CNS OPERATIONS MANUAL CONDUCT OF OPERATIONS PROCEDURE 2.0.1.2 OPERATIONS PROCEDURE POLICY	USE: INFORMATION ⊕ EFFECTIVE: 5/17/04 APPROVAL: SORC/IQA OWNER: OPS SUPV DEPARTMENT: OPS

P&I: 1

REV.	DATE	CHANGES
20	4/2/04	Revised immediate operator actions for RPV level control trouble to match revised guidance in Procedure 2.4RXLVL, Revision 11.
21	see above	Revised IOAs to match revised guidance in host procedures.

1.   PURPOSE

   1.1   Provide Operations procedure usage requirements and Operations Management expectations.

   1.2   These requirements/expectations are in addition to the requirements of Procedure 0.1, Introduction to CNS Operations Manual.

2.   OPERATIONS PROCEDURE USE - GENERAL

   2.1   Refer to Procedure 0.1, Introduction to CNS Operations Manual, for CNS procedure requirements for use and adherence.

   2.2   Operators shall ensure automatic safety initiations and actuations. They shall ensure automatic actions take place in response to valid initiation signals per their safety function design. Upon recognition of a failure of automatic safety feature, Operators shall manually perform those actions necessary to fulfill the safety function.

   2.3   If a completed procedure is not retained as a quality record (such as a system operating procedure), step discrepancies or non-performance shall be documented/logged as discrepancies. This requirement does not apply to "pen and ink" type discrepancies such as typos and obvious numbering errors.

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2.4 The term "Emergency Procedures" as used in this procedure does not include the Emergency Operating Procedures (EOPs)/Severe Accident Guidelines (SAGS) and Emergency Plan Implementing Procedures (EPIPs). Specific EOP usage is addressed in Procedure 5.8.

2.5 Alarm/Abnormal/Emergency/System Operating Procedures/Instrument Operating Procedures may be carried out concurrently with an EOP. In the event that conflicting actions are directed by procedures, the EOP actions shall take precedence. EOPs/SAMGs are Operations highest tier procedure. If an explicit operation is directed by EOPs per a 5.8 EOP Support Procedure, then transition shall be made from the Alarm/Abnormal/Emergency/System Operating/Instrument Operating Procedures (including hard cards) to the 5.8 Procedure to perform or continue performing that operation.

2.6 Specific Alarm Procedure usage is addressed in Procedure 2.3.1.

2.7 A required reading binder is maintained in the Control Room. The binder contains Procedure Change Requests (PCRs), that are not significant enough to require formal training prior to use, but significant enough to ensure awareness and understanding of the change. Operators are required to review and initial the procedure change sheet during their first watch after the procedure is made effective. By initialing, the Operator acknowledges they understand the described change.

3. SYSTEM AND INSTRUMENT OPERATING PROCEDURES

3.1 System Operating Procedures (SOPs) shall be classified as Reference Use, except for Communication Systems Operating Procedure, which will be classified as Information Use. Instrument Operating Procedures (IOPs) shall be classified as either Reference or Information Use.

3.2 SOPs and IOPs contain sections, as applicable, to fill and vent system, startup, and secure system, layup system, operate support systems, most typical system operations, and recovering from abnormal or emergency transients.

3.3 SOP and IOP tasks have been structured to perform and complete a task with no consideration for on-going maintenance or abnormal and transient plant conditions. Examples of this are:

3.3.1 Fill and vent sections were created assuming the system was completely drained.

3.3.2 Securing/shutdown sections were created assuming the complete system was in service.

4. HARD CARDS

4.1 Hard Cards are attachments to applicable Operating Procedures, that may be used for the timely operation of equipment needed to mitigate the effects of a transient/accident.

4.2 Hard Cards are created from existing procedure guidance and contain only the steps necessary to accomplish the task in the most expeditious manner.

4.3 In the event of entry into an Alarm Procedure, AP, EP, or Emergency Operating Procedure, either the Hard Card or applicable section of the SOP shall be used to perform the necessary task. If an Alarm Procedure, AP, or EP directs action without reference to an SOP, the intent is to perform the action as directed, without performing pre-start actions contained in the SOP. If time is not a consideration in mitigating the event, the step will direct operating equipment per the applicable SOP.

4.4 Hard Cards should not be used during normal plant operations.

4.5 Following completion of a task using a Hard Card, as plant conditions permit, the associated Operating Procedure should be reviewed for applicable precautions, limitations, and subsequent steps.

5. MITIGATING TASKS

5.1 The following tasks shall be performed from memory to ensure timely control of certain critical parameters during rapid plant transients. After performing task from memory, actions shall be verified with applicable procedure:

5.1.1 Responding to an automatic scram or manually scramming Reactor per Procedure 2.1.5, Attachment 1.

5.1.2 Manually controlling RPV pressure with SRVs per Procedure 2.2.1, 5.8.1, or 5.8.12.

5.1.3 Tripping Main Turbine per Procedure 2.2.77.

5.1.4 Starting SLC Injection per Procedure 2.2.74.

5.1.5 Manually initiating ARI per Procedure 4.5.

6. ABNORMAL AND EMERGENCY PROCEDURES

6.1 ABNORMAL AND EMERGENCY PROCEDURE USAGE - GENERAL

6.1.1 APs and EPs shall be classified as Continuous Use. The exception to Continuous Use is when performing Immediate Operator Actions from memory as prescribed in Step 6.7.1.

6.1.2 In general, APs address less severe conditions than EPs. An exception to this are electrical casualty procedures that are grouped together as 5.3 series for improved human factoring.

6.1.3 APs and EPs use a numeric-alpha numbering scheme. The alpha is a casualty or system descriptor. All APs are 2.4 series. EPs numeric series is defined below:

6.1.3.1 5.1 series typically address whole plant or large area emergencies.

6.1.3.2 5.2 series typically address individual piping system emergencies.

6.1.3.3 5.3 series typically address electrical system emergencies.

6.1.3.4 5.4 series typically address fire emergencies.

6.1.3.5 5.5 series typically address security emergencies.

6.1.4 Procedure 0.1 requirement to verify revision is waived during an unanticipated plant transient and AP/EP response.⊚

6.1.5 APs and EPs have guidance for taking aggressive actions in response to plant or equipment transients. The actions are normally to shut down the reactor or affected piece of equipment. The guidance is in place such that further degradation of plant or equipment conditions could challenge reactor or equipment safety. There are instances where the degradation of plant or equipment conditions have reached the action level requiring actions to be taken but are very short-lived due to mitigating actions that have been performed. If the mitigating actions are performed and Control Room supervision determines that no equipment damage has occurred, reactor safety has not been challenged and an automatic trip condition has not been exceeded, then Control Room supervision can direct not performing the actions. If this occurs, the event shall be logged, Operations Department management informed, and a Notification (use PCR Standard Text) written to evaluate the adequacy of the procedure guidance.⊚

6.1.6   When an AP or EP directs action without reference to an SOP, the intent is to perform the action as directed, without performing pre-start actions contained in the SOP. If time is not a consideration in mitigating the event, the step will direct operating equipment per the applicable SOP.

6.1.7   AP and EP steps should be performed in sequence unless mitigating circumstances warrant altering the sequence. To support priorities during event mitigation, it's acceptable to perform steps out of sequence. The procedures are typically written given the plant is at 100% power. Therefore, some actions in the procedure that are performed at power may not be applicable in other modes of operation (e.g., tripping the main turbine and scramming the reactor). The procedures may not address all possible plant conditions and therefore, some steps may not apply. If steps are performed out of sequence or not performed, the CRS or SM shall ensure all applicable steps are performed and procedure intent is not altered. If steps are not performed, justification for non-performance shall be documented/logged as discrepancies and a Notification (use PCR Standard Text) written to evaluate the adequacy of the procedure guidance.⊚

6.1.8   When an AP or EP is entered, the marked-up procedure should be retained, if necessary, for Procedure 2.0.6 review.

6.2   SCRAM ACTION

6.2.1   If scram actions are contained in an AP, EP, or Alarm Card, the first page of the procedure or alarm card will contain a "Scram Action" watermark along the right hand margin of the page. In addition, the word scram in the action step(s) will be capitalized and scram actions bolded.⊚

6.3   ENTRY AND EXIT CONDITIONS

6.3.1   This section is used to list plant conditions or indications that are indicative of expected abnormal operational conditions or transients.

6.4   APs and EPs shall be entered from any of following:

6.4.1   When directed by another plant procedure.

6.4.2 When abnormal or emergency plant conditions are consistent with Procedure Entry Conditions:

6.4.2.1 Entry conditions are formatted as a list. Generically, if <u>any</u> entry condition is met, the procedure should be entered <u>unless</u> the entry condition specifies entry based on a logic term (e.g., "and", "or", "if", "if not", and "when").

6.5 APs and EPs may be exited by any of following:

6.5.1 When directed by procedure.

6.5.2 When all applicable steps have been completed.

6.5.3 When conditions that required entry no longer exist and plant conditions are stable.

6.6 AUTOMATIC ACTIONS

6.6.1 AP/EP Automatic Actions identify those actions that will automatically occur for the transient. Only those actions directly caused by the event initiator are listed.

6.6.2 If a valid initiation signal exists, Operators shall ensure the identified automatic actions take place. Upon recognition of a failure of an automatic safety feature, Operators shall manually perform those actions necessary to fulfill the safety function.

6.7 IMMEDIATE OPERATOR ACTIONS

6.7.1 Immediate Operator Actions (IOAs) shall be performed from memory and subsequently verified with the applicable procedure.⊘

6.7.2 IOAs are developed using following criteria:

6.7.2.1 IOAs are activities that stop the degradation of abnormal or emergency conditions and mitigate their consequences by:

a. Ensuring the reactor is in a safe condition with adequate core cooling.

b. Ensuring the Reactor Coolant System pressure boundary is intact.

c. Ensuring adequate power sources are available.

d. Ensuring containment and exhaust systems (e.g., associated ventilation, SBGT, ERP) are operating properly to prevent uncontrolled release of radioactivity.

6.7.2.2 IOAs must be capable of performance within a reasonable time in order to stop event degradation and mitigate event consequences. The development of IOAs is based on a "reasonable time" being ~ 1 minute. The value of 1 minute is only for the purpose of developing IOAs and shall not be used as an Operator performance standard.

6.8 SUBSEQUENT OPERATOR ACTIONS

6.8.1 This section specifies follow-up actions to be taken after the IOAs are complete. Including steps to return the reactor or systems to a stable condition, identify contingencies, and provide instructions to inform Operator if a Technical Specification Limitation is considered to be crucial to event response or does not have an obvious association to the event.

6.8.2 FLOWCHARTS

6.8.2.1 Some APs and EPs may be comprised of both a numbered step/paragraph format and a flowchart format. A flowchart, when used, will typically be an attachment to the procedure and will contain subsequent operator actions. The flowchart will be used just as any other attachment (i.e., when directed by instructions within the procedure's main body). A flowchart will normally be performed concurrently with the steps in the procedure body. Each flowchart is comprised of three components:

a. Instruction blocks (squares or rectangles) that contain action steps or information in support of action performance.

b. Decision blocks (diamonds) that normally contain Yes/No questions.

c. Flow lines (lines with arrows) that direct the sequence of actions and decisions.

6.9   DISCUSSION

6.9.1   This section states the objective of the procedure. Since the Abnormal and Emergency Procedures are event based procedures, the section identifies the major parameters/systems being controlled by the procedure and when applicable, includes the reasoning behind steps in the procedure if those steps must be performed for a specific reason or commitment, and it is not obvious for the reasoning for those steps. This section also includes relevant probable annunciators, indications, and causes associated with the event.

6.10   REFERENCES

6.10.1   This section contains any procedures referenced by the procedure and other applicable references such as Technical Specification sections, drawings, etc.

7.   PLANT PROCEDURE AUDIT

7.1   An audit shall be performed quarterly on plant procedures located in the Control Room and on those procedures the Operations Department is responsible for at designated locations outside of the Control Room. These audits shall ensure these procedures are located properly and are of the latest procedural revision.

7.2   The Operations Clerk is responsible for ensuring an audit is conducted quarterly on procedures located in the Control Room. This audit shall entail using a list of the procedures located in the Control Room with the latest revision number indicated and a verification that the procedures in place in the Control Room are of the latest revision. Any procedures identified as not of the latest revision shall be removed and the latest revision inserted in place. The Control Room procedure list and audit records shall be maintained by the Operations Supervisor.

7.3   The Radwaste Operations Supervisor is responsible for ensuring an audit is conducted quarterly on procedures the Operations Department is responsible for at designated locations outside of the Control Room. This audit shall entail using a list of those procedures located outside of the Control Room with the latest revision number indicated and a verification that the procedures in place outside of the Control Room are of the latest revision. Any procedures identified as not of the latest revision shall be removed and the latest revision inserted in place. The list of procedures outside of the Control Room and audit records shall be maintained by the Radwaste Operations Supervisor.

8. SAFETY GUIDE 33/ANSI N18.7

8.1 This section identifies the Safety Guide 33/ANSI N18.7 Emergency, Abnormal, and System Operating Procedure recommendations, not implemented by the CNS Operations Department. Each applicable document and section number is first identified, followed by the CNS Operations position.

8.2 ANSI N18.7, Section 5.3.8.1 (4) - The notification of plant personnel of the nature of an emergency is not considered to be an IOA. It typically takes some time to validate and establish an accurate picture of plant status. Notifying personnel "Immediately" could result in erroneous information and an improper or unsafe response by plant personnel. In addition, personnel notification is controlled by the Operation communication standard and does not meet the IOA criteria.

8.3 ANSI N18.7, Section 5.3.8.1 (4) - The verification of Automatic Actions is not considered to be an IOA. The verification of Automatic Actions is considered to be a universal or standard Operator response that does not require a specific procedure step to trigger performance. CNS Abnormal and Emergency Procedures do provide a list of applicable Automatic Actions, that are used by the Operator to verify the correct system/component response.

8.4 ANSI N18.7, Section 5.3.2.8 - Operations procedures do not usually contain "check-off" lists as suggested in the standard. Operations used to use check-off lists, but now uses initial blocks or check-off boxes within the body to ensure place keeping. Unto themselves checklists are good tools, but are very brief in terms of guidance. For accurate task completion, both the checklist and body of the procedure have to be used in conjunction with each other. Using two documents in parallel is poor human factoring.

9. RECORDS

9.1 No quality records are generated by this procedure.

1. **PROCEDURE 2.4CSCS**

   1.1 If HPCI initiated, perform following:

   1.1.1 Ensure AUXILIARY OIL PUMP control switch in START.

   1.1.2 Press and hold TURBINE TRIP button.

   1.1.3 After turbine stops, place AUXILIARY OIL PUMP in PULL-TO-LOCK.

   1.1.4 Release TURBINE TRIP button.

2. **PROCEDURE 2.4DEH**

   2.1 Stop any power changes in progress.

   2.2 If either of the following occur at any time, **SCRAM** and concurrently enter Procedure 2.1.5:

   2.2.1 Reactor pressure cannot be maintained $\leq$ 1030 psig.

   2.2.2 Reactor Mode switch is in RUN and reactor pressure cannot be maintained $\geq$ 900 psig.

3. **PROCEDURE 2.4MC-RF**

   3.1 If RPV level cannot be maintained above +12" on Narrow Range Instruments, **SCRAM** and concurrently enter Procedure 2.1.5.

   3.2 If condensate or condensate booster pump trips while total feedwater/steam flow > 7×10^6 lbs/hr, perform rapid power reduction per Procedure 2.1.10 until either core flow reaches 37×10^6 lbs/hr or rod line reaches 120.0%.

4. **PROCEDURE 2.4RR**

   4.1 If both RR pumps are tripped and reactor power > 1% rated thermal, **SCRAM** and concurrently enter Procedure 2.1.5.

4.2   If recirculation flow is not stable, perform following:

    4.2.1   If recirculation flow is rising, lower on RRFC-SIC-16A(16B) to stabilize power.

        4.2.1.1   Press SCOOPTUBE LOCKOUT button.

        4.2.1.2   If flow still has not stabilized, trip affected RR pump and enter Attachment 1.

    4.2.2   If recirculation flow is lowering, press SCOOPTUBE LOCKOUT button.

5.   PROCEDURE 2.4RXLVL

5.1   If either of following occur at any time, **SCRAM** and concurrently enter Procedure 2.1.5:

    5.1.1   RPV level cannot be maintained above +12" on narrow range instruments.

    5.1.2   RPV level cannot be maintained below +50" on narrow range instruments.

5.2   If RPV level is rising, stop any power changes in progress.

5.3   Place following in MAN, MDEM, or MDVP, as necessary, and stabilize RPV level:

    5.3.1   RFC-LC-83, MASTER LEVEL CONTROLLER.

    5.3.2   RFC-CS-RFPTA, RFPT A CONTROL STATION.

    5.3.3   RFC-CS-RFPTB, RFPT B CONTROL STATION.

    5.3.4   RFC-CS-SUMAST, STARTUP MASTER CONTROL.

    5.3.5   RFC-CS-FCV11AA, STARTUP FCV 11AA.

    5.3.6   RFC-CS-FCV11BB, STARTUP FCV 11BB.

5.4   If RPV level is lowering, rapidly lower power and maintain RPV level in the green band per Procedure 2.1.10.

6. PROCEDURE 2.4RXPWR

   6.1   If reactor power rising, reduce power per Procedure 2.1.10.

   6.2   If power rise not terminated, **SCRAM** and concurrently enter Procedure 2.1.5.

7. PROCEDURE 2.4VAC

   7.1   For lowering condenser vacuum:

       7.1.1   Reduce power per Procedure 2.1.10 to maintain vacuum ≥ 23" Hg.

       7.1.2   If vacuum cannot be maintained ≥ 23" Hg, perform following:

            7.1.2.1   If Annunciator 9-5-2/C-4 clear, **SCRAM** and enter Procedure 2.1.5.

            7.1.2.2   Trip Main Turbine.

            7.1.2.3   If reactor was not scrammed, concurrently enter Procedure 2.2.77.

   7.2   If vacuum cannot be maintained ≥ 12" Hg, close MSIVs.

8. PROCEDURE 5.2REC

   8.1   If REC header pressure ≤ 62 psig, start available REC pumps.

   8.2   If REC header pressure not restored, close following valves:

       8.2.1   REC-AO-710, RWCU NON-REGEN HX INLET.

       8.2.2   REC-MO-1329, AUGMENTED RADWASTE SUPPLY.

9. PROCEDURE 5.3AC120

       9.1.1   If CDP-1B de-energized, fully open:

       9.1.2   MS-BV-1A, SJAE A STM SUPP BYP VLV.

       9.1.3   MS-BV-1B, SJAE B STM SUPP BYP VLV.

10. PROCEDURE 5.3AC480

   10.1   If 480V Bus 1G de-energized, fully open:

      10.1.1   MS-BV-1A, SJAE A STM SUPP BYP VLV.

      10.1.2   MS-BV-1B, SJAE B STM SUPP BYP VLV.

1. DISCUSSION

   1.1 This procedure provides Operations personnel with direction for use of procedures beyond the procedural requirements of Procedure 0.1.

2. REFERENCES

   2.1 CODES AND STANDARDS

        2.1.1 ANSI N18.7-1972, Administrative Controls for Nuclear Power Plants.

        2.1.2 Safety Guide 33, Quality Assurance Program Requirements (Operation).

   2.2 PROCEDURES

        2.2.1 Administrative Procedure 0.1, Introduction to CNS Operations Manual.

        2.2.2 Administrative Procedure 0.9, Tagout.

        2.2.3 Conduct of Operations Procedure 2.0.6, Operational Event Response and Review.

        2.2.4 General Operating Procedure 2.1.5, Reactor Scram.

        2.2.5 General Operating Procedure 2.1.10, Station Power Changes.

        2.2.6 System Operating Procedure 2.2.1, Nuclear Pressure Relief System.

        2.2.7 System Operating Procedure 2.2.74, Standby Liquid Control System.

        2.2.8 System Operating Procedure 2.2.77, Turbine Generator.

        2.2.9 Alarm Procedure 2.3.1, General Alarm Procedure.

        2.2.10 Abnormal Procedure 2.4CSCS, Inadvertent CSCS Initiation.

        2.2.11 Abnormal Procedure 2.4DEH, DEH Abnormal.

        2.2.12 Abnormal Procedure 2.4MC-RF, Condensate and Feedwater Abnormal.

        2.2.13 Abnormal Procedure 2.4RR, Reactor Recirculation Abnormal.

2.2.14   Abnormal Procedure 2.4RXLVL, RPV Water Level Control Trouble.

2.2.15   Abnormal Procedure 2.4RXPWR, Reactor Power Anomalies.

2.2.16   Abnormal Procedure 2.4VAC, Loss of Condenser Vacuum.

2.2.17   Instrument Operating Procedure 4.5, Reactor Protection/Alternate Rod Insertion Systems.

2.2.18   Emergency Procedure 5.2REC, Loss of REC.

2.2.19   Emergency Procedure 5.3AC120, Loss of 120 VAC.

2.2.20   Emergency Procedure 5.3AC480, 480 VAC Bus Failure.

2.2.21   Emergency Operating Procedure 5.8, Emergency Operating Procedures (EOPs).

2.2.22   Emergency Operating Procedure 5.8.1, Alternate Pressure Control Systems.

2.2.23   Emergency Operating Procedure 5.8.12, Alternate Pressure Control Systems (Failure to Scram) (Table 12).

2.3   MISCELLANEOUS

2.3.1   ⊕ CR2 94-1237, Inadequate Guidance Exists for Procedure Users to Verify Current Revision Prior to Procedure Use. Affects Step 6.1.4.

2.3.2   ⊕ SCR 98-0623. Affects Step 6.7.1.

2.3.3   ⊕ SER 4-00, Continued Operation When Conditions Called for Manually Scramming the Reactor. Affects Steps 6.1.5 and 6.2.1.

2.3.4   ⊕ TIP Action Plan 5.2.1.1, Revision 2, Action 19a, Establish Strict Guidance for Omitting Steps During Transients. Affects Step 6.1.7.