

NRC INSPECTION MANUAL

QASIP

INSPECTION PROCEDURE 88045

ENVIRONMENTAL PROTECTION

PROGRAM APPLICABILITY: 2600

88045-01 INSPECTION OBJECTIVES

The objectives of the Environmental Protection procedures are to ensure that:

01.01 the licensee is implementing license commitments for the environmental program.

01.02 the licensee maintains adequate management controls for the environmental program; and

01.03 the licensee is confident, through a system of quality controls, that releases of radioactivity to the environment, and attendant sampling methods and analysis, provide reasonable assurance that the impact on the environment and the public is minimal.

88045-02 INSPECTION REQUIREMENTS

02.01 Management Controls

- a. Responsibilities. Determine whether, since the last inspection, there have been any changes in the program and procedures or in the assignments of responsibilities to organizational units and individuals to implement the program.
- b. Internal Audits and Inspections. Verify that there are provisions for an ongoing review of environmental monitoring results. Randomly examine records of audits and inspections done by the licensees, including sampling results, and ensure that corrective actions have been undertaken and recorded for deficiencies recognized and identified during the audit process. Verify that systems are being implemented to inform management of audit and inspection results for review and action.

02.02 Quality Control of Analytical Measurements

- a. Responsibilities. Examine any changes since the previous inspection in sample analytical methods and verify that the accuracy resulting from those changes is at least as good as or better than the accuracy level before any changes were made. Verify that assignments and responsibilities have been made to manage and conduct the program and that the types

and numbers of measurements are made at the required frequencies as specified in the licensee's procedures or as required by the license. Determine the licensee's criteria for accepting or rejecting the measurement results and procedures for following up and correcting deficiencies that may be found in sampling results.

- b. Records of Quality Control in Analytical Methods. Randomly examine records since the previous inspection to verify that the quality control program for analytical measurements is implemented in accordance with procedures. The records should include the types and numbers of required checks of measurements, the frequency for making those checks, the licensee's acceptance or rejection of the measurement results, and followup on action taken as a result of deficiencies found.
- c. Sample Splitting. Split samples with the licensee and compare sample results as the inspector deems necessary to verify that the licensee's sample preparation and counting are adequate. Large discrepancies in sample results may indicate a need to reexamine sample preparation and/or counter calibration by the licensee.

02.03 Program Implementation

- a. Monitoring Stations. Determine by review of results and discussions with licensee personnel that results of monitoring stations are adequate and reflect compliance with the license requirements. The review should be made to include actual observation of sampling locations, monitoring and measurement frequencies, and interpretation and evaluation of results. Inspect a selection of sampling stations and locations during sample collection times, if practicable; otherwise, examine operations such as liquid effluent monitoring, air sampling, and radiation dose measurement stations. Verify that the equipment is operating as intended.
- b. Reports. Verify that reports of sampling data have been submitted to the NRC as required. Check reports for missing data and obvious mistakes, and observe trends in the data.

88045-03 GUIDANCE

Note: Guidance offered below is specific to Inspection Requirements in Section 02 above: Section 03.01 to 02.01, etc.

03.01 If there have been no changes in the environmental program procedures or changes in personnel or personnel responsibilities, there is no need to pursue this part of the inspection in depth. If changes have occurred in the program procedures, those should be examined (together with discussions with licensee personnel) to determine that the changes have enhanced the program and conform to license requirements. Personnel, together with responsibilities, may be named in the license application requiring a license amendment if changes have occurred. If not named in the license,

determine that personnel are qualified to perform the assigned functions (to a reasonable degree).

03.01, 03.02 The environmental monitoring program should be documented in policy directives designating a person or organizational unit responsible for reviewing the program on an ongoing basis. Procedures should establish criteria for: sampling, data recording and storage; reporting of results of samples; instrument calibration; sample preparation for measurements and analyses; and actions to be taken for anomalous results or when results exceed limits. Management controls should include provisions for review and evaluation of program results to ensure that deficiencies and trends are recognized and evaluated, and that timely corrective actions and followup actions are taken.

If records examined are only data summaries, examine some raw data records to be reasonably assured that the program conforms to requirements.

03.02 Sample splitting in many cases is difficult, especially soil samples and air samples. Sample splitting may be done with liquid effluents, vegetation, stream bottom, etc. Independent sampling is discouraged if the purpose is to make a comparison of NRC results with the licensee results. For example, an independent air sample, because of the time factor and other reasons, such as location, may be an order of magnitude different from a licensee sample yet both could be correct.

03.03 If it is known when environmental samples are to be taken, try to schedule an inspection in order to observe the taking of samples to determine if procedures are being followed. This need only be done once unless there are changes in procedures for taking samples. Such observations should be done only to the extent that the inspector is satisfied that sampling is being done in accordance with procedures. Such sampling may include effluent air and liquid, soil, vegetation, stream bottom silt or vegetation, small animals, fish, and radiation dosimeters, among others. At least once (unless there are procedural changes) the inspector should observe laboratory sample preparations such as ashing, chemical treatment, etc., and counting and evaluation of results to determine they are being done according to procedures. Also, the inspector should examine records of the calibration of analytical and counting equipment to determine if they are being done at the required frequencies.

88045-04 REFERENCES

Reg. Guide 4.5, "Measurements of Radionuclides in the Environment - Sampling and Analysis of Plutonium in Soil," May 1974

Reg. Guide 4.13, "Performing, Testing, and Procedural Specifications for Thermoluminescence Dosimetry: Environmental Applications," August 1977, Revision 1.

Reg. Guide 4.14, "Radiological Effluent and Environmental Monitoring at Uranium Mills," May 1980, Revision 1.

Reg. Guide 4.15, "Quality Assurances for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment," February 1979, Revision 1.

Reg. Guide 4.16, "Measuring, Evaluating, and Reporting Radioactivity in Releases of Radioactive Materials in Liquid and Airborne Effluents from Nuclear Fuel Processing and Fabrication Plants," March 1978.

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