ATTACHMENT 71122.03

INSPECTION AREA: Radiological Environmental Monitoring Program (REMP) And Radioactive Material Control Program

CORNERSTONE: Public Radiation Safety

INSPECTION BASES: This inspection area verifies aspects of the Public Exposure cornerstone for which there are no performance indicators to measure performance. The REMP is required by Criterion 64 of Appendix A to 10 CFR Part 50. The REMP supplements the effluent monitoring program by verifying that the measurable concentrations of radioactive materials and levels of radiation in the environment are in agreement with the values predicted by the radioactive effluent monitoring program. The licensee is required to implement the REMP in accordance with its Technical Specifications and/or Offsite Dose Calculation Manual, which are based on the design objectives contained in Appendix I of 10 CFR Part 50, as required by 10 CFR 50.34a. The radioactive material control program verifies that the licensee maintains a program to ensure that licensed radioactive material is controlled in accordance with the requirements of 10 CFR Part 20.

LEVEL OF EFFORT: Inspect biennially

71122.03-01 INSPECTION OBJECTIVES

01.01 To ensure that the REMP verifies the impact of radioactive effluent releases to the environment and sufficiently validates the integrity of the radioactive gaseous and liquid effluent release program.

01.02 To verify that the REMP is implemented consistent with the licensee's Technical Specifications (TS) and/or Offsite Dose Calculation Manual (ODCM) to validate that the radioactive effluent release program meets the design objective contained in Appendix I to 10 CFR Part 50.

01.03 To ensure that the licensee's surveys and controls are adequate to prevent the inadvertent release of licensed materials into the public domain.

71122.03-02 INSPECTION REQUIREMENTS

02.01 Inspection Planning and In-Office Inspection

a. Review the most current Annual Environmental Monitoring Report and licensee assessment results to verify that the REMP was implemented as required by TS and the ODCM. Review the report for changes to the ODCM with respect to environmental monitoring, commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, interlaboratory comparison program, and analysis of data. (Refer to the NRC Branch Technical Position, Revision 1, "An Acceptable Radiological Environmental Monitoring Program," for additional information)

b. Review the ODCM to identify environmental monitoring stations. Review licensee self assessments, audits, licensee event reports, and interlaboratory comparison program results.

c. Review FSAR for information regarding the environmental monitoring program and meteorological monitoring instrumentation.

d. Review the scope of the licensee's audit program to verify that it meets the requirements of 10 CFR 20.1101(c).

02.02 Onsite Inspection

a. Walk-down between 20 and 30 percent of the air sampling stations and 5 and 10 percent of the thermoluminescence dosimeter (TLD) monitoring stations to determine whether they are located as described in the ODCM and to determine the equipment material condition.

b. Observe the collection and preparation of a variety of environmental samples (e.g., ground and surface water, milk, vegetation, sediment, and soil). Verify that environmental sampling is representative of the release pathways as specified in the ODCM and that sampling techniques are in accordance with procedures.

c. Based on direct observation and review of records, verify that the meteorological instruments are operable, calibrated, and maintained in accordance with guidance contained in the FSAR, NRC Safety Guide 23, and licensee procedures. Verify that the meteorological data readout and recording instruments in the control room and at the tower are operable. Compare readout data (i.e., wind speed, wind direction, and delta temperature) in the control room and at the meteorological tower to identify if there is any line loss differences.

d. Review each event documented in the Annual Environmental Monitoring Report which involved a missed sample, inoperable sampler, lost TLD, or anomalous measurement for the cause and corrective actions. Conduct a review of the licensee's assessment of any positive sample results (i.e., licensed radioactive material detected above the lower limits of detection (LLDs). Review the associated radioactive effluent release data that was the likely source of the released material.

e. Review any significant changes made by the licensee to the ODCM as the result of changes to the land census or sampler station modifications since the last inspection. Review technical justifications for any changed sampling locations. Verify that the licensee performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

f. Review the calibration and maintenance records for up to 5 air samplers and composite water samplers.

g. Review calibration records for the environmental sample radiation measurement instrumentation (i.e., count room). Verify that the appropriate detection sensitivities with respect to TS/ODCM are utilized for counting samples (i.e., the samples meet the TS/ODCM required LLDs). Review quality control charts for maintaining radiation measurement instrument status and actions taken for degrading detector performance. If the licensee uses a vendor laboratory to analyze the REMP samples, review the results of the vendor's quality control program including the interlaboratory comparison program to verify the adequacy of the vendor's program. Review any audits and technical evaluations the licensee performed on the vendor's program.

h. Review the results of the licensees' interlaboratory comparison program to verify the adequacy of environmental sample analyses performed by the licensee. Review the licensee's quality control evaluation of the interlaboratory comparison program and the corrective actions for any deficiencies. If applicable, review the licensee's determination of any bias to the data and the overall effect on the REMP.

i Review QA audit results of the program to determine whether the licensee met the TS/ODCM requirements.

02.03 <u>Unrestricted release of material from the Radiologically Controlled Area (RCA)</u>

a. Observe several locations where the licensee monitors potentially contaminated material leaving the RCA, and inspect the methods used for control, survey, and release from these areas. When possible, observe the performance of personnel surveying and releasing material for unrestricted use to verify that the work is performed in accordance with plant procedures.

b. Verify that the radiation monitoring instrumentation is appropriate for the radiation types present (reference DAW radio-chemical analysis results obtained in Section 02.03) and was calibrated with appropriate radiation sources.

c. Review the licensee's criteria for the survey and release of potentially contaminated material. Verify that there is guidance on how to respond to an alarm which indicates the presence of licensed radioactive material.

NOTE: 10 CFR Part 20 does not contain release limits for the release of contaminated material to unrestricted areas; thus, the licensee's criteria should be that no detectable licensed radioactive material (radioactive gaseous and liquid

effluents excepted) is released for unrestricted use or as waste into an unrestricted area.

d. Review the licensee's equipment to ensure the radiation detection sensitivities are consistent with the NRC guidance contained in IE Circular 81-07 and IE Information Notice 85-92 for surface contamination and HPPOS-221 for volumetrically contaminated material. If applicable, as discussed in HPPOS-250, verify that the licensee performs radiation surveys to detect radionuclides that decay via electron capture.

e. Review the licensee's procedures and records to verify that the radiation detection instrumentation is used at its typical sensitivity level based on appropriate counting parameters (i.e., counting times and background radiation levels). Verify that the licensee has not established a "release limit" by altering the instrument's typical sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high radiation background area.

02.04 Identification and Resolution of Problems

a. Review the licensee's Licensee Event Reports, Special Reports, audits, and self assessments related to the radiological environmental monitoring program performed since the last inspection. Determine if identified problems are entered into the corrective action program for resolution.

b. Review corrective action reports affecting environmental sampling, sample analysis, or meteorological monitoring instrumentation. Interview staff and review documents to determine if the following activities are being conducted in an effective and timely manner commensurate with their importance to safety and risk:

1. Initial problem identification, characterization, and tracking.
2. Disposition of operability/reportability issues.
3. Evaluation of safety significance/risk and priority for resolution.
4. Identification of repetitive problems.
5. Identification of contributing causes.
6. Identification and implementation of effective corrective actions.
7. Resolution of non-cited violations (NCVs) tracked in corrective action system(s).
8. Implementation/consideration of risk significant operational experience feedback.

Emphasis should be placed on ensuring problems are identified, characterized, prioritized, entered into a corrective action, and resolved.

c. For repetitive deficiencies or significant individual deficiencies in problem identification and resolution identified above, determine if the licensee's self-assessment activities are also identifying and addressing these deficiencies.

71122.03-03 RESOURCE ESTIMATE

The estimated hours to complete this procedure ranges from a minimum of 30 hours to a maximum of 35 hours, with a base of 32 hours.

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