

**Activity:                   Administrative Controls**

1.0    Purpose:           This document provides guidance for evaluating the implementation of site administrative controls established to ensure that controlled instructions are available for operating nuclear power plants, and that the contents of the required instructions are in compliance with the applicable QA commitments.

2.0    Scope: This guideline provides a method to evaluate whether the required procedural coverage is provided for those operating activities that affect safety at nuclear power plants during all phases of operations. Guidance is also provided to evaluate whether the contents of the relevant instructions comply with the requirements of the endorsed reference documents. This guideline does not provide guidance for evaluating the actual implementation of the operating instructions.

E Excluded from the scope of this guideline are guidelines for evaluating the review, revision, and distribution of operating instructions.

E Operating activities relevant to this guideline include startup, system operating, power operations and load changing, process monitoring, and operating during off-normal, abnormal, and emergency conditions.

E Excluded from the scope of this guideline are those activities not directly related

to operating the reactor and associated safety-related systems and include maintenance, radiation control, chemistry, radiochemistry, calibration and testing of plant instrumentation and control systems, plant inspection, fuel handling, and implementation of emergency plan provisions not directly related to restoring the safety-related systems to normal conditions.

3.0 References:

None

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.

4.2 Further guidance for evaluating procedural content is provided by the following paragraphs for those categories of operating activities.

A. System Instructions - Review a representative sampling of operating instructions for safety-related systems and verify they address such activities as energizing, filling, venting, draining, starting up, shutting down, and changing modes of operation. If actions necessary to correct off-normal system conditions are relatively complex, verify that step-by-step instructions with checkoff lists are available.

B. Startup Instructions - Verify controlled copies of startup instructions are available to the control room operators. Review these documents and verify they provide instruction for starting the reactor from both hot and cold conditions and for establishing power operation with the generator synchronized to the grid.

1) Verify the instruction for recovery from reactor trips establishes a startup

prerequisite to determine the circumstances and to analyze the cause of the trip, as well as to evaluate whether operations can proceed. Either the startup instruction or a separate administrative document shall establish the responsibilities and authorities of the operating personnel required to perform these analyses and to decide to restart. If these responsibilities and authorities are described in a separate document, verify that an explicit reference to this document is provided in an appropriate location within the text of the startup instruction.

- 2) Verify the startup instructions contain provision for documenting, usually with startup checklists, the satisfactory completion of such prerequisites as ensuring the operability and proper setting of instruments and controls, the line-up of valves, the completion of system procedures and tests, and the acquisition of required approvals.
  
- 3) Verify the text of the startup instructions provides the sequence of major steps for startup and that it includes references to the appropriate system instructions. Verify for the major steps that detailed instructions for their performance are either provided or referenced, including, for example, minimum instrumentation requirements, manipulation of controls, and confirmation of such operating characteristics as feedwater and steam flow, turbine startup, and synchronization.

- C. Shutdown Instructions - Verify that controlled copies of instructions or procedures are available in the control room to guide operations during and following planned shutdown or reactor trips. Review and verify these instructions provide guidance for maintaining hot standby or cold shutdown conditions, as applicable.
- 1) Verify these shutdown instructions detail the major steps involved in shutting down the plant, including detailed instructions for performance of such activities as monitoring and controlling reactivity; load reduction and cooldown rates; activating or deactivating equipment or systems; acquiring and analyzing data necessary for determining the cause of reactor trips or unplanned controlled shutdowns; and providing for removal of residual heat. Verify checkoff lists are provided for controlling the sequence of and documenting the completion of major steps in shutting down the plant.
  - 2) Verify either the shutdown instructions or separate documents establish the reactor operators' authority for shutting down the reactor when they determine that the safety of the reactor is in jeopardy or when operating parameters exceed any of the reactor protection system setpoints and automatic shutdown does not occur. See paragraph 4.2.G for further guidelines or permissible operator action during an emergency.

- D. Power Operation and Load Changing Instructions - Verify controlled copies of instructions or procedures are available in the control room to guide steady-state power operation and load changing. Verify these procedures address such activities as the use of control rods, chemical shimmiing, control of coolant flow rates, making deliberate load changes, responding to unanticipated load changes, and adjusting operating parameters.
- E. Process Monitoring Instructions - Survey a representative number of performance monitoring activities carried out by operating personnel and confirm that controlled copies of applicable instructions are available to them. Verify instructions are provided for monitoring such parameters and conditions as core thermal margins, coolant quality, the integrity of fission product barriers, and the state of readiness of engineered safety features and emergency equipment.
- 1) Verify these instructions establish not only the maximum and minimum limits for significant process parameters associated with these monitoring activities, but also that the method, nature, and frequency of such monitoring is specified.
  - 2) Verify the process monitoring instructions specify the method(s) of documenting the monitoring results and notifying the appropriate operators of any off-normal readings or conditions.

- 3) Verify these instructions or separate administrative controls require both the labeling by suitable means and the reporting to the site maintenance section of any equipment or instrumentation identified through process monitoring to be inoperable or whose operability or accuracy is questionable.
- F. Instructions for Operating During Off-Normal, Abnormal and Alarm Conditions
- Instructions for operating during a condition other than normal.
- G. Emergency Operating Instructions - Verify there are controlled copies of instructions available in the control room which specify operator actions, including manipulation of plant controls, to reduce the consequence of an accident or hazardous condition which has already occurred.
- 1) Verify the emergency instructions place emphasis on operator responses to observations and indications in the control room. When immediate operator actions are required to prevent or mitigate the consequences of a serious condition, these instructions should detail the appropriate actions and require them to be implemented promptly.
  - 2) Verify the emergency operating instructions allow sufficient latitude in the

operating response to an emergency condition to accommodate actions not discussed by the emergency instructions. Verify that such unplanned actions are required to be approved prior to their implementation by a licensed senior operator.

- 3) Verify for a representative sampling of emergency instructions that they contain, in addition to the elements listed by paragraph 4.2.F, the following sections and content:
  - a. Symptoms of each type of emergency in order to aid in their identification. Symptoms include alarms, characteristic operating conditions, and probable range of off-normal parameter fluctuations.  
  
If a condition is peculiar to only the emergency under consideration, it should be listed or discussed first.
  - b. Those automatic actions that are engineered into the plant control systems and designed to occur as a result of the abnormal or emergency conditions.
  - c. Those immediate operator actions for manipulation of controls or confirmation of automatic actions. Examples of immediate operator actions include verifying the execution of automatic actions that

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should have occurred, ensuring the reactor is in a safe condition, notifying plant personnel of the nature of the emergency, determining whether the reactor coolant boundary is intact, confirming the availability of adequate power sources, and confirming the containment and exhaust systems are operating properly in order to prevent uncontrolled release of radioactivity.

- d. Those subsequent operator actions necessary to return the reactor to a normal condition or to provide for a safe extended shutdown period under abnormal or emergency conditions.
- 4) Verify controlled copies of instructions are available in the control room for each of the following types of potential emergencies and other significant events:
- a. Loss of coolant (including significant PWR steam generator leaks) (inside and outside primary containment) (large and small, including leak-rate determination).
  - b. Loss of instrument air.
  - c. Loss of electrical power (and/or degraded power sources) including

station blackout.

- d. Loss of core coolant flow.
- e. Loss of condenser vacuum.
- f. Loss of containment integrity.
- g. Loss of service water.
- h. Loss of shutdown cooling.
- i. Loss of component cooling system and cooling to individual components.
- j. Loss of feedwater or feedwater system failure.
- k. Loss of protective system channel.
- l. Mispositioned control rod(s) (and rod drops).
- m. Inability to drive control rods.

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- n. Conditions requiring use of emergency operation or standby liquid control system.
- o. Fuel cladding failure or high activity in reactor coolant or offgas.
- p. Fire in control room or forced evacuation of control room.
- q. Turbine and generator trips.
- r. Other expected transients that may be applicable.
- s. Malfunction of automatic reactivity control system.
- t. Malfunction of pressure control system.
- u. Reactor trip.
- v. Plant fires.
- w. Acts of nature (e.g., tornado, flood, dam failure, earthquakes).
- x. Irradiated fuel damage while refueling.

y. Abnormal releases of radioactivity.

z. Intrusion of demineralizer resin into primary system (BWR plants).

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.4, "Emergency Operations"

5.4 P.10, "Plant System Operations (System Status)"

5.5 P.11, "Plant System Operations (Power Operations)"

5.6 P.12, "Plant System Operations (Planned Shutdown)"