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Manpower Education,
Research, and Training
Division

October 3, 1985

PDR
RETURN TO 396-SS



Dr. Donald A. Cool
Uranium Process Licensing
Uranium Fuel Licensing Branch
Division of Fuel Cycle & Materials
Safety, NMSS
Nuclear Regulatory Commission
Washington, DC 20555

Dear Dr. Cool:

Enclosed are the proposed radiological survey plans for the Chemetron-McGean Harvard Avenue plant and Industrial Dump sites.

Please refer questions concerning these survey plans to myself or Jim Berger at FTS 626-3305.

Sincerely,

Alex Boerner

Alex Boerner
Team Leader
Radiological Site Assessment Program

AB:mec



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PROPOSED CONFIRMATORY RADIOLOGICAL SURVEY PLAN
FOR THE FORMER
CHEMETRON-MCGEAN URANIUM CONVERSION AND CATALYST PRODUCTION SITE
NEWBURG HEIGHTS, OHIO

I. Site Information

In 1959, the Chemetron-McGean Chemical Company purchased a foundry warehouse at the company's present location in Newburg Heights, Ohio. Though primarily used for storage of equipment, portions of the building (Rooms 21 A-E) were used from 1965 - 1972 to convert depleted UF_6 to U_3O_8 for use in producing a chemical catalyst. Processing operations subsequently contaminated the south end of the building. Decontamination efforts, initiated by NL Industries in 1980, were successful in removing residual contamination from rooms 21 C-E. However, interior contamination in Rooms 21 A and B (where the main handling and production of the catalyst took place) and outside soil contamination remained in excess of NRC decommissioning limits. Work to dismantle the building and decommission the site began in 1984; with the assistance of the licensee's contractor, Radiation Management Corporation (RMC), decontamination of the site has been completed. Following decontamination, the site was resurveyed and the RMC report indicates that activities were effective in reducing residual contamination levels to within the NRC criteria for release of property for unrestricted use.

The site (Figure 1) is located at 2910 Harvard Avenue in Newburg Heights, approximately 6 km south of downtown Cleveland, Ohio. The property occupies approximately 1.2 hectares; the site is fenced and access is restricted. The property is level and free of surface debris.

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October 3, 1985

The NRC Office of Nuclear Material Safety and Safeguards has requested that the Radiological Site Assessment Program of Oak Ridge Associated Universities perform a radiological survey to confirm the status of this site.

II. Purpose

The purpose of the ORAU survey is to confirm the radiological data presented by the licensee's contractor, Radiation Management Corporation, and provide information for evaluation of the site status, relative to release for unrestricted use.

III. Responsibility

Work described in this survey plan will be performed under the supervision of Mr. J. D. Berger, Certified Health Physicist with the Radiological Site Assessment Program of the Manpower Education, Research, and Training Division of Oak Ridge Associated Universities.

IV. Procedures

A. Gridding

A 20 m grid system will be established throughout the property. This grid will be subdivided into 10 m grids in the areas where remedial action was performed and at any locations identified by the RMC survey as containing residual soil contamination exceeding 10 pCi/g of U-238. Further grid subdivision will be performed to better define conditions, if necessary, based on information as the survey progresses.

B. Direct Measurements

1. Walkover surface scans will be conducted over the entire site and outside the fence perimeter using portable gamma scintillation

detectors and ratemeters with audible indicators. Traverses will be at 1-2 m intervals. Locations of elevated contact radiation levels will be noted.

2. Exposure rate measurements will be made at the surface and 1 m above the surface at each grid interval and at locations of elevated readings. The measurements will be performed using portable gamma scintillation detectors, calibrated onsite against a pressurized ion chamber.

C. Sampling

1. Surface (0-15 cm) soil samples will be collected at each grid interval and from areas of elevated surface contact levels identified by the walkover scan.
2. Boreholes will be drilled to perform gamma logging and to collect subsurface samples. Systematic subsurface investigations will be performed at 10-15 locations, evenly spaced to provide representative sampling of the site. Approximately 25 boreholes will be drilled in areas identified as potential locations for subsurface contamination based on RMC or ORAU survey results and facility drawings. The exact number, location, and depth of these boreholes will be determined by findings as the survey progresses.

Subsurface soil samples will be obtained at random depths and at locations of possible residues as identified by borehole logging. Samples of groundwater will be obtained where present.

3. Samples of surface water will be collected from the site as available.

D. Background and Baseline Determinations

Soil and water samples will be collected from 6-8 areas surrounding the site, to provide baseline concentrations of radionuclides for comparison purposes. Direct background radiation levels will be measured at locations where baseline soil samples are collected.

V. Sample Analysis and Interpretation of Results

Samples and direct measurement data will be returned to Oak Ridge, TN, for analysis and interpretation. Soil will be analyzed by solid state gamma spectrometry. Radionuclides of primary interest are U-238, Th-232, Th-228, and Ra-226; however, spectra will be reviewed for other identifiable photopeaks. Several composite samples will be analyzed for isotopic uranium. Water will be analyzed for gross alpha and gross beta; isotopic analyses will be performed if gross concentrations exceed 15 pCi/l or 50 pCi/l, respectively. Results will be compared to NRC criteria developed for release of property containing residues from previous uranium and thorium operations.

VI. Tentative Schedule

Gridding and Surface Measurements and Sampling	October 7-11, 1985
Drilling and Subsurface Sampling	October 14-18, 1985
Sample Analysis	November 18-December 20, 1985
Draft Report	January 20, 1986

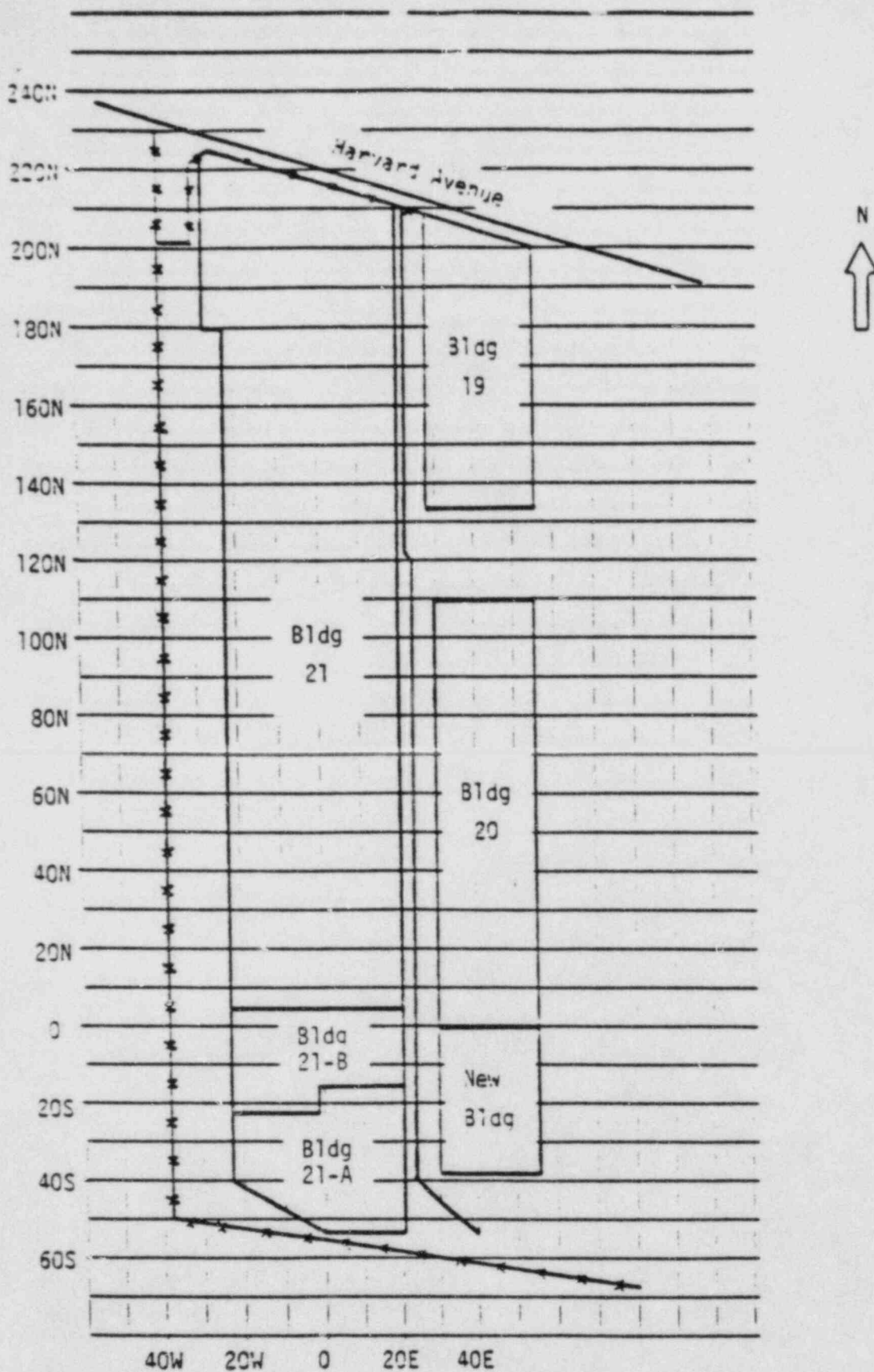


FIGURE 1: Plot Plan of the Chemetron-McGean Harvard Avenue Plant Site Showing Building 21 Before Demolition (Figure taken from RMC report, September, 1985)