INSPECTION PROCEDURE 83723

GENERAL EMPLOYEE, RADIATION SAFETY, PLANT CHEMISTRY, RADWASTE, AND TRANSPORTATION TRAINING

PROGRAM APPLICABILITY: 2515

83723-01 INSPECTION OBJECTIVE

To evaluate the effectiveness of the training programs (including continuing training) and qualification levels of individuals for the non-licensed plant staff, contractors, and visitors who have responsibilities in the areas of radiation safety (including both occupational and public dose areas), plant chemistry, radwaste, and transportation.

83723-02 INSPECTION REQUIREMENTS

This procedure is implemented to independently assess licensee conclusions regarding extent of condition of issues, when selected as a part of supplemental inspections using IP 95002, "Supplemental Inspection For One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area." Therefore, documentation and inspection techniques appropriate for the Baseline Inspection (i.e., implemented for radiation protection (RP) programs operating in the licensee response band) are not applicable. The threshold must be lower for documenting programmatic and performance weaknesses and deficiencies or other performance issues should be identified by the inspection team leader and communicated to all team members, and the licensee during the entrance meeting. The level of detail in the inspection report will be sufficient to clearly support the inspectors' findings and conclusions. Licensee corrective action program identifying numbers may be included in the report to assist in future tracking and verification that problems have been corrected in a timely manner. This procedure covers a broad spectrum of training areas, and the team leader may chose to perform selected portions of or all the inspection requirements.

02.01 Event or Situation Review. The inspector should perform the following, if the event or situation occurred that showed potential human performance deficiencies possibly linked to training. On the basis of the review of licensee event reports (LERs), performance indicator (PI) hits, and records of non-reportable events and through discussions with plant personnel, select one or more events involving the areas listed in the inspection objective that might have been caused by deficient training (including continuing training).

a. Evaluate whether the classroom training received before the event or situation was sufficient either to have prevented the event or mitigated its effects by recognition and proper action by the individuals involved. Did the training include plant and industry operating experience (OE) from similar events/activities?

b. Evaluate whether the on-the-job training received before the event or situation was sufficient either to have prevented the event or mitigated its effects by recognition and proper action by the individuals involved.

c. Evaluate the qualifications and experience of the individuals involved in the event or situation, and their first-line supervisors (and higher levels of management, as appropriate). (see Section 02.04).

d. Determine whether responsibility was clearly assigned for administering and evaluating the related training for the principal individuals involved in the event or situation.

e. Determine whether operating experience from the event/activity or related industry events were fed back and factored into the training program.

02.02 General Knowledge. By direct questioning of representative plant workers, determine whether the general knowledge of these individuals in administrative controls, industrial safety, controlled access and security, emergency plans, and quality assurance is sufficient for their assigned tasks and whether their knowledge of radiological health and safety is consistent with 10 CFR 19.12.

02.03 Radwaste and Transportation. Determine, through observation of work activities and personnel interviews, whether health physics and chemistry technicians and non-licensed operators working with radwaste and transportation have received adequate training for specific tasks assigned, such as evaluating a radiological incident, performing chemical sampling and analysis, and preparing a shipment manifest.

02.04 Qualification Requirements. Ensure that the qualification and experience requirements specified by the licensee position descriptions meet regulatory requirements and licensee commitments. Verify, by the review of records for representative workers, that their experience and qualification meet the respective requirements for:

a. Managerial, supervisory, and technical staff members responsible for occupational and public radiation safety, plant chemistry, radwaste and transportation.

b. Radiation protection technicians (RPT).

c. Chemistry technicians.

d. Non-licensed operators involved with radwaste and transportation.

e. Quality assurance personnel performing audits in the areas covered by this procedure.

f. Instructors

If possible, review qualification records for those personnel (and their immediate, first-line supervisors) involved with the events identified in Section 02.01 and personnel selected for interview in Section 02.03. Review the qualifications records of one or more recently hired individuals in the groups listed above.

Interview a random sample of members of pertinent technical/craft work groups. Based on the qualification requirements, focus the interview questions on technical knowledge, job responsibilities, knowledge of generic events (incidents), operating experience, emergency response, plant system knowledge, regulations and implementing procedures.

02.05 Replacement Personnel. Determine if replacement personnel for job positions listed in Section 02.04 have fulfilled all training and qualification requirements.

02.06 Instructors. Determine if designated instructors have fulfilled all training and qualification requirements and have the technical knowledge and experience necessary to adequately present the training materials (e.g., lesson plans).

02.07 Audits and Appraisals. Review the results of pertinent audits, assessments and appraisals performed by or for the licensee since the last inspection. Review the timeliness and effectiveness of the corrective actions, based on these audits and appraisals. Determine if program auditors have been trained and have the necessary experience to perform their assigned duties.

83723-03 INSPECTION GUIDANCE

General Guidance

This inspection procedure applies to general employee training and to the specialty areas of radiation safety (including both occupational and public dose cornerstones), plant chemistry, radwaste, and transportation.

For RPTs and others, 10 CFR 50.120 requires certain plant personnel (and contractors) to be task-qualified for their assigned normal, emergency and outage duties (all modes of operations). Other regulations currently in place which apply to training programs include:

a. 10 CFR 19.12, "Instructions to Workers."

b. 10 CFR 20.1703, respiratory protection.

c. 10 CFR 50.47, Emergency Plans

d. 10 CFR 71.105(d), quality assurance, related to packaging and transportation

e. 49 CFR 172, Subpart H, Department of Transportation (DOT) regulations on transportation of radioactive materials.

The regulatory bases for an acceptable training program are distributed over a wide variety of documents to which each licensee is committed to some extent. In addition to those listed above, these documents include:

a. Technical Specifications, Section 5 or 6, "Administrative Controls," requirements for unit staff qualifications and for training and retraining.

b. ANSI N18.1-1971, "Selection and Training of Nuclear Power Plant Personnel."

c. ANSI/ANS 3.1, "Selection, Qualification and Training of Personnel for Nuclear Power Plants," (Supersedes ANSI N18.1).

d. Regulatory Guide 1.8, "Personnel Selection and Training"

e. Regulatory Guide 8.13, Revision 3,"Instruction Concerning Prenatal Radiation Exposure"

f. Regulatory Guide 8.15, Revision 1, "Acceptable Programs for Respiratory Protection"

g. Regulatory Guide 8.27, "Radiation Protection Training for Personnel at Light-Water-Cooled Nuclear Power Plants"

h. Regulatory Guide 8.29, Revision 1, "Instruction Concerning Risks From Occupational Radiation Exposure"

i. 10 CFR 50, Appendix B, Criterion II

j. FSAR Chapters 12, "Radiation Protection," and 13, "Conduct of Operations"

k. 10 CFR 50, Appendix E, Section F. “Training”

Staff technical and policy guidance is provided in the following NUREGs:

a. NUREG-1220, Rev. 1, “Training Review Criteria and Procedures”

This staff NUREG describes the process for evaluating the adequacy and effectiveness of licensee training programs and provides tools and techniques useful in evaluating training programs.

b. NUREG/CR 5569, Rev. 1, “Health Physics Positions Data Base”

Specific Guidance

03.01 Event Review. The determination of whether an event was caused by deficient training is not always straightforward. For example, one study of high radiation exposure incidents found that six casual factors were common to most incidents (study completed in 1986). These included poor radiation survey (hazards evaluation), inadequate radiation work permit, poor RPT response to change of work conditions, failure to follow procedures,

lack of first line supervision involvement and lack of management support for radiation protection. Several of these six factors could be directly related to problems with training. A mishap in a high radiation area, although attributed to a weak procedure, may have occurred as result of a combination of training and procedural deficiencies. In selecting the activities for this inspection requirement, the inspector should apply judgment and not accept the apparent root causes of failures without a reasonable evaluation.

03.02 General Knowledge. The intent of this requirement is to provide the inspector with evidence of the effectiveness of the general employee training (GET) program. The GET programs are in place to satisfy 10 CFR 19.12 requirements (among other things). The inspector should focus on radiological work in high radiation areas, as it relates to craft workers responsibilities. For example, proper use of alarming dosimeters and worker response to alarms should be examined. Evaluate worker awareness of plant HRA technical specifications, as it relates to RPT coverage options and responsibilities. Discuss the plant practice of work/procedural "hold points" and how the worker is instructed to control/stop work accordingly.

Since GET retraining is not generally performed on a once-a-year basis at most plants, determine how the licensee ensures that workers are kept aware of changes in the plant's configuration, radiological conditions, procedures and work practices as it relates to Part 19 requirements.

If time permits, the inspector should sit in and observe a portion of a GET training session and take any computer-based refresher training. The inspector should review the GET written or computer based training materials and determine their technical adequacy and whether they are up to date, and include examples of real-life situations.

03.03 Radwaste and Transportation

a. Review the applicable training and qualifications for selected licensee (and contractor) employees that are responsible for processing, testing, storage, handling, packaging and shipping of radioactive waste. Determine if the licensee has provided training and continuing training for DOT and NRC regulatory requirements, waste burial license requirements, and instructions and operating procedures for all personnel involved in the transfer, packaging and transport of radioactive waste. Focus on personnel designated and authorized to approve a waste shipment for transport, and who have the responsibility to assure compliance with the package's certificate of compliance (COC).

b. Determine if the licensee has provided training and periodic retraining to those employees of the licensee (and its contractors) who operate the processes that generate radioactive waste to ensure that the volume of waste is minimized and is processed into acceptable chemical and physical form for transfer and shipment to a LLRW burial facility.

c. Determine if the licensee has incorporated the results of operating experience (resulting from any findings and corresponding corrective action which may have occurred since the last inspection) into lesson plans for employees who operate low-level waste processing equipment or for personnel involved in the transfer,

packaging and transport of radioactive material. The inspector should review the written or computer based training materials and determine their technical adequacy and whether they are up to date.

03.04 Qualification Requirements. Staff qualification (including experience factors) requirements are usually included in the "Administrative Controls" section of the Technical Specifications, which specify minimum requirements by reference to an ANSI standard or by specifying qualifications for individual positions. Minimum qualification requirements for the radiation protection manager are usually specified in Regulatory Guide 1.8, (September 1975).

Radiation Protection Technicians

a. By direct observation and discussion (including interviews) with the radiation protection staff, contractor personnel and their supervisors, verify that these personnel have the minimum knowledge (10 CFR 19.12) required to work with radioactive material. For a selected sample of contractor and non-station utility RPTs, review the actions taken by the licensee, in accordance with the training rule (10 CFR 50.120), to ensure that these individuals are task qualified to perform their assigned routine operations and outage activities. Ensure that RPTs and their supervisors have adequate knowledge of radiological hazards associated with plant systems [especially neutron-activated components such as traversing incore probes (TIPs), incore neutron detectors, and cabling, as discussed in Information Notice 88-63 and its Supplements 1 and 2, “High Radiation Hazards from Irradiated Incore Detectors and Cables”, and Regulatory Guide 8.38].

b. Review the licensee’s methods of providing training to permanent and contractor personnel on safety significant changes in procedures and operating experience. The inspector should review the written or computer based training materials and determine their technical adequacy and whether they are up to date.

c. Evaluate training provided to the increased work force required for outages. Determine the adequacy of the contractor RPT qualification program, including compliance with required education and experience criteria listed in applicable ANS documents referenced in the plant’s Technical Specifications.

d. The following general guidance concerns the impact of the training rule, 10 CFR 50.120, on inspections of training and is consistent with Health Physics Position (HPPOS) record #325, “New Training Rule for Nuclear Power Plant personnel,” (located at microfiche address 76266-310).

1. The only radiation protection personnel covered by the rule are “radiological protection technicians” (RPTs) who are employees of the power plant. No supervisory, managerial or technical staff are covered. Contractor RPTs are not covered unless they occupy regular positions performing independently within the licensee’s organization. If short term contractor RPTs (e.g., outage workers) are assigned to work independently, they must be qualified to perform their assigned task.

2. The training rule requires licensees to have a training program based on a systems approach to training , as defined in 10 CFR 55.4. Furthermore, successful completion of a training program required by the rule does not obviate the need to comply with other training or qualification requirements imposed by other regulations and/or licensee conditions.

e. The following HPPOS are pertinent to training and qualification issues and the summaries can be found in NUREG/CR 5569, Rev. 1:

HPPOS #'s 018, 019, 20, 21, 23, 66, 67, 96, 172, 173, 217, 238, 247, 325, and 328.

f. Observe on-the-job training and evaluation (whenever possible) of at least one RPT task and judge the instructor's, evaluator's and the trainee's performances (using checklists similar to those given in NUREG-1220, Rev. 1.)

g. Observe RPT classroom training (whenever possible) and judge the trainee's, and instructor's performance (using a checklist similar to those given in NUREG-1220, Rev. 1.)

03.05 Replacement Personnel. The inspector should review the qualifications of backup radiation protection managers and backup first-line supervisors to ensure these "acting" managers and supervisors meet regulatory requirements (as stipulated in the applicable ANSI qualification standard).

03.06 Instructors

a. Using NUREG-1220, Revision 1, "Training Review Criteria and Procedures," evaluate the effectiveness of the licensee's instructor training and qualification programs. NUREG-1220 is used to determine the success of training and qualification programs in meeting and maintaining job performance needs, and to evaluate the licensee's SAT process for developing, implementing, evaluating, and documenting training and qualification programs where a particular training related human performance problem has been identified or is suspected.

b. An instructor with recent in-field experience at the plant (or similar facility) or familiar with the work challenges and demands of the trainees can enhance the training environment.

c. Observe classroom training (in a specialty area other than normal operations RPT, whenever possible) of at least one designated qualified instructors and judge the instructor's performance (using a checklist similar to those given in NUREG-1220, Rev. 1.)

03.07 Audits and Appraisals

a. Review reports of required audits and self-assessments since the last inspection. Look particularly for those audits and assessments that probe for programmatic

weaknesses and assess the quality of the program. Focus on licensee follow-up actions for identified deficiencies and determine whether corrective actions are timely and technically acceptable.

Requirements for reviews and audits normally are contained in the Technical Specifications. Audit teams should include personnel knowledgeable in the activities audited. Guidance for the needed experience and qualifications of auditors is provided in ASME NQA-1-2000, Requirement 2, QA Program, Section 303 (for Lead Auditors); Appendix 18A-1, Nonmandatory Guidance on Audits, Sections 300 - 302 (for auditors). Note that Part 50, Appendix B applies only to certain activities involving RPTs (see HPPOS #173 for examples of safety related RPT activities).

b. Review reports of other audits, appraisals, assessments, and evaluations that may provide information on program quality.

83723-04 RESOURCE ESTIMATE

It is estimated that 45-75 inspector-hours onsite will be needed to complete the requirements of this procedure, for single or multiple sites.

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