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SUBJECT: SITE-SPECIFIC DECOMMISSIONING INSPECTION PLAN FOR THE SAXTON NUCLEAR EXPERIMENTAL FACILITY, SAXTON, PENNSYLVANIA (DOCKET NO. 50-146, RFTA NO. 01-003)

Dear Mr. Adams:

Enclosed is the proposed site-specific decommissioning inspection plan for the subject facility. Comments provided on the proposed plan have been incorporated. Attachment A contains the spending plan for the project.

If you have any questions, please direct them to me at (865) 576-5073 or Phyllis Weaver at (865) 576-5321.

Sincerely,

Timothy J. Vitkus
Survey Projects Manager
Environmental Survey and
Site Assessment Program

TJV:ar

Enclosure

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Rec'd 10/13/05
Reache Lee
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SITE-SPECIFIC DECOMMISSIONING INSPECTION PLAN FOR THE SAXTON NUCLEAR EXPERIMENTAL FACILITY SAXTON, PENNSYLVANIA

Provided below is the site-specific decommissioning inspection plan for the Saxton Nuclear Experimental Facility. This plan should be used as a checklist. The major elements of this site-specific inspection plan include the following six areas:

1.0 GENERAL

2.0 IDENTIFICATION OF CONTAMINANTS AND DCGLS

3.0 AREA CLASSIFICATION

4.0 FINAL STATUS SURVEY PROCEDURES AND INSTRUMENTATION

5.0 ANALYTICAL PROCEDURES

6.0 QA/QC AND DATA MANAGEMENT

The following Nuclear Regulatory Commission (NRC) Inspection Procedures may be used for guidance, in part, during this inspection:

- Inspection Procedure 83801 - Inspection of Final Surveys at Permanently Shutdown Reactors

Portions of the following documents and computer software applications will be used for guidance during this inspection:

- Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)
- Licensee Procedures
- NUREG 1727 - NMSS Decommissioning Standard Review Plan
- COMPASS v1.0

1.0 GENERAL

1.1 Review past records to determine the activities associated with the impacted open land areas and any records of spills or other releases of radioactive material and documentation of any previous cleanup that may have occurred.

1.2 Tour the land areas to obtain familiarity with the facility and surrounding areas. Identify any transport routes or other means of possible contaminant migration into these areas.

2.0 IDENTIFICATION OF CONTAMINANTS

2.1 Review previous measurement and analytical results to confirm the nature of the site information and contaminants at the site. In particular, review the data that relate to the licensee's determination of radionuclide ratios, fractional contributions to total activity and variability.

2.2 Review modeling codes and site-specific parameters that will be used in the DCGL development. Verify that the licensee has accounted for all media for which final status surveys will be designed.

2.3 Evaluate how the DCGLs, once developed and approved, will be implemented—e.g., use of surrogate measurements and modified DCGLs, gross activity DCGLs, $DCGL_{EMC}$s—to determine how samples/measurements will be compared, implementation of the unity rule, and how radionuclide variabilities—specifically modification of σ—will be integrated in DCGL implementation.

3.0 AREA CLASSIFICATION

3.1 Based on plant area tours and review of characterization and other surveys results, evaluate the licensee's technical basis for site classification of the open land areas as Class 2 and 3.

4.0 FINAL STATUS SURVEY PROCEDURES AND INSTRUMENTATION

4.1 Land Area Survey Instrumentation

4.1.1 Evaluate the instrument sensitivity for scan surveys of land areas. Review the scan MDC to permit further evaluation once the soil DCGL(s) are determined. Ensure that *a priori* scan MDCs adequately account for any proposed modified DCGLs if a surrogate approach or the unity rule is to be used.

4.1.2 Review the equipment set up and performance check procedures.

4.1.3 Review the procedures for field use of instrumentation and evaluate that any *a priori* factors that may impact use in the field have been accounted for, such as scan speed and background variability. Review training records of personnel who will operate survey instrumentation.

4.2 Final Status Survey Procedures

4.2.1 Review final status survey procedures and planning documents for the following:

4.2.1.1 Verify the adequacy of reference areas selected by the licensee for assessing background contributions to radionuclides in soils.

4.2.1.2 Review procedures for establishing survey unit boundaries. Review maps showing preliminary survey unit designations.

4.2.1.3 Review available radionuclide variability (σ) data that will be used for calculating required sample size. Additionally, determine whether the analytical methods and instrumentation used for the initial σ calculations are comparable to those that will be used during final status surveys.

4.2.1.4 Review procedures for required scan coverage based on survey unit classification.

4.2.1.5 Review methods for determining area factors that will be used for evaluating areas of elevated activity detected during scans.

4.2.1.6 Review proposed investigation levels and adequacy relative to the anticipated required and actual scan MDCs.

4.2.1.8 Review sampling and chain-of-custody procedures.

5.0 ANALYTICAL PROCEDURES

5.1 Review the laboratory instrumentation that will be used for sample analysis. Determine appropriateness and sensitivity of the selected equipment for the radionuclides of concern.

5.2 Review the licensee's laboratory analytical procedures for radiological analyses. Specifically:

5.2.1 Evaluate the laboratory's sample preparation techniques—geometries used for gamma spectrometry on soil samples, etc.

5.2.2 Review the protocol the lab uses to interpret the gamma spectrometry results, particularly the radionuclide photopeaks used to identify various contaminants.

5.2.3 Review the laboratory QA/QC procedures, including duplicates, blanks, and matrix spikes. Determine the frequency of analysis for each of the QC checks. Determine whether the lab participates in an adequate cross-check or performance evaluation program, such as that offered by EML and EPA.

6.0 QA/QC AND DATA MANAGEMENT

6.1 Review the licensee's QA/QC procedures as they relate to final status survey personnel training requirements and final status survey data acceptance criteria.

6.2 Review the licensee's data management system that will be used to track field and analytical results.