

NOTICE OF VIOLATION

Georgia Power Company
Hatch Unit 2

Docket No. 50-366
License No. DPR-7
EA 95-263

During NRC inspections conducted during the period October 1 through December 2, 1995, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violation is listed below:

License Condition 2.C.(3)(b) requires Georgia Power Company to implement and maintain in effect all provisions of the fire protection program, which is referenced in the Final Safety Analysis Report for the facility as contained in the Fire Hazards Analysis and Fire Protection Program.

Appendix E, of Units 1 and 2, Fire Hazards Analysis and Fire Protection Program, requires the capability to safely shutdown both units using the systems of pathway three Safe Shutdown Methodology in the event of a fire in area 24 which consists of the main control room, cable spreading room, and the computer room. Pathway three specifies the systems necessary to implement a safe shutdown in the event of a fire in area 24.

Section 10.1 of Units 1 and 2 Fire Hazards Analysis, Unit 2 Safe Shutdown Analysis, identifies specific equipment and required actions for safe shutdown of Unit 2 in the event of a fire in area 24.

Contrary to the above, as of November 2, 1995, the licensee failed to maintain in effect all the provisions of the fire protection program in that, specific Unit 2 systems identified in Appendix E of Units 1 and 2 Fire Hazards Analysis and Fire Protection Program and equipment identified in Section 10.1, Unit 2 Safe Shutdown Analysis, could not be operated from the remote shutdown panel to safely shutdown the unit in the event of a fire in area 24. The following are examples of components that would not operate properly from the remote shutdown panel:

- 2E11F003B, Residual Heat Removal System Heat Exchanger Outlet Valve, would not open from the remote shutdown panel
- 2E11F017B, Residual Heat Removal System Low Pressure Coolant Injection Outboard Injection Valve, would not cycle from the remote shutdown panel
- 2E11F004B, Residual Heat Removal Pump 2B Torus Suction Valve, would not open from the remote shutdown panel
- The open interlock between 2E11F004B, Residual Heat Removal Pump 2B Torus Suction Valve, and 2E1F006B, Residual Heat Removal Shutdown Cooling Suction Valve, was incorrectly installed allowing two valves to open simultaneously

Enclosure 1

- 2B31F023B, Reactor Water Recirculation Pump 2B Suction Isolation Valve, would not cycle from the remote shutdown panel
- 2E11-F006A, Residual Heat Removal Shutdown cooling Suction Valve, would not open from the remote shutdown panel

This is a Severity Level IV violation (Supplement I).
This violation is applicable to Unit 2 only.

Pursuant to the provisions of 10 CFR 2.201, Georgia Power Company is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555 with a copy to the Regional Administrator, Region II, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice of Violation (Notice), within 30 days of the date of the letter transmitting this Notice. This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previously docketed correspondence, if the correspondence adequately addresses the required response. 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. Where good cause is shown, consideration will be given to extending the response time.

Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

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 19th day of January 1996

LIST OF ATTENDEES

Nuclear Regulatory Commission

S. Ebnetter, Regional Administrator, Region II (RII)
E. Merschhoff, Director, Division of Reactor Projects (DRP), RII
A. Gibson, Director, Division of Reactor Safety (DRS), RII
H. Christensen Chief, Maintenance Branch, DRS, RII
P. Skinner, Chief, Reactor Projects Branch 2, DRP, RII
T. Peebles, Chief, Operator Licensing Branch, DRS, RII
K. Jabbour, Project Manager, Office of Nuclear Reactor Regulation (NRR)
B. Holbrook, Senior Resident Inspector, Hatch, DRP, RII
A. Boland, Senior Enforcement Specialist, EICS, RII
R. Wright, Project Engineer, Reactor Projects Branch 2, DRP, RII
P. Steiner, Operator Licensing Examiner, DRS, RII
M. Satorius, Enforcement Specialist, Office of Enforcement^{*}
P. Madden, Fire Protection, NRR^{*}

Georgia Power Company

J. Woodard, Senior Vice President
J. Beckham, Jr., Vice President - Hatch Project
H. Sumner, Nuclear Plant General Manager
J. Heidt, Nuclear Engineering & Licensing Manager
D. Crowe, Licensing Service Manager
S. Brunson, Senior Engineer
J. Hammonds, Regulatory Compliance Supervisor
O. Vidal, Project Engineer

^{*} Participated via teleconference

NRC SLIDES

PREDECISIONAL ENFORCEMENT CONFERENCE AGENDA

HATCH

**DECEMBER 28, 1995, AT 10:00 A.M.
NRC REGION II OFFICE, ATLANTA, GEORGIA**

- I. **OPENING REMARKS AND INTRODUCTIONS**
Stewart D. Ebnetter
Regional Administrator
- II. **NRC ENFORCEMENT POLICY**
L. Watson, Director
Enforcement and Investigation Coordination Staff
- III. **SUMMARY OF THE ISSUES AND STATEMENT OF CONCERNS**
E. Merschoff, Director
Division of Reactor Projects
- IV. **LICENSEE PRESENTATION**
L. Sumner, General Manager Plant Hatch
Georgia Power Company
- V. **BREAK / NRC CAUCUS**
- VI. **NRC FOLLOWUP QUESTIONS**
- VII. **CLOSING REMARKS**
E. Merschoff

ISSUE TO BE DISCUSSED

License Condition 2.C.(3).(b) requires Georgia Power Company to implement and maintain in effect all provisions of the fire protection program, which is referenced in the Final Safety Analysis Report for the facility as contained in the Fire Hazards Analysis and Fire Protection Program.

Appendix E, of Units 1 and 2, Fire Hazard Analysis and Fire Protection Program, requires the capability to safely shutdown both units using the systems of pathway three Safe Shutdown Methodology in the event of a fire in area 24 which consists of the main control room, cable spreading room, and the computer room. Pathway three specified systems necessary to implement a safe shutdown in the event of a fire in area 24.

Section 10.1 of Units 1 and 2 Fire Hazard Analysis, Unit 2 Safe Shutdown Analysis, identifies specific equipment and required actions for safe shutdown of Unit 2 in the event of a fire in area 24.

Following maintenance and design change activities that occurred prior to November 2, 1995, the time of deficiency identification, some of the Unit 2 systems identified in Appendix E of Units 1 and 2 Fire Hazard Analysis and Fire Protection Program and equipment identified in Section 10.1, Unit 2 Safe Shutdown Analysis, could not be operated from the remote shutdown panel to safely shutdown the unit in the event of a fire in area 24. The following are examples of deficiencies for components that would not operate properly from the remote shutdown panel:

- 2E11F003B, Residual Heat Removal System Heat Exchanger Outlet Valve, would not open from the remote shutdown panel

- 2E11F017B, Residual Heat Removal System Low Pressure Coolant Injection Inboard Isolation Valve, would not cycle from the remote shutdown panel

- 2E11F004B, Residual Heat Removal Pump 2B Torus Suction Valve, would not open from the remote shutdown panel
- The open interlock between 2E11F004B, Residual Heat Removal Pump 2B Suction Valve, and 2E1F006B, Residual Heat Removal Shutdown Cooling Isolation Valve, was incorrectly installed allowing two valves to open simultaneously
- 2B31F023B, Reactor Water Recirculation Pump 2B Suction Isolation Valve, would not cycle from the remote shutdown panel
- 2E51F045 Reactor Core Isolation Cooling Steam Inlet Supply Valve, would not cycle from the remote shutdown panel
- 2E11F006A, RHR Shutdown Cooling Suction Valve, would not open from the remote shutdown panel

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.

REMOTE SHUTDOWN PANEL ISSUES

GPC Presentation

to the NRC Staff

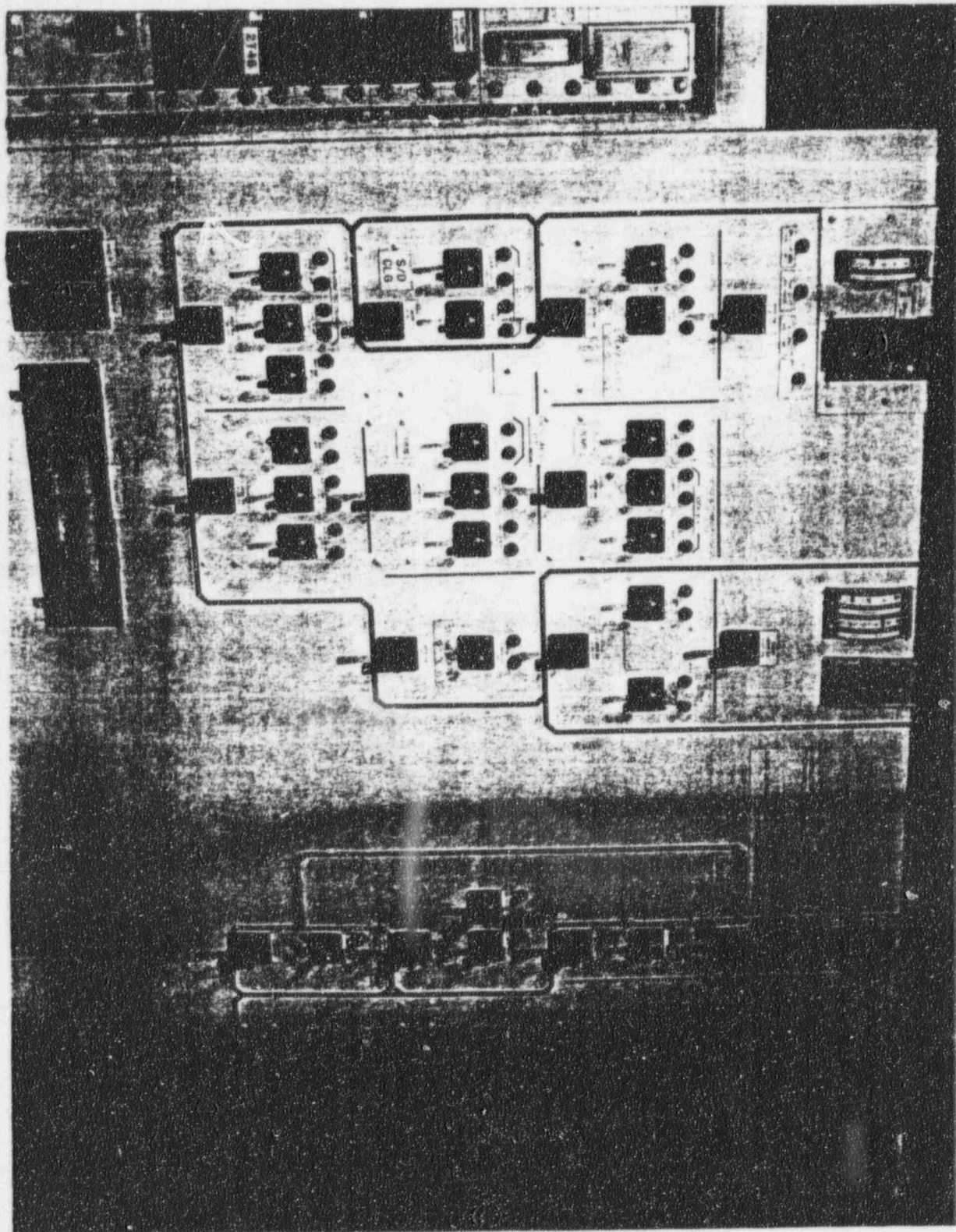
12/28/95

PURPOSE

- **Respond to NRC questions regarding recently identified conditions at the Unit 2 RSDP.**
- **Review each condition which existed prior to outage and evaluate effect on safe shutdown capability.**
- **Show that safe shutdown capability was maintained.**

AGENDA

- **Purpose**
- **Background**
- **History**
- **As Found Remote Shutdown Panel (RSDP)
Conditions Identified**
- **Root Causes**
- **Corrective Actions**
- **Broadness Review**
- **Conclusions**



BACKGROUND

RSDP DESIGN

- **Located on 130' elevation of Reactor Building.**
- **Provides limited control of select systems.**
- **Cannot shutdown unit solely from RSDP, other manual actions are required.**
- **Many automatic functions disabled when control is selected to RSDP.**

BACKGROUND

DESIGN BASIS

- **Class 9 events involving evacuation of the Main Control Room (MCR) due to fire or other conditions.**
- **10 CFR 50, App. R requires a dedicated safe shutdown system for areas such as MCR, Cable Spreading Room, and Computer Room. RSDP is part of this system.**

BACKGROUND (Cont'd)

SCENARIO ASSUMPTIONS

(Unit 2 Final Safety Analysis Report Section 7.5 and Unit 2 Fire Hazards Analysis, Appendix E, Section 9.5):

- 1. Plant is operating at, or less than, full power.**
- 2. Offsite power is not available.**
- 3. Loss of Coolant Accident (LOCA) does not occur.**
- 4. Plant personnel evacuate MCR & remain outside MCR during shutdown.**
- 5. Main Steam Isolation Valves (MSIVs) isolate.**

Additionally, Appendix R assumes the worst case single spurious actuation.

BACKGROUND (Cont'd)

OPERATOR ACTIONS BEFORE LEAVING MCR:

- **Shutdown reactor**
 - **Trip Main Turbine**
 - **Line up Feedwater system**
 - **Announce emergency over Public Address**
 - **Direct operators to RSDP**
 - **Distribute 2-way radios**
 - **Send STA to TSC to monitor SPDS**
- (Activate Emerg. Call List, Alert emergency)**

HISTORY

- **Implemented new Improved Tech Spec (ITS) 7/13/95.**
- **Testing from RSDP required every 18 months.**
- **SER allowed testing during twelfth refueling outage.**
- **Began testing 10/95 during outage.**
- **Problem with valve interlock led to reactor water inventory reduction event on 11/2/95.**
- **Other control problems were noted during subsequent testing at RSDP.**

EFFECT ON RSDP FUNCTIONS

FUNCTION: Short Term

LPCI

EFFECT

Functional

PRESSURE CONTROL

Functional

RCIC

Functional

FUNCTION: Long Term

Suppression Pool Cooling
(SPC)

1 Local Valve Operation

Shutdown Cooling (SDC)

3 Local Valve Operations

AS FOUND RSDP CONDITIONS

**Condition: Could not operate 2E11-F017B,
RHR LPCI/SDC Throttle Valve.**

Effect: No effect on LPCI or SPC.

Manual throttling required for SDC.

Cause: Design error implemented in 1992.

Corrective Actions: Rewired circuit in MCC.

UNIT 2 AS FOUND RSDP CONDITIONS

Condition: Could not open 2E11-F006B, RHR-SDC Suction Valve.

Effect: Manually open valve when SDC required if problem existed and could not be resolved.

Cause: Interlock apparently not satisfied, F024B probably not fully closed.

Corrective Action: No physical work required, reemphasized operating practice for closing throttle valves.

UNIT 2 AS FOUND RSDP CONDITIONS

Condition: Could not open 2E11-F004B, RHR LPCI Suction Valve. Could close valve.

Effect: None. In required position for LPCI/SPC, could be closed for SDC.

Cause: Limit switch for valve 2E11-F006B not setup properly, interlock in effect.

Corrective Actions: Corrected limit switch setup.

UNIT 2 AS FOUND RSDP CONDITIONS

Condition: Could not open 2E11-F006A, RHR-SDC Suction Valve, valve could be closed.

Effect: None. Valve normally closed, remains closed for LPCI/SPC/SDC.

Cause: Limit switch contact arm out of adjustment on F004A.

Corrective Actions: Adjusted contact arm.

UNIT 2 AS FOUND RSDP CONDITIONS

Condition: Could not open 2E11-F003B, RHR Heat Exchanger Outlet Valve.

Effect: For SDC/SPC, close valve at RSDP; then, manually open valve.

Cause: Dirty contacts or misaligned wire lug on transfer switch.

Corrective Actions: Cleaned contacts, repaired lug.

UNIT 2 AS FOUND RSDP CONDITIONS

**Condition: Could not operate 2B31-F023B,
Recirculation System Suction Valve.**

**Effect: None. GE analysis shows that floodup
(for LPCI) and cooling (for SDC) are
adequate with valve open.**

Cause: Loose connection on transfer switch.

Corrective Actions: Repaired connection.

UNIT 2 AS FOUND RSDP CONDITIONS

Condition: No “closed” indication for 2E11-F008, RHR SDC Isolation Valve, “open” indication worked.

Effect: None. Valve operation not affected, position indication not vital.

Cause: Dirty transfer switch contacts.

Corrective Actions: Cleaned contacts.

UNIT 2 AS FOUND RSDP CONDITIONS

Condition: No “closed” indication for 2E51-F019, RCIC Minimum Flow Valve.

Effect: None. Procedure directs operator to open valve then close when flow is obtained.

Cause: Misaligned light socket.

Corrective Actions: Repaired light socket.

UNIT 2 AS FOUND RSDP CONDITIONS

Condition: Double indication on Residual Heat Removal Service Water Pump 2E11-C001D.

Effect: None. Procedure allows operator to start "1B" or "1D" pump. Only one pump is needed.

Cause: Misaligned wire lug interfered with transfer switch operation or dirty contacts.

Corrective Actions: Cleaned contacts and repaired wire lug.

UNIT 2 AS FOUND RSDP CONDITIONS

Condition: “RSDP Transfer in Emergency Position” annunciator will not seal-in for the Reactor Core Isolation Cooling (RCIC) Barometric Condenser.

Effect: None. This is a MCR annunciator, MCR would be evacuated.

Cause: Misaligned wire lug on transfer switch.

Corrective Actions: Repaired wire lug.

Unit 2 AS FOUND RSDP CONDITIONS

**Condition: “RSDP Transfer in Emergency Position”
annunciator will not seal-in for the RHR SDC
Suction Valve and Safety Relief Valves**

**Affect: None. This is a MCR annunciator, MCR
would be evacuated.**

Cause: Misaligned wire lug on transfer switch.

Corrective Actions: Repaired wire lug.

EFFECT ON RSDP FUNCTIONS

FUNCTION: Short Term

LPCI

PRESSURE CONTROL

RCIC

EFFECT

Functional

Functional

Functional

FUNCTION: Long Term

SPC

1 Local Valve Operation

SDC

3 Local Valve Operations

ROOT CAUSES

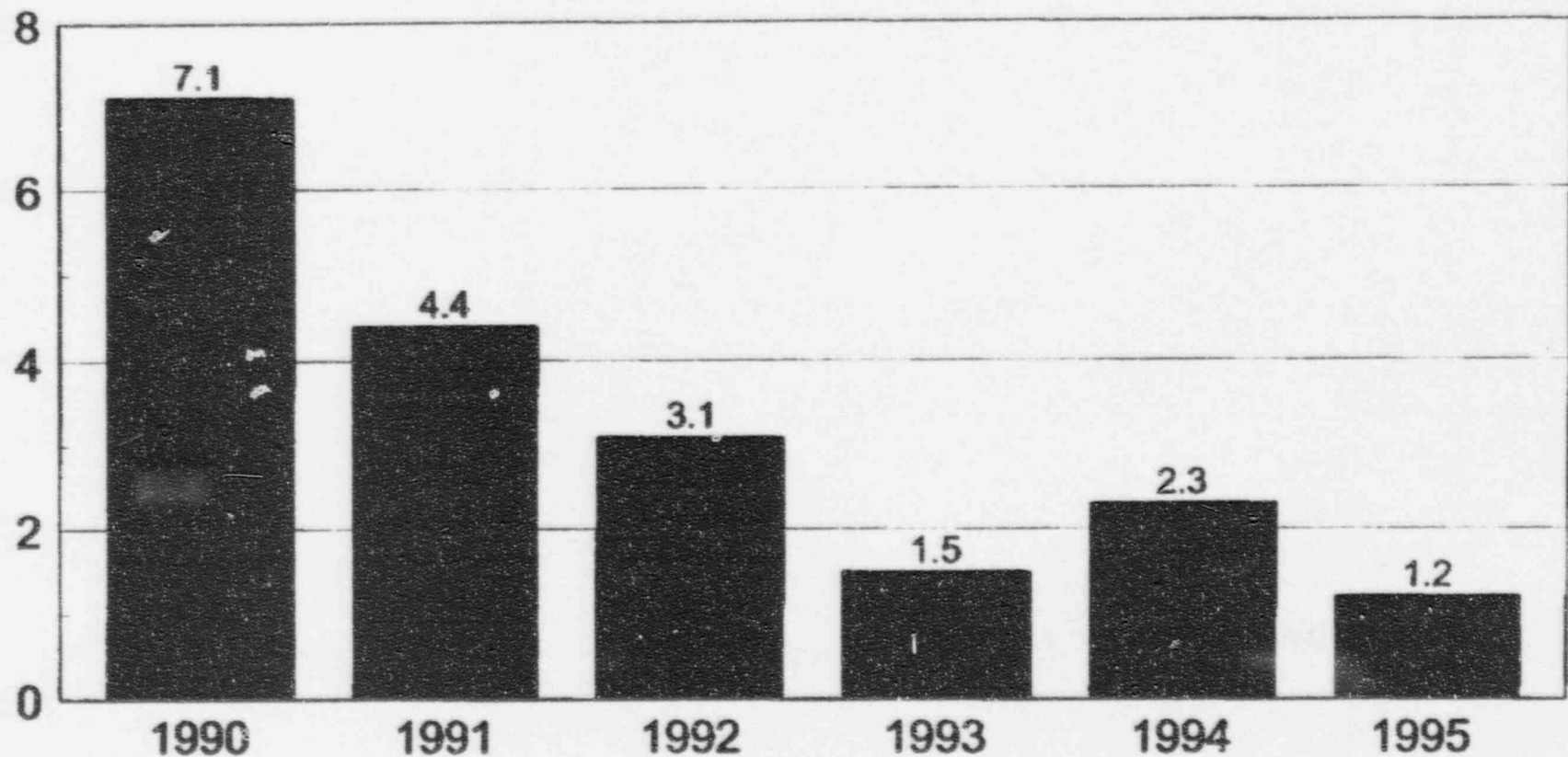
- **Lack of routine testing of the RSDP transfer and control switches.**
- **RSDP not routinely used during operation.**
- **DCR 87-150 landed one wire incorrectly, Functional Test did not address RSDP.**

DESIGN CONTROL ISSUES

- **Reviewed five Unit 1 Design Change Requests,**
- **No design problems found.**
- **Further, logic testing on Unit 1 found no design related problems.**
- **Reviewed three Unit 2 Design Change Requests.**
- **Only one design error was identified.**
- **Logic testing on Unit 2 found no other design related errors.**
- **Engineering Quality Improvement Program (EQIP) in effect since 1990.**

E. I. Hatch Nuclear Plant

Engineering Quality Improvement Program Design and Implementation Related Errors per DCR



CORRECTIVE ACTIONS

- **Implemented corrective actions to address causes for individual as found conditions.**
- **Completed Improved Technical Specifications surveillances on Unit 2 RSDP.**
- **Performed logic testing on Unit 1 RSDP. (One problem found with 'G' SRV).**
- **Reemphasized functional testing requirements for DCRs indirectly affecting the RSDP.**
- **Performed broadness review for similar situations.**

BROADNESS REVIEW

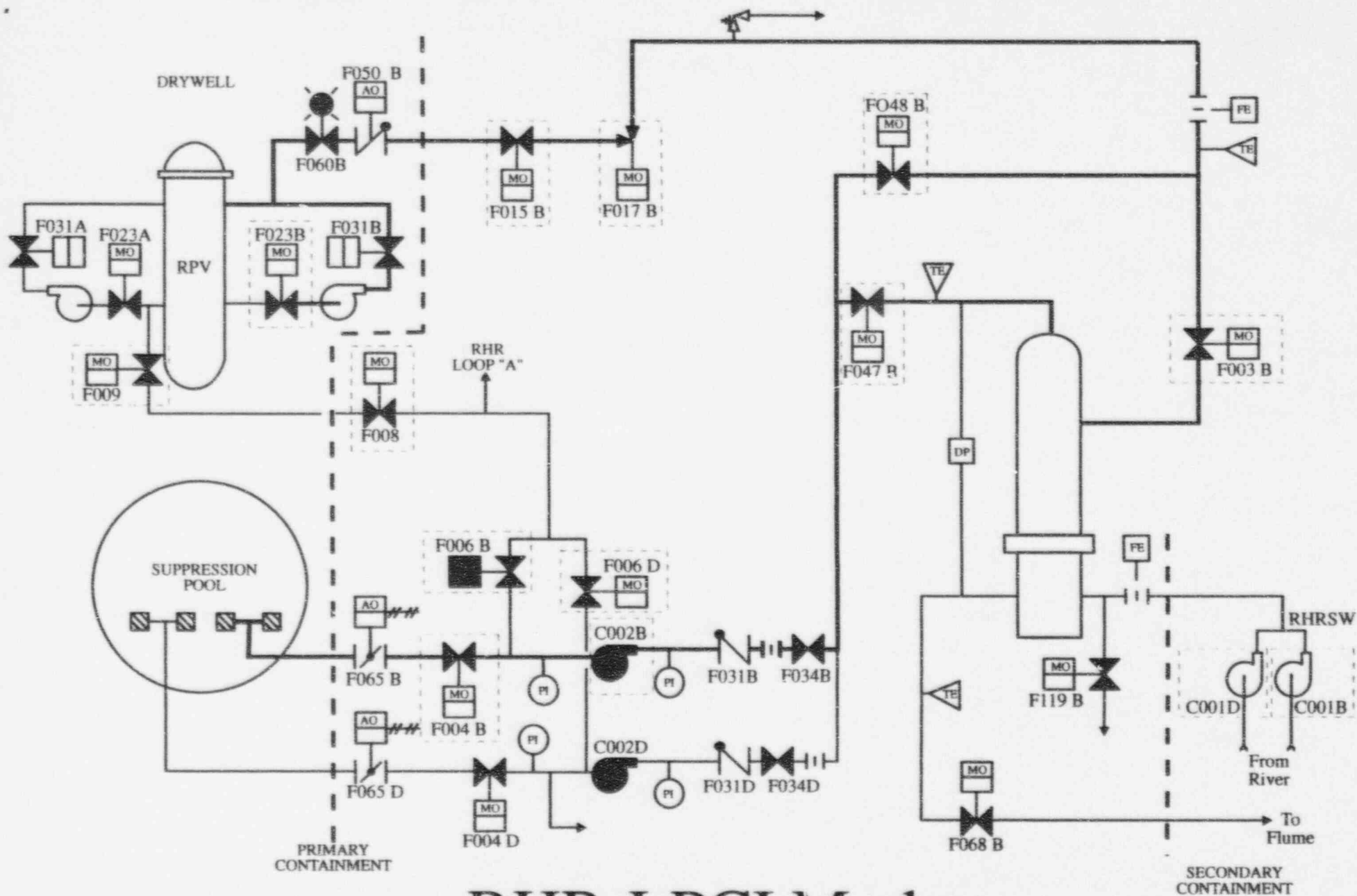
- **Review performed of systems not in the Tech Specs and/or not normally operated. Among those reviewed:**
 - **Unit 1 RSDP**
 - **Alternate Rod Insertion**
 - **ECCS Keep Fill**
 - **Diesel Building Ventilation System**
 - **River Intake Structure Ventilation System**
 - **Post Accident Sampling System**
 - **Meteorological Instrumentation**

BROADNESS REVIEW (Cont'd)

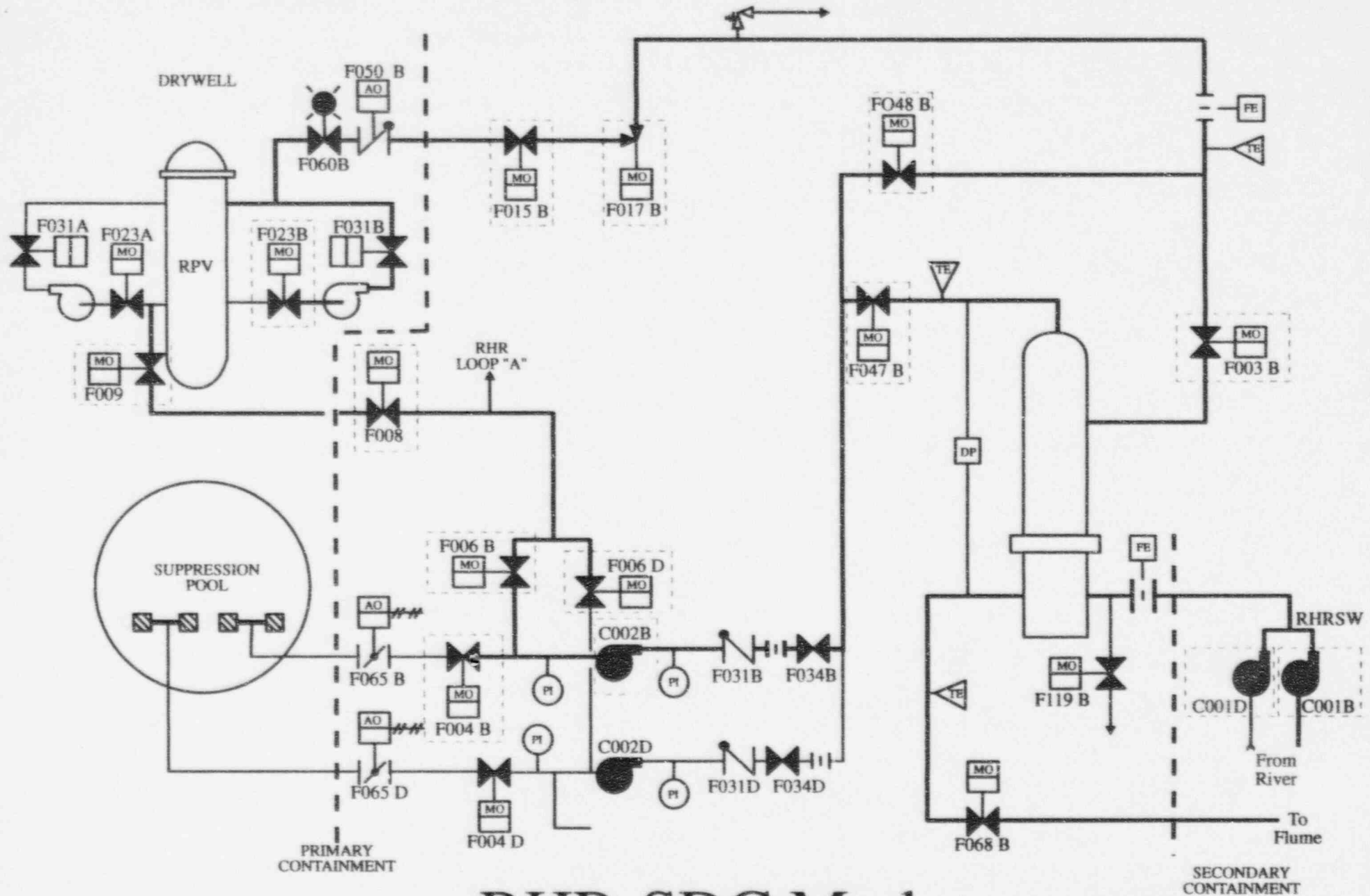
- **Systems determined to have adequate attention to ensure operability as a result of surveillances, operability tests, normal monitoring, and/or calibrations.**
- **Also, many of these systems are within the scope of the maintenance rule and have performance criteria associated with them ensuring their reliability.**

CONCLUSIONS

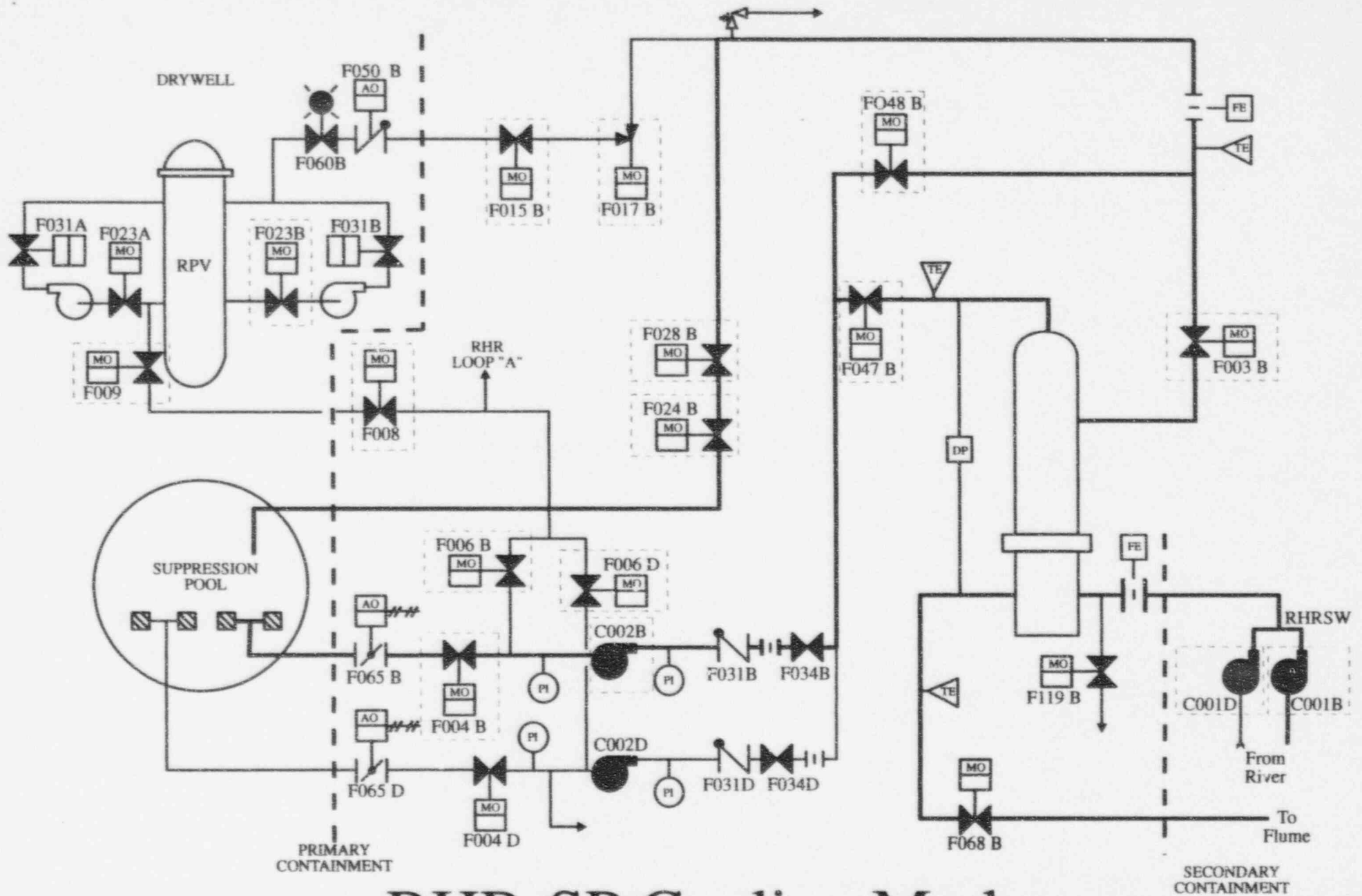
- **Breadness review revealed no maintenance or testing programmatic problems regarding other systems not in Tech. Specs.**
- **Individually, as found conditions on Unit 2 RSDP had Minimal Safety Significance.**
- **No programmatic problems with design control.**
- **Collectively, the plant could have been safely shutdown outside the MCR as required by the FSAR and the FHA:**
 - **Unit 2 - Using the RSDP and a few additional manual actions with as found conditions present.**
 - **Unit 1 - Using the RSDP.**



**RHR-LPCI Mode
(From RSDP)**



**RHR-SDC Mode
(From RSDP)**



**RHR-SP Cooling Mode
(From RSDP)**

ERRATA SHEET

<u>Page</u>	<u>Line</u>	<u>Inspection Report Reads</u>	<u>Corrected Report Reads</u>
13	11	design modification review	post maintenance testing

The inspectors reviewed procedure 31RS-OPS-001-2S: Shutdown From Outside Control Room, Revisions 4 and 5 and verified the procedures contained actions to safely shutdown the units using pathway three. The procedure contained sections providing guidance for operator immediate and subsequent actions. The procedure also contained 8 attachments which gave operators directions on performing various activities outside the CR and at the RSDP. Among these attachments were directions for the proper lineup and operations of RHR LPCI, RHR SDC, RHR Suppression Pool Cooling, and RCIC.

The inspectors concluded that the licensee's failure to adequately conduct post maintenance testing, implementation and testing along with a lack of strict administrative controls led to a significant uncontrolled Unit 2 reactor vessel draindown. The inspectors also concluded that inadequacies in the plant maintenance and modification reviews and control of testing activities of safety related components existed and contributed to the problem. These deficiencies are examples of significant concerns.

The special NRC team inspection initiated on November 3, to review the circumstances involved with the reactor draindown event, identified weaknesses in several areas. The weaknesses are documented in IR 50-321,366/95-23 and include the following: poor planning and lack of guidance, inadequate control and execution, lack of supervision, and personnel performance issues.

The inspectors concluded, based on their review and observations of licensee actions, that tests conducted for the Unit 1 RSDPs were satisfactory. The one deficiency identified, involving a blown fuse for valve 1B21F013G, did not present any significant difficulties for shutting the unit down from the RSDPs.

The inspectors also concluded from their reviews and a review of the licensee's activities that the operation of the RCIC system, SDC, LPCI, and Suppression Pool Cooling mode of RHR could not be performed from the Unit 2 RSDP as directed by section 10.1 of the Units 1 and 2 FHA/FPP or procedure 31RS-OPS-001-2S.

In addition, the inspectors concluded from their review that an orderly shutdown of the Unit 2 reactor, in the event of a fire in the main control room, cable spreading room and computer room, could not be performed from the Unit 2 RSDP as described in the Unit 1 and 2 FHA/FPP, Section 10.1 and Unit 2 FSAR, Section 7.5.1.4. These deficiencies are identified as apparent violation EEI 50-366/95-26-01: Inability to Safely Shutdown Unit 2 from the Remote Shutdown Panel in the Event of a Fire in the Main Control Room.

One apparent violation was identified.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2800
ATLANTA, GEORGIA 30323-0188

December 14, 1995

STEVE T - TEL, SIM H.
OZZIE
STWEB, H. B. D. / A. TUNN

EA 95-263

Georgia Power Company
ATTN: Mr. J. T. Beckham, Jr.
Vice President, Plant Hatch
Nuclear Operations
P.O. Box 1295
Birmingham, AL 35201

Post-It™ brand fax transmittal memo 7571 # of pages *

To	STEVE T	From	DDW C
Co.		Co.	
Dept.		Phone #	
Fax #		Fax #	

SUBJECT: NRC INSPECTION REPORT NOS. 50-321/95-26 AND 50-366/95-26

Gentlemen:

This refers to the inspection conducted by B. Holbrook of this office on November 12 - December 2, 1995. The inspection included a review of activities authorized for your Hatch facility. At the conclusion of the inspection, the findings were discussed with those members of your staff identified in the enclosed report.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observation of activities in progress. The purpose of the inspection was to determine whether activities authorized by the license were conducted safely and in accordance with NRC requirements.

Based on the results of this inspection, IR 50-321,366/95-26, an apparent violation was identified and is being considered for escalated enforcement action in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600. A number of deficiencies were identified that affected the operation of Residual Heat Removal System, Reactor Core Isolation Cooling, and Reactor Water Recirculating System components from the Unit 2 remote shutdown panel. This equipment could not be operated from the Unit 2 remote shutdown panel to mitigate the consequences of a fire in the main control room, cable spreading room and computer room. Accordingly, no Notice of Violation is presently being issued for these inspection findings. In addition, please be advised that the number and characterization of the apparent violation described in the enclosed inspection report may change as a result of further NRC review.

A predecisional enforcement conference to discuss this apparent violation has been scheduled for December 28, 1995. This is a closed meeting. The decision to hold a predecisional enforcement conference does not mean that the NRC has determined that a violation has occurred or that enforcement action will be taken. This conference is being held to obtain information to enable the NRC to make an enforcement decision, such as a common understanding of the facts, root causes, missed opportunities to identify the apparent violation sooner,

GPC

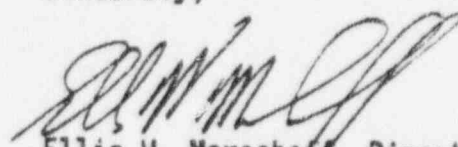
2

corrective actions, significance of the issues and the need for lasting and effective corrective action. In addition, this is an opportunity for you to point out any errors in our inspection report and for you to provide any information concerning your perspectives on 1) the severity of the apparent violation, 2) the application of the factors that the NRC considers when it determines the amount of a civil penalty that may be assessed in accordance with Section VI.B.2 of the Enforcement Policy, and 3) any other application of the Enforcement policy to this case, including the exercise of discretion in accordance with Section VII.

You will be advised by separate correspondence of the results of our deliberations on this matter. No response regarding the apparent violation is required at this time.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

Sincerely,



Ellis W. Merschoff, Director
Division of Reactor Projects

Docket Nos.: 50-321 and 50-366
License Nos.: DPR-57 and NPF-5

Enclosure: NRC Inspection Report

cc w/encls:
J. D. Woodard
Senior Vice President
Georgia Power Company
Nuclear Operations
P. O. Box 1295
Birmingham, AL 35201

H. L. Sumner, Jr.
General Manager, Plant Hatch
Georgia Power Company
Route 1, Box 439
Baxley, GA 31513

D. M. Crowe
Manager Licensing - Hatch
Georgia Power Company
P. O. Box 1295
Birmingham, AL 35201

cc w/encls: (See page 3)

cc w/encls: Continued
Ernest L. Blake, Esq.
Shaw, Pittman, Potts and
Trowbridge
2300 N Street, NW

Charles H. Badger
Office of Planning and Budget
Room 610
270 Washington Street, SW
Atlanta, GA 30334

Harold Reheis, Director
Department of Natural Resources
205 Butler Street, SE, Suite 1252
Atlanta, GA 30334

Thomas Hill, Manager
Radioactive Materials Program
Department of Natural Resources
4244 International Parkway
Suite 114
Atlanta, GA 30354

Chairman
Appling County Commissioners
County Courthouse
Baxley, GA 31513

Dan H. Smith
Vice President
Power Supply Operations
Oglethorpe Power Corporation
2100 E. Exchange Place
Tucker, GA 30085-1349

Charles A. Patrizia, Esq.
Paul, Hastings, Janofsky & Walker
12th Floor
1050 Connecticut Avenue, NW
Washington, D. C. 20036



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0188

Report Nos.: 50-321/95-26 and 50-366/95-26

Licensee: Georgia Power Company
P.O. Box 1295
Birmingham, AL 35201

Docket Nos.: 50-321 and 50-366 License Nos.: DPR-57 and NPF-5

Facility Name: Hatch 1 and 2

Inspection Conducted: November 12 - December 2, 1995

Inspectors: For R. W. Wright 12/13/95
Bob L. Holbrook, Sr. Resident Inspector Date Signed

For R. W. Wright 12/13/95
Edward F. Christnot, Resident Inspector Date Signed

Accompanying Inspector: James A. Canady

Approved by: Pierce H. Skinner 12/13/95
Pierce H. Skinner, Chief, Date Signed
Project Branch 2
Division of Reactor Projects

SUMMARY

Scope: This routine resident inspection involved inspection in the following areas: plant operations, maintenance, engineering, plant support, and inspection of open items. The inspectors conducted backshift inspections on the following dates: November 12, 19, 24, 25, and December 2, 1995.

Results: One apparent violation and one Inspector Followup Item were identified:

Operations:

The apparent violation was for deficiencies that affected operation of components associated with the residual heat removal system, reactor core isolation cooling system, and reactor water recirculation system from the unit 2 remote shutdown panel. The components could not be operated from the unit 2 remote shutdown

9512270044 1799

panel to mitigate the consequences of a fire in the main control room, cable spreading room and computer room (paragraph 5). The inspectors concluded that the power uprate tests were performed in a controlled manner, using approved procedures with adequate supervision and technical oversight. Operations and engineering personnel performance during the uprate testing was excellent (paragraph 2.b).

The inspectors concluded the control rod movement activities on both units were well controlled. Operators conducted pre-activity briefings and used good communications. The activities were well supervised and included very good technical oversight by the Shift Technical Advisors (paragraph 2.c).

Maintenance:

Unresolved item 50-321,364/95-26-02: valve failures involving stem couplings and packing configurations was identified. Maintenance personnel reviewed documentation, inspected and repaired several valves during the unit 2 refueling outage due to these deficiencies. The inspectors will continue to review licensees root cause determination and corrective actions (paragraph 3.b).

The inspectors concluded that personnel consistently used procedures and exhibited strong communication practices during the performance of the observed surveillances and work activities. Deficiencies identified for cold weather preparation were immediately corrected (paragraphs 3.c and 3.d).

Engineering:

The inspectors concluded that engineering and maintenance personnel took prompt actions in conducting troubleshooting activities for the three recent unit 1 reactor core isolation cooling system failures. The inspectors also concluded that, even though the root causes of the problems were not identified, the actions taken to determine the causes were reasonable (paragraph 4.d).

Plant Support:

The inspectors monitored and observed routine plant support activities. The inspectors concluded that security access controls were satisfactorily maintained; radiological control area boundaries were properly posted; high radiation areas were appropriately identified; and fire protection valves monitored were in their proper position (paragraph 5).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. Anderson, Unit Superintendent
- D. Crowe, Hatch Licensing Manager, Southern Nuclear
- *G. Barker, Maintenance Supervisor
- D. Bennett, Chemistry Superintendent
- J. Betsill, Unit 2 Operations Superintendent
- C. Coggins, Engineering Support Manager
- *D. Davis, Plant Administration Manager
- D. Dees, Operations Shift Supervisor
- P. Fornel, Maintenance Manager
- *O. Fraser, SAER Supervisor
- E. Gibson, Reactor Engineering Supervisor
- R. Godby, Maintenance Superintendent
- *J. Hammonds, Regulatory Compliance Supervisor
- W. Kirkley, Health Physics and Chemistry Manager
- *J. Lewis, Training and Emergency Preparedness Manager
- R. McGinn, Security Operations Supervisor
- T. Metzler, Acting Manager Nuclear Safety and Compliance
- *C. Moore, Assistant General Manager - Operations
- *J. Payne, Senior Engineer
- D. Powers, Plant Operator
- D. Read, Assistant General Manager - Plant Support
- R. Reddick, Emergency Preparedness Coordinator
- *P. Roberts, Outages and Planning Manager
- K. Robuck, Manager, Modifications and Maintenance Support
- *V. Shaw, Engineering Supervisor
- *D. Smith, Chemistry Superintendent
- H. Sumner, General Manager - Nuclear Plant
- *J. Thompson, Nuclear Security Manager
- *S. Tipps, Nuclear Safety and Compliance Manager
- P. Wells, Operations Manager
- *A. Wheeler, Acting Manager, Modifications and Maintenance Support

Other licensee employees contacted included technicians, supervisors, operators, maintenance personnel mechanics, security force members and staff personnel.

NRC Resident Inspectors

- *B. Holbrook
- *E. Christnot

Accompanying Inspector

- *J. Canady

- * Attended exit interview

Acronyms and abbreviations used throughout this report are listed in the last paragraph of this report.

2. Plant Operations (71707) (71711) (92901)

a. Operations Status and Observations

Unit 1 operated at 100% RTP during this report period with the exception of scheduled power reductions for routine testing.

Unit 2 began the report period in Cold Shutdown at the end of the 12th refueling outage. Unit startup began November 18. The unit was at 95% RTP at the end of the report period with power uprate testing still in progress.

Activities within the control room were routinely monitored. Observations included control room manning, access control, operator professionalism and attentiveness, and adherence to procedures. Instrument readings, recorder traces, annunciator alarms, operability of nuclear instrumentation and reactor protection system channels, availability of power sources, and operability of the SPDS were monitored. Control Room observations also included ECCS system lineups, primary and secondary containment integrity, reactor mode switch position, scram discharge volume valve positions, and rod movement controls.

Plant tours were taken throughout the reporting period on a routine basis. The areas toured included the following:

Reactor Building	Diesel Generator Building
Fire Pump Building	Intake Structure
Station Yard Zone	Turbine Building
Refuel Floor	Radwaste Building

Observed activities were conducted as required by the licensee's procedures. The complement of licensed personnel on each shift met or exceeded the minimum required by TS. Observed operating parameters were verified to be within TS limits.

b. Unit 2 Startup and Power Uprate Testing

The inspectors observed and reviewed portions of the Unit 2 Start-up and the Power Uprate Tests. The power uprate allowed reactor power level to be increased from 2436 MWT to 2558 MWT. The startup utilized the plant startup procedures and surveillances. The power uprate tests used a series of special purpose procedures. These test procedures were used to test components to verify performance for the increased unit power.

As part of the power uprate testing the inspectors reviewed the following special purpose procedures and observed part of the testing activities:

17SP-080895-PH-1-2S: DCR 90-164 Dynamic FT of the RFPT Controls
17SP-071895-PT-1-2S: EHC Pressure Regulator Test
42SP-080795-OM-2-2S: Unit 2 - Simplified Heat Rate Test
Instruction for Test Performance

The inspectors concluded that the unit startup and power uprate tests were performed in a controlled manner, using approved procedures with adequate supervision and technical oversight. Operations and engineering personnel performance during the uprate testing was excellent.

c. Control Room Activities

The inspectors monitored overall control room activities during the Unit 2 startup and testing activities. The inspectors specifically observed operator activities involved with control rod movement. The operator performing control rod movements and other control room personnel were constantly aware of the control rod system status, the rods to be manipulated, and the positioning of the individual control rods. The inspectors observed similar activities for Unit 1 on November 24, during the rod pattern adjustment. The inspectors conducted a review of some TS surveillances required for unit startup. The inspectors verified the surveillances were completed and current for unit conditions. The inspectors observed operator attention to detail was excellent. The inspectors concluded the control rod movement activities were well controlled. Operators conducted pre-activity briefings and used good communications. The activities were well supervised and included very good technical oversight by the STAs.

No violations or deviations were identified.

3. Maintenance Activities (62703) (61726) (71714) (92902)

a. Maintenance Work Activities

Maintenance activities were observed and reviewed during the reporting period to verify that work was performed by qualified personnel and that procedures adequately described work that was not within the skill of the trade. Activities, procedures, and work requests were examined to verify authorization to begin work, provisions for fire hazards, cleanliness, exposure control, proper return of equipment to service, and that limiting conditions for operation were met.

The following maintenance activities were reviewed and witnessed in whole or in part:

1. MWO 2-95-3618 Repairs to LPCI Valve 2E11F015B Ball Stem/Valve Stem Coupler
2. MWO 2-95-3639 Repairs to LPCI Valve 2E11F015A Ball Stem/Valve Stem Coupler
3. MWOs 1-95-4091 Check and Adjustment to RHR Valve thru 4095 LS for F004A, F004C, F006A and F006B
4. MWO 1-95-2466 Trouble shoot RCIC for Low Oil Level and Low Pump Discharge Pressure
5. MWO 1-95-3751 Investigate Cause of RCIC Turbine Trip
6. MWO 2-95-3370 Repair Galled Valve Stem on 2E11-F015B

The inspectors observed that personnel consistently used procedures and exhibited strong communication practices. The inspectors did not identify any specific concerns.

b. Valve Failures Involving Stem Couplings and Packing Configurations.

The inspectors observed and reviewed repair activity documentation for maintenance performed on various Unit 2 valves during the current refueling outage. These activities included repairs to a damaged valve stem and ball stem to valve stem couplings on two Unit 2 LPCI valves. The licensee conducted repairs for possible unacceptable valve packing configurations on ten additional valves. All items were repaired prior to unit startup. At the end of the report period, the licensee was in the process of finalizing reports on the extent of the deficiencies and evaluating options for corrective actions. This item is identified as URI 50-321,366/95-26-02: Valve Failures Involving Stem Couplings and Packing Configurations pending the inspectors review of the licensees root cause determination and corrective actions for these deficiencies.

c. Surveillance Observations

Surveillance tests were reviewed by the inspectors to verify procedural and performance adequacy. The completed tests reviewed were examined for necessary test prerequisites, instructions, acceptance criteria, technical content, authorization to begin work, data collection, independent verification where required, handling of deficiencies noted, and review of completed work. Witnessed tests were inspected to determine that procedures were available, test equipment was calibrated, prerequisites were met, tests were

conducted according to procedure, test results were acceptable and system restoration was completed.

The following surveillances were reviewed and witnessed in whole or in part:

1. 34SV-B21-004-2S: Safety Relief Valve Operability
2. 42SV-C11-003-0S: CR Scram Time Testing
3. 34SV-T48-002-2S: Drywell Vacuum Breaker Operability
4. 34SV-E41-002-1S: HPCI Pump Operability
5. 34SV-E51-002-1S: RCIC Pump Operability

The inspectors observed that personnel consistently used procedures, exhibited strong communication practices, and were proficient with the tasks. No deficiencies were identified.

d. Cold Weather Preparations

The inspectors reviewed and observed the licensee's activities involved with cold weather protection of plant equipment. The activities were primarily controlled by procedures 52PM-MEL-005-0S and DI-OPS-36-0989N, Cold Weather checks. The inspectors conducted tours of selected plant areas to review cold weather preparations. One deficiency was noted in the EDG building involving missing insulation. Maintenance personnel replaced the insulation to correct the problem. The inspectors discussed uninsulated PSW piping to the 1B EDG, located in the hallway outside the EDG rooms, with engineering personnel. Engineering personnel stated they would review the insulation requirements for corrective actions. Deficiencies identified for cold weather preparation were immediately corrected.

One URI was identified.

4. Engineering Activities (37551) (92903) (37828)

a. EDG Switchgear LOSP Seal In - Unit 2

A licensee identified design issue was documented in IR 50-321,366/95-18 involving the EDG auto/manual voltage control. The inspector monitored and reviewed the implementation of DCR 95-049, Install Auto Voltage Regulator Seal In. The DCR, as implemented and tested, used contacts associated with the EDG lock-out logic in parallel with the auto/manual control switch. With the occurrence of a LOSP the EDGs will power their respective boards and the lock-out

logic will automatically shift the voltage regulators to the automatic mode. Part of the lock-out logic locks out the normal and alternate power supplies while the EDG is supplying the switchgear.

The inspectors concluded the DCR was installed and tested using appropriate procedures. Management oversight was evident.

b. PSW Pressure to the 1B EDG.

During periodic walkdowns of the EDG and switchgear rooms the inspectors observed the PSW pressure indicator at the EDG control panel. On two occasions the pressure in the 1B EDG PSW system indicated approximately 20 psig higher than the pressurization system. The system has a pressurization connection from the 2C EDG PSW system. The 1B EDG has a dedicated PSW pump which operates when the EDG is started or is lined up manually by the operators. When the EDG is stopped the pump stops and the discharge valve from the three EDG coolers close. The pump has a check valve on the discharge and the pressurization connection also has a check valve. With the check valves closed and the PSW discharge valve closed the water in the EDG cooler becomes bottled up. The inspector concluded that as the bottled up water heats up from the EDG as well as the EDG room ambient heat it may pressurize the coolers and contributed to a previous leak. The cooler on EDG 1B was recently replaced due to a small leak. The inspectors discussed this observation with licensee maintenance and engineering personnel. Engineering and maintenance will evaluate the effect of heat up on an isolated system.

c. Modifications (37700)

The inspectors continued to review and observe the ongoing modification activities. The inspectors reviewed DCR packages and observed required testing activities for the following DCRs:

DCR	DESCRIPTION
92-164	RFTP Controls Converted to EHC
94-035	Power Uprate (Transmitters/Scales)
94-036	Power Uprate (Setpoint Changes)

The inspectors did not identify any specific concerns during the reviews and observations. The inspectors concluded that post modification testing of these three DCRs was appropriate.

d. Unit 1 RCIC Problems

Unit 1 RCIC was declared inoperable on September 26, due to being unable to establish an adequate test pressure while performing procedure 34SV-E51-002-1S: RCIC Pump Operability, Revision 15. The

inboard and outboard pump bearings had low oil levels after the startup of the system. Operations stopped the pump and requested troubleshooting by maintenance and engineering. Engineering suspected that valve 1E51-F022, Test Line To CST Valve, could be blocking system flow resulting in a low flow condition. Maintenance investigated and found no blockage or problems with the valve. Engineering recommended inspecting the Test Line to CST Check Valve, 1E51-F023. An inspection of this valve by maintenance also indicated no problems.

Maintenance found the oil levels to be low by a small amount but saw no signs of leakage. Oil was added to the inboard and outboard pump bearings.

Engineering recommended that operations run the pump for further observations. The Unit 1 RCIC pump operability test was satisfactorily performed September 27. The cause for the initial inadequate test pressure and low oil levels could not be identified.

On October 26, while performing procedure 34SV-E51-002-1S, the Unit 1 RCIC tripped. Operations suspected electrical overspeed caused the trip. I&C checked the electrical overspeed circuitry and found no problems. The trip throttle valve was also inspected and no problems were found. The RCIC pump operability test was satisfactorily performed the following day. The cause for the RCIC turbine trip could not be determined.

On November 8, operations receiving a 125/250 Battery Ground Fault Annunciator. They also smelled a burnt odor. A review of the control boards revealed that the RCIC flow controller had failed upscale. RCIC was declared inoperable due to the failure. The ground cleared after the controller failed upscale. I&C troubleshooting revealed that an EMI filter or an SPDS module may have been responsible for the ground. These components were replaced and the RCIC system was monitored. There have been no indications of a ground on the system since the replacement of these components.

The inspectors discussed the recent RCIC problems with engineering personnel. RCIC performance and availability was generally excellent. Engineering indicated that it could be speculated as to the cause of each problem but the actual root causes were not determined. The system engineer stated he felt the RCIC problems were isolated occurrences.

The inspectors concluded that engineering and maintenance personnel took prompt actions in conducting troubleshooting activities at operations request. The inspectors also concluded that, even though the root causes of at least two of the problems were not identified, the actions taken to determine the causes were reasonable.

No violations or deviations were identified.

5. Plant Support Activities (71750)

Security, health physics and other plant support activities were routinely observed and monitored during the report period. These activities included plant security access controls, locked high radiation area doors, proper radiological posting, personnel frisking upon exiting the RCA, and status of various FP equipment. The observations and monitoring were performed in conjunction with the conduct of other inspection activities. The inspectors did not identify any significant deficiencies.

The inspectors concluded that security access controls were satisfactorily maintained; RCA boundaries were properly posted; high radiation areas were appropriately identified; and FP valves monitored were in their proper position.

6. Inspection of Open Item (92901) (92902) (92903)

The following item was reviewed using licensee reports, inspections, record reviews, and discussions with licensee personnel, as appropriate:

(CLOSED) URI 50-321,366/95-23-02: Problems with Equipment Operability from the Remote Shutdown Panel. This URI was opened on November 11, 1995, following a significant reactor vessel drain down event during maintenance trouble shooting activities from the Unit 2 RSDP. A special NRC inspection was initiated on November 3, to review the circumstances involved with the drain down and review licensee actions. Some of the initial problems are documented in IR 50-321,366/95-23.

As part of the licensee's corrective actions a detailed review of past maintenance and DCR work that affected the RSDP or equipment operated from the RSDP for Unit 1 and Unit 2 was conducted. Comprehensive testing of components operated from the Unit 2 RSDP was completed prior to Unit startup. Several deficiencies were identified. Logic System Functional Tests of systems and components from the Unit 1 RSDP was completed on December 5.

a. Problems Identified On The RSDPs

The Unit 2 RHR Heat Exchanger Outlet Valve, 2E11F003B, would not open from the RSDP. The normal position of this valve is open. The valve would close from the RSDP, ~~when opened from the CR.~~ The pre-lineup of the systems from the RSDP requires this valve to be closed if the SP temperature was less than 100°F. Once closed, the failure would prevent placing SP cooling and SDC in service, in accordance with procedure 3IRS-OPS-001-2S: Shutdown from Outside Control Room, Revision 4. ~~The RSDP valve control switch open contact was identified as the cause of the problem. Maintenance corrected the problem by repairing the control switch's open contact.~~

Using the controls at the RSDP.

A bent wire lug interfering with transfer switch contact operation or dirty contacts was the cause of the condition. The wire lug was re-aligned and the contacts were cleaned.

- The Reactor Recirculation Water Pump Suction Valve, 2B31F023B, would not operate from the RSDP. The valve is normally in the open position. The inability to close the valve from the RSDP would prevent LPCI and SDC operations from the RSDP in accordance with procedure 3IRS-OPS-001-2S. A loose wire on the emergency transfer switch was identified as the cause of the problem. The problem was corrected by repairing the loose wire.

incorrectly required a wiring configuration that would preclude operation of the valve when being controlled from the RSDP.

- The RHR Outboard Injection Valve, 2E11F017B would not operate from the RSDP. A design change implemented during the Unit 2 fall 1992, refueling outage ~~did not require installation of wiring to allow auxiliary relays located in an MCC to work when on emergency power from the RSDP.~~ The valve could not be closed from the RSDP for SDC as required by procedure 3IRS-OPS-001-2S. Another design change was implemented to correct the wiring problem.

- The RCIC Steam Inlet Supply Valve, 2E51F045, would not ^{open} operate from the RSDP. During implementation of DCR 94-34 during the current refueling outage, two wires were not reconnected to a RSDP control switch as required by the drawings. The problem with the valve was corrected by reconnecting the wires.

Comment: This problem would be transparent to an operator initiating LPCI and SPC ^x because F004B is normally open. The F004B valve could have been closed from the RSDP, therefore, SDC could be placed in service.

Limit switch number 14, an interlock on RHR Valve 2E11F006B, SDC Suction Valve, was not adequately post maintenance tested. This allowed two valves, 2E11F006B and RHR Valve 2E11F004B, Torus Suction Valve, to open simultaneously from the remote shutdown panel. ~~This problem would prevent placing RHR LPCI in operation from either SDC or SP cooling in accordance with procedure 3IRS-OPS-001-2S.~~ The testing after the interlocks were initially installed was adequate. Three maintenance activities that were conducted between June 1986 to April 1989 could have introduced the error. This problem resulted in establishing a flow path that allowed a reactor vessel draindown on November 2, 1995. The details of this draindown are documented in IR 50-321,366/95-23.

The licensee identified several components at the RSDP that had indication and alarm problems when their emergency transfer switch was placed to the emergency position. Problems identified were:

- The green indicating light for SDC Outboard Valve 2E11F008 would illuminate momentarily and then extinguish. The problem was corrected by cleaning the contacts on the transfer switch.
- The RCIC Pump Minimum Flow Valve, 2E51F019 did not have "closed" position indication. The problem was corrected by straightening the socket connector.
- The RHRSW pump 2D, had both running and not running indication with the pump off. The cause of the problem was dirty contacts

or a misaligned wire lug interfering with transfer switch contact operation.

on the pump control switch at the RSDP. The problem was corrected by cleaning the contacts ~~x~~ and re-aligned a wire lug.

- The alarm circuit for the RCIC barometric condenser vacuum pump would not annunciate. The cause of the problem was a wire on the transfer switch that was interfering with the switch's contacts. The problem was corrected by repositioning the wire.

Problems Identified On Unit 1 RSDP

- A blown fuse was identified for valve 1B21F013G. Manual control for the relief function of the SRV would not operate. However, the safety function of the SRV was operable. A second SRV on the panel was still operable. The blown fuse was replaced to correct the problem.

b. Personnel Performance

Operator performance during the drain down and during recovery actions were appropriate. ESF actuations and safety equipment responded as designed. However, several personnel performance issues that led to the problem were identified and are discussed in IR 50-321,366/95-23.

Prior NRC approval was ~~granted~~ obtained for deferring testing until the upcoming refueling outages on each unit.

IRs 50-321,366/95-08 and 95-16 documented the licensee's activities involved with TSIP surveillance procedure validation process. This process validated the new and revised procedures needed to implement the new improved TS prior to their official use in July 1995. The RSDP procedures were not included in this validation process. The inspectors considered this to be a significant oversight by the licensee. This allowed the degraded condition of RSDP to exist for over three months after new implementation.

c. Licensee Corrective Actions

- Following the reactor vessel draindown problem, an ERT was initiated to investigate the problem and extent of system deficiencies and make recommendations for corrective actions.
- Three Licensed personnel involved with the draindown were temporarily disqualified from licensed duties until after completion of the investigation.
- Engineering management initiated a team to review and make recommendations for further testing of RSDP equipment. Special purpose procedures were developed to functional test all equipment operated from the Unit 2 RSDP. Testing was completed on November 9, 1995, prior to unit startup.
- A complete review of past maintenance and DCR work activities was conducted for both Unit 1 and Unit 2 RSDP.

Comment: The maintenance review was performed in an effort to determine the cause of the FC063 condition and, therefore, was limited to the maintenance on the FC063 valve. The DCR review was limited in scope with the purpose of identifying any Unit 1 conditions.

11

- Corporate engineering assisted with procedure development for testing Unit 1 RSDP equipment. The Logic System Functional Tests of the components were completed on December 5, 1995.
- Maintenance work orders were developed and corrective actions were completed as deficiencies were identified.
- Operations Order 00-02-1195S, Operations at the Remote Shutdown Panel, was issued to direct all operations from the Unit 1 and Unit 2 RSDP (except under certain conditions) be performed by licensed personnel.
- System surveillance and testing procedures were revised to include testing from the RSDP. *Comment: Procedures were revised during TSIP implementation.*
- Long term corrective actions were being reviewed and evaluated for future implementation.

d. Inspector Review

The inspectors continued to review and observe licensee actions to troubleshoot and correct deficiencies with the Unit 1 and 2 RSDP. The inspectors also observed post maintenance and operability testing of some components. The inspectors reviewed ERT Report Response 95-019, dated November 13, 1995, OF ORDER 00-02-1195S, Operations at the Unit Two Remote Shutdown Panel, discussed the problem with licensee management and individuals involved.

Following the initial reactor vessel inventory reduction on November 2, 1995, the licensee identified and corrected the root cause. Limit switch 14 on valve 2E11F006B, RHR SDC isolation valve, was set incorrectly. This deficiency allowed F006B and valve 2E11F004B, 2B RHR pump suction to open simultaneously from the RSDP, and establish a drain path from the reactor vessel to the torus. Inadequate post maintenance functional testing was identified as the cause of this deficiency.

Following the identification and correction of the valve limit switch problem, the licensee developed a special purpose procedure to functionally test the valves and other valves located on the RSDP. The inspectors reviewed Special Purpose Procedure 34SP-110495-DC-1-2S, Functional Test for Interlocks Between 2E11-F004A(B,C,D,) and 2E11-F006A(B,C,D), Revision 0, and observed the testing activities. The procedure was performed successfully on November 9. This procedure functionally tested the interlocks between the 2E11F004 valves, the F006 valves and other valves from the CR and the RSDP. This test verified that the interlocks functioned as designed.

The inspectors reviewed Procedure 34SV-E51-001-2S, RCIC Valve Operability, Revision 7, with respect to the deficiency identified on valve 2E51F045, RCIC Steam Inlet Supply Valve. Revision 7 of the

12 Comment: Rev. 8 was issued for testing of the F045 valve as required by TSIP. Credit was taken for this procedure in functional testing the associated DCR, even though, it was not documented in the DCE package.

procedure did not have acceptance criteria for the inspection or testing of the valve following the DCR work activities. The post modification tests did not include the valve for testing. This resulted in the problem not being identified. Poor work practice was also identified for the failure to reconnect two wires at the RSDP.

The inspectors reviewed procedure 34SV-E11-002-2S, RHR Valve Operability, Revision 15, with respect to deficiencies identified with the RHR Outboard Injection Valve, 2E11F017B. The valve would not operate from the RSDP. Revision 15 of the procedure, did not have acceptance criteria for the inspection or testing of the valve from the RSDP following DCR work conducted in 1992. This resulted in the problem not being identified. The licensee identified a deficiency with the DCR which did not direct installation of wiring in a MCC in a manner that would allow interposing relays to work when on emergency power from the RSDP. The normal position of this valve is open, however, if the valve was closed normal injection with LPCI could not occur. Also the valve could not be throttled to control reactor water level ~~or closed~~ for SDC operation in accordance with procedure 31RS-OPS-001-2S. The inspectors concluded that inadequate post modification testing procedures and inadequate design review led to the deficiency. *from the RSDP*

e. Significance and Regulatory Issues of Identified RSDP Problems

The inspectors reviewed Units 1 and 2 FSAR, Fire Hazards Analysis and Fire Protection Program, and applicable system and RSDP drawings. Unit 2 FSAR Section 7.5.1.4, Special Condition - Loss of Habitability of MCR, described the RSDP and the systems available from the panel. This section also described the procedure for reactor shutdown from outside the CR in a step by step format.

FSAR Section 9.5.1, Fire Protection System, referenced the Unit 1 and 2 FHA and FPP manuals. The FHA described the alternate shutdown capability as required for each fire area necessary to achieve safe shutdown of the plant. Section 10.1 of the Units 1 and 2 FHA paragraph titled, Unit 2 Safe Shutdown Analysis, contained required actions from the RSDP. These actions consisted of placing control switches in the EMERGENCY position and using designated control switches to manipulate specific equipment from the RSDP.

FHA/FPP, Appendix E, Section 9.5, indicated three fire mitigation paths were analyzed to shutdown Units 1 and 2 during a design basis fire. Minimum equipment required to safely shutdown, to cold shutdown, HNP Units 1 and 2 for a design basis fire was listed. Sub-Section 10.1, Unit 2 Safe Shutdown Analysis, indicated, for a fire in area 0024, which included the main control room, the cable spreading room and the computer room, safe shutdown will be achieved using the remote shutdown system, designated as path 3. The paragraph contained a table which designated affected equipment and required actions to achieve the safe shutdown using pathway three.

The inspectors reviewed procedure 3IRS-OPS-001-2S: Shutdown From Outside Control Room, Revisions 4 and 5 and verified the procedures contained actions to safely shutdown the units using pathway three. The procedure contained sections providing guidance for operator immediate and subsequent actions. The procedure also contained 8 attachments which gave operators directions on performing various activities outside the CR and at the RSDP. Among these attachments were directions for the proper lineup and operations of RHR LPCI, RHR SDC, RHR Suppression Pool Cooling, and RCIC.

Comment: The draindown event did not involve D&R design, implementation, nor testing. Reference page 9, paragraph 4 of this report.

The inspectors concluded that the licensees failure to adequately conduct design modification review, implementation and testing along with a lack of strict administrative controls led to a significant uncontrolled Unit 2 reactor vessel draindown. The inspectors also concluded that inadequacies in the plant maintenance and modification reviews and control of testing activities of safety related components existed and contributed to the problem. These deficiencies are examples of significant concerns.

The special NRC team inspection initiated on November 3, to review the circumstances involved with the reactor draindown event, identified weaknesses in several areas. The weaknesses are documented in IR 50-321,366/95-23 and include the following: poor planning and lack of guidance, inadequate control and execution, lack of supervision, and personnel performance issues.

The inspectors concluded, based on their review and observations of licensee actions, that tests conducted for the Unit 1 RSDPs were satisfactory. The one deficiency identified, involving a blown fuse for valve 1B21F013G, did not present any significant difficulties for shutting the unit down from the RSDPs.

Comment: These systems could be placed in service with additional manual actions. LPCI did not require manual actions; F023 B valve per GE analysis did not to be closed for the LPCI function.

The inspectors also concluded from their reviews and a review of the licensees' activities that the operation of the ~~RCIC system~~, SDC, LPCI, and Suppression Pool Cooling mode of RHR could not be performed from the Unit 2 RSDP as directed by section 10.1 of the Units 1 and 2 FHA/FPP or procedure 3IRS-OPS-001-2S.

In addition, the inspectors concluded from their review that an orderly shutdown of the Unit 2 reactor, in the event of a fire in the main control room, cable spreading room and computer room, could not be performed from the Unit 2 RSDP as described in the Unit 1 and 2 FHA/FPP, Section 10.1 and Unit 2 FSAR, Section 7.5.1.4. These deficiencies are identified as apparent violation EEI 50-366/95-26-01: Inability to Safely Shutdown Unit 2 from the Remote Shutdown Panel in the Event of a Fire in the Main Control Room.

One apparent violation was identified.

7. Exit Interview

The inspection scope and findings were summarized on December 11, 1995, with those persons indicated in paragraph 1 above. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspectors during this inspection.

<u>Item Number</u>	<u>Status</u>	<u>Description and Reference</u>
URI 50-321,366/95-23-02	Closed	Problems with Equipment Operability from the Remote Shutdown Panel (paragraph 6).
EI 50-366/95-26-01	Open	(Apparent Violation) Inability to Safely Shutdown Unit 2 from the Remote Shutdown Panel in the Event of a Fire in the Main Control Room (paragraph 6).
URI 50-321,366/95-26-02	Open	Valve Failures Involving Stem Couplings and Packing Configurations (paragraph 3.b).

8. Acronyms and Abbreviations

- APRM - Average Power Range Monitor
- CFR - Code of Federal Regulations
- CR - Control Room, Control Rod
- CST - Condensate Storage Tank
- DCR - Design Change Request
- DW - Drywell
- EI - Escalated Enforcement Item
- EDG - Emergency Diesel Generator
- EHC - Electro-hydraulic Control
- EMI - Electro-magnetic Interference
- ERT - Event Review Team
- FHA - Fire Hazard Analysis
- FPP - Fire Protection Program
- FSAR - Final Safety Analysis Report
- FT - Functional Test
- HNP - Hatch Nuclear Plant
- HPCI - High Pressure Coolant Injection
- I&C - Instrumentation and Controls
- IR - Inspection Report
- LOSP - Loss of Offsite Power
- LPCI - Low Pressure Coolant Injection
- MCC - Motor Control Center
- MCR - Main Control Room
- MWT - Megawatts Thermal
- MWO - Maintenance Work Order
- NRC - Nuclear Regulatory Commission

NRR - Nuclear Reactor Regulation
PSW - Plant Service Water System
RCA - Radiological Controlled Area
RCIC - Reactor Core Isolation Cooling
RFP - Reactor Feedwater Pump
RFPT - Reactor Feedwater Pump Turbine
RHR - Residual Heat Removal
RHRSW - Residual Heat Removal Service Water
RSDP - Remote Shutdown Panel
RTP - Rated Thermal Power
SDC - Shutdown Cooling
SP - Suppression Pool
SRV - Safety Relief Valve
TRM - Technical Requirement Manual
TS - Technical Specifications
TSIP - Technical Specification Improvement Program
URI - Unresolved Item