

**Activity:                    Emergency Operations**

1.0    Purpose:            This guideline has been developed to provide guidance in evaluating off normal/emergency operations and the associated procedures.

2.0    Scope: This guideline has been developed to review and evaluate the following:

E      The use of plant instructions during off normal/emergency operations.

E      Operator response to changing conditions.

E      Plant response to off normal/emergency conditions.

E      Off normal/emergency procedures are prepared to adequately control safety-related functions in the event of a component or system malfunction.

**NOTE:**                It is advisable that an individual with Senior Reactor Operator (SRO) qualifications, or equivalent, perform or assist in the performance of this evaluation.

3.0    References:

3.1    ANS 3.2/N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants"

3.2    Regulatory Guide 1.33-1978, "Quality Assurance Program Requirements (Operations)," Appendix A, Parts 5 and 6

3.3    NRC I&E Procedure 71715, "Sustained Control Room and Plant Observation"

3.4    NRC I&E Procedure 42452B, "Emergency Procedures"

3.5    INPO Good Practice OP-204, "Conduct of Operations"

4.0 Guidelines:

## 4.1 In preparation for and during the conduct of this surveillance:

- E Obtain and review implementing procedures, instructions and drawings governing this activity.
- E Prepare a guide or checklist using the selected items from this guideline.
- E Review past surveys, audits, surveillances and other evaluations/ assessments.
- E Ensure that checklists include, where applicable, actual observations of performance, general plant conditions, radiological work practices, housekeeping, work document controls and use, and safety practices.

**NOTE:** Refer to Guideline A.1, "General Quality Surveillance Guidance," for specific details on the attributes listed above.

**NOTE:** The evaluation of plant off normal/emergency operations should be performed during the annual exercise for emergency preparedness if the drill scenario lends itself to off normal/emergency operations. Otherwise, the evaluation can be performed on the simulator during emergency operations training, although this evaluation would be the least desirable.

**NOTE:** This guideline is not intended to evaluate the entire annual exercise but only that portion that relates to off normal/ emergency operations.

## 4.2 Observe the conduct of off normal/emergency operations and evaluate for the following:

**NOTE:** Preparation for the evaluation should include a review of the drill scenario prior to

developing the surveillance checklist so the evaluator will know what to expect.

In the case of simulator observation, discuss with the training instructor or review the training schedule to aid in developing the surveillance checklist.

- A. The operator-at-the-controls remains at-the-controls unless properly relieved.
- B. The operator's response to changes in plant conditions and alarms as follows:
  - 1) Operators are required to have immediate operator actions, related to emergency operating instructions, committed to memory. Procedures should be out and being used for follow-up actions.
  - 2) Response to alarms includes taking timely action to return the plant to normal.
  - 3) The operator is cognizant of expected alarms.
- C. Plant operating instructions, abnormal and alarm response instructions, and emergency operating instructions being used are the latest approved issue.
- D. The operator's narrative log and the control room log is properly maintained during the evaluation.
- E. Unnecessary personnel are not permitted in the control room.
- F. The proper response of plant instrumentation and alarms to plant conditions.
- G. The operator is cognizant of the actual plant conditions.
- H. If a shift relief occurs, verify accurate and adequate information is provided to oncoming shift.
- I. If surveillance testing is required to be performed, verify the test is properly

completed, acceptance criteria is met, and the test is properly documented.

- J. Verify that licensed plant operators are aware of their authority and responsibility to shut down the plant when there is any doubt about the safety of continued operation.

**NOTE:** Conversations and questions directed at the operators should not interfere with their ability to perform their function.

- K. The plant is operated in a manner to ensure long-term availability as opposed to short-term generation.
- L. The shift engineer maintains a broad prospective of operational conditions affecting the safety of his assigned unit as a matter of highest priority at all times.
- M. The shift engineer does not become involved in any single operation that distracts him when multiple operations are required in the control room.
- N. The shift engineer is responsible for ensuring a professional atmosphere is maintained in the control room at all times.
- O. All senior reactor operators, shift engineers/assistant shift engineers, reactor operators, and auxiliary operators on shift are aware of and responsible for the plant status at all times. This includes supervisors being responsible for the performance of all personnel assigned to their shift.
- P. Only licensed operators manipulate the controls that directly affect the reactivity or power level of the reactor except for training purposes. A trainee may manipulate controls only under the direct supervision of a licensed operator.

- Q. Potentially distracting activities in the control room and other watch stations are not occurring (e.g., radios, games, horseplay, hobbies, and non-job related reading).
  - R. Control boards are unobstructed by operator aids.
  - S. Briefings are conducted for individuals involved in an evolution that is to be performed. The details of the briefings will be dependent on the complexity of the evolution.
  - T. Backup instrumentation, measurements, and readings are used as appropriate when normal instrumentation is found defective or out of tolerance.
- 3.3 Review a representative sample of the emergency operating instructions and verify the following:
- A. Instructions are symptom-based rather than event-based.
  - B. Instructions are reviewed in conjunction with operator retaining programs.
  - C. Instructions are in the required format.
  - D. Instructions exist for the required categories of events.
- 3.4 Review a representative sample of abnormal/alarm response instructions and verify the following:
- A. Instructions are provided for each safety-related annunciator. Each alarm response instruction includes:
    - i. The meaning of the annunciator.
    - ii. The source of the signal.
    - iii. The automatic action that will occur.

- iv. The immediate operator action.
- v. The follow-up action.
- B. Abnormal operating instructions are prepared for anticipated events that can reasonably be expected to occur during normal plant operations.
- C. Procedures are reviewed in conjunction with the operator retraining program.
- D. Abnormal operating instructions are in the required format.

5.0 Other Guidelines for Consideration:

- 5.1 A.1, "General Quality Surveillance Guidance"
- 5.2 P.2, "Control Room Quality Surveillance"
- 5.3 P.9, "Operations Roundsheet and Log Control"