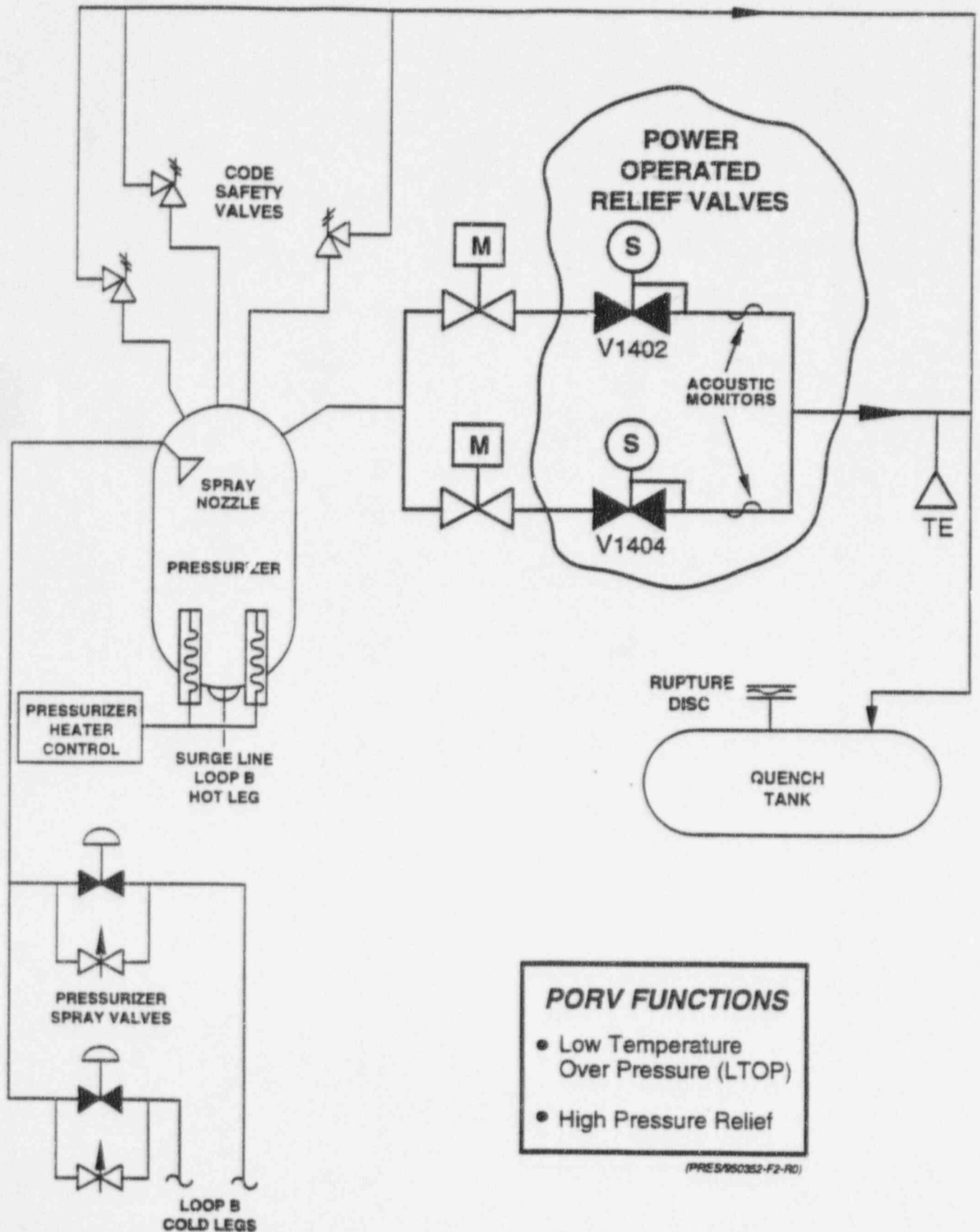
SEPTEMBER 25, 1995

AGENDA

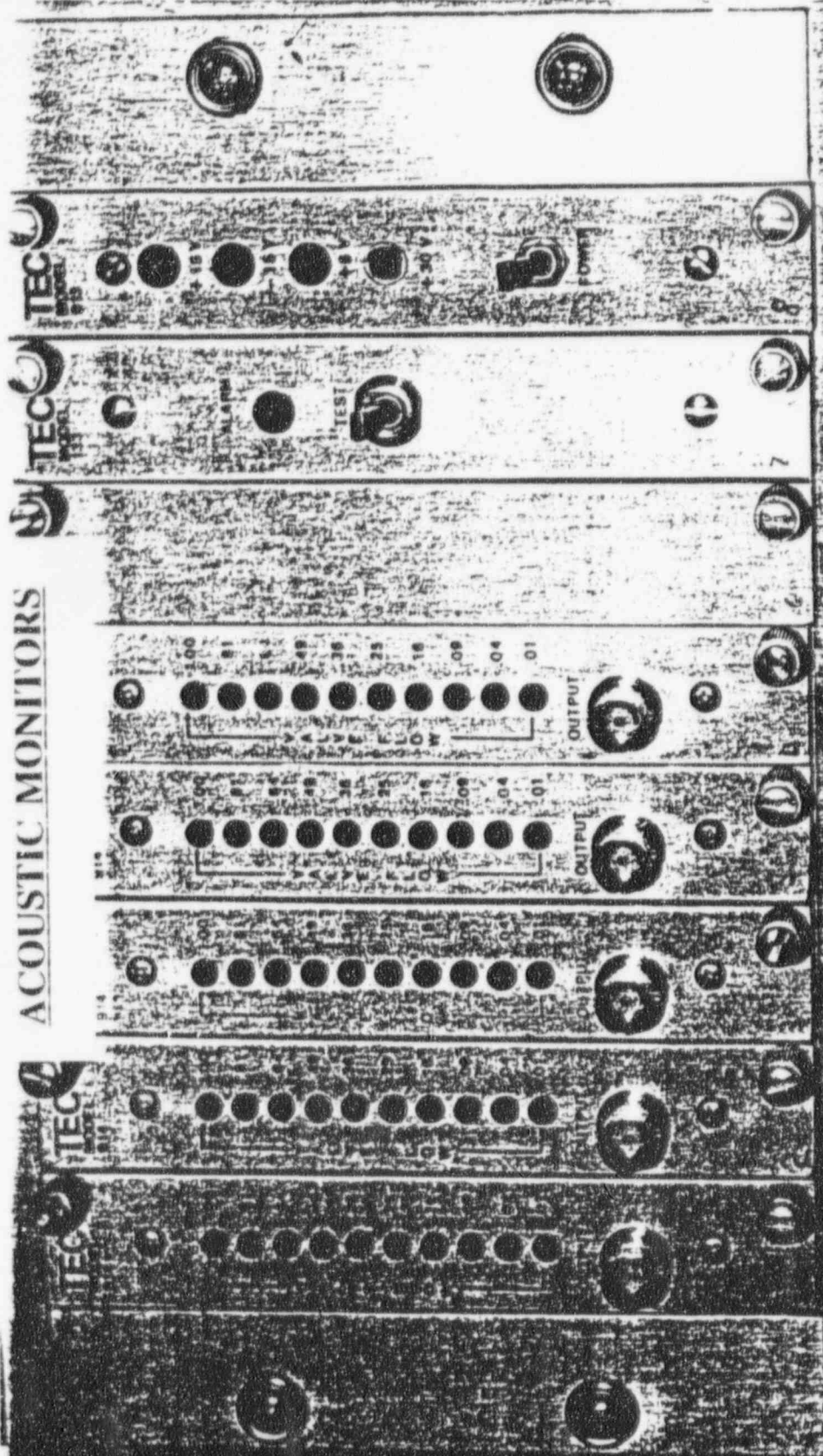
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SYSTEM DESCRIPTION

SIMPLIFIED RCS/PRESSURIZER DIAGRAM



ACOUSTIC MONITORS



1 2 0 2

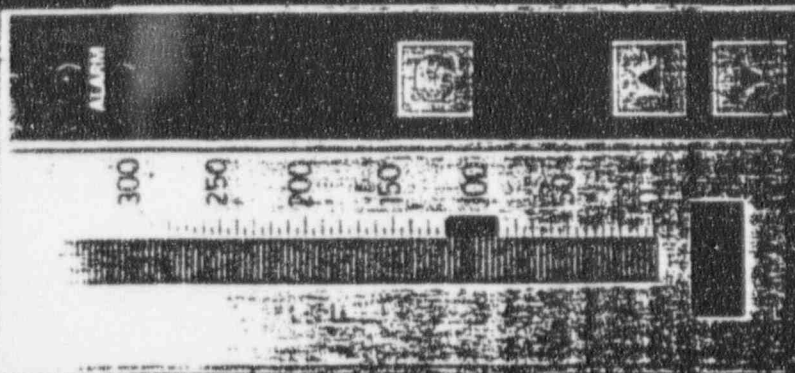
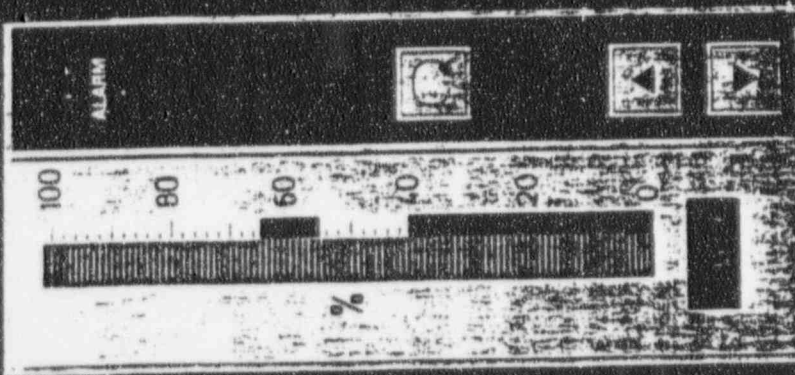
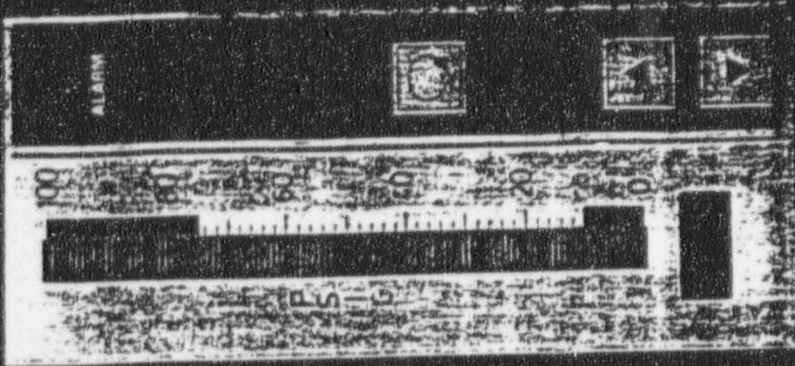
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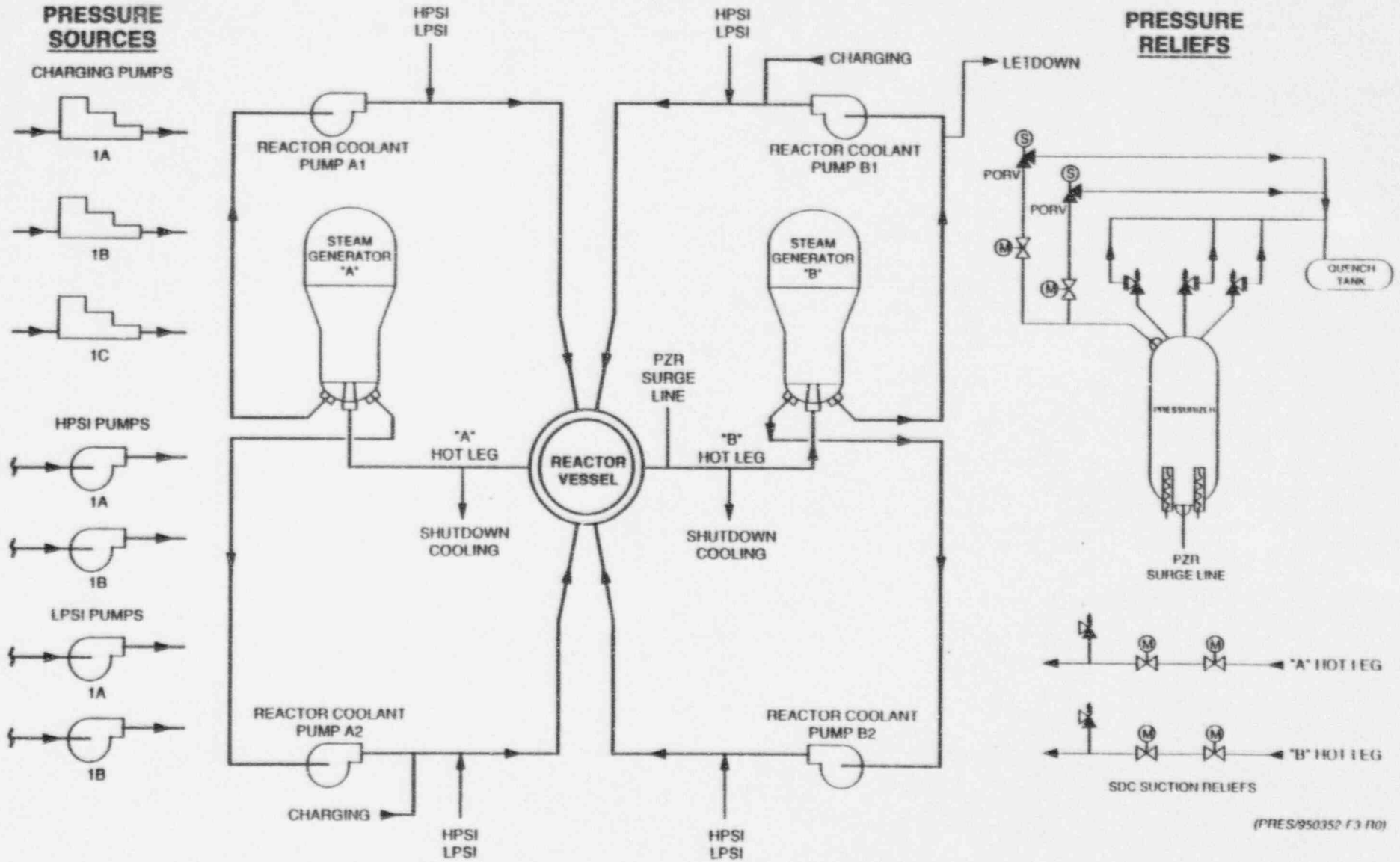
1 4 0 4

1 4 0 2

QUENCH TANK



REACTOR COOLANT SYSTEM PRESSURE SOURCES AND RELIEFS



EVENT CHRONOLOGY

REFUELING OUTAGE 10/26 - 12/1 1994	INSERVICE TEST OF PORVs	10/27
	RCS IN LTOP RANGE	10/27 - 29
	OVERHAUL BOTH PORVs	11/2 - 4
	BENCH TEST OF PORVs	11/5
	RCS IN LTOP RANGE	11/22 - 26
	INSERVICE TEST OF PORVs	11/25
PRESSURIZER CODE SAFETY OUTAGE 2/27 - 3/7 1995	INSERVICE TEST OF PORVs	2/27
	RCS IN LTOP RANGE	2/27 - 3/1
	CODE SAFETIES REPLACED	3/4
	RCS IN LTOP RANGE	3/5 - 6
PLANT TRIP 7/8/95 HURRICANE ERIN SHUTDOWN 8/1 - PRESENT	AUTOMATIC REACTOR TRIP (High Pressurizer Pressure Trip)	7/8
	SHUTDOWN FOR HURRICANE	8/1
	1A2 RCP LOWER SEAL FAILS	8/2
	RCS IN LTOP RANGE	8/3 - 4
	RCP SEALS REPLACED	8/8
	INSERVICE TEST/ACOUSTIC MONITOR TROUBLESHOOTING PERFORMED	8/3 - 9
	RCS IN LTOP RANGE	8/7 - 10
	PORVs DECLARED INOPERABLE	8/9
	PORVs REBUILT USING UPGRADED PROCEDURE	8/13 - 14
	UPGRADED POST MAINTENANCE TESTS CONDUCTED	8/14
UPGRADED INSERVICE TEST PERFORMED	8/16	

SYSTEM DESCRIPTION
PORV INSERVICE TESTS

(Prior to August 16, 1995)

- **INSERVICE TEST (IST) REQUIREMENTS:**
 - **FREQUENCY - EACH COLD SHUTDOWN PERFORM A FULL VALVE STROKE**
 - **VALVE STROKE TIME ACCEPTANCE CRITERIA - OPEN IN LESS THAN 1 SECOND**

- **PORVs TESTED USING PROCEDURE 0010125A, "SURVEILLANCE DATA SHEETS" DATA SHEET #24, "VALVE TESTING". REQUIRES THREE OPERATORS.**
 - **1 Reactor Operator to initiate test (RTGB 103) and monitor position indication**
 - **1 Reactor Operator to observe acoustic monitor (indication of steam flow in the PORV discharge pipe) LED display on post accident panel**
 - **1 Senior Reactor Operator to observe overall plant response**

PROBLEMS ASSOCIATED WITH PORV PREVENTIVE MAINTENANCE AND POST MAINTENANCE TESTING

UNIT 1 VALVE DESCRIPTION

- NUMBER OF VALVES - 2

- SOLENOID PILOT OPERATED VALVE
 - POWER SUPPLIED FROM CLASS 1E DC POWER

- SIZE - 2 1/2" X 4"

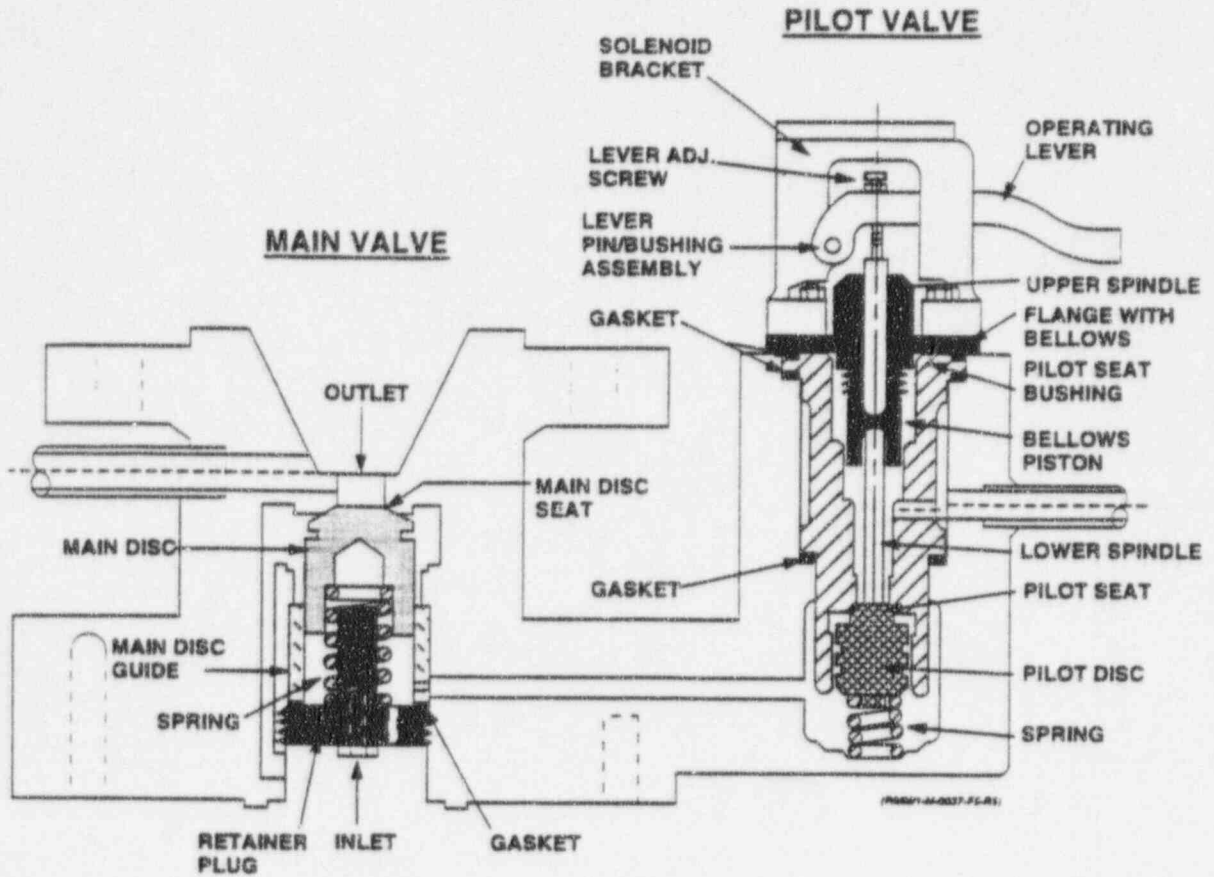
- MANUFACTURER - DRESSER

- SET PRESSURE
 - OPERATING - 2400 PSIA
 - LTOP - 530 PSIA
 - 350 PSIAtemperature dependent

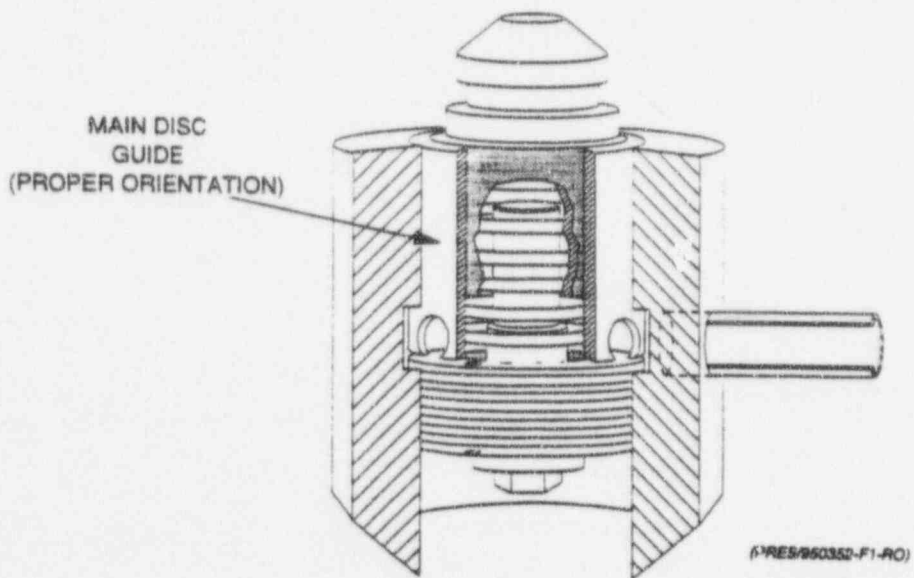
- POSITION INDICATION IN CONTROL ROOM IS FROM SOLENOID VALVE POSITION

VALVE DESCRIPTION PORV DIAGRAM

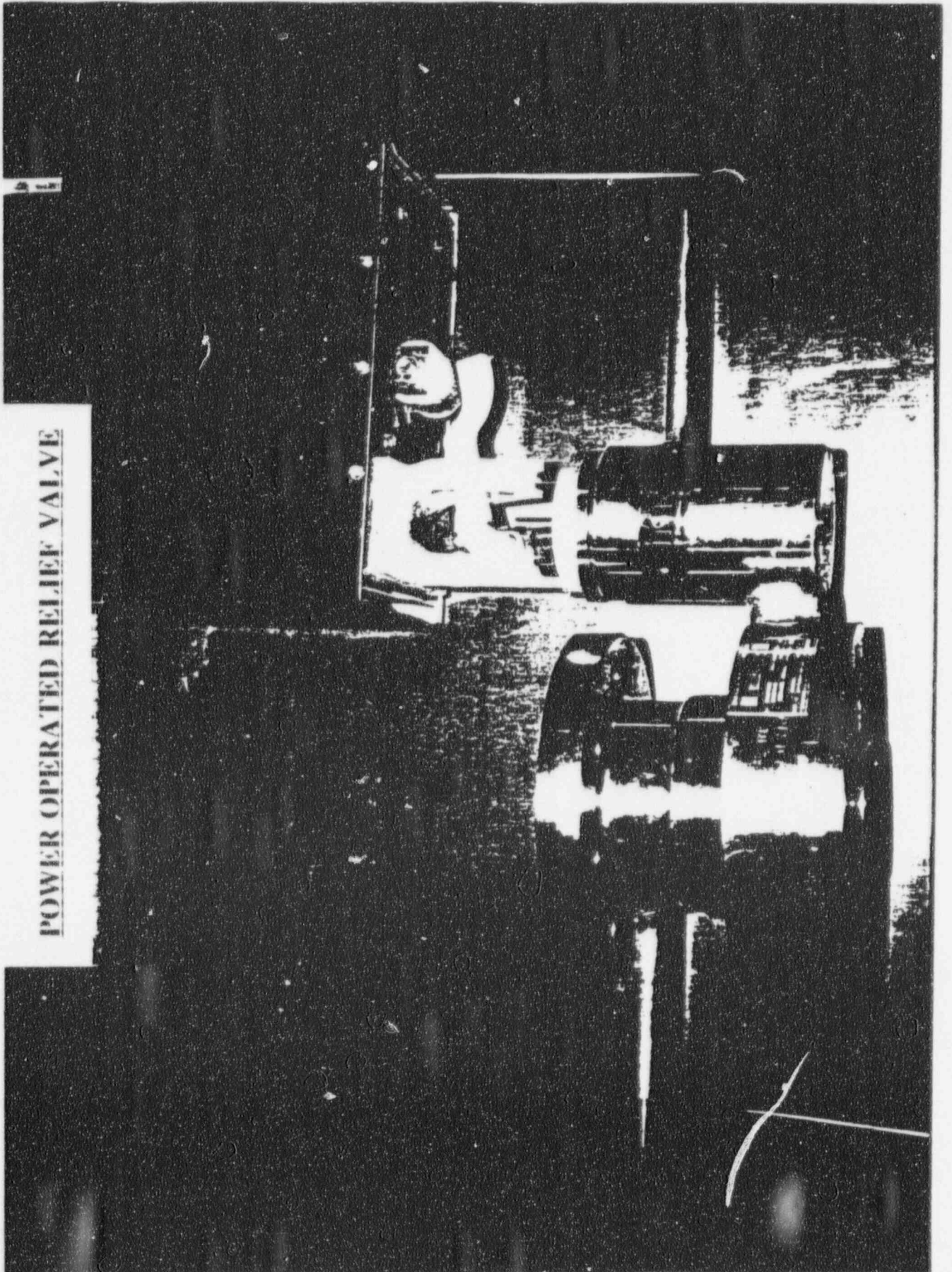
Partial Section View of Power Operated Relief Valve (PORV)



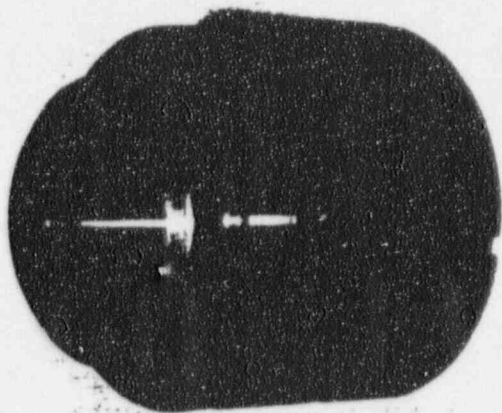
Detail of Main Disc & Main Disc Guide Assembly



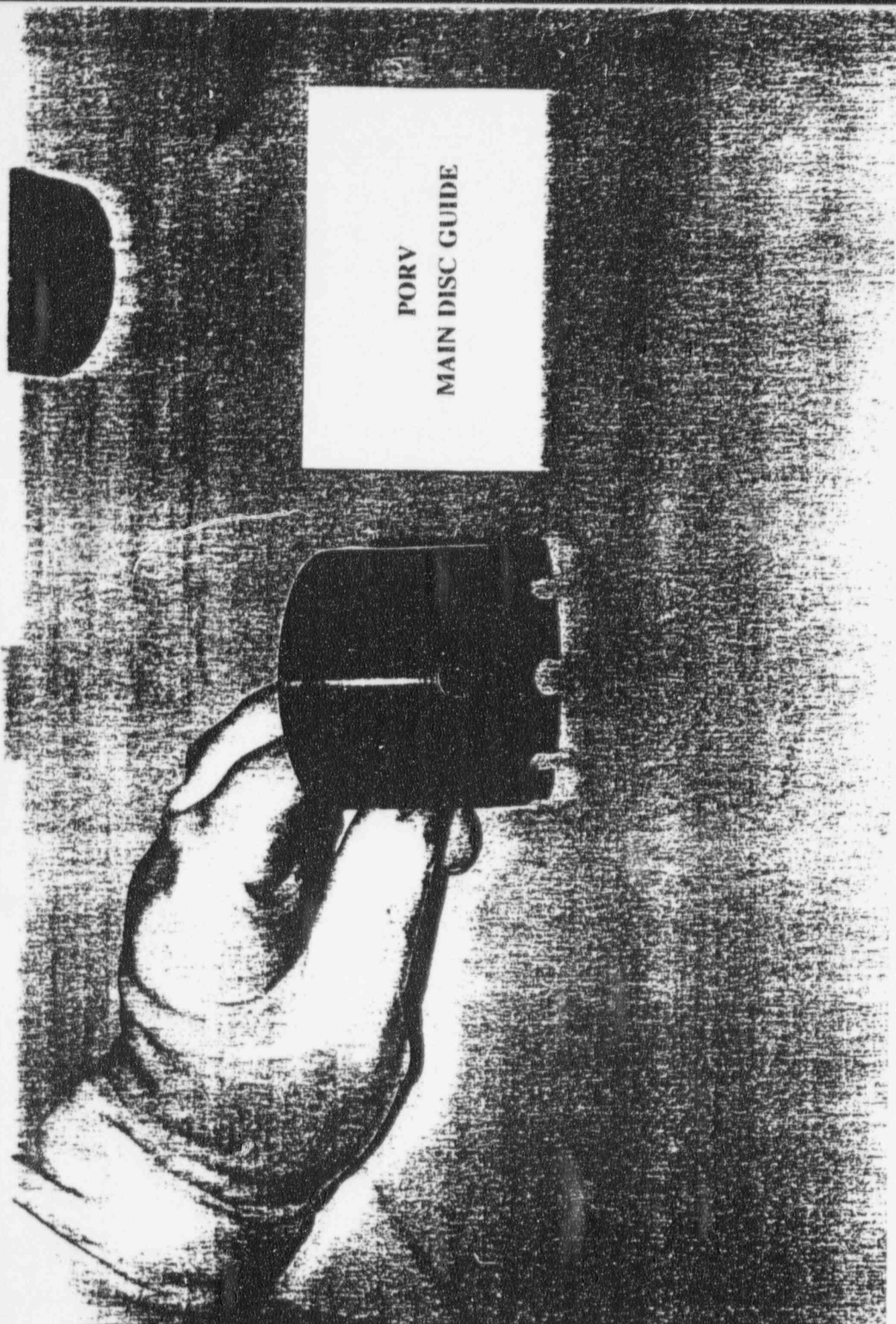
POWER OPERATED RELIEF VALVE



PORV
MAIN DISC

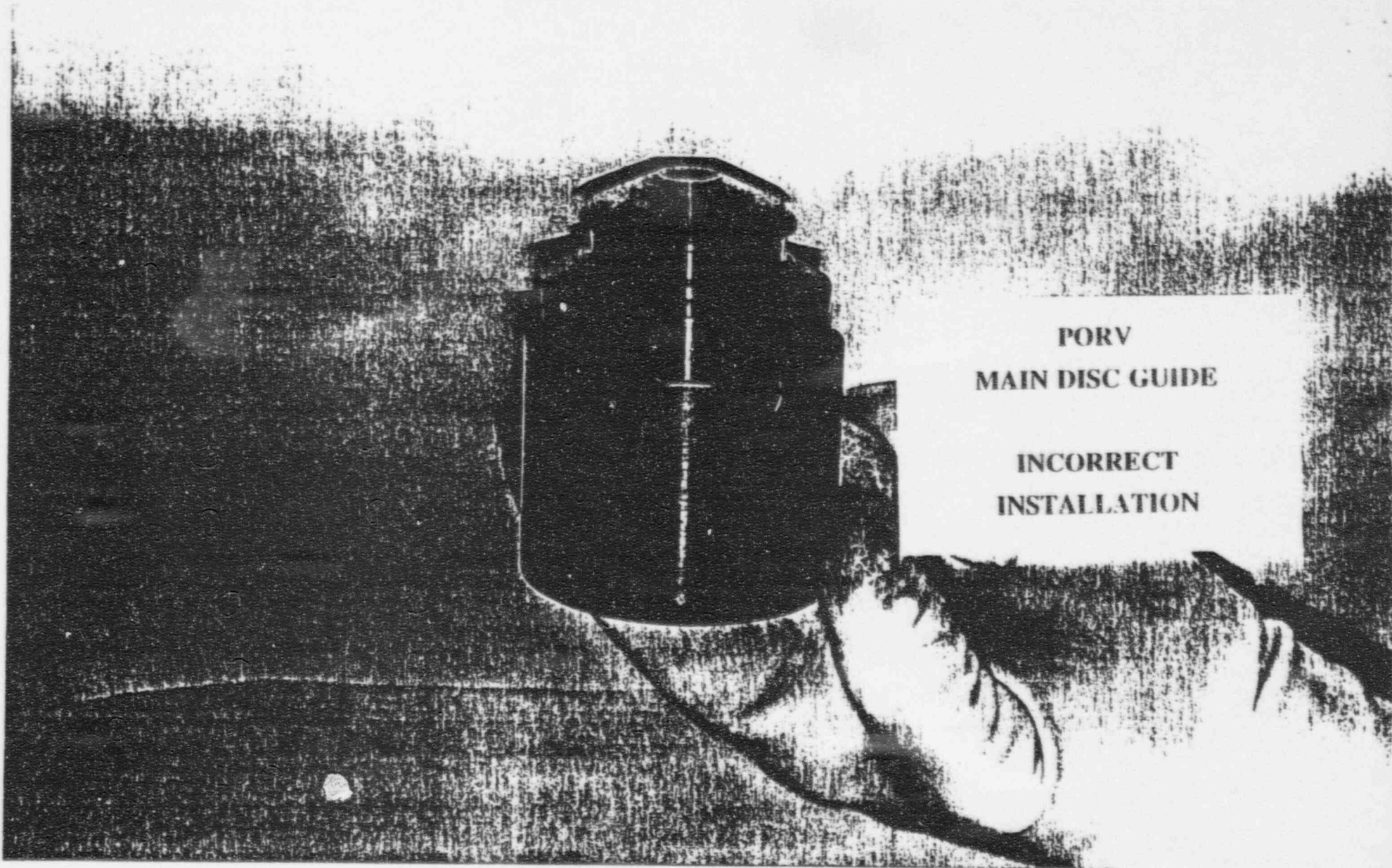


St. Lucie Unit #1
V-1404
8/95



PORV
MAIN DISC GUIDE

St. Lucie Unit #1
V-1404
8/95

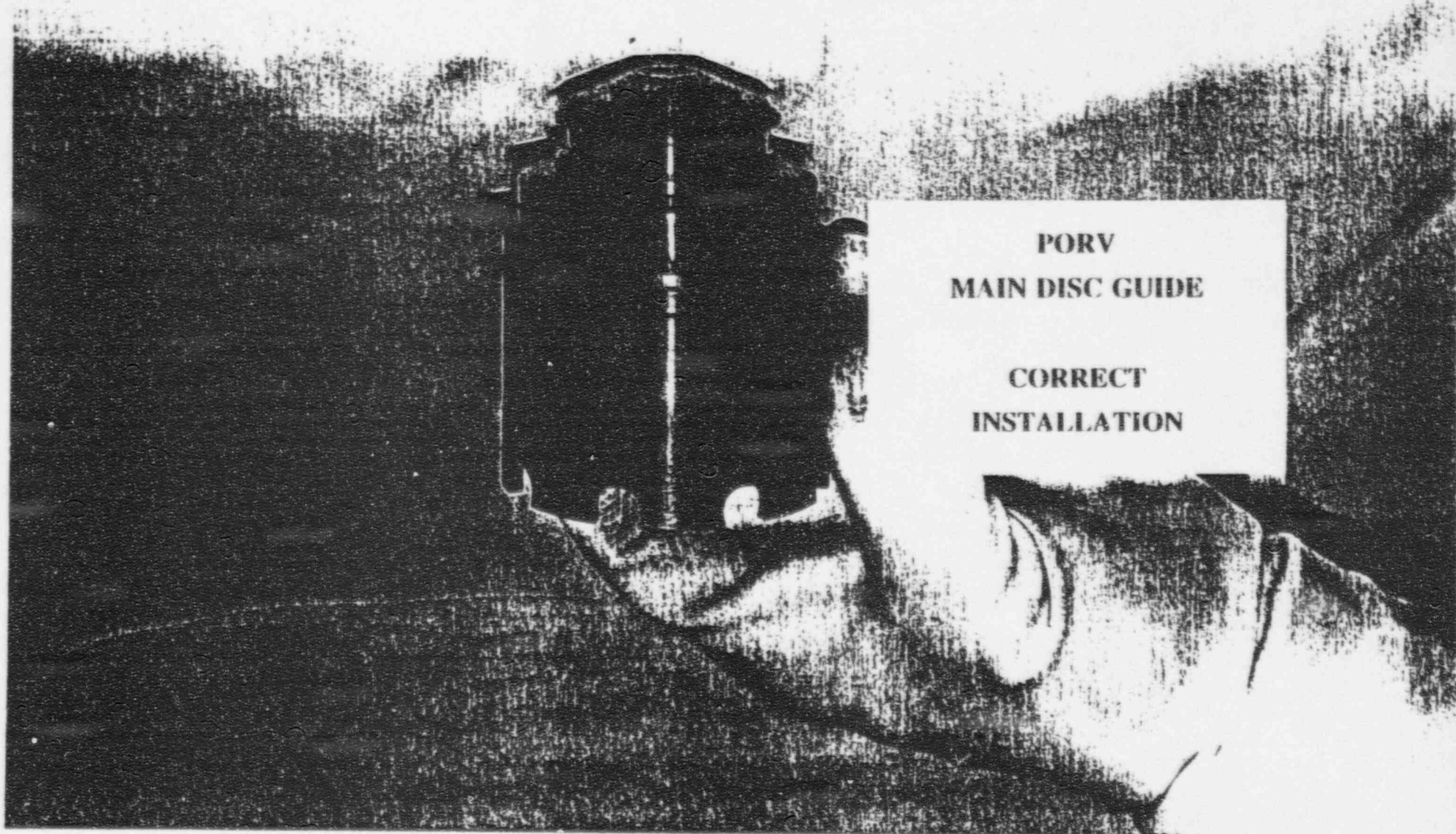


**PORV
MAIN DISC GUIDE**

**INCORRECT
INSTALLATION**

St. Lucie Unit #1

**V-1404
8/95**



**PORV
MAIN DISC GUIDE**

**CORRECT
INSTALLATION**

St. Lucie Unit #1

V-1404

8/95

VALVE DESCRIPTION

PORV PREVENTIVE MAINTENANCE ACTIVITIES

- BOTH VALVES ARE REMOVED FROM THE PRESSURIZER, DISASSEMBLED, REFURBISHED, INSPECTED AND RE-INSTALLED EACH REFUELING OUTAGE (18 MONTHS) USING PROCEDURE M-0037, "PORV MAINTENANCE"
 - MAIN VALVE AND PILOT VALVE ARE RECONDITIONED (SEATS, BUSHINGS, GASKET SURFACES, LUBRICATION)
 - DIMENSIONAL CHECKS ARE PERFORMED
 - INSTALLATION QC CHECKS INCLUDE:
 - FLANGE MATING SURFACES (VALVE AND PRESSURIZER)
 - BOLTING MATERIAL
 - GASKET MATERIAL
 - CLEANLINESS OF VALVE INTERNALS
 - TORQUE VERIFICATION
- POST MAINTENANCE TESTING PRIOR TO AUGUST, 1995
 - SEAT LEAKAGE TEST CONDUCTED USING ON-SITE VALVE TEST BENCH (AIR TEST AT 2250 PSIA)

VALVE DESCRIPTION
PORV PREVENTIVE MAINTENANCE ACTIVITIES

(continued)

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ST. LUCIE UNIT 1
GENERAL MAINTENANCE PROCEDURE NO. 1-M-0037, REVISION 6
POWER-OPERATED RELIEF VALVE MAINTENANCE

9.0 DETAILED PROCEDURE: (continued)

9.8 Reassembly of Main Valve

7. Place guide (5) into the base with the slots toward the inlet flange, making certain the guide is properly seated and free to rotate. _____
8. If guide is not free to rotate, inspect guide and cage surfaces to determine cause. _____
9. Install main disc (2) gently into guide until it is seated. _____
10. Place the disc spring (4) into the disc and a new Flexitallic gasket into the recesses and onto the guide. _____
11. Lubricate the threads of the disc retaining plug (6) with Dow Corning No. 41. _____

CAUTION

Do not allow the retaining plug to tilt during installation. Do not tighten excessively.

ROOT CAUSES

PROBLEM #1: PORVs ASSEMBLED INCORRECTLY

ROOT CAUSE: PERSONNEL ERROR BY MAINTENANCE
CONTRACTOR

PROBLEM #2: FAILURE TO DETECT THE PORV
INOPERABILITY

- ROOT CAUSES:
1. INADEQUATE POST MAINTENANCE TESTING
 - PROCEDURE DID NOT REQUIRE VERIFICATION OF THE MAIN VALVE'S OPERATION WHEN THE PILOT VALVE ACTUATED
 2. IN-SERVICE SURVEILLANCE TESTING WAS INADEQUATE
 - RELIED SOLELY ON ACOUSTIC MONITOR RESPONSE
 - OTHER CONFIRMATORY PARAMETERS (QUENCH TANK TEMPERATURE/LEVEL/PRESSURE AND RCS PRESSURE) WERE NOT USED

CORRECTIVE ACTIONS

VALVE MAINTENANCE

IMMEDIATE ACTIONS TAKEN

- **SPARE PORV TESTED AT AN OFFSITE LABORATORY. TESTING DEMONSTRATED THAT PORVs CANNOT OPERATE AS REQUIRED WITH THE MAIN DISC GUIDE IMPROPERLY INSTALLED**
- **PORV ASSEMBLY PROCEDURE WAS REVISED TO PROVIDE INDEPENDENT VERIFICATION (QC HOLD POINT) OF DISC GUIDE ORIENTATION AND POST MAINTENANCE TESTING TO ENSURE PROPER VALVE FUNCTION**
- **BOTH PORVs WERE REMOVED FROM THE PRESSURIZER AND PROPERLY REASSEMBLED WITH REVISED PROCEDURE**
- **PERFORMED VALVE ACTUATION AND SEAT LEAKAGE TESTS ON BOTH PORVs**
- **OTHER WORK PERFORMED BY SAME CONTRACTOR WAS EVALUATED; NO ADDITIONAL PROBLEMS WERE IDENTIFIED**
- **REVIEWED CONTRACTOR QUALIFICATIONS AND CERTIFICATION PROCESS; DETERMINED TO BE SATISFACTORY**
- **EVALUATED UNIT 2 PORVs; DETERMINED NOT TO BE A PROBLEM:**
 - **MAIN DISC GUIDE AND OTHER INTERNAL PARTS CANNOT BE MISINSTALLED DUE TO DESIGN**
 - **MAIN VALVE STEM INDICATOR GIVES DIRECT INDICATION OF VALVE POSITION**

VALVE DESCRIPTION
PORV PREVENTIVE MAINTENANCE ACTIVITIES

(continued)

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ST. LUCIE UNIT 1
GENERAL MAINTENANCE PROCEDURE NO. 1-M-0037, REVISION 7
POWER-OPERATED RELIEF VALVE MAINTENANCE

9.0 DETAILED PROCEDURE: (continued)

9.8 Reassembly of Main Valve

QC HOLD POINT
STEP 9.8.7

Verify guide (5) is properly installed. Slotted end oriented toward cage guide plug threads. Ensure guide is properly seated and free to rotate.

Verified By

____/____/____
Date

7. Place guide (5) into the base with the slots toward the cage guide plug threads. Make certain the guide is properly seated and free to rotate.

Verified By

____/____/____
Date

8. If guide is not free to rotate, inspect guide and cage surfaces to determine cause. _____
9. Install main disc (2) gently into guide until it is seated. _____
10. Place the disc spring (4) into the disc and a new Flexitallic gasket into the recesses and onto the guide. _____
11. Lubricate the threads of the disc retaining plug (6) with Dow Corning No. 41. _____

CAUTION

Do not allow the retaining plug to tilt during installation. Do not tighten excessively.

CORRECTIVE ACTIONS
VALVE MAINTENANCE

(continued)

<u>ACTIONS TO PREVENT RECURRENCE</u>	<u>EXPECTED COMPLETION</u>
<ul style="list-style-type: none">• CONTRACTOR CONTROL WILL BE ENHANCED:	
<ul style="list-style-type: none">- TECHNICAL AND ENGINEERING REVIEW OF PROCEDURES USED BY CONTRACTORS DURING THE UPCOMING UNIT 2 REFUELING OUTAGE TO IDENTIFY QUALITY CONTROL ATTRIBUTES/PROCESSES AND DESIRED CONFIDENCE LEVELS CRITICAL FOR EQUIPMENT PERFORMANCE	10/9/95
<ul style="list-style-type: none">- INSPECTION PLANS TO MEET THE CRITICAL STEPS IDENTIFIED BY THE ABOVE PROCEDURE REVIEW WILL BE DEVELOPED	10/9/95
<ul style="list-style-type: none">- IT WILL BE RE-EMPHASIZED THAT EACH FPL CONTRACT ADMINISTRATOR IS ACCOUNTABLE FOR THE QUALITY OF WORK PERFORMED BY CONTRACTORS	10/1/95
<ul style="list-style-type: none">- TRAINING/RE-TRAINING WILL BE PROVIDED FOR FPL PERSONNEL ASSIGNED DUTIES AS CONTRACT ADMINISTRATORS	10/9/95

CORRECTIVE ACTIONS

PORV TESTING

IMMEDIATE ACTIONS TAKEN

- **UPGRADED POST MAINTENANCE TEST PROCEDURE M-0037, "PORV MAINTENANCE" TO VERIFY VALVE OPERATION IN ADDITION TO SEAT LEAKAGE TEST**

- **TESTED BOTH PORVs ABILITY TO LIFT PRIOR TO INSTALLATION**

- **UPGRADED INSERVICE TEST PROCEDURE AP 0010125A, DATA SHEET #24, "VALVE TESTING"**
 - **IN ADDITION TO ACOUSTIC MONITORS' RESPONSE, VERIFY RCS PRESSURE DECREASE >5 PSIG TO CONFIRM MAIN DISC OPENING**

 - **OTHER CONFIRMING SYSTEM PARAMETERS ARE RECORDED AND EVALUATED:**
 - **QUENCH TANK TEMPERATURE**
 - **QUENCH TANK LEVEL**
 - **QUENCH TANK PRESSURE**
 - **PORV TAILPIPE TEMPERATURE**

CORRECTIVE ACTIONS
PORV TESTING

(continued)

<u>ACTIONS TO PREVENT RECURRENCE</u>	<u>EXPECTED COMPLETION</u>
• REVISE THE UNIT 2 PORV POST MAINTENANCE TEST PROCEDURE TO VERIFY THAT THE MAIN DISC ACTUATES	11/15/95
• REVIEW POST MAINTENANCE TESTING OF OTHER SAFETY RELATED EQUIPMENT TO ENSURE THE TESTING ADEQUATELY DEMONSTRATES COMPONENT OPERABILITY:	
- CONSOLIDATE TEST GROUPS UNDER A SINGLE MANAGER REPORTING TO THE OPERATIONS MANAGER	COMPLETE
- REVIEW UNIT 2 OUTAGE SCOPE POST MAINTENANCE TEST PROCEDURES TO ENSURE CRITICAL COMPONENT FUNCTIONS ARE ADDRESSED	11/9/95
- REVISE PROCESS FOR POST MAINTENANCE TESTING TO IMPROVE COORDINATION AMONG OUTAGE MANAGEMENT, OPERATIONS AND MAINTENANCE	1/1/96
- REVIEW UNIT 1 OUTAGE SCOPE POST MAINTENANCE TEST PROCEDURES TO ENSURE CRITICAL COMPONENT FUNCTIONS ARE ADDRESSED	4/96

EVALUATION OF SAFETY SIGNIFICANCE

- **FUNCTIONS OF PORVs**
- **POWER AND SHUTDOWN OPERATION ASSESSED**
- **PROBABILISTIC SAFETY ASSESSMENT**
- **CONCLUSIONS**

EVALUATION OF SAFETY SIGNIFICANCE

(continued)

FUNCTIONS OF PORVs

- **POWER OPERATION**
 - **PORVs PREVENT LIFTING CODE SAFETIES DURING OPERATING TRANSIENTS AND ARE NOT RELIED UPON FOR ANY SAFETY RELATED OPERATING FUNCTION**
 - **EMERGENCY OPERATING PROCEDURES (EOPs) USE PORVs AS CONTINGENCY FOR BEYOND DESIGN BASIS EVENTS THAT INVOLVE MULTIPLE SINGLE FAILURES SUCH AS COMPLETE LOSS OF SECONDARY HEAT REMOVAL**

- **SHUTDOWN OPERATION**
 - **PORVs ARE REQUIRED FOR LTOP MITIGATION AND ARE INCLUDED IN THE TECHNICAL SPECIFICATIONS:**
 - **MODE 4: RCS COLD LEG $\leq 304^{\circ}\text{F}$**
 - **MODE 5 & 6: VESSEL HEAD ON AND RCS NOT VENTED**

EVALUATION OF SAFETY SIGNIFICANCE

(continued)

POWER OPERATION ASSESSMENT

- VARIOUS METHODS FOR DEPRESSURIZATION
 - PRESSURIZER SPRAY SYSTEM
 - ATMOSPHERIC DUMP VALVES
 - STEAM BYPASS CONTROL SYSTEM

- SOME PRESSURIZED WATER REACTORS DO NOT HAVE PORVs
 - TECH SPECS ALLOW BLOCK VALVE CLOSURE

- PORVs ARE NOT REQUIRED FOR UFSAR CHAPTER 15 ACCIDENT MITIGATION
 - CODE SAFETY RELIEF VALVES PROVIDE PROTECTION

EVALUATION OF SAFETY SIGNIFICANCE

(continued)

PROBABILISTIC SAFETY ASSESSMENT (PSA)

- **PORVs MODELED IN BASE PSA**

- **EFFECT OF PORVs ON CDF**
 - **PSA WITH PORVs: 2.1 X 10⁻⁵/YEAR**

 - **PSA WITHOUT PORVs: 7.6 X 10⁻⁵/YEAR**
(i.e., LOSS OF SECONDARY HEAT REMOVAL)

- **CDF REMAINS LESS THAN NRC SAFETY GOAL OF 10⁻⁴/YEAR**

- **ADDITIONAL CREDIT FOR OPERATOR ACTIONS TO RESTORE FEEDWATER TO S/Gs WOULD FURTHER REDUCE CDF**

EVALUATION OF SAFETY SIGNIFICANCE

(continued)

SHUTDOWN OPERATION ASSESSMENT

- REVIEWED UNIT 1 OPERATING HISTORY
 - HAVE NEVER EXPOSED THE REACTOR VESSEL/RCS TO OVER PRESSURE EVENT (LTOP RANGE)

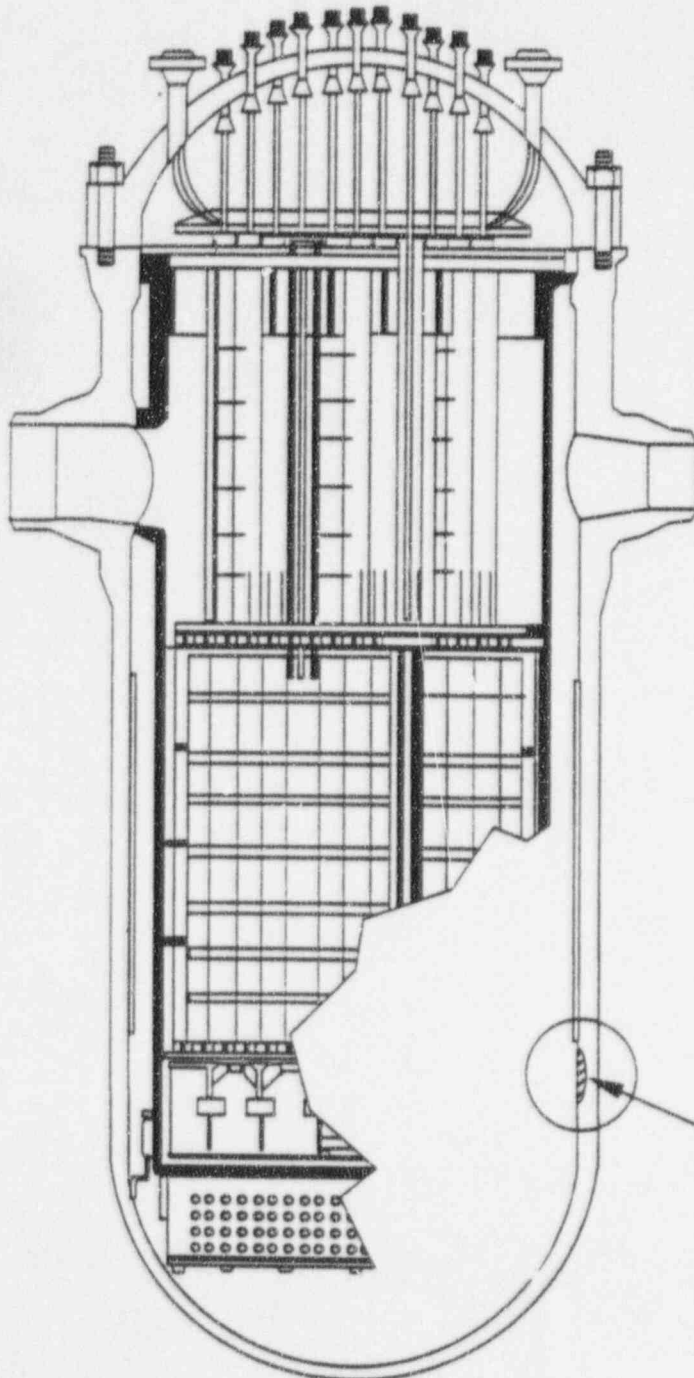
- REVIEWED THE ANALYZED LTOP TRANSIENTS

- CONSIDERED MASS AND ENERGY ADDITION TRANSIENTS

- MASS ADDITION TRANSIENTS ARE MOST LIMITING
 - HPSI AND/OR CHARGING PUMPS

SHUTDOWN OPERATIONS ASSESSMENT EFFECTS ON REACTOR VESSEL

REACTOR VESSEL

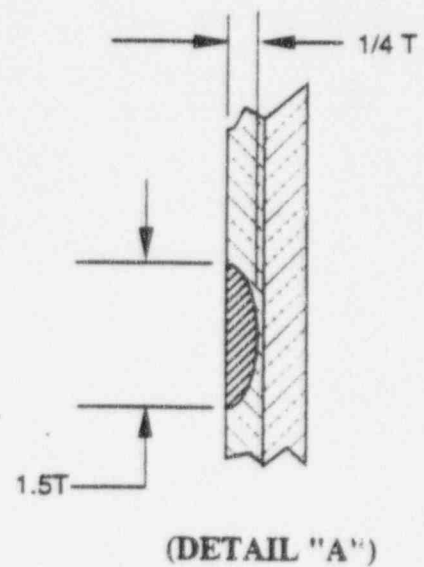


ASSUMPTIONS

- ISOTHERMAL EVENT
- 1/4 T FLAW (2.2" X 13")
- LOCATION LIMITING WELD (LOWER AXIAL WELD)
- RT ndt CORRECTED FOR IRRADIATION
- BOUNDING CRACK INITIATION CURVE - K_{Ic} (ASME APP. A)

ACCEPTANCE CRITERIA

- NO CRACK INITIATION



ASSUMED FLAW
(SEE DETAIL "A"))

EVALUATION OF SAFETY SIGNIFICANCE

(continued)

SHUTDOWN OPERATION ASSESSMENT (continued)

LTOP TRANSIENTS ANALYTICAL RESULTS			
RCS TEMPERATURE (°F)	ASSUMED SOURCE OF PRESSURIZATION	MAXIMUM RCS (PSIA)	VESSEL ALLOWABLE (PSIA)
≤ 200	HPSI PUMP	≤ 1300	≤ 1510
> 200	2 HPSI AND 3 CH PUMPS	≤ 2575¹	≤ 2750

¹ CODE SAFETY RELIEF PRESSURE (2500 PSIA) PLUS ACCUMULATION (75 PSIA)

- **IMPOSED STRESSES ARE LESS THAN REQUIRED FOR CRACK INITIATION**

EVALUATION OF SAFETY SIGNIFICANCE

(continued)

CONCLUSIONS

- NO EFFECT ON CHAPTER 15 SAFETY ANALYSES
- CDF REMAINS LESS THAN NRC SAFETY GOAL
- UNDER LTOP, IMPOSED STRESSES LESS THAN THOSE REQUIRED FOR CRACK INITIATION
- NO UNDUE RISK TO PUBLIC HEALTH AND SAFETY