

RIVER BEND STATION  
APPROVAL SHEET  
STATION OPERATING PROCEDURES

NO. OSP-0007

TITLE PREPARATION OF OPERATIONS SECTIONS PROCEDURES

SAFETY RELATED

YES ☒

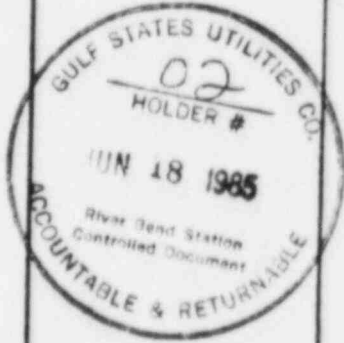
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TECHNICAL REVIEW REQUIRED

YES ☒

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PREPARATION OF OPERATIONS SECTIONS PROCEDURES

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N/A

N/A

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## 1.0 PURPOSE

- 1.1 To provide purpose, content, format, and style guidelines to Operations Section procedure authors and reviewers for initial drafts and future revisions of the following Operations Section Procedures:
  - 1.1.1 System Operating Procedures (SOP)
  - 1.1.2 Fuel Handling Procedures (FHP)
  - 1.1.3 General Operating Procedures (GOP)
  - 1.1.4 Alarm Response Procedures (ARP)
  - 1.1.5 Abnormal Operating Procedures (AOP)
  - 1.1.6 Operations Section Procedures (OSP)
- 1.2 Preparation of the Operations Section Surveillance Test Procedures (STP) is covered in ADM-0015, "Station Surveillance Program".
- 1.3 Preparation of the Operations Section Emergency Operating Procedures (EOP) is covered in OSP-0009, "Author's Guide/Control and Use of Emergency Operating Procedures".

## 2.0 REFERENCES

- 2.1 NRC Regulatory Guide 1.33, Revision 2 (February 1978), "Quality Assurance Program Requirements (Operations)".
- 2.2 ANSI N18.7-1976 - "Administrative Controls and Quality Assurance of the Operational Phase of Nuclear Power Plants".
- 2.3 ADM-0003, "Development, Control and Use of Procedures".

## 3.0 GENERAL GUIDELINES

- 3.1 All Operations procedures shall be written, reviewed and approved in accordance with ADM-0003. The requirements of this procedure are additional and apply specifically to Operations Section documents.
- 3.2 A list of all Operations procedures may be obtained from the RBS Procedure Tracking List.
- 3.3 Typing Format
  - 3.3.1 The standard procedure page shall be 8 1/2 X 11 inches.
  - 3.3.2 All section and subsection headings shall be underlined.

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3.3.3 For continuity, paragraphs or sentences should not be split between pages.

3.3.4 The first line of typing of a procedure shall begin "a triple space" under the heading line. Text lines shall be single spaced. Lines between headings and paragraphs shall be double spaced. Texts of procedure drafts may be double spaced, but approved procedures must be single spaced.

3.3.5 The typing layout shall be as follows:

#### 1.0 PROCEDURE SECTION

##### 1.1 Procedure Sub-section

##### 1.1.1 Paragraph or step

##### 1. Sub-paragraph or step

a.

1)

a)

#### 4.0 DEFINITIONS AND TERMINOLOGY

4.1 When necessary to make a statement to place a pump or system in service or remove it from service, use the terminology: Start.... Pump, Stop.... Pump, Startup.... System or Shutdown.... System as appropriate. Do not make statements such as "Start the HPCS Pump by placing the switch in Start and verify Start by observing red light, etc."

4.2 The word "Verify" should only be used when the component or system should already be in the stated configuration.

4.3 When making statements concerning valves, components, etc., reference by name first, then number (e.g.: "Open SLC Test Valve, [1C41-F016]").

4.4 In Service - As applied to the Instrument Lineups means that the listed instrument is energized, lined up, valved in, etc. as required to be operable by Technical Specifications definition.

4.5 Safety Related Lineup Sheets - Valve, Instrument, Electrical and Control Board Lineup sheets which have a signoff column for first and second verification initials.

4.6 When writing equipment numbers for safety related components, asterisks need not be used (e.g., IEGF-V109 instead of IEGF\*V109).

- 4.7 Regulating valves such as TCV's, PCV's, and manual dampers which are normally in some position other than full open or full closed should have their position indicated by the word "THROTTLE". When startup test results are available, a more exact position will be included (e.g., 3 rounds from closed, 40% open, etc.).

## 5.0 SYSTEM OPERATING PROCEDURES (SOP)

### 5.1 Purpose

- 5.1.1 To provide an approved document for guidance in the startup, operation and shutdown of a single system.

### 5.2 Format

- 5.2.1 The format shall be as follows:

1. Approval Sheet
2. (LATER's) Page (when required)
3. Table of Contents (always Page 1) (see Enclosure 1)
4. Text Pages (see Enclosure 2)
5. Other Documents
  - a. Enclosures
  - b. Figures (see Enclosure 17)
  - c. Attachments
  - d. Data Sheets (see Enclosure 18)

### 5.3 Content

#### 5.3.1 General

1. Each SOP should contain, as applicable, instructions for energizing, placing in standby, starting up, shutting down, de-energizing, and changing modes of operation.
2. On system lineups, safety related components shall be listed on Safety Related Lineup Sheets.
3. For instruments, only the root valves off the process piping should be included in the valve lineups. The particular instrument valves (e.g., high and low side inlets, instrument vents and drains) should be included in the Instrument and Valve Lineup when

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identification numbers are provided by the I&C Department.

4. Filling and venting instructions for safety related systems shall be provided and may be provided for non-safety related systems if the complexity or use necessitates.
5. Instructions for draining a system or parts of a system will be provided by maintenance instructions or tag-out and are therefore not required in the SOP.
6. Each procedure shall be sufficiently detailed for a qualified individual to perform the functions without direct supervision.
7. Abbreviations used in SOP's should conform to industry standards. The use of unique abbreviation should be preceded by the words it represents when first introduced (e.g.: Shift Supervisor (SS)).
8. Procedure steps should indicate on which panel a switch, indicator or other device is located. This notation may be a general note at the beginning of the applicable section, or it may be included in each applicable step.
9. Direct, concise statements should be used for action statements. Authors should avoid the use of flowery and/or lengthy descriptions.
10. The exact labeling on the control board should be used when describing equipment; except that accepted acronyms and abbreviations may be used.
11. There are several different types of auto-start switches and logic systems at RBS. Authors should ensure that the system is properly aligned prior to activating the auto-start circuits. Authors should also ensure that switch positions following an equipment start are aligned such that auto-trip and auto-transfer logics are maintained.
12. Normal operating parameters such as flows, temperatures and pressures should not be listed in the SOP's. Control Room indication or log will be marked to reflect this.
13. On Control Board Lineup Attachments, list the indicating lights that should be lit in the "INDICATION" column by their color only (e.g., "green" instead of "green lamp lit"). It is understood that that lamp should be lit and the remaining lamps for

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that item will not be lit. If the panel item has a single indicator lamp which is normally not lit, then use the word "NONE". If the item has no indication use "N/A".

14. On Control Board Lineups, multimode controller status should be indicated by mode and setpoint (set tape) adjustment (e.g., Manual, 30% or Auto, 4 psi). Some setpoint adjustments may not be available until startup test data is compiled. The author should give careful consideration as to whether the controller should be lined up in its normal operating configuration or lined up in "manual and closed" condition; then set up by a procedure step later.
15. On Valve Lineups, valves which do not have an external means of position verification need not be listed (e.g., check valves).
16. CAUTION statements should be used to indicate that execution of a step(s) under some circumstances could cause personnel or equipment damage, or a major change in plant safety or status. The statement should precede the step to which it applies and be enclosed in a box as shown below.

<u>CAUTION</u>
Wear face shield and apron when working with acid.

17. A Valve Lineup places a system in standby; then the procedure steps place it in operation.

#### 5.3.2 SOP Section Titles, Numbers and Content

1. Each SOP should contain the following section titles. The corresponding section numbers are shown in parenthesis at right of the title.
  - a. PURPOSE (1.0)
    - 1) The purpose of the SOP should be stated in an inclusive but concise manner.
  - b. PRECAUTIONS AND LIMITATIONS (2.0)
    - 1) Precautions that may prevent personnel injury or equipment damage should be stated.

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- 2) Limitations on operation of equipment should be stated. Technical Specifications limits should be referenced using the Technical Specification Section numbers, if appropriate, and not restated from the Technical Specifications.
  - 3) Precautions and Limitations may be restated just prior to performing the action step. This should be accomplished by the use of a boxed in CAUTION statement; not by a NOTE.
  - 4) Major equipment interlocks should be listed. Major safety system interlocks required during operation of the system should be listed.
- c. PREREQUISITES (3.0)
- 1) Tasks which must be performed on external components or systems prior to the subject system being placed in standby or operation should be indicated in this section.
- d. SYSTEM STARTUP (4.0)
- 1) Instructions for energizing, placing in standby, starting up from shutdown or standby, etc.
- e. SYSTEM OPERATION (5.0)
- 1) Instructions for normal operation, operation after an auto initiation, etc.
- f. SYSTEM SHUTDOWN (6.0)
- 1) Instructions for de-energizing, transfer to standby after operation, shutdown, etc.
- g. REFERENCES (7.0)
- 1) The references shall be the last section of the procedure text.
  - 2) List references by document title, number and revision number.

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### 5.3.3 Other Documents

1. Forms designated as enclosures, attachments, data sheets and figures are available for adding information to a procedure which would not be suitable in the text (e.g., tables, graphs, drawings).
2. Enclosures and figures should not contain information which would be detached from the procedure. Attachments and data sheets should be used for recordable data which might be removed from the procedure.
3. In SOP's attachment forms are used for system lineups and are sequenced as follows:
  - a. Attachment 1 - Valve Lineup (see Enclosures 3, 4 and 5).
  - b. Attachment 2 - Instrument and Valve Lineup (see Enclosures 6 and 7).
  - c. Attachment 3 - Electrical Lineup (see Enclosures 8 and 9).
  - d. Attachment 4 - Control Board Lineup (see Enclosures 10 and 11).
  - e. Attachment (No.) - Additional as required, numbered in sequence.
  - f. If a system had no Valve Lineup, then the Instrument and Valve Lineup would become Attachment 1 and so on.

## 6.0 FUEL HANDLING PROCEDURES (FHP)

### 6.1 Purpose

- 6.1.1 The purpose of a FHP is to provide guidance for the operation of the fuel handling equipment; and to establish guidelines for refueling floor operations and personnel conduct.

### 6.2 Format Guidelines

- 6.2.1 The format for FHP's should follow the same format as the SOP's.

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### 6.3 Content Guidelines

- 6.3.1 The procedure should contain the same type of information, when applicable, as the SOP's.

## 7.0 GENERAL OPERATING PROCEDURES (GOP)

### 7.1 Purpose

- 7.1.1 To provide instructions to personnel in the performance of major plant evolutions (e.g., startup, shutdown, etc.).

### 7.2 Content Guidelines

- 7.2.1 In general, the GOP will direct system alterations and lineups in accordance with the system SOP by direct reference.
- 7.2.2 Since most operations performed in a GOP will be performed using a SOP, the GOP need not be as specific as a SOP. Procedure steps which do not reference a SOP or STP should be specific enough to perform the operations without the use of another procedure.
- 7.2.3 The GOP's shall direct surveillance activities to be performed when required. In some instances, surveillance activities may be performed as steps within the GOP.

### 7.3 Format Guidelines

- 7.3.1 The GOP's have a two-part format (see Attachment 12):

1. Procedure Body;
  - a. Approval Sheet
  - b. Later's Page (if needed)
  - c. Table of Contents (Page 1)
  - d. Purpose (Section 1.0)
  - e. References (Section 2.0)
  - f. Enclosures (graphs, tables, etc. if needed to support the performance package).
2. Performance Package (Attachments);
  - a. Signoff Information
  - b. Precautions (Section 3.0)

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c. Limitations and Actions (Section 4.0)

d. Procedure Notes (Section 5.0)

e. Sequence of Steps

7.3.2 A GOP may have more than one Performance Package, but each Performance Package must contain all the information stated in Step 7.3.1.2 and shall be formatted as an attachment.

7.3.3 Attachments other than the Performance Packages may be needed in the GOP; if so, they shall be numbered sequentially following the Performance Packages.

7.3.4 The signoff area shall contain spaces for the date and time of procedure commencement and completion and signatures of the initiating and completing operators and Shift Supervisors. There shall also be space for remarks and for listing other documents which may be included with the Performance Package (e.g.: computer printouts).

7.3.5 The procedure steps should follow as closely as possible the format shown in Enclosure 12.

a. The steps should be numbered consecutively (e.g., 1, 2, 3, 4, .....107, etc.).

b. Each major step should require initials when the step is completed. Minor steps within a major step do not require initials. If a step requires initials, it should be a major step.

c. Each major step should be divided by a horizontal line.

d. Subsections should be divided by two horizontal lines.

7.3.6 CAUTION statements should be boxed in and appear prior to the step to which they apply.

## 8.0 ABNORMAL OPERATING PROCEDURES (AOP)

### 8.1 Purpose

8.1.1 To provide instructions to personnel for plant or system operation during abnormal conditions.

8.1.2 These procedures will be used to combat abnormal events similar, but not limited to, those listed in Appendix A of NRC Regulatory Guide 1.33, Revision 2, (February 1978).

N/A

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## 8.2 Content Guidelines

- 8.2.1 Each AOP shall provide sufficient information to direct a qualified operator through the event.
- 8.2.2 The AOP's should provide the most expedient means of mitigating abnormal conditions, or provide sufficient details to operate with the conditions present.
- 8.2.3 Any AOP that meets or could degrade into an entry condition for an Emergency Operating Procedure shall provide a statement directing the operator to the appropriate EOP.
- 8.2.4 The Immediate Operator Action section should consist of only those actions necessary to place a system or the plant in a safe condition.

## 8.3 Format Guidelines

- 8.3.1 The AOP's shall have the following format (see Enclosure 14);

- 1. Approval Sheet
- 2. Text
  - a. Purpose/Discussion (1.0)
  - b. Symptoms (2.0)
  - c. Automatic Actions (3.0)
  - d. Immediate Operator Actions (4.0)
  - e. Subsequent Operator Actions (5.0)

- 8.3.2 AOP's may reference other procedures as needed subject to the following:

- 1. Do not reference another procedure in the Immediate Operator Action section unless it is to proceed to a more critical level of action (ex: Refer to EOP-0001 "RPV Control").
- 2. References to other procedures or Technical Specifications should be made in the Subsequent Operator Action section.

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## 9.0 ALARM RESPONSE PROCEDURES (ARP)

### 9.1 Purpose

9.1.1 To provide guidance to an operator in responding to component or system malfunctions. ARP's are written for all annunciator-type alarms.

### 9.2 General Guidelines

9.2.1 Until such time the Operations Supervisor determines to group the individual ARP's by panels, each individual ARP shall appear as an enclosure to a single ARP for that system. (i.e., All of the Control Rod Drive System Alarms should be included in ARP-0002, "Control Rod Drive Hydraulic System Alarm Procedure".)

9.2.2 When the Operations Supervisor decides to group the individual ARP's by panels, the ARP's will be reorganized so that all enclosures for a specific panel will be grouped together for that panel and will be organized by panel section and grid location.

### 9.3 Content Guidelines

9.3.1 The alarm enclosures for each ARP shall contain the following information:

1. The alarm title (window description).
2. The Stone & Webster alarm number.
3. Panel, section, and grid location of alarm.
4. Alarm initiating devices.
5. The alarm setpoints.
6. Automatic actions that occur in conjunction with the alarm.
7. Immediate operator actions that should be taken upon alarm receipt.
8. Possible causes for the alarm.
9. Subsequent operator actions that can be performed after the initial events of the alarm condition.

9.3.2 The ARP's should be written for trained, qualified operators who are familiar with the equipment and theories involved. The wording of the ARP's should be concise and contain terminology used in daily plant operations.

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9.3.3 ARP's may reference other plant procedures as necessary to accomplish their intended functions.

1. Do not reference another procedure in the IMMEDIATE ACTIONS section unless it is to proceed to a higher level of action. (i.e., Refer to Emergency Operating Procedure, EOP-0001, "RPV Control".)
2. "Immediate Actions" should consist of only those actions necessary to place a system or the plant in a safe condition.
3. References to other types of procedures or Tech Specs should be placed in the SUBSEQUENT ACTIONS section. (i.e., "Test and return the system to standby per SOP-0043".)

9.3.4 Alarm conditions may not follow anticipated patterns; therefore, ARP's should contain flexibility to accommodate variations.

9.3.5 Any ARP which is, or may degrade into, any entry condition for an EOP shall refer the operator to the appropriate EOP in the Immediate Actions section of the ARP.

#### 9.4 Format Guidelines

9.4.1 Prior to the reorganization of the individual alarm responses by panel, the format for an ARP is as follows:

1. Approval Sheet
2. (LATER's) Page (when required)
3. Table of Contents (Page 1) (see Enclosure 15)
4. Individual Alarm Enclosures (see Enclosure 16)

9.4.2 After the reorganization of the individual alarm responses by panel, the format for ARP's, should be as follows:

1. Approval Sheet (this is a cover sheet for entire panel)
2. (LATER's) Page (when required)
3. Table of Contents (Page 1)
4. Individual Alarm Enclosures

## 10.0 OPERATIONS SECTION PROCEDURES (OSP)

### 10.1 Purpose

10.1.1 Subject to the Plant Administrative Procedures, these procedures provide administrative guidance to Operations personnel on matters which are the direct responsibility of the section.

### 10.2 Format Guidelines

10.2.1 The OSP format should conform to the following as much as practical:

1. Approval Sheet
2. Later's Page (if needed)
3. Table of Contents (Page 1)
4. Text
5. Enclosures
6. Attachments

"END"

<u>TABLE OF CONTENTS</u>				
<u>SECTION</u>				<u>PAGE NO.</u>
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Attachment 2 - Instrument and Valve Lineup				25
Attachment 3 - Electrical Lineup				28
Attachment 4 - Control Board Lineup				29
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1.0 PURPOSE

- 1.1 The purpose of this procedure is to provide instructions for startup, normal operations, and shutdown of the Main Turbine Lube Oil System.

2.0 PRECAUTIONS AND LIMITATIONS

- 2.1 During oil transfer of any kind close observation should be kept on the oil flow path for leaks. If a leak develops, stop oil transfer immediately and notify the Shift Supervisor. Every effort should be made to prevent oil from entering any kind of drain.
- 2.2 The Main Turbine should never be placed on turning gear without the bearing lift pumps running and the Emergency Sealing Oil Pump (ITGL-ESOP) operable.
- 2.3 Vapor Extractor (ITGL-VEX) should be running when Turbine Lube Oil System is placed in service.
- 2.4 Turbine Lube Oil System must be in service and turbine on turning gear a minimum of 4 hours prior to rolling turbine.
- 2.5 With turbine on turning gear, lube oil temperature should be kept between 80°F and 90°F.

3.0 PREREQUISITES FOR STARTUP AND OPERATION

- 3.1 Makeup Water System operable and aligned to Turbine Lube Oil System per SOP-0008, Condensate Storage, Makeup and Transfer System.
- 3.2 Service Water System operable and aligned to Turbine Lube Oil System per SOP-0018, Normal Service Water System.
- 3.3 Turbine building floor drains operable per SOP-0106, Floor and Equipment Drains System.
- 3.4 The following electrical systems operable and aligned to Turbine Lube Oil System:
- 3.4.1 24VDC per SOP-0031, Cathodic Protection System.
- 3.4.2 125VDC per SOP-0049, 125VDC System.
- 3.4.3 120VAC per SOP-0048, 120VAC System.
- 3.4.5 480VAC per SOP-0047, 480VAC System.
- 3.5 Fire Detection - Supervisory System operable per SOP-0036, (LATER).

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ATTACHMENT - 1		DATE: _____			
		VALVE LINEUP - MAIN TURBINE LUBE OIL SYSTEM			
VALVE NUMBER	VALVE NAME (OR DESCRIPTION)	REQ'D POSITION	INITIALS	ACTUAL POSITION	
ILCS-V1	Dirty Oil Storage TK2 Inlet/Outlet Valve	CLOSED			
ILCS-V2	Dirty Oil Storage TK2 Inlet/Outlet Valve	CLOSED			
ILCS-V3	Dirty Oil Storage TK2 Drain to Waste Oil Disposal System	CLOSED			
ILCS-V4	Clean Oil Storage TK2 Drain to Waste Oil Disposal System	CLOSED			
ILCS-V7	Fill & Discharge Hose Connection Fill Isolation Valve	CLOSED AND CAPPED			
ILCS-V8	Fill & Discharge Hose Connection Disch Isolation Vlv	CLOSED AND CAPPED			
ILCS-V10	Clean Oil Storage TK2 Inlet/Outlet Vlv	CLOSED			
ILCS-V11	Turbine Oil Transfer Pump Suction Vlv	OPEN			
ILCS-V12	Turbine Oil Transfer Pump Suction Strainer Drain Vlv	CLOSED			
ILCS-V13	Turbine Oil Transfer Pump Drain Vlv	CLOSED			
ILCS-V14	Turbine Oil Transfer Pump Disch Drain Vlv	CLOSED			
ILCS-V15	Turbine Oil Transfer Pump Disch Press Ind (ILCS-PI109) Root Vlv	OPEN			
ILCS-V17	Turbine Oil Transfer Pump Disch Isol Vlv to Disch Hose Station	CLOSED			
ILCS-V18	Turbine Oil Purifier to Clean Oil Storage TK2 Inlet Valve	CLOSED			
ILCS-V37	Turbine Lube Oil Reservoir Drain Isol Vlv to Dirty Oil Storage TK2	CLOSED			
ILCS-V39	Purifier Used During Startup	CLOSED AND CAPPED			
ILCS-V30	Turbine Oil Holding TK4 Inlet from Turbine Oil Transfer Pump	OPEN			
ILCS-V36	Turbine Oil Feed Pump Suction from Turbine Oil Holding TK4	CLOSED			
ILCS-V32	Turbine Oil Feed Pp Suction from Turbine Oil Reservoir Overflow	OPEN			
ILCS-V33	Turbine Oil Fd Pp Suct Str	LOCKED			
ILCS-V46	Drn Vlv to Waste Oil Disposal Sys from Purifier Bowl Drain TK3	CLOSED			
ILCS-SOV-156	Turbine Oil Feed Pump Disch Vlv	CLOSED			
ILCS-SOV-130	Turbine Oil Feed Pump Relief Vlv	CLOSED			
ATTACHMENT - 1	PAGE 1 OF 4	SOP-0012	R - DRAFT	PAGE 21	

## EXAMPLE OF A VALVE LINEUP SIGNOFF SHEET

ATTACHMENT - 1		DATE: _____ VALVE LINEUP - FUEL POOL COOLING AND CLEANUP (SAFETY RELATED) (Continued)		
VALVE NUMBER	VALVE NAME (OR DESCRIPTION)	REQ'D POSITION	INITIALS 1st 2nd	ACTUAL POSITION
ISFC-V253	8w Transfer Pump 18 PS-158 Root Valve	OPEN		
ISFC-V255	8w Transfer Pump 18 PI-1-3 Root Valve	OPEN		
ISFC-V257	8w Transfer Pump 18 Discharge Valve	OPEN		
ISFC-V258	8w Transfer Pump Discharge Vent Valve	CLOSED		
ISFC-V305	2w Tank LT-1-3 Root Valve	OPEN		
ISFC-V307	8w Tank LT-1-3 Vent Valve	CLOSED		
ISFC-V304	8w Tank LT-1-3 Drain Valve	CLOSED		

Performed By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

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NOTE: Every type of lineup used in the SOP's has a signoff area as shown above.  
It is placed on the last page of each Attachment used in the procedure.

ATTACHMENT - 1		VALVE LINEUP - FUEL POOL COOLING AND CLEANUP (SAFETY RELATED)			
		DATE:			
VALVE NUMBER	VALVE NAME (OR DESCRIPTION)	REQ'D POSITION	INITIALS		ACTUAL POSITION
			1st	2nd	
ISFC-V4	Lower Transfer Pool Outlet Vlv to Purification Pumps	CLOSED			
ISFC-V7	Cask Pool Outlet Vlv to Purification Pumps	CLOSED			
ISFC-V1	Fuel Storage Pool Outlet Vlv to Purification Pumps	OPEN			
ISFC-V8	Fuel Storage Pool Inlet Vlv from Demineralizer	OPEN			
ISFC-V9	Cask Shell Inlet Vlv from Demineralizer	CLOSED			
ISFC-V8	Cask Pool Inlet Vlv from Demineralizer	OPEN			
ISFC-V3	Lower Transfer Pool Inlet Vlv from Demineralizer	CLOSED			
ISFC-V9	Lower Transfer Pool Inlet Vlv from Demineralizer	OPEN			
ISFC-V10	Spent Fuel Pool Outlet Vlv to FPC Pump B	OPEN			
ISFC-V35	Spent Fuel Pool/Contact Pool Outlet to FPC Pump B Separation V	OPEN			
ISFC-V37	Contact Pool Outlet Vlv to FPC Pump	CLOSED			
ISFC-V37	CST Supply to FPC and Purification System	CLOSED			
ISFC-V84	CST Supply to FPC System Drain Vlv	CLOSED			
ISFC-V43	CST Supply Vlv to FPC System	CLOSED			
ISFC-V33	CST Supply to FPC Pump A	CLOSED			
ISFC-V34	CST Supply Vlv to FPC Pump B	CLOSED			
ISFC-V31	Spent Fuel Pool Outlet Vlv to FPC Pump A	CLOSED			
ISFC-V32	FPC Pump A Suction Vlv	OPEN			
ISFC-V67	FPC Pump A Suction Strainer Upstream PE Test Connection Vlv	CLOSED			
ISFC-V48	FPC Pump A Suction PI-4A Isol Root Valve	OPEN			
ISFC-V70	FPC Pump A Disch PI-4A Isol Root Valve	OPEN			
ISFC-V71	FPC Pump A Disch PS-4A Isol Root Valve	OPEN			
ISFC-V84	FPC Pump A Disch Drain Vlv	CLOSED			
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ATTACHMENT - 2		INSTRUMENT AND VALVE LINEUP - FLOOR AND EQUIPMENT DRAIN SYSTEM			DATE: _____
INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	STATUS	COMMENTS/ INITIALS		
10FR-LS1A	Aux Sdg FD Sump TX1A Level Switch	IN SERVICE			
10FR-LS2A	Aux Sdg FD Sump TX2A Level Switch	IN SERVICE			
10FR-P13A	Aux Sdg FD Sump Pump 10FR-P13A Disch PI	IN SERVICE			
10FR-P13G	Aux Sdg FD Sump Pump 10FR-P13G Disch PI	IN SERVICE			
10FR-LS1B	Aux Sdg FD Sump TX1B Level Switch	IN SERVICE			
10FR-LS2B	Aux Sdg FD Sump TX2B Level Switch	IN SERVICE			
10FR-P13B	Aux Sdg FD Sump Pump 10FR-P13B Disch PI	IN SERVICE			
10FR-P13H	Aux Sdg FD Sump Pump 10FR-P13H Disch PI	IN SERVICE			
10FR-LS1C	Aux Sdg FD Sump TX1C Level Switch	IN SERVICE			
10FR-LS2C	Aux Sdg FD Sump TX2C Level Switch	IN SERVICE			
10FR-P13C	Aux Sdg FD Sump Pump 10FR-P13C Disch PI	IN SERVICE			
10FR-P13J	Aux Sdg FD Sump Pump 10FR-P13J Disch PI	IN SERVICE			
10FR-LS1D	Aux Sdg FD Sump TX1D Level Switch	IN SERVICE			
10FR-LS2D	Aux Sdg FD Sump TX2D Level Switch	IN SERVICE			
10FR-P13D	Aux Sdg FD Sump Pump 10FR-P13D Disch PI	IN SERVICE			
10FR-P13K	Aux Sdg FD Sump Pump 10FR-P13K Disch PI	IN SERVICE			
10FR-LS1E	Aux Sdg FD Sump TX1E Level Switch	IN SERVICE			
10FR-LS2E	Aux Sdg FD Sump TX2E Level Switch	IN SERVICE			
10FR-P13E	Aux Sdg FD Sump Pump 10FR-P13E Disch PI	IN SERVICE			
10FR-P13L	Aux Sdg FD Sump Pump 10FR-P13L Disch PI	IN SERVICE			
10FR-LS1F	Aux Sdg FD Sump TX1F Level Switch	IN SERVICE			
10FR-LS2F	Aux Sdg FD Sump TX2F Level Switch	IN SERVICE			
10FR-P13F	Aux Sdg FD Sump Pump 10FR-P13F Disch PI	IN SERVICE			
ATTACHMENT - 2	PAGE 1 OF 8	SOP-0104	R - DRAFT	PAGE 36	

# EXAMPLE OF AN INSTRUMENT AND VALVE LINEUP SHEET FOR SAFETY RELATED INSTRUMENTS

ATTACHMENT - 2		INSTRUMENT AND VALVE LINEUP - FUEL POOL COOLING AND CLEANUP (SAFETY RELATED)			DATE:	
INSTRUMENT NUMBER	INSTRUMENT DESCRIPTION	STATUS	COMMENTS/ INITIALS		1st	2nd
ISFC-LT-135	Cask Pool Level Transmitter	IN SERVICE				
	Cask Pool Level					
ISFC-LI-135	Indication on PNL870	IN SERVICE				
	Lower Transfer					
ISFC-LT-136	Pool Level Transmitter	IN SERVICE				
	Lower Transfer Pool					
ISFC-LI-136	Level Indication on PNL870	IN SERVICE				
	Spent Fuel Pool					
ISFC-TI-103	Local Temperature Indication	IN SERVICE				
ISFC-LE-28A	Spent Fuel Pool Level Element	IN SERVICE				
	Spent Fuel Pool					
ISFC-LIT-28A	Level Indication Transmitter	IN SERVICE				
	Spent Fuel Pool					
ISFC-LI-28A	Level Indication on PNL870	IN SERVICE				
ISFC-LE-28B	Spent Fuel Pool Level Element	IN SERVICE				
	Spent Fuel Pool					
ISFC-LIT-28B	Level Indication Transmitter	IN SERVICE				
	Spent Fuel Pool					
ISFC-LI-28B	Level Indication on PNL870	IN SERVICE				
ISFC-RTD-7A	SFC Pump A	IN SERVICE				
	Suction Temperature Element					
ISFC-TT-7A	SFC Pump A	IN SERVICE				
	Suction Temperature Transmitter					
	SFC Pump A Suction					
ISFC-TI-7A	Temperature Indication on PNL870	IN SERVICE				
	SFC Pump B					
ISFC-RTD-7B	Suction Temperature Element	IN SERVICE				
	SFC Pump B					
ISFC-TT-7B	Suction Temperature Transmitter	IN SERVICE				
	SFC Pump B Suction					
ISFC-TI-7B	Temperature Indication on PNL870	IN SERVICE				
	SFC Pump A					
ISFC-PI-9A	Suction Press Indication	IN SERVICE				
	SFC Pump B					
ISFC-PI-9B	Suction Press Indication	IN SERVICE				
	SFC Pump A					
ISFC-PI-4A	Discharge Press Indication	IN SERVICE				
	SFC Pump B					
ISFC-PI-4B	Discharge Press Indication	IN SERVICE				
	SFC Pump A					
ISFC-PS-6A	Disch Press Alarm Switch	IN SERVICE				
	SFC Pump B					
ISFC-PS-6B	Disch Press Alarm Switch	IN SERVICE				
ATTACHMENT - 2	PAGE 1 OF 4	SOP-0091	R - DRAFT	PAGE 33		

ATTACHMENT - 3		DATE: _____ ELECTRICAL LINEUP - MAIN TURBINE LUBE OIL SYSTEM		
EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	POWER SUPPLY	REQ'D POSITION	COMMENTS/INITIALS
1LOS-V2	Turbine Oil Transfer Pump Motor	1NMS-MCC101	CLOSED	
1TML-VVN	Lube Oil Reservoir Vapor Extractor	1NMS-MCC101	CLOSED	
1TML-TGM	Turning Gear Motor	1NMS-MCC101	CLOSED	
1TML-TGOP	Turning Gear Oil Pump	1NMS-MCC101	CLOSED	
1TML-MSP	Motor Suction Pump	1NMS-MCC101	CLOSED	
1TML-LPM1	Bearing Lift Pump 1	1NMS-MCC101		
1TML-LPM2	Bearing Lift Pump 2	1NMS-MCC101		
1TML-LPM3	Bearing Lift Pump 3	1NMS-MCC101		
1TML-LPM4/5	Bearing Lift Pump 4/5	1NMS-MCC101		
1TML-LPM6	Bearing Lift Pump 6	1NMS-MCC101	CLOSED	
1LOS-PIN	Turbine Oil WPM Pump Motor Heater	1SCA-PN101	CN	
1TML-TGM	Turning Gear Motor Heater	1SCA-PN101	CN	
N/A	Turbine Aux Test Ckt	1SCI-PN102	CN	
1TML-ESOPM	ESOP Motor Heater	1SCA-PN102B1	CN	
N/A	Turbine Bearing Oil Pump Motor Heater	1SCA-PN101	CN	
1TML-ESOP	Emergency Bearing Oil Pump	1BYS-SV001A	CLOSED	

Performed By: _____	Date/Time: _____
_____	_____
Reviewed By: _____	Date/Time: _____
_____	_____

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EXAMPLE OF AN ELECTRICAL LINEUP SHEET  
FOR SAFETY RELATED COMPONENTS

ATTACHMENT - 3		ELECTRICAL LINEUP - FUEL POOL COOLING AND CLEANUP (SAFETY RELATED)			DATE:
EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	POWER SUPPLY	REQ'D POSITION	COMMENTS/INITIALS 1st 2nd	
1SFC-MQV119	Contact Pools Outboard Isol Valve	1EHS-MCC8A	CLOSED		
1SFC-MQV119M	Contact Pools Outboard Isol Vlv Motor Htr	1SCV-PNL8A1	ON		
1SFC-MQV120	Contact Inboard Isol Return to Cooling Pump	1EHS-MCC8B	CLOSED		
1SFC-MQV120M	Contact Inboard Isol Return to Cooling Pumps Motor Htr	1SCV-PNL8B1	ON		
1SFC-MQV121	Contact Outboard Isol to Purification Pumps	1EHS-MCC8A	CLOSED		
1SFC-MQV121M	Contact Outb Isol to Purification Pps Motor Htr	1SCV-PNL8A1	ON		
1SFC-MQV122	Contact Outb Isol to Cooling Pumps	1EHS-MCC8A	CLOSED		
1SFC-MQV122M	Contact Outb Isol to Cooling Pumps Motor Heater	1SCV-PNL8A1	ON		
1SFC-MQV123	Contact Inbd Isol to Purification Pumps	1EHS-MCC8B	CLOSED		
1SFC-MQV123M	Contact Inbd Isol to Purification Pumps Motor Htr	1SCV-PNL8B1	ON		
1SFC-P1A	FPC Pump A	1EJS-SWG1A ACB004	CLOSED		
1SFC-P1AM	FPC Pump A Motor Space Heater	1SCV-PNL8A1	ON		
1SFC-P1B	FPC Pump B	1EJS-SWG1A ACB013	CLOSED		
1SFC-P1BM	FPC Pump B Motor Space Heater	1SCV-PNL8B1	ON		
1SFC-P2A	FPC Purification Pump A	1EJS-SWG1C ACB031	CLOSED		
1SFC-P2AM	FPC Purification Pump A Motor Space Heater	1SCA-PNL8A1	ON		
1SFC-P2B	FPC Purification Pump B	1EJS-SWG1M ACB327	CLOSED		
1SFC-P2BM	FPC Purification Pump B Motor Space Heater	1SCA-PNL8B1	ON		
1SFC-P3A	SV Transfer Pump A	1NHS-MCC8A	CLOSED		
1SFC-P3AM	SV Transfer Pump A Motor Space Heater	1SCA-PNL8A1	ON		
1SFC-P3B	SV Transfer Pump B	1NHS-MCC8B	CLOSED		
1SFC-P3BM	SV Transfer Pump B Motor Space Heater	1SCA-PNL8B1	ON		
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ATTACHMENT - 4		DATE _____	
CONTROL BOARD LINEUP - MAIN TURBINE LUBE OIL SYSTEM			
PANEL ITEM	PANEL ITEM POSITION	INDICATION	COMMENTS/INITIALS
THE FOLLOWING CONTROL SWITCHES AND LIGHTS ARE LOCATED ON PNL (1N13-P680)			
(1TNL-TGM) Turning Gear Motor	PULL-TO-LOCK	GREEN	
(1TNL-MSP) Motor Suction Pump	OFF/RESET	GREEN	
(1TNL-TGOP) Turning Gear Oil Pump	OFF/RESET	GREEN	
(1TNL-ESOP) Emergency Bearing Oil Pump	OFF/RESET	GREEN	
(1TNL-VXN) Lube Oil Reservoir Vapor Extractor	OFF	GREEN	
(1TNL-LPM1) Bearing Lift Pump	OFF/RESET	GREEN	
(1TNL-LPM2) Bearing Lift Pump	OFF/RESET	GREEN	
(1TNL-LPM3) Bearing Lift Pump	OFF/RESET	GREEN	
(1TNL-LPM4/5) Bearing Lift Pumps	OFF/RESET	GREEN/GREEN	
(1TNL-LPM6) Bearing Lift Pump	OFF/RESET	GREEN	
(1TNL-LPM1) Bearing Lift Pump Test	NORMAL	GREEN/RED	
(1TNL-LPM2) Bearing Lift Pump Test	NORMAL	GREEN/RED	
(1TNL-LPM3) Bearing Lift Pump Test	NORMAL	GREEN/RED	
(1TNL-LPM4/5) Bearing Lift Pump Test	NORMAL	GREEN/RED GREEN/RED	
(1TNL-LPM6) Bearing Lift Pump Test	NORMAL	GREEN/RED	
ATTACHMENT - 4	PAGE 1 OF 2	SOP-0012	R - DRAFT
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# EXAMPLE OF A CONTROL BOARD LINEUP SHEET FOR SAFETY RELATED DEVICES

ATTACHMENT - 4		DATE	
CONTROL BOARD LINEUP - FUEL POOL COOLING AND CLEANUP (SAFETY RELATED) (Continued)			
PANEL ITEM	PANEL ITEM POSITION	INDICATION	COMMENTS/ INITIALS
THE FOLLOWING ARE LOCATED ON IN13-PS70			
15FC-P1A Fuel Pool Cooling	STOP	GREEN AND WHITE	
15FC-P1B Fuel Pool Cooling	STOP	GREEN AND WHITE	
15FC-MV119 Contact Fuel Pools Inlet Isol	NOTE 1	GREEN	
15FC-MV120 Rtn to Cfg			
Contact Inbd Isol	GREEN	GREEN	
15FC-MV121 Rtn to Prefn			
Pumps Contact Outbd Isol	NOTE 1	GREEN	
15FC-MV122 Rtn to Cfg Pumps			
Contact Outbd Isol	NOTE 1	GREEN	
15FC-MV129 Rtn to Prefn			
Contact Inbd Isol	NOTE 1	GREEN	
Division 1 Spent Fuel Pool Manually Bypassed	OFF	N/A	
Division 2 Spent Fuel Pool Manually Bypassed	OFF	N/A	

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**1.0 PURPOSE**

To provide instructions to the Operations Section Personnel for plant recovery following a reactor scram. It is assumed that all applicable sections of ACP-0001 "Reactor Scram" and, if necessary, EOP-0001 "RPV Control" have been completed prior to entry into this procedure.

The actions specified in this procedure are intended to prepare the plant for a subsequent startup (GOP-0005) or Shutdown to HOT S-STOP (GOP-0003) or Cold Shutdown (GOP-0004).

Administrative requirements are contained in ADM-0022 "Conduct of Operations".

**2.0 REFERENCES**

- 2.1 ANSI N16.7-196 Administration Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants.
- 2.2 "Preparation of Operations Section Procedures", CSP-0007.
- 2.3 "Standardized Technical Specifications", GE BWR's (LATER).
- 2.4 "Development, Control and Use of Procedures", ADM-0003.
- 2.5 System Operating Procedures:
  - 2.5.1 "Circulating Water", SOP-0006.
  - 2.5.2 "Feedwater", SOP-0009.
  - 2.5.3 "Residual Heat Removal", SOP-0031.
  - 2.5.4 "Reactor Core Isolation Cooling", SOP-0035.
  - 2.5.5 "Reactor Water Cleanup", SOP-0090.
  - 2.5.6 "Off Gas System", SOP-0092.
  - 2.5.7 "Condensate Demineralizer", SOP-0093.
  - 2.5.8 "Main Turbine", SOP-0080.
- 2.6 Abnormal Operating Procedure, "Reactor Scram", ACP-0001.
- 2.7 Emergency Operating Procedures, "RPV Control", EOP-0001.
- 2.8 GCU Operational QA Manual, Section XIV.
- 2.9 Administrative Procedure ADM-0022, "Conduct of Operations".

N/A

N/A

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ATTACHMENT - 1		PERFORMANCE PACKAGE: MSIV's OPEN		
<u>INITIATED</u>		<u>COMPLETED</u>		
ON: DATE _____		ON: DATE _____		
AT: TIME _____		AT: TIME _____		
BY: NCO _____		BY: NCO _____		
SS _____		SS _____		
OTHER DOCUMENTS ATTACHED: _____				
REMARKS: _____				
_____				
_____				
_____				
3.0 PRECAUTIONS				
3.1 Following a reactor scram from high power levels there is an initial RPV level "Shrink" of 20 to 40 inches followed by a "Swell" of approximately 10 to 20 inches. The Feedwater Level Control System is programmed to "ride out" this shrink and swell without overfilling the RPV. DO NOT attempt to take manual control of the level unless misoperation in automatic is obvious.				
3.2 If Reactor Recirc Pumps should trip, they should be restarted on LFMG to assure adequate mixing of RPV Coolant and prevent stagnation of Cool Water in the bottom head region. Consult SOP-0003 for pump restart precautions. Even on low speed, flux peak can result and cause a scram (particularly on 1RM's).				
3.3 If feedwater regulating valves leak excessively, close MOV's (1FWS-HOV27A, 27B and/or 27C) to prevent overfilling the RPV.				
4.0 LIMITATIONS AND ACTIONS				
4.1 RPV level should be maintained between +32" and +40" on the Wide Range Level Recorder, throughout this procedure unless specifically directed otherwise.				
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## ATTACHMENT - 1

## PERFORMANCE PACKAGE: MSIV's OPEN (Continued)

- 4.2 Limit the reactor coolant to less than or equal to 100°F when averaged over any one hour period (Technical Specifications 3.4.1).
- 4.3 When heat is being added to the suppression pool, maintain pool temperature per (Technical Specification 3.4.3.1).
- 4.4 Whenever the Condensate/Feedwater System is providing primary makeup to the RPV with the RPV water temperature greater than or equal to 21.1°F, condenser vacuum should be maintained between 7 Hg ABS and 2 in. Hg ABS to assure deaeration of the feedwater and reduce the possibility of Inter-Granular Stress Corrosion.
- 4.5 The Main Turbine must remain on Turning Gear whenever the Steam Seals are on.
- 4.6 Maintain Condensate Demin Inlet temperature less than 130°F.
- 4.7 Complete administrative requirements in reference 2.9 before restarting the reactor.

## 5.0 PROCEDURES NOTES

- 5.1 As feed flow is reduced, reduce on-line condensate demins per SOP-0093 to maintain flow through each demin between 1250 GPM and 2350 GPM.
- 5.2 Block the NSSS Computer P-1 Calculations per (LATER).
- 5.3 If RPV drain temperature to saturated steam temperature differential exceeds 100°F then depressurize the RPV as necessary to maintain this differential temperature less than (LATER).
- 5.4 Anytime steam loads are reduced (such as when steam drains are closed or steam driven equipment is shutdown) maintain RPV pressure control with the Bypass Valves.
- 5.5 Except as specified, primary RVP level control will be with makeup from the Feedwater System with reject as necessary (to control increasing level) from RVCU Blowdown to the main condenser per SOP-0090.
  - 5.5.1 Maintain condenser vacuum between 7" Hg and 2" Hg ABS using Aux Boiler Steam for Steam Seals and condenser vacuum pumps.
- 5.6 If the circulating water pumps trip and cannot be immediately started, close MSIV's and enter Attachment 2 of this procedure.

ATTACHMENT - 1

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PAGE 4

ATTACHMENT - 1		PERFORMANCE PACKAGE: MSIV's OPEN (Continued)		
STEP		INITIAL		
1.	Verify/establish on-scale neutron monitoring on the SKM's and ISM's			
2.	Maintain RPV pressure at approximately 430 Psig using any of the following: a. Main Turbine Bypass Valves per SOP-0080. 1. On automatic pressure control 2. With bypass valve opening jack b. Normal plant steam loads. 1. SJAE per SOP-0025 2. Steam seals per SOP-0015 3. Radwaste reboiler per SOP-0026 4. DFC gas preheater per SOP-0092 5. WSL drains per SOP-0011 c. RCIC per SOP-0015.			
3.	Verify Main Turbine Steam Seals are being maintained by Auxiliary Boiler.			
4.	Maintain RPV level using condensate/feedwater as follows: a. Transfer level control to single element and reset level "Setdown" per SOP-0012. b. Shutdown condensate pumps and feedpumps as necessary to have one condensate and one feedwater pump running. c. If necessary, start RCIC per SOP-0015. d. Use RUCU blowdown per SOP-0090 if RPV level increases to +10".			
5.	If tripped, restart reactor recirculation pumps on LFMS per SOP-0003. a. Open flow control valves to the full open position.			
6.	Verify the RCU scram accumulators have been recharged, by observing the ACCUM FAULT indicating lights on IN13-Pe80 are out.			
7.	Shutdown both heater drain pumps per SOP-0010.			
8.	Open/verify open main steam drain valves (10TM-MOVF021 and F068).			
9.	Shutdown feedwater heaters extraction steam per SOP-0010.			
ATTACHMENT - 1		PAGE 3 OF 4	GOP-0007	R - DRAFT
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ATTACHMENT - 1		PERFORMANCE PACKAGE: MSIV's OPEN (Continued)		
STEP		INITIAL		
10.	Consistent with decay heat availability, open the following drain valves to the main condenser: a. Main Stop Before Seat (IDTM-MOVSV1, SV3, SV5, SV7) b. SJAE Supply Line (IDTM-MOV173) c. Main Steam Header (IDTM-MOV12A and 12B) d. Main Steam Line (IDTM-MOV-F066A-D1) e. Main Steam Line (IDTM-MOV-F070) f. Main Steam Line Drain Header (IDTM-MOV-F021) g. MSIV Before Seat (IDTM-MOV068) h. Reheater Steam Supply (IDTM-MOV91A and B, 54A and B) i. Crossaround Piping ( ) j. Extraction Line ( )			
11.	Start condenser vacuum pumps per SOP-0025 a. Maintain vacuum between 2" Hg ABS and 2" Hg ABS			
12.	Shutdown moisture separator/reheaters and establish steam blanketing per SOP-0010.			
13.	Complete the Scram Report and Post Trip Review Checklist (in reference 2.9).			
14.	If Plant Shutdown is desired, notify System Dispatcher and enter CIP-0003 or GOP-0004.			
15.	If it is desired to startup the Plant, perform the following: a. Verify the cause of the scram is known and no longer exists. b. Verify that the necessary maintenance actions and post-maintenance tests to correct any malfunction that caused or contributed to the scram have been corrected. c. Enter GOP-0005.			
16.	Submit the completed Scram Report, Post Trip Review Checksheet and this attachment to the Operations Supervisor for review.			
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ATTACHMENT - 2		MASTER STARTUP CHECKSHEET	
NO.	DESCRIPTION	INITIALS	
1*	Isolated Phase Bus Test System in service per 1-SOP-111		
2*	Fan on Main and Normal Service Transformers ready for service per 1-SOP-111		
3*	Turbine and Steam Ready ready for service per 1-SOP-111		
4*	Turbine Steam Sealing System ready for service per 1-SOP-111		
SYSTEM AVAILABLE STATUS			
5*	Service Water System in service per 1-SOP-111		
6*	Turbine Plant Component Cooling Water System in service per 1-SOP-111		
7*	Reactor Plant Component Cooling Water System in service per 1-SOP-111		
8*	Instrument and Service Air System in service per 1-SOP-111		
9*	Waste Management System in service per 1-SOP-111		
10*	Fire Protection System in service per 1-SOP-110 and 1-SOP-101		
11*	Turbine Building Ventilation System in service per 1-SOP-101		
12*	Containment Building Ventilation System in service per 1-SOP-101		
13*	Radwaste Building Ventilation System in service per 1-SOP-101		
14*	Control Building Ventilation System in service per 1-SOP-101		
15*	Auxiliary Building Ventilation System in service per 1-SOP-101		
16*	Fuel Building Ventilation System in service per 1-SOP-101		
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ATTACHMENT - 2		MASTER STARTUP CHECKSHEET	
102	Authorization received for start-up from Superintendent or Assistant Superintendent.		
103	Load Dispatcher notified of impending start-up.		
104	Announced - "Primary and Secondary Conductions Integrity is in effect."		
105	Announced - "Master Start-up is commenced."		
106	Place Reactor Mode Switch to the START-UP/NOT START-UP position.		
107	Record any alarm indication on panel IN13-PA55 and any other significant abnormal signals.		
108	Note any items on this checklist that could not be satisfied:		
		Time/Date	
		Operator	
		Reviewed	
		(State Supervisor)	
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1.0 PURPOSE DISCUSSION

- 1.1 The purpose of this procedure is to provide instructions for the operator during the loss of RPIS.
- 1.2 This procedure will not interfere with the Emergency Implementing Procedures or Emergency Operating Procedures.
- 1.3 RPIS supplies the operator with control rod position information which is required for all modes of operation. The RPIS also supplies inputs to the computer and A-L and RPC System.

2.0 SYMPTOMS

- 2.1 Loss of one or more rod position indicators.
- 2.2 Loss of the full core display.
- 2.3 Double image on rod position indicator.
- 2.4 RC&IS INOP alarm on IH13-P&SO.
- 2.5 Control Rod Withdrawal Block alarm on IH13-P&SO.
- 2.6 INSERT INHIBIT and/or WITHDRAWAL INHIBIT status Light ON.
- 2.7 Data fault.

3.0 ALTERNATIVE ACTIONS

- 3.1 Control rod withdrawal block and/or rod insert block.

4.0 IMMEDIATE OPERATOR ACTIONS

- 4.1 Obtain rod position data from computer or the alternate RPIS channel.
- 4.2 If possible, insert the control rod to a position with an operable position indication.
- 4.3 If all rod position indication is lost - rod motion is prohibited except by scram.
- 4.4 Notify the Shift Supervisor.

5.0 SUBSEQUENT OPERATOR ACTIONS

- 5.1 Refer to Technical Specifications, Section 3.1.3.3.
- 5.2 Notify the Instrument and Control Section.

"END"

N/A	N/A	AOP-CO25	8-0	PAGE 2
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<u>ALARM NUMBER</u>	<u>ALARM TITLE</u>	<u>ENCLOSURE NO.</u>		
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0112	Reactor Bldg Fuel Storage Pool High/Low Level	Enclosure 3		
0113	Refueling Cavity Water High/Low Level	Enclosure 4		
0293	Fuel Pool Clg Sys Div II Inoperative	Enclosure 5		
0331	Fuel Pool Cooling Pump PIA Auto Trip	Enclosure 6		
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- 7	FUEL POOL COOLING PUMP PIA LOW PRESSURE	(IN13-PS70) / 56A / G01 ALARM NO. 0332
<u>INITIATING DEVICES</u>		<u>SET POINTS</u>
1. 62A Low Pressure Alarm Relay		1. 25 Psig, 10 Second TDPU
<u>AUTOMATIC ACTIONS</u>		
1. None		
<u>IMMEDIATE ACTIONS</u>		
1. None		
<u>POSSIBLE CAUSES</u>		
1. Failure of Pressure Switch (ISFC-PS6A).		
2. Improper system valve lineup.		
3. (ISFC-PIA) Fuel Pool Cooling Pump failure.		
<u>SUBSEQUENT ACTIONS</u>		
1. Dispatch personnel to determine cause for low pressure alarm and initiate appropriate corrective action.		
2. If necessary, shutdown A loop per Section 6.1 of SOP-0091, Fuel Pool Cooling and Cleanup.		
3. If necessary, place B loop in service per Section 4.2 of SOP-0091, Fuel Pool Cooling and Cleanup.		
4. Monitor Spent Fuel Pool temperature until problem has been corrected.		
5. When cause of low pressure has been corrected, place A loop in standby or in service if needed.		
6. Insure alarm clears when problem has been cleared.		
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FIGURE -				
FIGURE -	PAGE OF	-	-	PAGE

DATA SHEET - 1		GENERATOR CORE MONITOR SYSTEM FUNCTIONAL TEST DATA SHEET	
6.1 Permission obtained to perform test:			
Shift Supervisor _____	Date _____	Time _____	
Control Room Operator notified _____			
		Filament 1 2	
6.2 "TEST FIL" button depressed for 7 seconds:			
6.2.1 Meter reading drops to almost zero.			
6.2.2 Recorder reading drops to almost zero.			
6.2.3 Alarm light comes on.			
6.3 ALARM/SAFE switch reset to SAFE			
6.4 FILTER pushbutton depressed.			
6.5 "TEST FIL" button depressed for 7 seconds.			
6.6 Little or no change in meter or recorder reading.			
6.7 "FILTER" and "TEST FIL" pushbuttons released.			
6.8 Steps 6.2 through 6.6 repeated for Filament No. 2.			
6.9 Generator Core Monitor in service per 1-SOP-23.			
6.10 Control Room Operator informed of test completion.			
6.11 Shift Supervisor informed of test completion.			
Remarks: _____			
_____			
Time/Date: _____			
Test Performed By: _____			
Test Complete and Reviewed: _____			
Shift Supervisor			
DATA SHEET - 1	PAGE 2 OF 2	STP-23-3	REV - 0 PAGE 6