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 Oak Ridge
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Energy
Environment
Systems Division

December 10, 1990

Mr. George France
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Eilyn, Illinois 60137

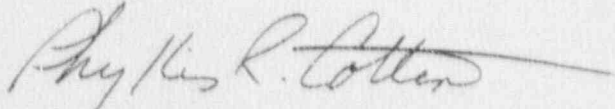
Subject: PROPOSED SURVEY PLAN FOR RMI TITANIUM FACILITY

Dear Mr. France:

Enclosed is the copy of our proposed confirmatory radiological survey plan for the area south of the RF-6 Building at the RMI Titanium Company in Ashtabula, Ohio. The survey is scheduled for December 13 & 14, 1990.

If you have any questions or require additional information, please contact me at FTS 626-3355 or (615) 576-3355 or Jim Berger at FTS 626-3305 or (615) 576-3305.

Sincerely,



Phyllis R. Cotten
Senior Project Leader
Environmental Survey and
Site Assessment Program

PRC:jls

Enclosure

cc:

- J. Berger, ORAU
- D. Tiktinsky, NRC/6H3
- C. Haughney, NRC/6H3
- D. Sreniawski, NRC/Region III

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**CONFIRMATORY SURVEY PLAN
FOR THE
YARD SOUTH OF THE RF-6 BUILDING
RMI TITANIUM COMPANY
ASHTABULA, OHIO**

I. INTRODUCTION

The RMI Titanium Company located in Ashtabula, Ohio performed uranium extrusions for the Department of Energy from 1962 to 1988 and for the Nuclear Regulatory Commission (NRC) until 1988. RMI is in the process of decommissioning the facility and surrounding areas that were involved in the uranium extrusion processes. The construction of new office and laboratory space to relocate current activities is required as a result of planned decommissioning activities. The new facility will be located in an area immediately south of the RF-6 Building, in an area of approximately 117 m x 34 m. Initial surveys of the yard south of the RF-6 Building have identified concentrations of depleted and low-enriched uranium in the soil, exceeding the current NRC guidelines. RMI has initiated a plan to remove the contaminated soil prior to the building construction.

The Nuclear Regulatory Commission (NRC) has requested that the Environmental Survey and Site Assessment Program of Oak Ridge Associated Universities (ORAU) perform a confirmatory survey of the yard south of the RF-6 Building at the RMI facility.

Prepared by the Energy/Environment Systems Division of Oak Ridge Associated Universities, Oak Ridge, Tennessee, under Nuclear Regulatory Commission interagency agreement (NRC Fin. No. A-9076) between the U.S. Nuclear Regulatory Commission and the U.S. Department of Energy.

December 11, 1990

II. PURPOSE

The purpose of the survey is to confirm that the decontamination activity conducted by the licensee is sufficient to reduce uranium activity levels in the area south of the RF-6 Building to below NRC guidelines for unrestricted use.

III. RESPONSIBILITY

Work described in this survey plan will be performed under the direction of J. D. Berger, Director of the Environmental Survey and Site Assessment Program of the Energy/Environment Systems Division of ORAU. The cognizant site supervisor has the authority to make appropriate changes to the survey plan as deemed necessary as the survey progresses.

IV. PROCEDURES

- A. ORAU will review the licensee's initial survey results and supporting documentation concerning site decommissioning activities. Information will be evaluated to assure that areas identified as exceeding site guidelines have undergone decontamination and that residual activity levels satisfy the established guideline.
- B. A survey team from ORAU will visit the RMI Facility and perform visual inspections and independent measurements and sampling. Survey activities will be conducted in accordance with the ORAU ESSAP Survey Procedures and Quality Assurance Manuals. These procedures are listed in Section VII of this survey plan. Any changes to this plan will be documented in the field log book.

1. Measurements and sampling will be referenced to the existing 25 ft. (7.5 m) grid used by the licensee. Grids will be combined to form a system of 50 ft. (15 m) grid blocks. In areas where grids have not been established, measurements and sampling will be referenced to prominent facility features, existing land marks, or nearby gridded surfaces.
2. Walkover surface scans will be conducted at 0.5 - 5 m intervals using gamma scintillation detectors and ratemeters with audible indicators. Locations of elevated contact radiation levels will be identified for further investigation.
3. Gamma exposure rates will be measured at the surface and 1 m above the surface at the grid line intersections and at locations of elevated radiation levels as identified by the walkover surface scans. Portable NaI (Tl) gamma scintillation detectors will be used. Conversion to exposure rates in $\mu\text{R}/\text{h}$ will be made by cross-calibration with a pressurized ion chamber (PIC).
4. Exposure rates at 1 m above the surface will be measured at a minimum of 6 locations using a PIC.
5. Surface soil samples will be collected at grid intersections. Time composite samples will be collected from selected gridblocks. Additional soil samples will be collected at locations of elevated radiation identified by surface gamma scans.

6. Subsurface soil samples (approximately 1 m depth) will be collected at excavated locations greater than 30 cm in depth, and at locations and at locations of elevated direct radiation identified by surface gamma scans.
7. Measurement and sampling locations and frequencies may be increased or decreased based on findings as the survey progresses.
8. A minimum of 6 locations for area background measurement and sampling will be selected within a 0.5 to 10 km radius of the site. Exposure rate measurements will be performed using a pressurized ion chamber. A baseline soil sample will be collected from each location of external background measurement.

V. SAMPLE ANALYSES AND DATA INTERPRETATION

Samples and data will be returned to the ESSAP laboratory at ORAU in Oak Ridge, Tennessee for analysis and interpretation. Direct measurements will be converted to units of $\mu\text{R/h}$ (gamma exposure rate). Soil samples will be analyzed by solid state gamma spectrometry. Radionuclides of primary interest are U-235 (of various enrichments) and U-238; however, spectra will be reviewed for other identifiable photopeaks. Data will be compared with the NRC guidelines for this site. Results will be presented in a report provided to the NRC for review and comment. Data and samples collected as part of this survey will be archived by ORAU.

VI. TENTATIVE SCHEDULE

Measurement and Sampling	December 13-14, 1990
Sample Analysis	January, 1991
Draft Report	March, 1991

VII. LIST OF CURRENT PROCEDURES TO BE USED IN THE SURVEY

Applicable procedures from ORAU ESSAP Survey Procedures Manual include:

Section 5.0	Site Preparation
	5.2 Reference Grid System
Section 6.0	Measurement Techniques
	6.3 Gamma Radiation (Exposure Rate) Measurement
	6.4 Surface Scanning
	6.10 Instrument Calibration
Section 7.0	Sampling Procedures
	7.1 Surface Soil Sampling
	7.2 Subsurface Soil Sampling
	7.10 Sample Identification and Labeling
Section 8.0	Integrated Survey Procedures
	8.1 Background Measurements and Baseline Sampling
	8.3 Surveys of Open Land Areas