

NRC INSPECTION MANUAL

PIPB

INSPECTION PROCEDURE 71750

PLANT SUPPORT ACTIVITIES

PROGRAM APPLICABILITY: 2515

SALP FUNCTIONAL AREA: PLANT SUPPORT (PLTSUP)

71750-01 INSPECTION OBJECTIVES

To ensure that selected activities of the following licensee programs are implemented in conformance with the facility policies and procedures and in compliance with regulatory requirements:

- Radiological controls.
- Radiological effluent, waste treatment, and environmental monitoring.
- Physical security.
- Emergency preparedness.
- Fire protection.

71750-02 INSPECTION REQUIREMENTS

02.01 Radiological Controls

a. Use of Locks to Control Access (Biweekly)

During tours of the plant, check a selected sample of doors required (by plant technical specifications and plant procedures) to be locked for the purpose of radiation protection.

b. Posting and Labeling (Biweekly)

While touring the plant, determine by direct observations and radiation measurements in selected representative areas whether posting of areas and labeling of containers are in compliance with NRC regulations and licensee procedures.

c. Observation of Radiation Protection for Workers on the Job
(Biweekly)

By observation during tours within radiologically controlled areas of the plant, determine whether workers, their supervisors, and radiation protection personnel are following the licensee's procedures for radiation protection. Discuss strengths and weaknesses noted with the regional radiation protection staff.

d. Posting of Notices to Workers (Once every three months)

Determine whether NRC Form 3 and notices of violation involving radiological working conditions have been posted in accordance with 10 CFR 19.11

e. Periodic Inspections/Tests of Self-Contained Breathing Apparatus (SCBA) (Once per year)

By observation during a routine facility tour, determine whether routine periodic functional inspections/tests of "in-use" SCBAs are being performed as required by licensee procedures.

02.02 Effluent and Environmental Radiation and Meteorological Monitoring (Monthly)

- a. Review in the control room, or other appropriate locations, visible portions of stack and other radiation monitor recorder traces and follow up on any indication of an apparent uncontrolled release.
- b. Audit operability of meteorological indicators.
- c. Audit operability of plant specific monitoring systems such as toxic gas monitors in the control room, e.g., ammonia, chlorine detectors.

02.03 Sampling and Chemistry (Monthly)

- a. Review, in a PWR, secondary water activity analysis and radiation monitor alarm status to confirm steam generator tube integrity.
- b. Verify plant chemistry to be within the TS and procedural limits.
- c. Observe portions of the licensee's sampling program (e.g., coolant samples, boric acid tank samples, or plant liquid and gaseous effluent).

02.04 Physical Security Observations. Observe the following security program measures or activities:

- a. General integrity of protected area (PA) barriers.
- b. Maintenance of the isolation zones around PA barriers.

- c. PA illumination levels.
- d. The proper display of access badges, escort of visitors, and escort of vehicles, when required.
- e. Vital Area (VA) control of personnel.
- f. VA control of vehicles.
- g. Access control devices.
- h. Emergency access provisions.

02.05 Physical Security Power Supply. Verify that the security secondary power supply system and its components for the alarm annunciator and non-portable communications equipment are tested in accordance with the security plan commitments. (Once per year)

02.06 Emergency Preparedness

a. Emergency Preparedness Exercises and Drills

Within the limitation of resources specified in 71750-04 below, observe and evaluate selected licensee EP exercises and drills. (The full participation exercise conducted every two years is not included in this requirement but is covered by IP 82301.)

b. Emergency Response Facilities

Observe whether the emergency response facilities (ERFs) are readily available and maintained for emergency operations.

02.07 Fire Protection. During plant tours, examine, on a sampling basis:

- a. Plant areas (including cabinet interiors) for fire hazards. Examine for operability fire alarms, extinguishing equipment, emergency lighting, actuating controls, fire-fighting equipment, fire barriers, and emergency equipment.
- b. Control of ignition sources and flammable materials.
- c. Use of risk insights. If a risk analysis specific to fire exists, consider risk significance as one input in the selection of a sample of inspection items.

71750-03 INSPECTION GUIDANCE

General Guidance

The inspectors are to routinely discuss negative and questionable findings concerning radiation protection, effluents, chemistry, physical security and emergency preparedness with the regional office specialists.

Inspectors are to inform the regional office specialist staff of major changes in the radiation protection, security, and emergency preparedness organizations and management personnel.

Specific Guidance

03.01 Radiological Controls

a. Use of Locks to Control Access

See the licensee's procedures concerning requirements for locking doors.

b. Posting and Labeling

NRC requirements for posting and labeling, and the exceptions thereto, are presented in 10 CFR 20.1901-20.1905, inclusive.

For individual radiation areas accessible to personnel with radiation levels greater than 1000 mR/hr that are located within large areas, such as PWR containment, plant technical specifications usually include requirements for barricading, posting, and using a flashing light as a warning device.

Measurements of radiation dose or exposure rates to check posting and labeling may be made using either NRC or licensee survey instruments. Be aware of survey instrument limitations when making these measurements.

c. Observation of Radiation Protection for Workers on the Job

During their normal plant tours, resident inspectors have the opportunity to observe radiation protection controls as they apply to various plant activities in progress. The following are items that the inspectors can observe, on a sampling basis, during tours:

1. Whether personnel within a radiologically controlled area (a) are wearing proper protective clothing (as required) and (b) whether these individuals are wearing required personal dosimeters (TLD or film badge and direct reading dosimeter or electronic (digital) alarming dosimeter/dose rate meter) and if the dosimeters are properly located on the body.
2. Whether individuals leaving a radiologically controlled area follow the licensee's procedures for recording dosimeter readings.
3. Whether individuals exiting a radiologically controlled area properly use high sensitivity personal contamination monitors, hand-held friskers, portal monitors, or hand and foot counters as required by the licensee's procedures to check for personal contamination.

d. Posting of Notices to Workers

See 10 CFR 19.11(a)(3) and 19.11(c)

e. Periodic Inspections/Tests of Self-Contained Breathing Apparatus (SCBA)

Look for a tag/form attached to the SCBA that shows when the inspection/test was last performed.

For background and information, see NUREG-0041, "Manual of Respiratory Protection Against Airborne Radioactive Materials," Section 10.1.3, pages 10-5 to 10-8.

03.02 Effluent and Environmental Radiation and Meteorological Monitoring

- a. The review of the stack, vent and effluent monitors is to determine if there have been any significant increases in releases. Strip charts or logs are usually reviewed to determine if such significant increases have occurred by determining the increase in chart printouts. Such a review will also provide information as to possible uncontrolled releases.
- b. It can be determined that the meteorological instrumentation is providing information to the control room when the following information is present. The information noted below is typical.

Differential Temperature - usually at two elevations, between a height of 10 meters and the height of release. For facilities with a stack (elevated) release, there is usually an additional measurement with the location being the height of the elevated release.

Wind speed and wind direction

Barometric pressure and precipitation

- c. Certain facilities have potential toxic gas challenges and have specific monitoring instrumentation to reduce the hazard of such challenges. The typical locations of such instrumentation are in the control room and at the location of the potential source. These monitors should be operational.

03.03 Sampling and Chemistry

- a. For PWRs, a review of the activity levels in the secondary coolant and increases in the activity level in the releases from the condenser air ejector are all indications of possible increases in primary to secondary leak rates and may be an indication of potential steam generator tube rupture potential. The primary and secondary radioactivity levels and chemistry levels must be within TS limits. For BWRs, make similar verifications for the reactor coolant.

- b. Many licensees have procedural limits which specify actions to be taken prior to reaching the TS limit. Determine whether the licensee has taken the actions detailed in the procedures when the specified limits are reached.
- c. The general intent is for significant aspects of each sampling program to be inspected every SALP cycle. Of particular importance is whether samples taken are representative of the attribute being sampled, whether the associated acceptance criteria for accumulating the sample are being met, and whether the test results are being properly evaluated and trended, if appropriate.

03.04 Physical Security

General Guidance

Frequencies have not been specified for observing the identified physical security activities. It is expected that, for the most part, inspectors will make these observations during their routine tours of the facility. Specific observations outside of routine tours may be made at any time.

Specific Guidance

In general, violations of security requirements are written against the applicable section of an NRC-approved plan. For further guidance in this area, refer to the NRC Enforcement Manual.

- a. PA and vital area (VA) barriers should be separated, the entire barrier (fence fabric and barbed wire) should have no openings and not be damaged or degraded, and the barrier should not show signs of erosion at the base.
- b. Isolation zones should be generally free of objects, clearly marked, and of sufficient size to permit clear observation by the Central Alarm Station (CAS) and Secondary Alarm Station (SAS) operators and security force members for any unauthorized activities. An isolation zone generally encompasses 20 feet on both sides of the PA barrier. Refer to the NRC-approved security plan when zone dimensions come into question.
- c. PA illumination levels should be sufficient for the CAS/SAS and patrols to detect unauthorized activities by personnel.
- d. Requirements for display of badges and escort of visitors can be found in 10 CFR 73.55(d)(5) and (6). The visitor to escort ratio should not exceed 10:1 in the PA and 5:1 in a VA. Requirements for escort of vehicles can be found in 10 CFR 73.55(d)(4).
- e. Requirements for personnel access control to VAs can be found in 10 CFR 73.55(d)(7)(I). Normally, an active card reader system, in conjunction with the security computer access

program, determines whether an individual is authorized to have access to the VA.

- f. Requirements for access to VAs for vehicles can be found in 10 CFR 73.55(d)(7)(I)(B). The licensee should have vehicle access authorization procedures and controls, and the authorization of each vehicle should be checked and authenticated before it enters a VA. In addition, vehicle access portals into VAs should be continuously manned by an armed guard while open. This guard is required in addition to any vehicle escort.
- g. Requirements for access control devices can be found in 10 CFR 73.55(d)(8). The licensee must promptly take measures to prevent unescorted access to the PA and VAs when employees and contractor personnel are terminated for cause. As appropriate, the measures may include changing access authorization lists and retrieving, changing, or rotating keys, locks, and combinations and related access control devices to which the individual had access.
- h. Emergency access provisions normally include accommodations for rapid ingress and egress for operations staff; authority to suspend safeguards measures during emergencies (10 CFR 50.54 (x) and (y)); and hard keys are available to the operations staff should the access control system fail. Verify that safeguards measures do not adversely impact emergency egress and ingress.

03.05 Physical Security Power Supply. The secondary power supply system must be load tested in accordance with the physical security plan commitments and site procedures. While observing this test, ensure that the security diesel or other power system picks up the load when normal AC power is interrupted. In the CAS or SAS, note whether there is indication on the alarm panel, or other location, that the security system is now on secondary power. During the shift to secondary power, both the alarm annunciator panel and communication systems should remain operational and no alarm indications should be lost during the changeover. The test is normally run annually.

03.06 Emergency Preparedness

General Guidance

Evaluations are limited to the staff, activities, records and facilities of the licensee. Where it is necessary to verify licensee performance concerning interactions with organizations and personnel involved in offsite emergency preparedness, the inspectors are to limit their activities to the review of pertinent records available through the licensee. If additional information about offsite emergency preparedness is necessary, it may be obtained from FEMA.

In preparation for inspection, it is useful to contact the regional office EP inspector or EP Section Chief to determine whether there

are any specific problem areas, open items or inspection followup items to be inspected.

In addition to the guidance provided below, extensive guidance to accomplish the above inspection requirements can be found in the guidance sections of Inspection Procedures 82301, "Evaluation of Exercises for Power Reactors;" 82302, " Review of Exercise Objectives and Scenarios for Power Reactors;" and 82701, "Operational Status of the Emergency Preparedness Program."

Specific Guidance

a. Emergency Preparedness Exercises and Drills

Requirements for EP exercises and drills can be found in 10 CFR 50.47(b)(14) and Paragraph IV.F. of 10 CFR Part 50, Appendix E. The frequency of required EP drills may be found in the licensee's emergency plan. Such drills include, but are not limited to, radiological, security, communication, augmentation, and medical drills. The schedule for assigned drills can be obtained from the licensee.

A part of the drill and exercise observation includes attending the licensee's critique and final evaluation. Another important aspect of this inspection is the verification that drill or exercise objectives have been met. Discuss all significant findings with the regional office EP section chief before they are reported to licensee management.

b. Emergency Response Facilities

Requirements for ERFs can be found in 10 CFR 50.47(b)(8) and Paragraph IV.E. of 10 CFR Part 50, Appendix E. Inspection of this area may be accomplished during routine plant tours. The licensee's ERFs are required to be available and maintained in a state of operational readiness. If an ERF, such as the Technical Support Center is used for normal operations, it should have the capability for rapid conversion for emergency operations. In these facilities, equipment such as telephones, radios, dosimetry and monitoring instruments are required to be readily available and operational. The calibration of dosimetry and monitoring instruments should be current. Controlled copies of the emergency plan and implementing procedures should be current and readily available in the ERFs and control room.

03.07 Fire Protection.

A risk analysis specific to fire may be available in the IPEEE or a probabilistic risk assessment. The inspector should refer to IMC 2515 Appendix C for guidance on the use of PRA insights to help in the selection and prioritization of items to inspect. If necessary, contact NRC PRA specialists (e.g., Senior Reactor Analysts or the NRR Probabilistic Safety Assessment Branch) for assistance.

71750-04 INSPECTION RESOURCES

Completion of this inspection procedure is expected to take the approximate hours shown in the following table:

	Single Unit	Dual Unit	Triple Unit
<u>Health Physics</u> 02.01, 02.02, 02.03	4 Hours/Month	5 Hours/Month	6 Hours/Month
<u>Physical Security</u> 02.04, 02.05	2 Hours/Month	3 Hours/Month	3 Hours/Month
<u>Emergency Prep</u> 02.06	12 Hours/Year	12 Hours/Year	12 Hours/Year
<u>Fire Protection</u> 02.07	6 Hours/Year	6 Hours/Year	6 Hours/Year

END