

NY.51-03

***Certification Docket for the
Remedial Action Performed at the
Sacandaga Road Site Property in
Glenville, New York***

***United States
Department of Energy
Schenectady Naval Reactors***

December 1994



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Performed at the Sacandaga Road Site Property
in Glenville, New York**

December 1994

Prepared for

UNITED STATES DEPARTMENT OF ENERGY

Schenectady Naval Reactors Office

**By: Knolls Atomic Power Laboratory
Schenectady, New York**

EXECUTIVE SUMMARY

The Sacandaga Site, located at 823 Sacandaga Road, Glenville, New York, was operated by the General Electric Company for the Atomic Energy Commission (AEC) between 1947 and 1951. AEC sponsored research at the site involved physics studies and sodium technology development in support of breeder reactor design. Work also involved the use of nonradioactive beryllium.

It is the policy of the U.S. Department of Energy (USDOE) to verify that environmental conditions left at formerly used sites and facilities comply with current USDOE guidelines. At the request of the Office of Naval Reactors, Sacandaga Site characterization studies were conducted commencing in July, 1988. Oak Ridge National Laboratory (ORNL), Schenectady Naval Reactors (SNR), Knolls Atomic Power Laboratory (KAPL), New York State Department of Environmental Conservation (NYSDEC), and New York State Department of Health (NYSDOH) contributed to the site characterization studies. After conducting detailed site surveys and sampling, ORNL concluded there are no radioactive residuals from former Sacandaga Site research operations remaining at the property. ORNL sampling did reveal elevated beryllium concentrations in limited, isolated areas at the site. However, ORNL concluded the small amount of beryllium posed no health risk to workers or the general public.

Site specific guidelines for the cleanup were developed by Argonne National Laboratory (ANL) and were agreed to by NYSDOH and NYSDEC. These conservative guidelines were derived to ensure that unrestricted use of the site will not result in any health risk to individuals who may frequent the site, to the general public, or to the environment. In August, 1993, KAPL contracted with Allwash of Syracuse, Inc. to perform remedial cleanup actions. Actions involved cleaning rust scale from steel roof beams containing beryllium concentrations close to, but below guidelines, removing soil containing beryllium from a small isolated area of the site, and demolition of a small concrete structure. This was followed by post remedial action sampling. Post remedial action sampling results showed the site meets applicable cleanup guidelines. Site conditions were independently verified to meet cleanup guidelines with sampling performed by ORNL, NYSDEC and NYSDOH.

It is concluded that the Sacandaga Site conforms to all radiological and beryllium guidelines established by the USDOE and agreed to by NYSDEC and NYSDOH for release of the property for unrestricted use.

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SACANDAGA SITE CERTIFICATION DOCKET

Introduction

1. Purpose

The material in this docket consists of documents supporting the certification by the USDOE that environmental conditions at the formerly used Sacandaga Site in Glenville, New York are in compliance with site specific cleanup guidelines. Site specific cleanup guidelines were established under DOE Order 5400.5 consistent with DOE Formerly Utilized Sites Remedial Action Program protocols; these guidelines were agreed to by NYSDOH and NYSDEC as sufficiently protective to allow for unrestricted use of the property.

There was no residual radioactivity found at the Sacandaga Site. Remediation of residual beryllium was performed by a contractor under DOE direction and completed in 1993. Extensive post-remedial sampling was conducted to confirm that all site areas had been remediated in accordance with the applicable cleanup guidelines under DOE Order 5400.5. Independent verification sampling was conducted by the Measurement Applications and Development Group of the Oak Ridge National Laboratory (ORNL). Representatives of the New York State Department of Health (NYSDOH) and New York State Department of Environmental Conservation (NYSDEC) also conducted independent overcheck surveys and sampling for residual radioactivity and beryllium. The results of all surveys and sampling verified compliance with DOE Order 5400.5 and the site specific cleanup guidelines.

2. Property Identification

The General Electric Company formerly operated facilities known as the Sacandaga Atomic Power Laboratory (SAPL) for the Atomic Energy Commission (AEC), predecessor to the DOE, on lands in the Town of Glenville, County of Schenectady, New York. The Sacandaga Site land parcel consists of approximately 51 acres, located at 823 Sacandaga Road (NY Route 147), Glenville, New York. More detailed description of the property is provided in sections 2.0 and 3.0 of Exhibit I.

3. Docket Contents

Exhibit I provides a summary of remedial action activities completed at the Sacandaga Site. It includes a brief history of the Sacandaga Site, then summarizes site characterization, remedial action development, remedial action execution, and post-remedial action verification of site conditions.

Exhibit II consists of the letters, memos, reports and other documents that were issued relative to the Sacandaga Site. Exhibit II documentation encompasses the entire remedial action process, from site characterization to certification of the property for unrestricted use. Lengthy documents are incorporated as separate appendices.

The certification docket contains only the material deemed most pertinent to the certification of the property. The comprehensive package of records will be archived by the Knolls Atomic Power Laboratory after certification of the property. Copies of this docket will be available for public review between 9:00 a.m. and 4:00 p.m., Monday through Friday (except federal holidays) at the DOE Public Reading Room located in room 1E-190 of the Forrestal Building, 1000 Independence Avenue SW, Washington, D.C. Copies will also be available in the DOE Public Document Room at the Oak Ridge Operations Office, Oak Ridge, Tennessee, and the Schenectady County Public Library, 99 Clinton St., Schenectady, New York.

Exhibit I ***Summary of Remedial Action Activities***

SACANDAGA SITE CERTIFICATION DOCKET

Exhibit I - Summary of Remedial Action Activities

1.0 Introduction

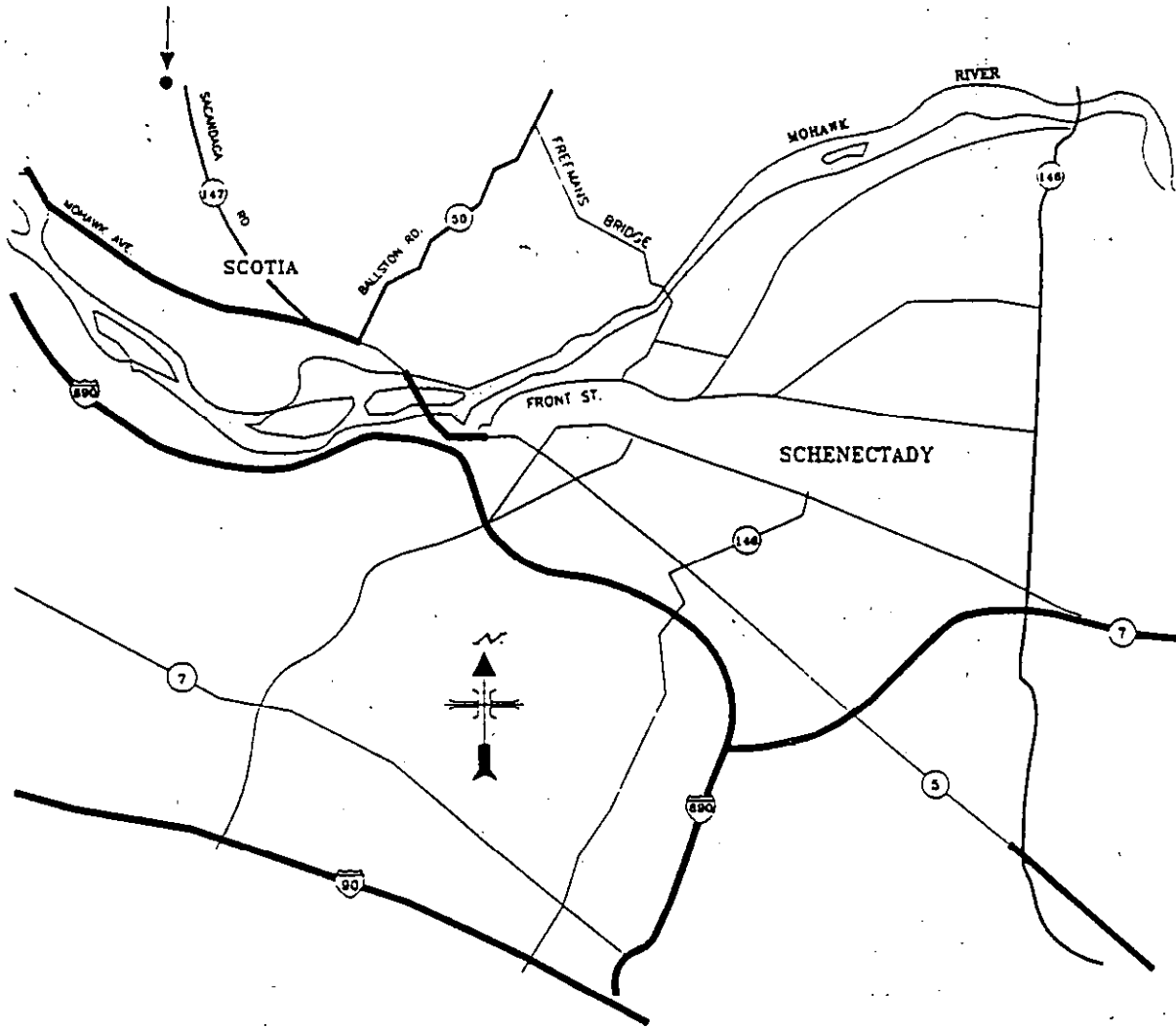
Exhibit I summarizes the activities culminating in the certification that environmental conditions at the Sacandaga Site are in compliance with applicable guidelines established by the USDOE and agreed to by New York State regulatory agencies. This certification of compliance provides assurance to the public that future use of the property will result in no radiological or beryllium exposure above guidelines established to protect members of the public and the environment.

This summary discusses the remedial action process applied at the Sacandaga Site. Key elements of the process include the characterization of the radiological and beryllium residual status, establishment of site specific cleanup guidelines, performance of remedial action, and verification of the effectiveness of remedial actions by independent agencies.

The site addressed in this docket is located approximately 4 miles north of Scotia, New York, at 823. Sacandaga Road (NY Route 147), Glenville, New York. The total land parcel consists of approximately 51 acres. Figure I-1 shows the location of this site.

Former Sacandaga Site Location

ORNL-DWG 89-7331



SCH8801

Figure I-1
Location of the Sacandaga Site

2.0 Site History

The General Electric Company operated the Sacandaga Atomic Power Laboratory (SAPL) for the AEC during the period 1947-1951. AEC sponsored research at the site involved physics studies and sodium technology development in support of breeder reactor design. Physics studies involved work with radioactive materials and nonradioactive beryllium metal. Prior to SAPL operations, the site was used for development and study of radar during World War II.

Although the Sacandaga Site consisted of approximately 51 acres, operation facilities were erected within a smaller fence enclosed area. The fenced area was approximately 975' long by 220' wide, centrally located between the property lines and set back from the main highway a distance of about 980'. Former facilities included buildings constructed variously of wood framework, steel framework and concrete block. Most buildings housed required support services, such as security, fire equipment, utility systems, storage and offices. Two reinforced concrete structures were additionally constructed for SAPL operations. One of the reinforced concrete structures, known as building P, housed research equipment. The other reinforced concrete structure, commonly known as a bunker, was used for incineration disposal of nonradioactive sodium.

Activities at SAPL were terminated in March, 1951. SAPL operations were transferred and consolidated with other operations at the newly constructed Knolls Atomic Power Laboratory facility located on River Road, in Niskayuna, New York. Transfer of operations included removal of all radioactive materials and reusable equipment. Decontamination and radiological clearance surveys were conducted following removal of equipment from the site.

Site demolition in the early 1950s included removal of most buildings and structures down to but not including concrete foundations and floor slabs. All site improvements, including utility hookups and fencing were removed. Nonsalvageable materials were removed, burned and/or buried in an effort to leave the site in a relatively clean and orderly condition. The only structures left intact were the two reinforced concrete buildings. Building P was stripped of all services and equipment, with the exception of crane rails mounted overhead near the ceiling. The other structure was buried with dirt and miscellaneous demolition debris.

Figure I-2 illustrates the locations of remaining structures on the site prior to commencement of remedial activities.

I-4

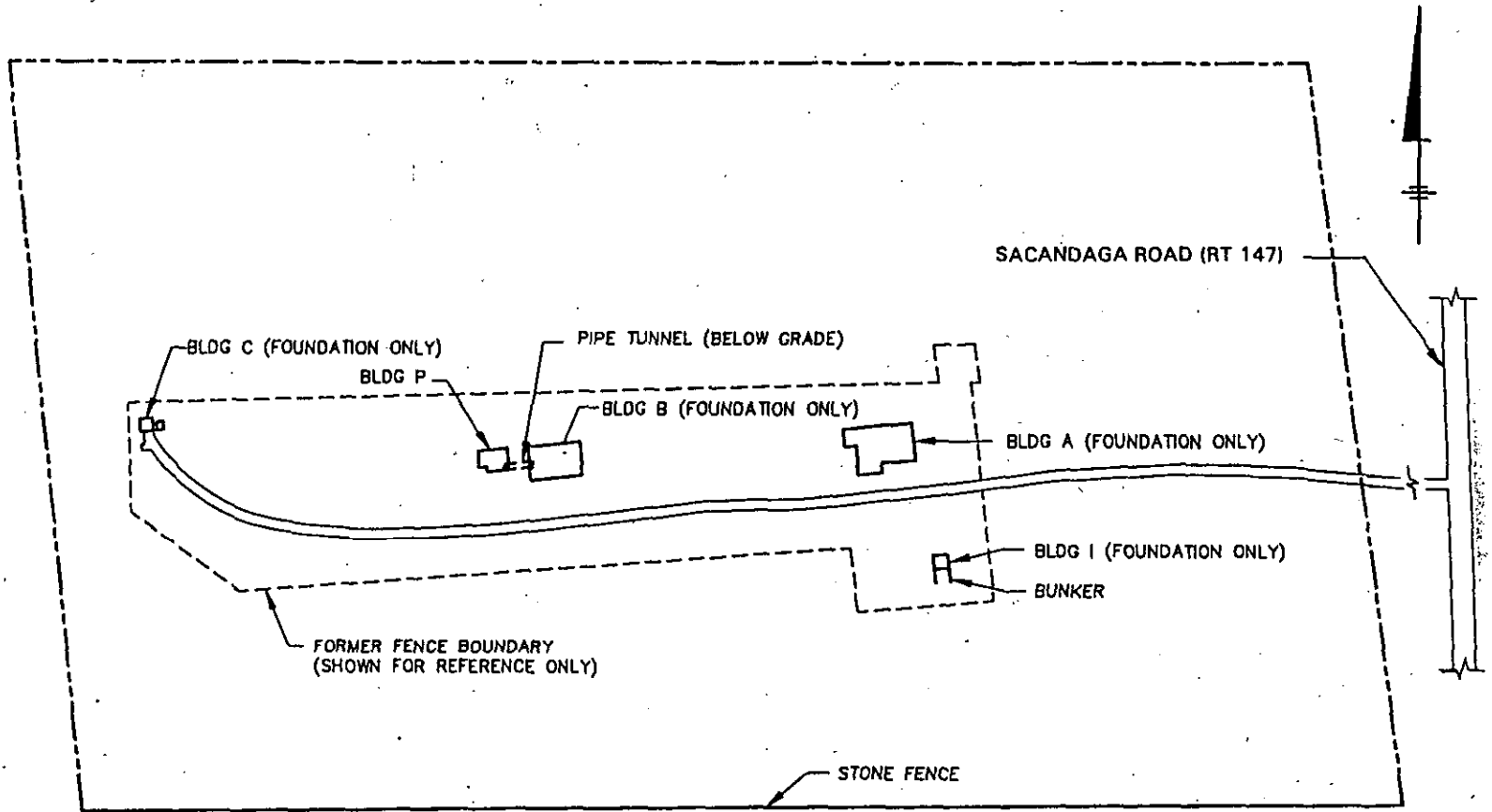


FIGURE I-2 SACANDAGA SITE - FOUNDATIONS AND STRUCTURES PRIOR TO REMEDIAL ACTIVITIES

2.0 Site History, cont.

In June, 1956, ownership of the property was transferred from the United States Government to the private sector. The site property has not been used for any commercial purposes or residential development since site dismantlement.

Small amounts of demolition debris, primarily concrete blocks and some steel, remains scattered around the site. In the time since site dismantlement, brush vegetation and small trees have proliferated in the former operations area of the site. Building P is currently used for material storage by the present owner.

Appendix C includes maps and photos of existing site structures and conditions as found prior to site characterization studies.

3.0 Site Characterization

At the request of the Office of Naval Reactors through the Office of Remedial Action and Waste Technology, Oak Ridge National Laboratory (ORNL) surveyed and evaluated the site for radiological and beryllium residuals on several occasions. Prior permission to access the site property for the purpose of surveys and engineering studies was granted by the owner, as documented in Exhibit II, section (5), item a.

Initial scoping surveys were conducted in July 1988 by a team from Oak Ridge National Laboratory (ORNL), Knolls Atomic Power Laboratory (KAPL), and New York State Departments of Environmental Conservation (NYSDEC) and Health (NYSDOH). As documented in Exhibit II, section (3), items a. and b., preliminary results indicated that while the site did not pose an immediate health hazard, more detailed surveys and soil sampling were warranted.

3.0 Site Characterization, cont.

The first detailed surveys were conducted between August and October 1989. Based on results of the first surveys, a second survey focusing on a small, isolated area of the site (inside the bunker) was conducted in February 1991. Appendix C provides ORNL site characterization methodology and all results. The results of detailed surveys revealed no radioactive residuals from former research operations. ORNL analyses did identify residual beryllium concentrations, above typical natural concentrations, in the gravel floor of the bunker.

In April 1993, additional dust samples and smear samples were collected from inside Building P and analyzed for beryllium. Results indicated elevated beryllium levels in dust samples taken from horizontal surfaces of a former overhead crane rail.

4.0 Remedial Action Development

Development and Approval of Cleanup Guidelines

Guideline values for remediation of the Sacandaga Site are provided in Table I-1. Exhibit II, section (1) provides the documentation tracing development of the cleanup guidelines and concurrence between SNR, NYSDOH and NYSDEC.

Argonne National Laboratory (ANL) developed the site specific cleanup guidelines based on DOE, EPA and OSHA criteria for beryllium inhalation exposures. Appendix A documents derivation of the beryllium guidelines.

ANL subsequently prepared a remedial action plan (RAP) for remedial cleanup of identified beryllium contaminated areas at the Sacandaga Site (Exhibit II, section (1), item 1.).

SNR provided New York State regulatory agencies with all cleanup guideline analyses and remedial action plans. Beryllium cleanup levels of 13 μ g/g in soil and 2 μ g/ft² in dust on indoor surfaces were agreed to by NYSDOH as sufficiently protective of human health.

4.0 Remedial Action Development, cont.

Development of Project Plans

In June 1993, SNR obtained license agreement with the Sacandaga Site owner granting permission to perform remedial actions. Exhibit II, section (5), item b., provides a copy of the license agreement.

In July 1993, SNR directed KAPL to develop implementation plans and execute remediation actions at the Sacandaga Site. KAPL amended an existing contract with ALLWASH of Syracuse, Inc. to perform the remediation action work. Oak Ridge National Laboratory was designated as the Independent Verification Contractor (IVC) to provide independent quality assurance of the cleanup effort.

TABLE I-1

GUIDELINE VALUES FOR REMEDIATION OF THE SACANDAGA SITE

Mode of Exposure	Guideline Value
¹³⁷ Cs in soil	34 pCi/g
²³⁸ U in soil	35 Pci/g
²³⁸ U in Indoor Dust	1000 dpm- α /100 cm ²
²³⁸ U Fixed Plus Removable Surface Contamination	5000 dpm- α /100 cm ²
Beta-Gamma Dose Rate at 1 cm from Surface over a 1-m ² Area	0.2 mrad/hr
Maximum Beta-Gamma Dose Rate in any 100-cm ² Area	1.0 mrad/hr
Gamma Exposure Rate Indoors at 1 m above Surface (Above Background)	20 μ R/hr
Beryllium in Removable Surface Dust	2 μ g/ft ²
Beryllium in air 8-hour average	2 μ g/m ³
Acceptable ceiling	5 μ g/m ³
Never to be exceeded	25 μ g/m ³
Beryllium in Soil	13 μ g/gm

5.0 Summary of Remedial Action

Remedial actions were performed at the Sacandaga Site to remove dirt and gravel containing nonradioactive beryllium from the floor of the buried concrete structure, to demolish and remove the buried concrete structure and to clean nonradioactive beryllium-containing dirt and dust from building P.

5.1 Remedial Action Activities

Appendix D provides details of the remedial actions performed at the Sacandaga Site.

Buried concrete structure remedial actions included the following:

- Removal of an approximately 30' radius by 10' tall dirt mound covering the structure.
- Excavation of the beryllium-containing soil and gravel from the structure floor using a small backhoe.
- Demolition and removal of the structure.

Building P remedial actions included the following:

- Removal of all stored owner materials from the building.
- Removal of the former overhead crane rails and other extraneous metal pieces such as empty conduit and brackets.
- Sandblasting overhead ceiling beams with emphasis on horizontal surfaces.
- Aggressive vacuuming (using a truck mounted vacuum) and cleaning of both rooms after sandblasting.

Remedial cleanup activities occurred between August 12 and August 20, 1993.

5.2 Post Remedial Action Sampling

At the completion of remedial action, the remedial action contractor performed swipe sampling in Building P and bulk soil sampling in the area of the buried structure excavation. Appendix D includes all final sample locations and results.

5.3 Verification Activities

An independent review of the Sacandaga Site remedial action was conducted by ORNL between August 21-22, 1993. The purpose of the review was to verify the data supporting the adequacy of the remedial action and to confirm the site's compliance with applicable guidelines established by the USDOE and agreed to by the State of New York regulatory agencies.

Based on FUSRAP protocol, the Independent Verification Contractor may conduct two types of verification reviews. Type A verifications include review of remedial action plans, release criteria, procedures, final survey documentation, final project documentation, and optional sampling analysis. Type B verifications include the same document reviews as Type A along with on-site visit(s) and survey(s) by direct measurements and sampling. ORNL performed a Type B verification at the Sacandaga Site.

Following the verification reviews and surveys, ORNL prepared a verification report (Appendix E). ORNL concluded that site conditions at the completion of remedial actions conform to all applicable nonradioactive beryllium and radiological guidelines established for the site.

Independent radiological and beryllium measurements were also taken by New York State representatives to monitor the effectiveness of the remedial actions. On August 27, 1993, NYSDEC representatives performed radiological surveys at the site. On September 1, 1993, a NYSDOH representative obtained soil samples from in and around the excavated area which formerly contained the buried concrete structure. Results of New York State regulatory agency surveys and sampling conducted at the Sacandaga Site are provided in Appendix D and exhibit II, section (8). NYSDEC and NYSDOH concluded that site conditions at the completion of remedial actions conform to all applicable nonradioactive beryllium and radiological guidelines established for the site.

5.4 Site Restoration

Following notification by ORNL and New York State that independent verification sampling results were below applicable guidelines, site restoration was completed. All owner materials were returned to storage in building P and the excavated area was backfilled with clean soil. The project was completed on September 16, 1993.

6.0 Conclusion

The Sacandaga Site conforms to all radiological and beryllium guidelines established by the USDOE and agreed to by NYSDEC and NYSDOH to certify the site for unrestricted use.

***Exhibit II Documents Supporting the Certification of the Remedial
Action Performed at the Former Sacandaga Site***

PREFACE

Exhibit II contains the letters, memos, reports and other documents that were produced throughout the remedial action process. Short documents are categorized by topic and incorporated into applicable Exhibit II sections. Lengthy documents are incorporated as appendices to the docket. For the convenience of the reader, all documents in Exhibit II are paginated sequentially with the prefix "II-".

Exhibit II (1) - Decontamination Criteria

The following documents contain the guidelines that determine the need for remedial action. The subject property has been remediated to comply with these guidelines.

- a. USDOE letter to K. Rimawi, Director, Bureau of Environmental of Environmental Protection, New York State Department of Health, and to P. Merges, Bureau of Radiation, Division of Regulatory Affairs, New York State Department of Environmental Conservation, *Radiological Survey Plans for the Peek Street and Sacandaga Sites*, REC&SD:ARS#124, June 9, 1989. II-4
- b. NYSDOH letter, K. Rimawi, Director, Bureau of Environmental Protection, to AR Seepo, USDOE, providing comments on survey plans, July 5, 1989. II-13
- c. USDOE Memo-of-Telecon documenting resolution of NYSDEC (P.Merges) comment on Sacandaga Site survey plans, REC&SD:ARS#140, July 11, 1989. II-14
- d. USDOE Memorandum-to-File documenting resolution of NYSDOH (W.Condon and K.Rimawi) comments on Sacandaga Site survey plans, REC&SD:ARS#138, July 25, 1989. II-15
- e. USDOE letter to P. Giardina, Director, Air and Waste Management Division, USEPA Region II, *Radiological Surveys of Two Former U.S. Atomic Energy Commission Sites in Upstate New York*, REC&SD:ARS#145, dated July 26, 1989. II-18
- f. Argonne National Laboratory, *Derivation of Beryllium Guidelines for Use in Establishing Cleanup Levels at the Peek Street and Sacandaga Sites, New York*, Hartmann, Avci, Ditmars, February 1992. Appendix A
- g. USDOE letter, to K. Rimawi, Director, Bureau of Environmental of Environmental Protection, New York State Department of Health, and to P. Merges, Bureau of Radiation, Division of regulatory Affairs, New York State Department of Environmental Conservation, *Cleanup Criteria for the Peek Street and Sacandaga Sites*, April 3, 1992. II-20

Exhibit II (1) - Decontamination Criteria, cont.

- h. NYSDOH letter, K. Rimawi, Director, Bureau of Environmental Protection, to AR Seepo, USDOE, providing comments on proposed guideline values for Peek Street and Sacandaga Sites, May 13, 1992. II-23
- i. NYSDEC letter, PJ Merges, Director, Bureau of Radiation, to AR Seepo, USDOE, providing agreement with proposed guidelines for the Peek Street and Sacandaga Sites, May 15, 1992. II-24
- j. USDOE letter, to K. Rimawi, Director, Bureau of Environmental Protection, NYSDOH and to PJ Merges, Director, Bureau of Radiation, NYSDEC, *Resolution of New York State Comments on Guideline Values for Remediation at the Peek Street and Sacandaga Sites*, July 2, 1992. II-26
- k. NYSDOH letter, RJ Fedigan, Program Research Specialist III, Bureau of Environmental Exposure Investigation, to AR Seepo, USDOE, providing agreement with beryllium guideline values for Peek Street and Sacandaga Sites, July 17, 1992. II-28
- l. USDOE Remedial Action Plan for Sacandaga Site, Glenville, New York, August 1992. II-29



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#124

JUN 09 1989

Dr. Karim Rimawi, Director
Bureau of Environmental Protection
New York State Department of Health
2 University Place
Albany, New York 12203

Dr. Paul J. Merges
Bureau of Radiation
Division of Regulatory Affairs
New York State
Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

Dear Drs. Rimawi and Merges:

Subject: RADIOLOGICAL SURVEY PLANS FOR THE PEEK STREET AND SACANDAGA SITES

As you are aware, the Office of Naval Reactors has arranged for the conduct of radiological surveys at former KAPL Sites on Peek Street in Schenectady and on Sacandaga Road in Glenville, New York by a survey team from the Department of Energy Formerly Utilized Sites Remedial Action Program. New York State Department of Health and Department of Environmental Conservation representatives participated in preliminary scoping surveys at these sites in July 1988. More comprehensive surveys are planned to be done later this summer.

Attached are copies of the survey plans for this upcoming work. Please provide any comments your departments may have on these plans to the undersigned no later than June 16, 1989.

Your prompt attention to this request would be greatly appreciated. I will advise you of the schedule for performance of the surveys as soon as specific dates are established.

Sincerely,

ORIGINAL SIGNED BY

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

Attachment 1: Peek Street Survey Plan
Attachment 2: Sacandaga Survey Plan

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OAK RIDGE NATIONAL LABORATORY

OPERATED BY MARTIN MARIETTA ENERGY SYSTEMS, INC.

POST OFFICE BOX 2008
OAK RIDGE, TENNESSEE 37831

June 7, 1989

Mr. Andrew Wallo
Division of Facility and Site
Decommissioning Projects
Department of Energy
NE-20
Washington, D. C. 20545

Dear Mr. Wallo:

Radiological Survey Plans for the Schenectady Surveys

The survey plans for the Peek Street and Sacandaga sites have been revised according to the comments received by you from Naval Reactors. Three copies of these plans are being forwarded to you, five copies to Andrew Seepo, SNR and five copies to Larry Poletti, NE-60. The primary revisions are editorial with some adjustment in the number of samples collected and analyses performed.

If you have questions please call me at FTS 624-5834.

Sincerely,

W. D. Cottrell

W. D. Cottrell

Measurement Applications
and Development Group

WDC:ec

Enclosures

RECEIVED

JUN 09 1989

REC & SD

RADIOLOGICAL SURVEY PLAN FOR THE SACANDAGA SITE, GLENVILLE, NEW YORK

W. D. Cottrell
R. E. Swaja

Measurement Applications and Development Group
Oak Ridge National Laboratory
Oak Ridge, Tennessee

INTRODUCTION

The Sacandaga Site¹ is located on Sacandaga Road in the Town of Glenville, in Schenectady County, New York. Originally called the Sacandaga Atomic Power Laboratory, this facility was used for the study and development of radar during World War II. Later (1947-1955) operations involved physics studies and sodium technology development in support of breeder reactor design and other Atomic Energy Commission (AEC) programs. It is estimated that the total inventory of radioactive materials on the site included ~300 kg of uranium in the form of solid metal discs, ~8 mg of plutonium on platinum discs covered with plastic, and ~3 mg of radium sealed in a radium/beryllium source. Both ²³⁸U and ²³⁵U in solid metal form were used in experiments for breeder reactor studies. With the termination of Thermal Test Reactor and Preliminary Pile Assembly operations in March 1951, the Sacandaga equipment was dismantled and moved to the Knolls Atomic Power Laboratory in nearby Schenectady.

The Office of Naval Reactors requested through the Office of Remedial Action and Waste Technology that a radiological survey group from the Formerly Utilized Sites Remedial Action Program (FUSRAP) conduct an independent assessment of the radiological condition of the Sacandaga Site. This type of assessment typically involves a two-stage process. The first part consists of a preliminary site visit (scoping survey) to verify that no radiological hazards exist at a specific site and to collect sufficient data to plan the second part of the process - a more comprehensive radiological survey. At the request of the Department of Energy (DOE), the scoping survey was conducted by Oak Ridge National Laboratory (ORNL) on July 22, 1988.

Results of the limited scoping survey of a portion of the Sacandaga Site provided no indication that residual radioactivity from former operations exists either indoors or outdoors on the surveyed areas.

However, since this property contains approximately 51 acres and the limited survey covered only that portion of the facility that contained the process and associated service buildings (5-6 acres), a more comprehensive study is required to characterize the radiological condition of the site.

SITE DESCRIPTION AND PRESENT USE

The subject site contains approximately 51 acres of land most of which is covered by a heavy growth of trees and underbrush. Rubbish and dismantled structural material is also strewn throughout the site. Operations involving work for the AEC appear to have been carried out on five or six acres which contained process and storage facilities. Building P, the Critical Assembly Building, is the only original structure remaining on the site. A concrete tunnel connecting the Critical Assembly Building with a former control building has been filled with dirt and debris. The site and building are presently being used for storage.

PLANNED SURVEY MEASUREMENTS

This characterization plan has been developed by ORNL to determine the radiological status of that portion of the facility involved in or influenced by operations carried out under AEC contract. The measurements will include a comprehensive survey of the former operations area (5-6 acres), 100-200 foot buffer around the area and a less detailed survey of the remaining portion of the property. The amount of detail required and the frequency of sampling will be determined in the field but will be sufficient to assess the radiological condition of the former plant site. A comprehensive description of survey methodology and instrumentation is given in the ORNL Procedures Manual for Radiological Surveys.²

Measurements to be made will include some or all of the following:

1. Range and average gamma radiation levels at the surface and 1 m above the surface inside buildings and outdoors on the site,
2. Surface alpha and beta contamination levels, both fixed and transferable, in on-site buildings,
3. Beta-gamma dose rates at 1 cm above the surface in buildings on the site,
4. Concentrations of radionuclides in surface soil samples,
5. Concentrations of radionuclides in subsurface soil, and

6. Gamma radiation levels and radionuclide concentrations in surface soil at areas away from the site to determine background levels.
7. Concentration of non-radioactive beryllium in selected samples of soil and dirt/debris

External gamma exposure rates will be measured throughout the site outdoors using a pressurized ionization chamber and these readings will serve as a basis for the conversion of gamma scintillator (NaI) readings to gamma exposure rates.

The following discussion of the survey plan has been divided into those measurements to be made indoors, those to be made outdoors on the site, and those to be made outdoors away from the site. Survey specifications are attached.

INDOORS

Floor and Lower Walls

For convenience and to obtain estimates of average contamination levels, the floor and lower walls (to a height of 2m) of Building P will be divided into survey blocks formed by the intersection of mutually perpendicular grid lines. The exact spacing of the grid lines will be determined in the field based on the physical layout and accessibility of some areas in the building. In small rooms, each room may serve as a survey unit and outdoor concrete pads which were formerly building floors will also serve as survey units.

Each accessible survey block will be scanned at the surface with a gamma scintillator, and the range and average readings recorded. At the point of maximum gamma exposure, beta-gamma and direct alpha measurements will be made and the external gamma exposure rate at 1 m above the surface will be determined. In addition to these measurements, direct alpha and beta-gamma measurements will be made at selected locations in each survey block. Transferable surface contamination will be determined by taking dry smears at random locations throughout the building for analysis of alpha and beta activity. In grid blocks where this general survey technique cannot be applied (i.e., where equipment is located), a gamma scan of the area will be made with smears and direct beta-gamma and alpha measurements taken as judged necessary. Where feasible samples of dust/debris will be collected and analyzed for radionuclide content and non-radioactive beryllium.

Overhead Surfaces

On overhead surfaces (e.g., ceilings, structural members, pipes, and wall surfaces higher than 2 m above the floor), direct alpha, beta-gamma, external gamma, and transferable alpha and beta contamination levels would most likely be found. will be measured at randomly chosen points and at locations where contamination / Surface gamma scans will be conducted on roofs of buildings. At points indicating above-background radiation levels and at systematically selected locations, surface beta-gamma and alpha measurements will be made. Where feasible samples of dust/debris will be collected and analyzed for radionuclide content and non-radioactive beryllium.

Floor Irregularities

Floor irregularities including drains, sumps, cracks, crevices, and pipe chases, when accessible, will be monitored to determine alpha, beta-gamma, and gamma levels. Where feasible, samples of scale, dirt, and/or water will be collected and analyzed for radionuclide content and non-radioactive beryllium.

OUTDOORS - ONSITE

The outdoor area will be gridded prior to the survey with the grid line spacing being determined based on site conditions. Typical grid spacing for properties of this size (5-6 acres) is 100 feet. The gamma survey of the former operating area will consist of a detailed gamma scan of each grid block with measurements and samples being taken as discussed in the following sections. The remaining area of the site will receive the same general type of survey except that the gamma scan will be a walkover survey; i.e., traverses made during the scan will be more widely spaced and fewer soil samples will be collected. The degree of detail of the survey is subject to modification and will be governed by findings during the initial field measurements. Small trees and brush will have to be cleared from the property prior to the survey.

Surface Measurements

Each grid block in the outdoor area will be gamma scanned at the near-surface (~2 inches above ground) and the range and average gamma levels recorded. In addition, gamma levels will be measured at the surface and at 1 m, and beta-gamma measurements will be made at the center and at the point of maximum gamma exposure rate in each block.

Surface Soil Sampling

Samples of surface soil (0-15 cm) will be collected from systematically determined locations. The location and frequency of sampling points will be determined based on existing field conditions. Additional

samples will be collected from locations showing significantly elevated gamma radiation levels. Samples will be processed and analyzed by gamma spectroscopy for gamma-emitting radionuclides. Selected samples will be analyzed for plutonium, polonium, strontium and other radionuclides as required as well as non-radioactive beryllium.

Subsurface Investigation

Drilling and/or split-barrel sampling will be conducted at selected locations to locate and quantify the extent of any subsurface contamination. Gamma radiation levels will be measured as a function of depth using a collimated NaI gamma scintillation detector. Samples of subsurface soil will be collected, processed and analyzed for specific radionuclides as in surface soil.

OUTDOORS - OFFSITE

Surface soil samples will be collected in the Glenville area (outside the influence of the site) to establish background concentrations of radionuclides of interest. Gamma radiation levels at 1 m above the ground surface will be determined at each background soil sampling location using a pressurized ionization chamber.

REPORTING OF RESULTS

Upon completion of the specified field work, sample analyses, and data reduction, a draft report summarizing the survey results will be submitted to DOE for review and comment. When review comments are received, the draft document will be revised and submitted to DOE in final form.

REFERENCES

1. B. F. Knapp, General Electric Company, to The Manager, Schenectady Naval Reactors Office, U.S. DOE, *History and Radiological Status of the KAPL Peek Street Site and The KAPL Sacandaga Site RHEP-30-1685* (August 24, 1979).
2. T. E. Myrick, B. A. Berven, W. D. Cottrell, W. A. Goldsmith, and F. F. Haywood, *Procedures Manual for the ORNL Radiological Survey Activities (RASA) Program*, Oak Ridge National Laboratory, ORNL/TM-S600 (April 1987).

SURVEY SPECIFICATIONS FOR THE SACANDAGA SITE

*GRID SIZE:

INDOOR - EACH ROOM WILL SERVE AS A SURVEY UNIT

OUTDOOR - CONCRETE PADS WILL SERVE AS SURVEY UNITS

FORMER PLANT AREA (5-6 ACRES) AND A BUFFER ZONE
(100 - 200 FEET) SURROUNDING THE PLANT AREA - 100 FEET GRID

REMAINDER OF PROPERTY (45 ACRES) WILL NOT BE GRIDDED

*SOIL SAMPLES:

OUTSIDE PLANT AREA-

-SYSTEMATIC (SURFACE) - SPOT SAMPLED ONLY (APPROX. 40 SAMPLES)

-SUBSURFACE (DRILLING) - 1/HOLE = 20 TOTAL

-CORE SAMPLES - 2 HOLES - 6 PER HOLE = 12 TOTAL

-BIASED SAMPLES AT AREAS OF ELEVATED GAMMA LEVELS

FORMER PLANT AREA-

-SYSTEMATIC (SURFACE) - 2/GRID = 36 TOTAL

-SUBSURFACE (DRILLING) - 1 PER HOLE = 20 TOTAL

-CORE SAMPLES - 10/HOLES - 6 PER HOLE = 60 TOTAL

-BIASED SAMPLES AT AREAS OF ELEVATED GAMMA LEVELS

*RADIONUCLIDES TO BE CONSIDERED:

GAMMA EMITTERS, URANIUM, RADIUM, PLUTONIUM, POLONIUM, AND ⁹⁰Sr WHERE
ELEVATED LEVELS OF ¹³⁷Cs OCCUR.

*BERYLLIUM SAMPLING:

ABOUT 30 SAMPLES (CHEMICAL ANALYSIS)

*OTHER COMMENTS:

CIVIL SURVEY NEEDED TO GRID AREA

BRUSH MUST BE CLEARED (BUSHHOG) PRIOR TO SURVEY

RUBBLE AND MOUNDS OF EARTH WILL BE SAMPLED
(BULLDOZER AND/OR FRONT-END LOADER WILL BE REQUIRED)

DRILLING CONTRACT NECESSARY

HEAVY EQUIPMENT CONTRACT NECESSARY (BULLDOZER AND/OR FRONT-END LOADER)



STATE OF NEW YORK DEPARTMENT OF HEALTH

Corning Tower The Governor Nelson A. Rockefeller Empire State Plaza Albany, New York 12237

David Axelrod, M.D.
Commissioner

OFFICE OF PUBLIC HEALTH

Linda A. Randolph, M.D., M.P.H.
Director

William F. Leavy
Executive Deputy Director

July 5, 1989

A.R. Seepo, Director
Radiological/Environmental
Control & Safety Division
Department of Energy
Schenectady Naval Reactors Office
Schenectady, NY 12301-1069

Dear Mr. Seepo:

The Bureau of Environmental Radiation Protection has reviewed the DOE's proposed surveys of the Peek Street and Glenville Sites. For the most part, we agree with the scope and methodology of the survey plans. However, there are a few questions and comments which require clarification.

In previous discussions about the Peek Street facility, it was anticipated that surveys of adjacent properties would be performed. The proposed survey description only refers to "Any areas of the Bike Path not covered in the November survey...." and does not mention the homes on the western side of the property. Also, the homes to the east of the bike path, potentially affected by air emission are not specifically delineated.

On page 4, under Surface Soil Sampling, surface soil sample depths are stated as being 0-15 cm. We suggest samples be taken to depth 0-5 and 5-15 cm in locations when surface contamination is expected for a more comprehensive site evaluation. Also in the same paragraph it is stated that "....additional samples will be collected from locations showing significantly elevated gamma radiation levels". The range or trigger point for additional sampling needs to be defined.

The survey plan does not address evaluation of potential ground water contamination. This should be addressed for the Glenville site.

If you have any questions concerning these comments, please contact me or William Condon for clarification.

Sincerely,

Karim Rimawi, Ph.D.
Director
Bureau of Environmental
Radiation Protection



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#140
JUL 11 1989

MEMO-OF-TELECON WITH NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL
CONSERVATION (P. MERGES) ON JULY 7, 1989

The purpose of this telecon was to discuss and resolve a comment provided to SNR by the New York State Department of Environmental Conservation on radiological survey plans for the Peek Street and Sacandaga Sites.

Background

The office of Naval Reactors has arranged for the conduct of radiological surveys at former KAPL Sites on Peek Street in Schenectady and on Sacandaga Road in Glensville, New York by a survey team from the U. S. Department of Energy Formerly Utilized Sites Remedial Action Program. New York State Department of Health (NYSDOH) and Department of Environmental Conservation (NYSDEC) representatives participated in preliminary scoping surveys at these sites in July 1988. More comprehensive surveys are planned to be done later this summer.

On June 9, 1989, SNR forwarded copies of the radiological survey plans to NYSDEC for review and comment. On June 26, 1989, NYSDEC (Merges) contacted SNR (Vodapivc) and provided the comment that the ORNL survey team should consider use of an in-situ survey technique developed at KAPL for measuring subsurface soil radioactivity.

Discussion

On July 7, 1989, SNR (Seepo) contacted NYSDEC (Merges) to discuss and resolve the above comments. SNR (Seepo) described the technique normally used by ORNL which entails lowering a sodium iodide scintillation detector into core boring holes to obtain gross gamma readings. NYSDEC (Merges) agreed that use of the standard ORNL technique for the Peek Street and Sacandaga Site surveys would be acceptable.

ORIGINAL SIGNED BY

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

cc: P. Merges, NYSDEC
W. Condon, NYSDOH



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#138
JUL 25 1989

MEMORANDUM-TO-FILE

PEEK STREET AND SACANDAGA SITE SURVEY PLANS - RESOLUTION OF NEW YORK STATE
DEPARTMENT OF HEALTH COMMENTS

The purpose of this memorandum is to document the resolution of comments provided to SNR by the New York State Department of Health on radiological survey plans for the Peek Street and Sacandaga Sites.

The U. S. Department of Energy has arranged for the conduct of radiological surveys at former KAPL Sites on Peek Street in Schenectady and on Sacandaga Road in Glenville, New York by a survey team from the Formerly Utilized Sites Remedial Action Program (FUSRAP). New York State Department of Health (NYSDOH) and Department of Environmental Conservation (NYSDEC) representatives participated in preliminary scoping surveys at these sites in July 1988. More comprehensive surveys are planned to be done later this summer.

On June 9, 1989, SNR forwarded copies of the FUSRAP radiological survey plans to NYSDOH for review and comment. On June 19, 1989, NYSDOH (Condon) contacted SNR (Seepo) and provided verbal comments. These comments were discussed among DOE FUSRAP (Wallo), NR (Poletti), ORNL (Cottrell) and SNR (Seepo) in several telecons during the period between June 20 and July 3, 1989. It was agreed that SNR (Seepo) would call NYSDOH to provide the comment resolutions.

On July 5, 1989, SNR (Seepo) called Mr. Condon to discuss how DOE FUSRAP proposed to resolve NYSDOH comments on the radiological survey plans. NYSDOH comments were resolved as follows:

1. NYSDOH questioned the adequacy of the number of soil samples to be obtained and analyzed. SNR indicated that for the Peek Street Site, 45 systematic surface samples and approximately 30 biased samples would be obtained by the FUSRAP team. In addition, 15 subsurface (drilling) samples and 60 core samples will be obtained. For perspective, 11 soil samples were obtained during the scoping survey in July 1988. For the Sacandaga Site, approximately 40 systematic surface samples, 20 subsurface (drilling) samples and 12 core samples will be obtained by FUSRAP as well as biased surface samples at areas of elevated gamma levels. Nine (9) soil samples were obtained during the scoping survey in July 1988.

2. NYSDOH indicated that the depth of drilling samples and some idea of location should be stipulated. SNR stated that based on discussions with FUSRAP, the drilling samples would be one to three meters in depth and would be taken both randomly and in areas where contamination might conceivably accumulate such as low points and along drip lines.
3. NYSDOH identified the need to perform radon emission studies to detect buried sources not normally detectable using gross gamma scans. SNR indicated that the FUSRAP survey plan included monitoring each core boring or drill hole by lowering a sodium iodide scintillation detector into the hole to obtain measurements at various depths up to three meters. SNR also pointed out that at Sacandaga a bulldozer or backhoe would be used to overturn and expose partially buried building rubble to allow radiation measurements to be made of soil and debris that may have been displaced by previous grading or razing of former buildings.
4. NYSDOH requested the term "significantly elevated" gamma levels be defined. SNR stated that levels two or more times greater than normal background levels is how FUSRAP defines this term for this survey.
5. NYSDOH requested definition of the extent to which areas or locations beyond the confines of the Peek Street Site would be surveyed. SNR indicated that the FUSRAP plan is to conduct radiation surveys approximately 50 feet, in all directions, beyond the perimeter of the Peek Street Site. In the unlikely event that any areas of significantly elevated gamma levels are found, soil samples will be obtained and the survey extended outward to define the extent of the contamination.

On July 12, 1989, SNR received a letter from Dr. Rimawi, Director of the New York State Department of Health, Bureau of Environmental Radiation Protection that provided additional comments on the Peek Street and Sacandaga Site survey plans. These comments were discussed among DOE FUSRAP (Wallo), NR (Poletti), ORNL (Cottrell) and SNR (Seepo) on July 13, 1989. It was again agreed that SNR (Seepo) would call NYSDOH to provide comment resolutions. In a telecon, on July 14, 1989 between SNR (Seepo) and NYSDOH (Condon), the following resolutions were provided:

1. NYSDOH requested clarification of the extent to which areas or locations beyond the confines of the Peek Street Site would be surveyed. The FUSRAP plan is to conduct radiation surveys approximately 50 feet, in all directions, beyond the perimeter of the Peek Street Site. SNR stated that based on discussions with FUSRAP, properties west of the site at 413 and 417 Peek Street would be surveyed as well as property owned by the Delaware & Hudson Railroad west and north of the site. To the south and east, the survey will include the area on and adjacent to the bike path.
2. NYSDOH suggested that soil samples be obtained at depths of 0-5 and 5-15 cm. SNR stated that soil samples would be taken by FUSRAP at 0-5 and 5-15 cm at each sampling location where significantly elevated gamma levels are measured.

3. NYSDOH pointed out that the Sacandaga Site survey plan does not address evaluation of potential groundwater contamination. SNR indicated that based on the results of the scoping survey conducted in July 1988, FUSRAP has no reason to suspect groundwater contamination. In the event that subsurface soil samples obtained during the upcoming survey indicate the presence of contamination, the potential for groundwater contamination will be evaluated.

ORIGINAL SIGNED BY

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

cc: K. Rimawi, NYSDOH
P. Merges, NYSDEC



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#145

JUL 26 1989

Director, Air and Waste Management Division
U. S. Environmental Protection Agency
Region II
Federal Office Building
26 Federal Plaza
New York, New York 10278

Attention: P. Giardina

Dear Mr. Giardina:

Subject: RADIOLOGICAL SURVEYS OF TWO FORMER U. S. ATOMIC ENERGY COMMISSION
SITES IN UPSTATE NEW YORK

The purpose of this letter is to inform you of actions being taken by the U. S. Department of Energy to complete radiological surveys at two former Atomic Energy Commission sites in upstate New York. No Environmental Protection Agency action is requested or required.

In the late 1940's and early 1950's, two federal government sites known as the Peek Street Site in Schenectady, New York and the Sacandaga Site in Glenville, New York were used for early Atomic Energy Commission nuclear work. The sites were sold to private parties in the mid-1950's after the Commission's prime contractor, General Electric-KAPL, had decommissioned its facilities and performed surveys to determine that it met applicable standards for unrestricted use.

In June 1988, the current Peek Street owner requested the DOE to perform a radiological survey of the Peek Street Site to ensure it met current standards for use by the general public. In response, the DOE arranged for a survey team from its Formerly Utilized Sites Remedial Action Program (FUSRAP) organization to survey both the Peek Street and Sacandaga Sites. The plan was to perform a preliminary survey to determine the general radiological condition of the sites and to determine whether there was any significant health concern. This was to be followed by a more detailed final survey to fully characterize the sites.

In July 1988, representatives from the DOE, the New York State Department of Environmental Conservation, and the New York State Department of Health conducted preliminary surveys at both sites. Upon completion of the surveys, the team, including the State of New York, concluded that neither site represents a health hazard to employees or residents in the area and that there was no requirement or need for posting or other forms of control. Copies of DOE Preliminary Site Survey reports are attached herein for your information.

JUL 26 1989

In November 1988, the DOE survey team and the state representatives returned and conducted an additional survey of a public bike path area adjacent to the Peek Street facility. This survey confirmed that there is no radiological concern for members of the public using this area. Attached, for your information, is a preliminary assessment of the bike path area.

Although these preliminary surveys indicate there are no significant concerns or health risks, more detailed surveys are being conducted to complete the radiological evaluation of each site. The DOE team will conduct the final surveys in August 1989. Copies of survey plans for this work are attached. These plans have been reviewed with the New York State Departments of Environmental Conservation and Health.

Should you have any questions, please contact me at (518) 395-6366.

Sincerely,

ORIGINAL SIGNED BY

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

Attachments:

- (1) Preliminary Site Survey Report for Peek Street Site
- (2) Preliminary Site Survey Report of Sacandaga Site
- (3) Survey of the Bike Path Adjacent to the Peek Street Site
- (4) Radiological Survey Plan for Peek Street Site
- (5) Radiological Survey Plan for Sacandaga Site

cc: K. Rimawi, NYSDOH
P. Merges, NYSDEC



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#423

APR 03 1992

Dr. Karim Rimawi, Director
Bureau of Environmental Protection
New York State Department of Health
2 University Place
Albany, New York 12203

Dr. Paul J. Merges
Bureau of Radiation
Division of Regulatory Affairs
New York State
Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

Dear Drs. Rimawi and Merges:

Subject: CLEANUP CRITERIA FOR THE PEEK STREET AND SACANDAGA SITES

As you are aware, the U. S. Department of Energy (DOE) has completed radiological surveys at former Atomic Energy Commission sites on Peek Street in Schenectady and on Sacandaga Road in Glenville, New York. Copies of the Oak Ridge National Laboratory (ORNL) survey reports are provided as Attachments 1 and 2.

Although only localized and small amounts of residual radioactive material were found at the Peek Street Site, which pose no hazard to the site workers, the public, or the environment, DOE intends to remediate these areas. The remediation work would include cleanup of the residual radioactivity and the trace quantities of non-radioactive beryllium found in limited areas indoors and localized spots in soil outdoors at the Peek Street Site.

At the Sacandaga Site, the survey revealed no detectable radioactivity above background. A small amount of residual beryllium was found at the Sacandaga Site in samples of the gravel floor and subfloor soil from within an excavated concrete bunker. Remediation work will include cleanup of the beryllium.

Argonne National Laboratory (ANL) will be responsible for the remediation work. ANL has prepared the following documents in support of this task, copies of which are attached:

Drs. Karim Rimawi/
Paul J. Merges

-2-

APR 03 1992

- o Remedial Action Plan (Draft) for the Peek Street Industrial Facility (Attachment 3)
- o Remedial Action Plan (Draft) for the Sačandaga Site (Attachment 4)
- o Derivation of Uranium Residual Material Guidelines for the Peek Street Site (Attachment 5)
- o Derivation of Cesium-137 Residual Material Guidelines for the Peek Street Site (Attachment 6)
- o Derivation of Beryllium Guidelines for Use in Establishing Cleanup Levels at the Peek Street and Sacandaga Sites (Attachment 7)

Attachment 8 to this letter compiles guideline values for remediation of residual radioactive material and non-radioactive beryllium at the Peek Street and Sacandaga Sites.

New York State concurrence with the Attachment 8, Guideline Values, is requested. We would appreciate concurrence within thirty (30) days to support current ANL plans for performance of cleanup work this summer. Please contact the undersigned to resolve any comments or questions.

Sincerely,

ORIGINAL SIGNED BY

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

Attachments:
As Stated

Guideline Values for Remediation of Residual Radioactive Material and Non-Radioactive Beryllium at the Peek Street and Sacandaga Sites

Mode of Exposure	Guideline Value	Reference
²³⁸ U in Soil	35 pCi/g	Robinet 1989
²³⁸ U Indoor Dust	1000 dpm-alpha/100 cm ²	DOE 1990
²³⁸ U Fixed Plus Removable Surface Contamination	5000 dpm-alpha/100 cm ²	DOE 1990
Beta-Gamma Dose Rate at 1 cm from Surface over a 1 m ² area	0.2 mrad/h	DOE 1987
Maximum Beta-Gamma Dose Rate in any 100 cm ² Area	1.0 mrad/h	DOE 1987
Gamma Exposure Rate Indoors at 1 m above Surface (Above Background)	20 µR/h	DOE 1987
Beryllium in Removable Surface Dust	2 µg/ft ²	Hartmann, Avci and Ditmars 1992
Beryllium in Air 8-hr average Acceptable ceiling never to be exceeded	2 µg/m ³ 5 µg/m ³ 25 µg/m ³	Hartmann, Avci and Ditmars 1992
Beryllium in Soil	13 µg/g	Hartmann, Avci and Ditmars 1992 (See also the discussion in Text)
¹³⁷ Cs in soil	34 pCi/g	Jones, Nimmagadda and Yu 1992



STATE OF NEW YORK DEPARTMENT OF HEALTH

Center for Environmental Health

2 University Place

Albany, New York 12203-3399

McBarnette
Executive Deputy Commissioner

OFFICE OF PUBLIC HEALTH
Sue Kaly
Executive Deputy Director
William N. Stasiuk, P.E., Ph.D.
Center Director

May 13, 1992

Andrew Seepo
US Department of Energy/SNR
P.O. Box 1069
Schenectady, NY 12309

Dear Mr. Seepo:

We have reviewed the recent report on the surveys at the sites of Peek Street, Schenectady and Sacandaga Road, Glenville, New York and the information regarding the proposed residual contamination limits for these sites.

The proposed Cs-137 concentration limit is based on 100 mrem/yr. We feel that a more appropriate dose limit to be used for these sites is 10 mrem/yr. Soil concentration limits assuming uniform contamination of an area of 100m² should be derived on this basis. A modifying factor for source area to allow for a higher concentration limit in small areas may be used. The other radionuclide residual limits cited are similar to values used at other locations in New York.

The Beryllium limit is being reviewed by the Bureau of Toxic Substance Assessment. I will provide you with feedback when the review is completed.

Please contact me if you have any questions.

Sincerely,

Karim Rimawi, Ph.D.
Director
Bureau of Environmental
Radiation Protection

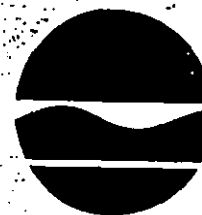
cc: P. Merges, Ph.D.
W. Stasiuk, P.E., Ph.D.
R. Tramontano, P.E.

RECEIVED

MAY 18 1992

REC&SD

New York State Department of Environmental Conservation
Wolf Road, Albany, New York 12233



Thomas C. Jorling
Commissioner

MAY 15 1992

Mr. A. R. Seepo
Director
Radiological/Environmental Control
and Safety
U.S. Department of Energy/ SNR
Schenectady Naval Reactors Office
P.O. Box 1069
Schenectady, NY 12301-1069

Dear Mr. Seepo:

I am writing in response to your April 3, 1992 letter regarding cleanup criteria for the Peek Street and Sacandaga sites. The Bureau of Radiation has reviewed all the attachments to your letter, and in particular, the guideline values for remediation of residual radioactive material (attachment 8).

To help determine the consequences of the application of these guidelines, we ran RESRAD to estimate doses that might result from those values under a conservative but plausible scenario. This scenario considered soil processes only (direct radiation, ingestion, inhalation, and plants). Aquatic sources, meat, milk, and groundwater were judged to be less important and also could not be well specified. Occupancy was assumed to be 0.45. The run used defaults for essentially all inputs. Soil transport questions were not addressed, and it is improper to use the time dependent calculations.

For cesium-137, the result was a dose rate of about 3 mrem/y per pCi/g. This is consistent with the proposed cleanup guideline of 34 pCi/g if the allowed dose is 100 mrem/y. However, DEC recommends an allowed dose of no more than 10 mrem/y. Therefore, the guideline should be approximately an order of magnitude lower than that presented in Attachment 8. A guideline closer to 3 or 4 pCi/g should be used.

We find the remaining guidelines for radioactive material to be acceptable. As you know, the State Health Department is reviewing the beryllium guideline, and will provide the State's comments on that.

Thank you for the opportunity to review these documents.
If you have any questions, please feel free to contact John
Kadlecek or me at 457-2225.

Sincerely,

Paul Merges

Paul J. Merges, Ph.D.
Director
Bureau of Radiation

cc: K. Rimawi, DOH

RECEIVED
MAY 18 1992

FEC&SD



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#454

JUL 02 1992

Dr. Karim Rimawi, Director
New York State
Bureau of Environmental Radiation Protection
New York State Health Department
2 University Place, Room 375
Albany, New York 12203

Dr. Paul Merges, Ph.D
Director, Bureau of Radiation
New York State
Department of Environmental Conservation
Div. of Hazardous Substances Regulation
50 Wolf Road
Albany, New York 12233-7255

Dear Drs. Rimawi and Merges:

Subject: RESOLUTION OF NEW YORK STATE COMMENTS ON GUIDELINE
VALUES FOR REMEDIATION AT THE PEEK STREET AND
SACANDAGA SITES

- References:
- (a) SNR letter REC&SD:ARS#423, dated April 3, 1992
 - (b) New York State Department of Health (Rimawi) letter, dated May 13, 1992
 - (c) New York State Department of Environmental Conservation (Merges) letter, dated May 15, 1992
 - (d) ORNL Survey Report for Peek Street

In Reference (a), SNR requested New York State concurrence with guideline values for remediation of residual radioactive material, including a derived value for Cs-137, and non-radioactive beryllium at the Peek Street and Sacandaga Sites. The proposed Cs-137 guideline value was 34 pCi/g which was conservatively derived assuming the entire Peek Street Site (approximately 18,000 m²) to be uniformly contaminated with Cs-137 and was based on the DOE standard of 100 mrem/yr. In references (b) and (c), New York State commented that the Cs-137 guideline should be based on an allowed dose of no more than 10 mrem/yr. The remaining guideline values for radioactive material were acceptable.

Drs. Karim Rimawi and
Paul Merges

-2-

JUL 02 1992

As suggested by New York State in Reference (b), SNR had Argonne National Laboratory recalculate a Cs-137 guideline value for the Peek Street Site using a 10 mrem/yr. dose limit and an affected area of approximately 100 m². This area more closely corresponds to the area of the Peek Street Site that actually contains elevated levels of Cs-137, as documented in Reference (d). Because of the smaller area used in the new calculation (copy attached), which, while still conservative, is more representative of actual site conditions than that used in the initial calculation, the new calculation resulted in a Cs-137 guideline value of 50 pCi/g for the 10 mrem/yr. dose limit.

The results of the recalculated cesium-137 guideline value were discussed with New York State Department of Environmental Conservation (Merges) and New York State Department of Health (Rimawi) by SNR (Seepo) in separate telecons on June 1, 1992. It was agreed that 34 pCi/g should be adopted as the guideline value for the Peek Street Site. During these discussions, SNR (Seepo) identified Argonne National Laboratory's intent to remediate residual cesium-137 at the Peek Street Site to essentially background levels.

SNR notes that New York State's review of guideline values for non-radioactive beryllium is not yet complete. It is requested that this review be completed as soon as practicable to avoid delays to cleanup work planned for this summer.

Sincerely,

ORIGINAL SIGNED BY

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

Attachment:
As Stated



STATE OF NEW YORK DEPARTMENT OF HEALTH

Center for Environmental Health

2 University Place

Albany, New York 12203-3399

McBarnette

Executive Deputy Commissioner

OFFICE OF PUBLIC HEALTH

Sue Kelly

Executive Deputy Director

William N. Stasiuk, P.E., Ph.D.

Center Director

July 17, 1992

Mr. Andrew Seepo
U.S. Department of Energy
P.O. Box 1069
Schenectady, NY 12301-1069

Dear Mr. Seepo:

We reviewed the information on chemical contamination in the reports on the Peek Street, Schenectady and Sacandaga Road, Glenville sites. We also inspected each site. The investigation of chemical contamination at these sites focused on residual, non-radioactive beryllium.

We reviewed the clean-up levels for beryllium in the documents and compared them with our calculations. While our clean-up numbers are not identical with those in the reports, the differences should not be a problem in these two situations. Interior surfaces of the Peek Street building will be cleaned and resampled. Elevated beryllium levels in soils adjacent to the building will be removed. The areas will then be resampled and covered with clean fill. The bunker at the Sacandaga Road site, which contains elevated beryllium, will be dug up, removed, resampled and covered. The areas of coal ash cinders at both sites are within background ranges for beryllium. Given this approach, our concerns with beryllium contamination are addressed.

Sincerely,

Richard J. Fedigan
Program Research Specialist III
Bureau of Environmental Exposure
Investigation

jlh/21980694

RECEIVED

JUL 21 1992

REC&SD

REMEDIAL ACTION PLAN FOR SACANDAGA SITE
GLENNVILLE, NEW YORK

August 1992

U.S. Department of Energy
Washington, D.C.

REMEDIAL ACTION PLAN FOR SACANDAGA SITE GLENVILLE, NEW YORK

Purpose

The purpose of this plan is to outline the steps to perform localized remediation for identified areas of the Sacandaga site located in Glenville, New York, near Schenectady, New York (see Figure 1). The objective of the plan is to reduce residual nonradioactive beryllium concentrations in identified areas to levels that satisfy applicable guidelines for unrestricted use of the property.

Site Condition

A radiological survey of the site was conducted by Oak Ridge National Laboratory (ORNL) between 1988 and 1991. The results of the survey are documented by Foley et al. (see Foley, Cottrell, and Carrier 1992) in the report, *Results of the Radiological Survey at the Sacandaga Site, Glenville, New York* (ORNL-6638). The majority of the measurements taken and samples analyzed indicate results that are within U.S. Department of Energy (DOE) guidelines. These conservative guidelines, based on possible exposure through inhalation, ingestion, or direct contact, are derived to ensure that unrestricted use (including residential and industrial use) will not result in any significant exposure to individuals who may frequent the site, to the general public, or to the environment.

No radioactive residuals that could be associated with the former Sacandaga site research operations were found at the Sacandaga property. The slightly elevated gamma exposure rates observed were clearly associated with coal ash and cinders containing naturally enhanced radioactivity or with slightly elevated concentrations of naturally occurring potassium-40. Coal ashes are typically found at installations that operated during the 1940s and 1950s because coal-fired furnaces were the primary source of heat. Concentrations of potassium-40 in subsurface soil samples at approximately 1.8 times the amount found in surface soil from nearby background areas would not have resulted from any operations formerly conducted at the Sacandaga site. All radiation levels and radionuclide concentrations are within the DOE criteria (DOE 1987).

Concentrations of nonradioactive beryllium in soil samples from across the site were consistent with natural background levels with one exception. Residual beryllium was found to be in excess of DOE guidelines in samples of the gravel floor and subfloor soil from within the excavated concrete bunker. (The location of the bunker is indicated in Figure 2.) Because the identified area is localized and limited in extent, the ORNL report concluded that, under present use conditions, the residual material does not pose a significant health risk.

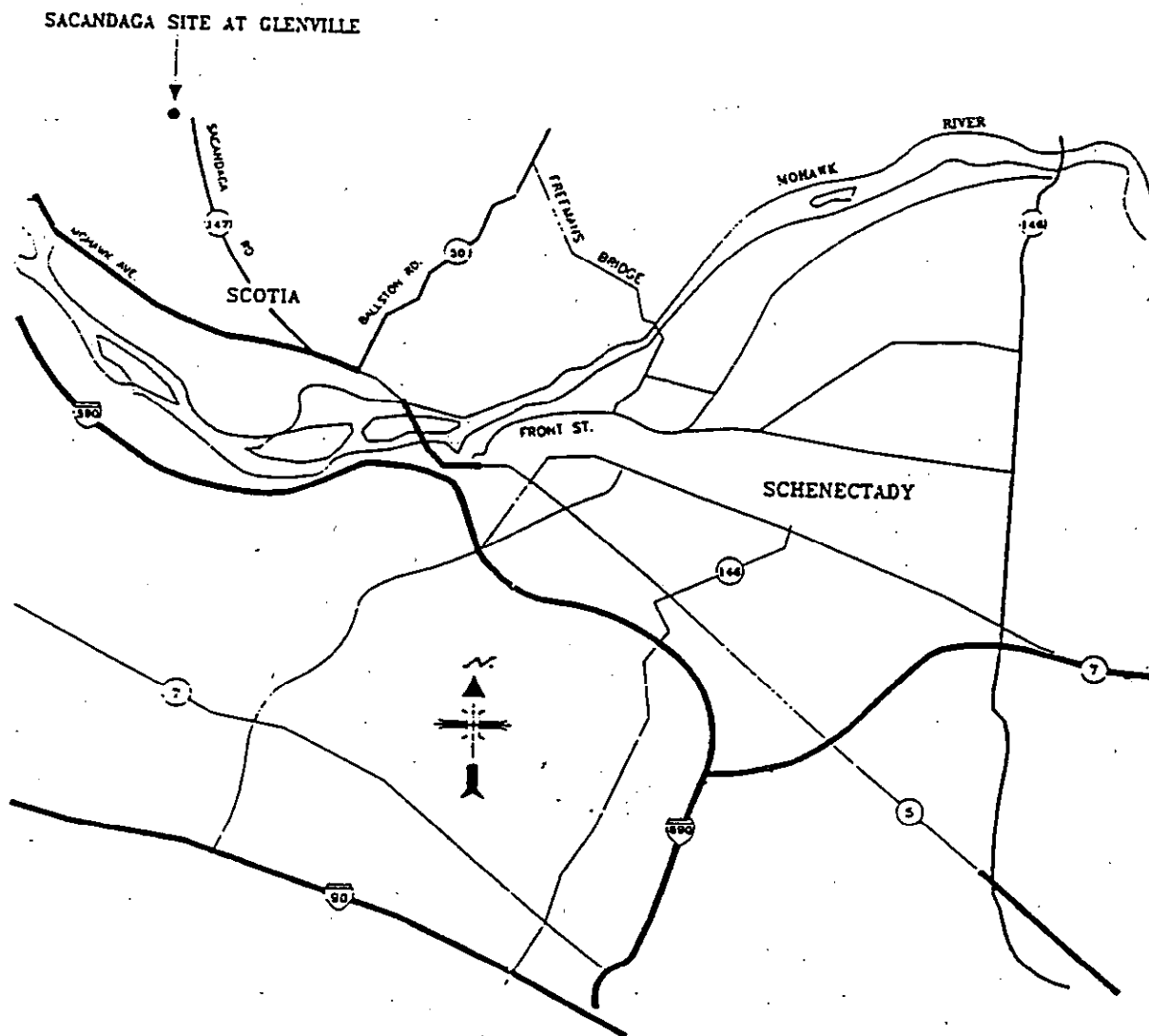


Figure 1 Diagram Showing the General Location of the Sacandaga Site [Source: Foley, Cottrell, and Carrier 1992]

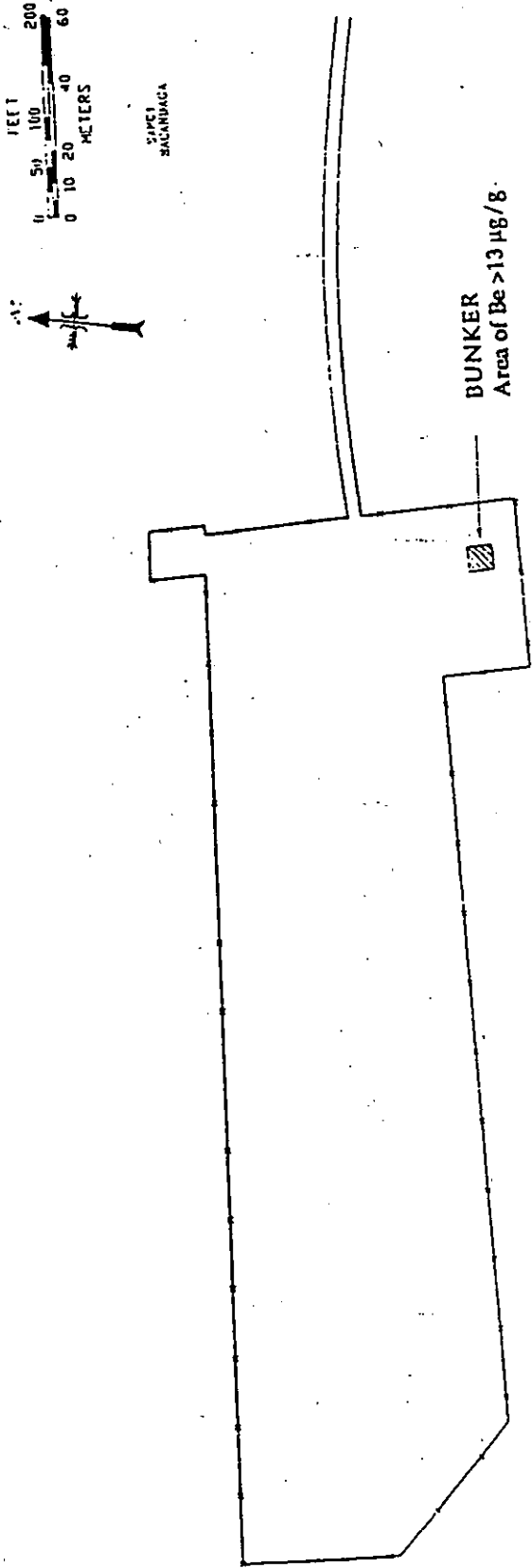


Figure 2 Diagram Showing the Location of the Bunker at the Sacandaga Site [Source: Foley, Cottrell, and Carrier 1992]

Specific Areas Identified for Remediation

The ORNL report identified elevated nonradioactive beryllium concentrations in samples of gravel floor and subfloor soil collected from inside the bunker. These concentrations ranged from 1.4 to 880 mg/kg. In addition, coal ash was found extensively. The average beryllium concentration in coal is between 1.8 and 2.2 mg/kg, but beryllium concentrations in coal ash have been reported from 5.0 to 15.3 mg/kg (EPA 1987) due to the concentration that occurs during the combustion process.

Hartmann, Avci, and Ditmars (1992) assessed the hazards associated with the elevated beryllium concentrations in the soil at the Sacandaga site. By using highly conservative assumptions, they have concluded that, for a future on-site resident, a reasonable upper bound estimate for the concentration of beryllium in soil might be about 13 mg/kg. Because of the extensive coal ash found at the site, this concentration is also the practical level for cleanup. Any cleanup limit below this level could lead to widespread remediation of areas not associated with past government work. A cleanup level of 13 mg/kg is within the target risk range and corresponds to the upper background value for coal ash to which the public in the area is routinely exposed.

Remediation Method

In general, the following cleanup and remediation steps will be taken:

- Proper engineering controls will be used to preclude the generation of airborne concentrations of nonradioactive beryllium above the allowable limit of $2 \mu\text{g}/\text{m}^3$ (Hartmann, Avci, and Ditmars 1992). Air monitoring will be used to confirm the adequacy of the engineering controls.
- All waste generated during the cleanup process will be packaged for removal from the site.

Cleanup of the bunker that has beryllium concentrations in the gravel floor and subfloor soil exceeding the guidelines will require the following steps:

- Excavate soil with a small backhoe and a hand shovel.
- Collect soil samples and confirm by laboratory analyses that the remaining soil satisfies the cleanup guidelines.
- When cleanup guidelines are satisfied, demolish the bunker, confirm that the rubble is clean, remove the rubble from the site, and backfill the excavated areas with clean soil.

Work Planning

The work will be done by a local contractor under the direction of Argonne National Laboratory personnel.

References

Foley, R.D., W.D. Cottrell, and R.F. Carrier, 1992, *Results of the Radiological Survey at the Sacandaga Site, Glenville, New York*, ORNL-6638, Measurement Applications and Development Group, Oak Ridge National Laboratory, Oak Ridge, Tenn.

Hartmann, H.M., H.I. Avci, and J.D. Ditmars, 1992, *Derivation of Beryllium Guidelines for Use in Establishing Cleanup Levels at the Peek Street and Sacandaga Sites, New York*, Argonne National Laboratory, Argonne, Ill., Feb.

U.S. Department of Energy (DOE), 1987, *Guidelines for Residual Radioactivity at Formerly Utilized Sites Remedial Action Program and Remote Surplus Facilities Management Program Sites*, U.S. Department of Energy, April.

U.S. Environmental Protection Agency (EPA), 1987, *Health Assessment Document for Beryllium*, Office of Health and Environmental Assessment, Washington, D.C., EPA/600/8-84/026 F, Nov.

Exhibit II (2) - Designation or Authorization Documentation

There is no designation or authorization documentation applicable to the Sacandaga Site. While survey and cleanup actions performed at the Sacandaga Site were consistent with FUSRAP guidelines, the property was not designated as a FUSRAP site.

Exhibit II (3) - Characterization Reports

The documents listed below address the pre-remedial action status of the Sacandaga Site.

- a. Oak Ridge National Laboratory, *Preliminary Site Survey Report for the Sacandaga Site, Glenville, New York*, ORNL/RASA-88/102, Foley, Cottrell, Carrier, January 1989. Appendix B

- b. NYSDOH letter, K.Rimawi, Director, Bureau of Environmental Radiation Protection, to AR Seepo, USDOE, dated January 11, 1989. Report on the preliminary survey conducted on July 22, 1988. II-37

- c. Oak Ridge National Laboratory, *Results of the Radiological Survey at the Sacandaga Site, Glenville, New York*, ORNL-6638, Foley, Cottrell, Carrier, August 1992. Appendix C



STATE OF NEW YORK DEPARTMENT OF HEALTH

Corning Tower The Governor Nelson A. Rockefeller Empire State Plaza Albany, New York 12237

Axelrod, M.D.
Commissioner

OFFICE OF PUBLIC HEALTH

Linda A. Randolph, M.D., M.P.H.
Director

William F. Leavy
Executive Deputy Director

January 11, 1989

Mr. Andrew R. Seepo
Director
Radiological/Environmental
Control & Safety
US Department of Energy
Schenectady Naval Reactors Office
P.O. Box 1069
Schenectady, New York 12301-1069

Dear Mr. Seepo:

Attached please find a copy of the Department of Health's report on the preliminary survey of the former Knolls Atomic Power Laboratory (KAPL) site at Glenville, New York. The survey was conducted on July 22, 1988 by a team from the US DOE, KAPL, DEC and DOH. The survey indicates the presence of slightly elevated radiation levels in some spots. The site does not pose an immediate health hazard to those frequenting it. However, a more detailed survey is indicated.

Please feel free to contact me or Mr. Robert Alibozek if you have any questions on this report.

Sincerely,

Karim Rimawi, Ph.D.
Director
Bureau of Environmental Radiation
Protection

ATTACHMENT

SURVEY OF FORMER KAPL SITES
AT GLENVILLE, NEW YORK

Department of Health
Bureau of Environmental Radiation Protection
2 University Place
Albany, New York 12203

January 1989

SURVEY OF FORMER KAPL SITES AT GLENVILLE, NEW YORK

INTRODUCTION

This report was prepared to address concerns about residual contamination at former Knolls Atomic Power Laboratory (KAPL) sites located in Schenectady and Glenville, New York.

One of the sites is located on Peek Street in Schenectady, while the other is in Glenville. The following discusses the survey and results for the Glenville site. An earlier report discussed the Peek Street site.

On July 21, 1988, a meeting was held to discuss background information and to develop a study protocol concerning potential radiological contamination of the former KAPL sites. In attendance were representatives of General Electric, Knolls Atomic Power Lab (KAPL), the Department of Energy (DOE), Department of Environmental Conservation (DEC) and Department of Health (DOH). The DOE survey team included radiological health staff from Oak Ridge National Laboratory (Oak Ridge, Tennessee).

BACKGROUND

The 45 acre Glenville/Sacandaga Road site is located about 500 feet west of Sacandaga Road (Rte 147), approximately 1/2 mile North of Boldt Road and the Glendall School. This facility was used by KAPL for nuclear

reactor (critical assembly) experiments. It consisted of numerous metal quonset hut type buildings in addition to a two foot thick concrete structure (Figure #1) which housed the critical assembly and control area (Rx).

The land is now privately held and the Rx building is being used as a storage facility by the owner. At one time, a mound of earth had been pushed against the Rx building (south side) to a height of about 10 feet. This dirt has since been removed, and the footing (dashed lines) of the structures attached to the Rx building is evident. The remainder of the property is covered with overgrowth and does not appear to be in active use. The other buildings have long since been demolished and the land bulldozed. The original location of these buildings is not readily discernible. In addition to its use by the owner for storage, the land appears to be used by some individuals for target practice and hunting as evidenced by numerous shell casings in the area. One area about 200-300 feet east of the Rx building is used by deer as a bedding area.

SURVEY DESCRIPTION

The survey was conducted on July 22, 1988 by a team comprised of staff from DOE, DEC and DOH. It included measurements of the radiation fields, using portable instruments, as well as the collection of soil samples which were analyzed for various radionuclides by DOH. The primary focus of the survey was the Rx building, the former storage area for radium, beryllium and uranium, the septic system area on the north side of the

building and a carbon storage area about 150 feet east of the Rx building. These areas are depicted in Figures #1 and #2.

Throughout the survey, DOH staff used a 5" Sodium Iodide Field Instrument Detector for Low Energy Radiation (FIDLER) coupled with a Ludlum Model 1200 Pulse Rate Meter in a gross counting mode. Prior to the survey, DOH staff obtained background readings on soils at the Glendall School and other areas in Glenville. The background readings ranged from 5,000 - 6,000 cpm.

Figure #1 includes FIDLER readings taken over a one minute period and approximate locations of soil samples. All DOH soil samples are of 5 inch diameter and 2 inch depth. Samples designated as "split" samples were taken by the DOE team at a depth of 4"-6".

As shown in Figure #1, the majority of readings are in the 5,000 - 6,000 cpm range. The 7,000-10,000 cpm readings on the northern and western sides occurred in areas with visible shale fragments. Soil in this area appeared to have been moved or excavated and mounds of earth with exposed shale were left. (Some shales are known to have higher natural uranium concentrations). At the eastern edge of the footings, two areas had readings of about 9,000 - 10,000 cpm on leveled ground which looked like shale, clay and cinders.

The highest readings were obtained about 100 feet northeast of the building at what may have been the carbon storage building. The only indication that anything existed at this location was the presence of cinders and the lack of vegetation. Most of the readings throughout

the area range between 10,000 and 15,000 cpm, with the highest observed at 19,000 cpm. The soil sample from this location read 17,500 cpm.

Figure #2 shows the approximate location of the radioisotope storage area. The structure was used to store radium, uranium, plutonium and, according to G.E. records, approximately 300 grams of beryllium. The only evidence of the building's location was some concrete debris and rotted wood. The average readings obtained were in the 8,000 - 9,000 cpm range. Figure #2 also shows a concrete slab northeast of the storage area at which readings of about 10,000 cpm were obtained. The origin and significance of this concrete is unknown.

OBSERVATIONS

A comprehensive survey of this site would be difficult to perform without clearing a large amount of brush and overgrowth. Locations of former buildings would have to be found and a land survey carried out with the original building plans.

SAMPLE ANALYSIS RESULTS AND DISCUSSION

The results of the samples taken at the Glenville site are listed below. One sample (885264) shows levels of Cs-137 and Pu-239 to be slightly higher than normal for the site and the capital district. The Cs-137 concentration is well below the N.Y.S. Department of Labor (DOL) limit of 200 pCi/g. DOL regulations do not specify a limit for Pu contamination. Both the Cs-137 and Pu-239 levels are also below the DOE Remedial Action Guidelines of 80 pCi/g and 100 pCi/g respectively.

DOH regulations do not specify soil contamination limits for radionuclides. Action limits are derived on a case by case basis depending on the contamination's potential public health impact.

The following are the soil concentration results expressed in picocuries per gram wet weight and corrected to picocuries per gram dry weight.

#885264 - Oak Ridge Split
(54 feet from South Corner of Rx Bldg. - Glenville)

	<u>Wet Weight(pCi/g)</u>	<u>Dry Weight(pCi/g)</u>
U-238	- 1.7 ± 1.1	2.2 ± 1.4
Th-232	- 1.0 ± 0.2	1.3 ± .3
Ra-226	- 1.03± 0.18	1.7 ± .23
Cs-137	- 4.0 ± 0.4	5.2 ± .5
K-40	- 13.0 ± 3.0	16.8 ± 3.9
U-235	- < 0.2	<0.3
Sr-90		0.19 ± .05
Pu-238		<0.007
Pu-239		0.15 ± 0.05

#885266 - Northeast corner Rx Bldg. - Glenville

U-238	- 1.9 ± 0.8	2.2 ± .9
Th-232	- 1.2 ± 0.2	1.4 ± .2
Ra-226	- 1.1 ± 0.3	1.3 ± .3
Cs-137	- 0.11± 0.08	.13± .09
K- 40	- 23.0 ± 4.0	26.7 ± 5.0
U-235	- < 0.3	< .3

#885267 - Northeast of Rx Bldg.
(Approximate location of High Level Waste Area - Glenville)

U-238	- 2.2 ± 1.3	2.8 ± 1.7
Th-232	- 1.7 ± 0.2	2.2 ± .3
Ra-226	- 1.6 ± 0.3	2.0 ± .4
Cs-137	- 0.14± 0.08	.18± .1
K- 40	- 9.0 ± 2.0	11.5 ± 3.0
U-235	- < 0.4	< .5

#885268 -Glenville - West Side Rx Bldg. near wall

U-238	- 1.3 ± 0.4	1.5 ± .5
Th-232	- 0.71± 0.06	0.82± .07
Ra-226	- 0.49± 0.08	0.56± .09
Cs-137	- 0.11± 0.03	0.13± .03
K- 40	- 16.8 ± 1.3	19.3 ± 1.5
U-235	- < 0.12	<0.14

#885269 - Glenville - West Side Rx Bldg., parking lot.

U-238	-	1.1		1.3	
Th-232	-	0.61 ± 0.1		0.7 ± .1	
Ra-226	-	0.49 ± 0.19		0.56 ± .22	
Cs-137	-	0.41 ± 0.12		0.47 ± .14	
K- 40	-	16.0 ± 3.0		18.4 ± 3	
U-235	-	< 0.3		< 0.3	

#885271 - Drain Tile Bldg. C - Glenville (Oak Ridge)

U-238	-	0.8 ± 0.5		1.0 ± .6	
Th-232	-	0.77 ± 0.11		0.99 ± .14	
Ra-226	-	0.81 ± 0.13		1.0 ± .17	
Cs-137	-	0.48 ± 0.07		0.6 ± .09	
K- 40	-	14.4 ± 1.6		18.4 ± 2.0	
U-235	-	0.2		.3	

#885272 - Glenville - East Side Rx past footings
(similar loc. to 885264)

U-238	-	2.4 ± 1.2		2.7 ± 1.4	
Th-232	-	1.19 ± 0.18		1.3 ± .20	
Ra-226	-	1.0 ± 0.2		1.3 ± .23	
Cs-137	-	< 0.06		< .07	
K- 40	-	29.0 ± 4.0		33.8 ± 4.5	
U-235	-	< 0.3		< .3	

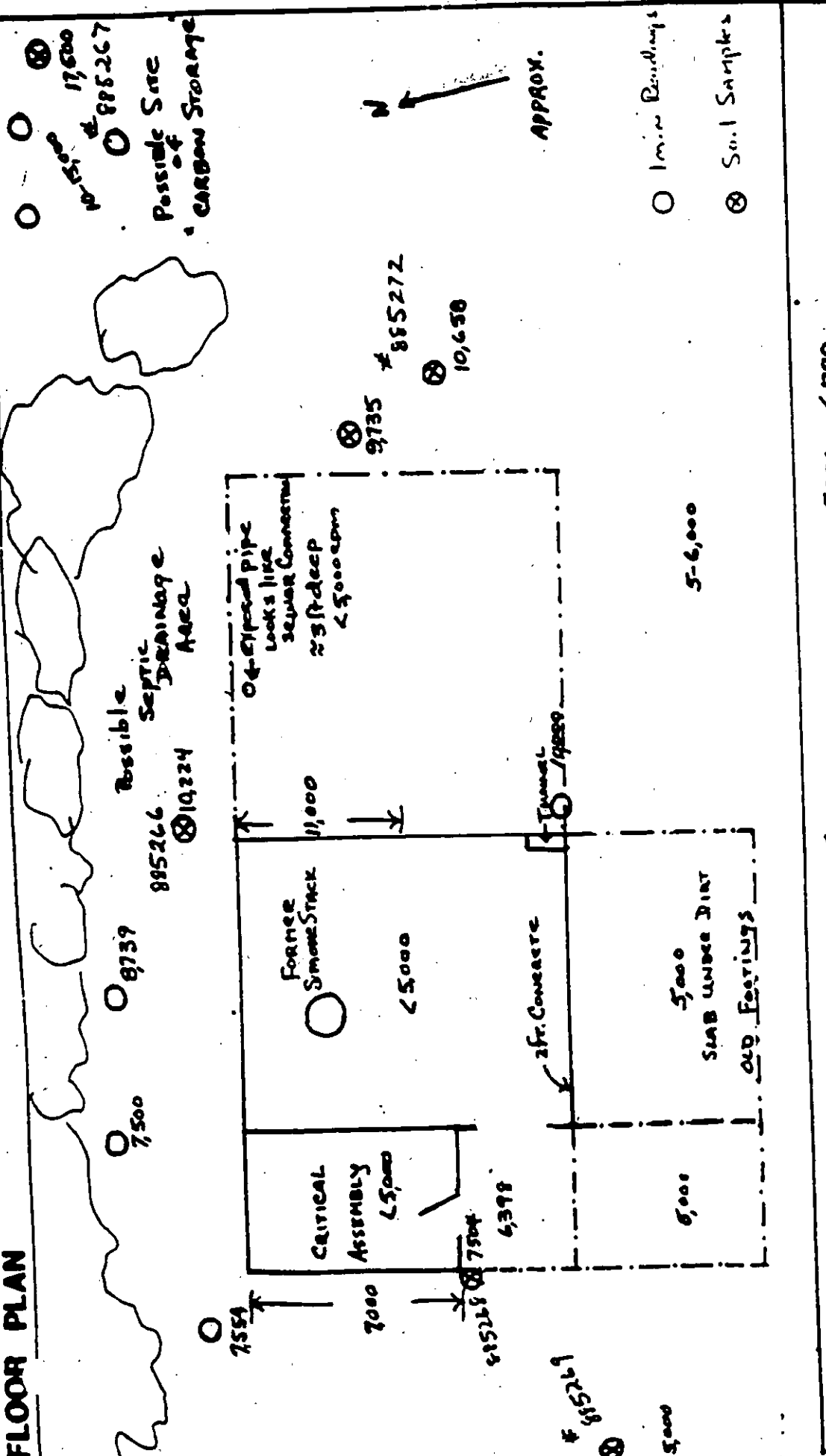
CONCLUSIONS

1. One sample indicated slightly elevated levels of Cs-137 and Pu-239 higher than normal for the area.
2. A portable instrument survey showed readings slightly above normal background at isolated locations.
3. Available data do not indicate any immediate health risk from the limited areas showing contamination, nor does there appear to be a likelihood of significant exposure from the limited use of the property.

RECOMMENDATION

A more detailed survey of the site should be conducted by the US DOE. The survey should include the collection and analysis of soil samples at various depths. Based upon level and extent of contamination found, additional evaluations of Cs-137 uptake by flora and fauna may be necessary. The study should be undertaken as soon as practical.

FLOOR PLAN



ROAD

5000 - 6,000

CRITICAL ASSEMBLY Bldg. (Rc)

5000 - 6,000

DIAG. # 5

FLOOR PLAN

CRITICAL ASSEMBLY Bldg. (Rc)

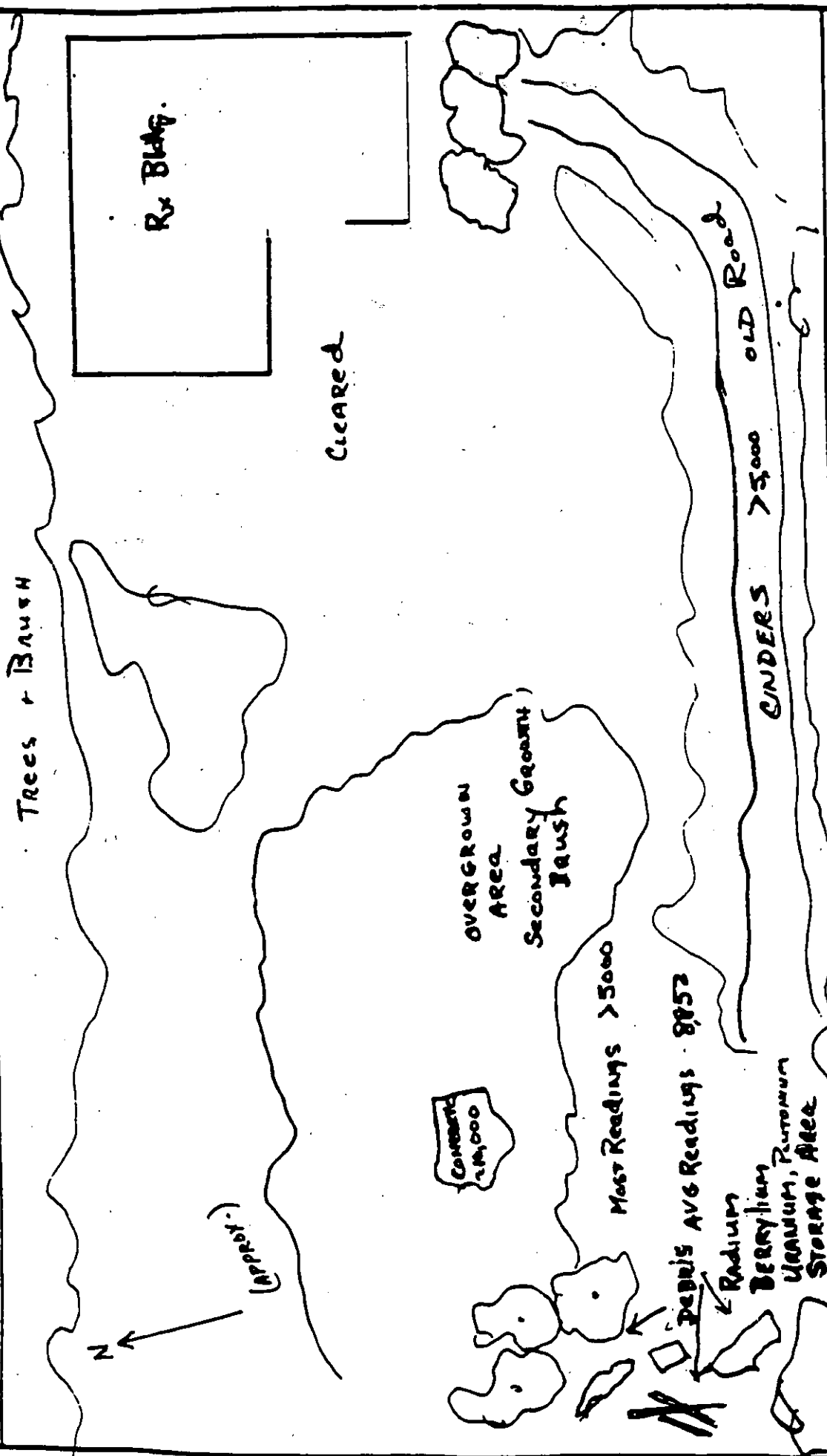
5000 - 6,000

5000 - 6,000

DIAG. # 5

Figure 1

FLOOR PLAN



<p>STORAGE AREA FOR NEUTRON SOURCES</p> <p>U. P. Ra. etc.</p>	<p>GLEAVILLE SACANDAGA RA</p>	<p>FLOOR PLAN</p>
<p>U. P. Ra. etc.</p>	<p>GLEAVILLE SACANDAGA RA</p>	<p>FLOOR PLAN</p>
<p>U. P. Ra. etc.</p>	<p>GLEAVILLE SACANDAGA RA</p>	<p>FLOOR PLAN</p>

Exhibit II (4) - NEPA Documents

The Sacandaga Site was categorically excluded from NEPA review and documentation in accordance with DOE NEPA guidelines in effect at the time. The categorical exclusion applied was based on remedial actions taking less than 12 months to complete and costing less than \$2 million.

- a. USDOE Memo-to-File, JJ Mangeno, Director, Nuclear Technology Division, Office of Naval Reactors, *Former Knolls Atomic Power Laboratory (KAPL) Sacandaga Site - Removal of Residual Beryllium; Categorical Exclusion (CX) Determination*, September 16, 1991

II-49

memorandum

DATE: September 16, 1991

REPLY TO
ATTN OF: NE-60

SUBJECT: FORMER KNOLLS ATOMIC POWER LABORATORY (KAPL) SACANDAGA SITE -
REMOVAL OF RESIDUAL BERYLLIUM; CATEGORICAL EXCLUSION (CX)
DETERMINATION

TO: File

Background: Temporary facilities located on Sacandaga Road, Glenville, New York were operated by KAPL for the Atomic Energy Commission (AEC) between 1947 and 1951. The facilities housed operations involving physics studies and sodium technology development in support of breeder reactor design and other AEC programs. The equipment was dismantled and removed in the early 1950's when KAPL moved to its present location on River Road.

Proposed Action: Remove a small amount of non-radioactive beryllium from the Sacandaga site.

Location: 823 Sacandaga Road, Glenville, New York

Description of the Proposed Action: Approximately five cubic meters of gravel and soil containing residual beryllium would be removed from the floor of the bunker in the southeast corner of the cleared portion of the site. Waste removed during this operation will be packaged and removed from the site for disposal. The floor of the bunker will be backfilled with clean soil and gravel.

The scope of this removal action was identified by surveys performed by personnel from Oak Ridge National Laboratory as part of a Formerly Utilized Sites Remedial Action Program. No conditions were found at this site which required immediate action or restriction of the current use of the site. The removal action will be conducted under the direction of Argonne National Laboratory personnel. The removal action will not occur until the survey report and remediation plan have been reviewed by New York State and any comments addressed. New York State personnel participated in preliminary surveys at this site and concurred with the survey plan.

CX to be Applied: Removal action taking less than 12 months and costing less than \$2 million.

I have determined that the proposed action meets the eligibility criteria and the requirements for the CX referenced above. Therefore, I have determined that the proposed action is categorically excluded from further NEPA review and documentation.


J. J. Mangeno
Naval Reactors

Exhibit II (5) - Access Agreements

- a. An access agreement was obtained from the Sacandaga Site property owner (BN Morris) before preliminary site surveys were performed. II-52
- b. An access (license) agreement was obtained from the Sacandaga Site property owner (J Morris on behalf of the estate of BN Morris) before remedial actions began. II-54



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

CONSENT FOR PROGRAM ACCESS
SURVEYS AND ENGINEERING STUDIES

The undersigned persons (hereinafter individually and collectively referred to as "Owner") represent that they own the following property:

Mr. Bernard N. Morris

823 Sacandaga Road

Glenville, New York 12302

The following matters are understood by the Owner:

The United States of America (the "Government"), acting through the U. S. Department of Energy (DOE), will provide or contract for radiological surveys and engineering assessments for the following purposes: (1) DESIGNATION - determining if there is radiological contamination on the property for which DOE has authority and sufficient to require remedial action. If the property is designated for remedial action, the next step will be (2) CHARACTERIZATION - accurately defining the extent of contamination in order to design remedial action.

DOE shall be responsible for loss or destruction of, or damage to, the Owner's real and personal property caused by the activities of DOE, their authorized representatives, agents, contractors and subcontractors, in exercising any of the rights granted in this Agreement; PROVIDED, that such responsibility shall be limited to restoration of such real and personal property to a condition comparable to its condition immediately prior to the conduct of any activities on the Property by techniques of backfilling, seeding, sodding, landscaping, rebuilding, repair or replacement.

If the property is not designated for remedial action, this agreement will terminate upon completion of the designation survey. If the property is designated for remedial action, this agreement will remain in effect until completion of the characterization.

Nothing in this document shall be deemed to obligate the Owner to enter into an agreement for the performance of remedial action. No remedial action shall be performed until and unless (1) DOE shall have determined the need for and selected the appropriate remedial action, and (2) the DOE and Owners have entered into a written agreement providing for the performance of such remedial action.

By signing this document and sending it to the DOE, the Owners grant, effective 7/21/88, to the DOE and its contractors and subcontractors, such access to the Property as is reasonably required, and at times satisfactory to the Owners, for the performance of the radiological surveys and engineering studies.

The radiological surveys and engineering studies will involve some or all of the following activities:

Reviewing existing building, structural, and site plans available to the Owner. Such plans shall be provided to DOE and its contractors, at no cost to the Owner. If such plans are not in the possession of the Owner but are available, the Owner agrees to permit the DOE and its representatives to borrow or acquire, at no cost to the Owner those plans deemed necessary to facilitate the performance of these reviews.

Performing land surveys and placing survey stakes as required to characterize the premises, including any light clearing of vegetation that may be required.

Determining the location and extent of actual radioactive material on the premises through measurements by various techniques and/or removing samples of contaminated materials by digging or core drilling.

Measuring and examining the premises and structures thereon.

Documenting through photographs the existing conditions of the Property and structures thereon.

Taking radiation measurements and performing core drilling inside structures, in such a manner as is agreeable to the Owner; placing a small radiation monitor in the structures, and collecting a sample from the monitor periodically.

THE UNITED STATES OF AMERICA
DEPARTMENT OF ENERGY

Andrew Wall III
(Name)

**SITE DESIGNATION &
CERTIFICATION MANAGER**
(Title)

7/21/88
(Date)

B. Morris
(Printed name of Property Owner(s))

Bernard A. Morris
(Signature of Owner)

Signature of Owner (if multiple)

7/12/88 578-399-4411
(Date) (phone)



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

**LICENSE AGREEMENT
SACANDAGA SITE**

THIS AGREEMENT, entered into this 30th day of JUNE, 1993, effective as of the 30th day of JUNE, 1993 between THE UNITED STATES OF AMERICA, (hereinafter called the "Government"), acting through the DEPARTMENT OF ENERGY (hereinafter called "DOE"), and Jason Morris (hereinafter called the "Licensor") who is the representative on behalf of the estate of Bernard N. Morris, owner of the parcel of land (hereinafter called the "Premises") which is described in deed book 1068, page 914, filed in the Schenectady County Clerk's Office and shown in Exhibit 1, the exhibit being attached hereto and made part hereof.

WITNESSETH THAT:

WHEREAS, the DOE through its contractor, Argonne National Laboratory, is conducting a non-radioactive beryllium remedial action program in the environs of the former Sacandaga Site in Schenectady County, Town of Glenville; and

WHEREAS, the DOE desires to enter upon Licensor's Premises for the purpose of performing certain remedial actions as part of said program; and

WHEREAS, the Licensor is agreeable to the performance of remedial actions under the terms set forth below:

NOW THEREFORE, in consideration of the mutual covenants herein contained, the parties hereto agree as follows:

1. The Licensor hereby grants to the DOE or its designees a License giving: (a) the right to enter upon the Premises for the purpose of removing non-radioactive beryllium contaminated material from the Premises in accordance with the attached Remedial Action Plan; and (b) the right to enter upon the Premises to take soil samples, perform surveys, and to perform or take any other reasonable action consistent with the expeditious completion of the subject remedial action; and (c) the right to periodically enter upon the Premises after completion of the remedial action for the purpose of conducting follow-up surveys.

2. The Government shall be responsible for any loss or destruction of or damage to the Licensor's real or personal property caused by the rights given in this Agreement. This responsibility shall be limited to restoration of said real and personal property to a condition comparable to its original condition by techniques of backfilling, seeding, sodding, landscaping, rebuilding, repair or replacement (as indicated in the attached Remedial Action Plan), and such other methods as may be agreed to between the parties at the time of restoration work in accordance with terms and conditions of this Agreement and upon certification by the DOE that the Licensor's Premises meet all applicable remediation criteria, the Licensor agrees to release the Government, its contractors, and the officers, employees, servants, and agents of either of them from all further responsibility related to the non-radioactive beryllium contamination and the remedial action covered by this Agreement.

3. The Licensor will notify the DOE in writing if the Premises are, or at any time during the term of this Agreement shall become, leased, sold or otherwise transferred to another party. The Licensor will also give written notice to any purchaser, lessee, or transferee of the applicability of the rights contained in this Agreement when such purchase, lease, or transfer takes place during the term of this Agreement. The Licensor hereby consents to any lessee of the Premises entering into a suitable agreement with the Government to cover any part of the remedial action that may affect such lessee. The conveyance of any interest in the Premises to another by the lessor shall be subject to this Agreement.

4. All notices to the DOE may be given by mailing same to the Manager, Schenectady Naval Reactors, P. O. Box 1069, Schenectady, New York 12301.

5. No member of or delegate to Congress, or Resident Commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit.

6. The Licensor warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees and bona fide established commercial or selling agencies maintained by the Licensor for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this Agreement without liability or in its discretion to deduct from the Agreement price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

7. This Agreement shall terminate upon completion of the restoration work in accordance with the terms and conditions of this Agreement and upon certification by the DOE that the Licensor's Premises meet applicable remediation criteria to the maximum extent practicable.

8. Obligations of the Government hereunder shall be subject to the availability of funds appropriated by Congress which the DOE may legally spend for such purposes and nothing in this Agreement implies that Congress will appropriate funds to perform this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

BY: DEPARTMENT OF ENERGY

BY: [Signature]

TITLE: Manager, Schenectady
Naval Reactors Office

DATE: 6-30-93

Jason Morris
Printed Name of Property Owner

[Signature]
Signature of Owner

Signature of Owner (if Multiple)

DATE: 6/30/93

PHONE: 518 399 3936

Exhibit II (6) - Post-Remedial Action Report

The following report documents the remedial action activity performed at the Sacandaga Site and describe the post-remedial action residual beryllium status.

- a. Knolls Atomic Power Laboratory Report KAPL-4804, *Post Remedial Action Report for the Sacandaga Road Site Property in Glenville, New York, August 1994* Appendix D

Exhibit II (7) - Verification Report and Letter to Owner.

- a. Oak Ridge National Laboratory Report ORNL-6807,
*Results of the Radiological and Beryllium Verification
Survey at the Sacandaga Site, Glenville, New York,*
September 1994 Appendix E

- b. USDOE letter to J. Morris; owner of the Sacandaga Site,
transmitting the DOE Statement of Certification,
REC&SD:ARS#94-57, dated November 29, 1994. II-59



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#94-57

NOV 29 1994

Mr. Jason Morris
552 Swaggertown Road
Scotia, New York 12302

Dear Mr. Morris:

The Department of Energy (DOE) has completed remedial action at two sites in Schenectady County, New York, which were formerly operated for the Atomic Energy Commission. Previous surveys had identified no detectable radioactivity above background at the Sacandaga Site, Glenville, New York. The surveys had identified low levels of non-radioactive beryllium in the gravel floor and soil surrounding a small isolated concrete structure. Remediation work has been completed. Following remediation, independent verification sampling was conducted by Oak Ridge National Laboratory. New York State representatives also conducted an additional independent overcheck survey. The results of these surveys verified compliance with applicable cleanup guidelines. The Sacandaga Site is now certified to be in compliance with applicable guidelines established by DOE and agreed to by the State of New York for unrestricted use of the property. Copies of the DOE Statement of Certification and applicable characterization, remediation, and verification documents are attached for your information. A DOE Notice of Certification will be published in the Federal Register within the next two weeks.

Please contact me if you have any questions on this matter. I can be reached at (518) 395-6366.

Sincerely,

A handwritten signature in cursive script, appearing to read "A. R. Seepo".

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

NOV 29 1994

Mr. Jason Morris

-2-

Attachments:

1. DOE Statement of Certification
2. ORNL-6638, Results of the Radiological Survey of the Sacandaga Site, Glenville, New York, August 1992
3. KAPL-4804, Post Remedial Action Report for the Sacandaga Site Property in Glenville, New York, August 1994
4. ORNL-6807, Results of the Radiological and Beryllium Verification Survey at the Sacandaga Site, Glenville, New York, September 1994

Exhibit II (8) - State, County, and Local Correspondence on Remedial Action

The State of New York and the Town of Glenville were kept fully informed of all DOE activities conducted at the Sacandaga Site.

- a. USDOE letter to P. Giardina, Radiation Program Manager, USEPA Region II, *Plan to Remediate Peek Street and Sacandaga Sites*, REC&SD:GJV#6396, dated August 26, 1992 II-63
- b. USDOE letter to K. Rimawi, Director, Bureau of Environmental Radiation Protection, New York State Department of Health and to P. Merges, Director, Bureau of Radiation, New York State Department of Environmental Conservation, *Plan to Remediate Peek Street and Sacandaga Sites*, REC&SD:ARS#499, dated January 21, 1993 II-65
- c. USDOE Memorandum-to-File, *Meeting Between SNR (Seepo) and Local Officials Regarding Peek Street and Sacandaga Site Cleanups*, REC&SD:ARS#509, dated February 2, 1993 II-67
- d. USDOE Memorandum-to-File, NYSDOH post-remedial action sampling for beryllium, REC&SD:GJV#6565, November 24, 1993. II-70
- e. NYSDEC letter, PJ Merges, Chief, Bureau of Radiation Division of Hazardous Substances Regulation, to AR Seepo USDOE, dated February 7, 1994, documenting NYSDEC site close out inspection conducted on August 27, 1993. II-71
- f. USDOE letter to P. Merges, Chief, Bureau of Radiation, NYSDEC, transmitting the DOE Statement of Certification and supporting documents, REC&SD:ARS#94-58, dated November 29, 1994. II-76
- g. USDOE letter to K. Rimawi, Director, Bureau of Environmental Radiation Protection, NYSDOH, transmitting the DOE Statement of Certification and supporting documents, REC&SD:ARS#94-59, dated November 29, 1994 II-78

Exhibit II (8) - State, County, and Local Correspondence on
Remedial Action, continued

- h. USDOE letter to R. Fedigan, Program Research Specialist,
NYSDOH, transmitting the DOE Statement of Certification
and supporting documents, REC&SD:ARS#94-60, dated
November 29, 1994 II-80

- i. USDOE letter to P. Giardina, Chief, Radiation Branch,
USEPA Region II, transmitting the DOE Statement of
Certification and supporting documents, REC&SD:ARS#94-61,
dated November 29, 1994 II-82

- j. USDOE letter to J. Parisi, Director, Environmental Health,
Schenectady County Public Health Service, transmitting the
DOE Statement of Certification and supporting documents,
REC&SD:ARS#94-62, dated November 29, 1994 II-84



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:GJV#6396
AUG 25 1992

Mr. Paul Giardina
Radiation Program Manager
U. S. Environmental Protection Agency
26 Federal Plaza - Room 1137-J
New York, New York 10278

Dear Mr. Giardina

Subject: PLAN TO REMEDIATE PEEK STREET AND SACANDAGA SITES

The purpose of this letter is to provide additional information on the current status and planned remedial actions to be undertaken at the Peek Street and Sacandaga Sites as discussed with you on July 27, 1992. Both sites were previously occupied by the Knolls Atomic Power Laboratory during the late 1940's and early 1950's.

My letter to you of July 26, 1989 informed you of actions being taken by the U. S. Department of Energy to complete radiological surveys at both sites. Initial surveys were completed in 1989. Copies of the Preliminary Site Survey reports were provided to you for information with my July 1989 letter. The final surveys have now been completed.

Although only localized and small amounts of residual radioactive material were found at the Peek Street Site, which pose no hazard to the site workers, the public, or the environment, DOE intends to remediate these areas. The remediation work would include cleanup of the residual U-238 and the trace quantities of non-radioactive beryllium found in limited areas indoors and localized spots in soil outdoors at the Peek Street Site.

At the Sacandaga Site, the survey revealed no detectable radioactivity above background. A small amount of residual beryllium was found at the Sacandaga Site in samples of the gravel floor and subfloor soil from within an excavated concrete bunker. Remediation work will include cleanup of the beryllium.

New York State Departments of Health and Environmental Conservation have agreed with DOE on a guideline value of 35 pCi/g for the U-238 and 34 pCi/g for Cs-137 present in soil for Peek Street.

Mr. Paul Giardina

-2-

AUG 25 1992

Beryllium, where present, at Peek Street and Sacandaga Sites will be removed. At Peek Street this will include cleaning interior spaces and removal of soil adjacent to the building. At the Sacandaga Site, a concrete bunker and some soil with elevated beryllium will be removed. Areas where coal ash cinders exist at both sites are within background ranges for beryllium and are acceptable to New York State as stated in their letter of July 17, 1992.

Cleanup work at both sites will be performed under the technical and administrative control of Argonne National Laboratory and is expected to begin this year.

Attached for your information are copies of relevant correspondence. Should you have any questions, please contact me at (518) 395-6366.

Sincerely,

ORIGINAL SIGNED BY

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

Attachments:

- (1) Final Peek Street Survey Report
- (2) Final Sacandaga Survey Report
- (3) Final Peek Street Remedial Action Plan
- (4) Final Sacandaga Remedial Action Plan
- (5) SNR letter to NYSDEC and NYSDOH, dated April 3, 1992
(w/o Attachment)
- (6) NYSDOH letter to SNR, dated May 13, 1992
- (7) NYSDEC letter to SNR, dated May 15, 1992
- (8) SNR letter to NYSDEC & NYSDOH, dated July 2, 1992
(w/o Attachment)
- (9) NYSDOH letter to SNR, dated July 17, 1992



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#499

JAN 21 1993

Dr. Karim Rimawi, Director
New York State
Bureau of Environmental Radiation Protection
New York State Health Department
2 University Place, Room 375
Albany, New York 12203

Dr. Paul Merges, Ph.D
Director, Bureau of Radiation
New York State
Department of Environmental Conservation
Division of Hazardous Substances Regulation
50 Wolf Road
Albany, New York 12233-7255

Dear Drs. Rimawi and Merges:

Subject: PLAN TO REMEDIATE PEEK STREET AND SACANDAGA SITES

As you are aware, remediation plans for the former Atomic Energy Commission Sites on Peek Street in Schenectady and Sacandaga Road in Glenville have been agreed to by the State of New York. Cleanup work at both sites will be performed under the technical and administrative control of Argonne National Laboratory. Work is planned to commence at the Peek Street facility on February 1, 1993. Work at the Sacandaga Site is planned for later in the spring contingent upon owner agreement.

Attached, for your information and use, are copies of relevant correspondence. Should you have any questions, or desire additional copies of any of the attached reports, please contact me at (518) 395-6366.

Sincerely,

ORIGINAL SIGNED BY

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

JAN 21 1993

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- (9) NYSDOH letter to SNR, dated July 17, 1992



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#509

FEB 02 1993

MEMORANDUM-TO-FILE

MEETING BETWEEN SNR (SEPO) AND LOCAL OFFICIALS REGARDING PEEK STREET AND SACANDAGA SITE CLEANUPS

Date: January 19, 1993

Place: 1 Broadway Center
Schenectady, New York

Attendees: Jack Parisi - Environmental Health Director,
Schenectady County

Bernard Sisson - Engineer, City of Schenectady

Charles Maetta - Senior Sanitarian, Schenectady
County Health Department

A. R. Seepo - SNR

This meeting was arranged by SNR (Seepo) to update local officials on current U. S. Department of Energy (USDOE) plans and schedules for performance of cleanups at formerly government-owned facilities at 425 Peek Street in Schenectady, New York and on Sacandaga Road in Glenville, New York. Principal points of interest discussed were as follows:

- o Seepo summarized USDOE FUSRAP team survey results for both sites. Tables and figures from the Oak Ridge National Laboratory survey reports were used and copies of the reports were provided to Messrs. Parisi and Sisson.
- o Seepo reviewed the scope of cleanup work planned at both sites utilizing the Argonne National Laboratory (ANL) Remedial Action Plans. Copies of these Plans were provided to Parisi and Sisson. ANL was identified as the USDOE contractor assigned responsibility to oversee the cleanup work. Emphasis was placed on the modest amount of cleanup required.

FEB 02 1993

- o Schedules for cleanup work were discussed. Seepo informed the local officials that work at the Peek Street Site was scheduled to begin on February 1, 1993 and complete in April 1993. Seepo noted that work at the Sacandaga Site was not yet scheduled pending the signing of a License Agreement with the deceased owner's son, but that our objective was to complete the Sacandaga Site work this spring.
- o Seepo discussed the cleanup criteria agreed to by New York State for the remediation work. Copies of the relevant correspondence between SNR and New York State were provided to Parisi and Sisson. In response to a Sisson question, Seepo indicated that Drs. Rimawi and Merges were the principal State officials involved.
- o Seepo reviewed the fact that the State of New York (and not the City of Schenectady as initially thought) owns the land adjacent to the Peek Street facility where a small amount of remedial work will be done. Seepo stated that a representative from the State Department of Parks and Recreation had signed a Consent Agreement authorizing the work.
- o Seepo noted that Mayor Duci (formerly Councilman Duci) had expressed an interest in the Peek Street survey work in 1988 and 1989. Seepo provided Mr. Sisson with perspective on the questions and concerns that had been raised by Mayor Duci and how each had been resolved, notably:
 - The potential for beryllium contamination of food stuffs during the period of time when the Peek Street facility was used as a food warehouse.
 - Allegations of buried drums of radioactive waste at the Peek Street Site.
 - The need for radiological surveys to be extended further downwind from the Peek Street facility.
 - Consideration by the City Council to authorize an independent survey of the Peek Street Site.

Mr. Parisi agreed with and supported Seepo's explanations as to why and how each of these questions and concerns had been adequately addressed by USDOE.

FEB 02 1993

- o Parisi asked about site access controls during performance of the work and how USDOE would handle any media interest. Seepo indicated that the current Peek Street owner had relocated his business to Amsterdam, New York and would be providing ANL supervisory personnel with keys to keep the Peek Street facility locked and alarmed. Seepo also noted that media inquiries would be responded to by a USDOE spokesperson. Seepo added that State and local officials would be provided with a copy of any press releases issued by USDOE on the remediation work.
- o Parisi asked if SNR had had any discussions with officials from the Town of Glenville regarding the planned Sacandaga Site work. Seepo answered no. Parisi indicated he would take care of this matter (two additional copies of the Sacandaga Site Survey Report and Remedial Action Plan were provided to Parisi by Seepo subsequent to the meeting).

At the conclusion of the meeting, all three officials expressed their appreciation for the briefing. Mr. Parisi said that he did not foresee any problems. Mr. Sisson indicated that he would brief Mayor Duci. The meeting lasted approximately 90 minutes and was amicable throughout.

ORIGINAL SIGNED BY

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:GJV#6565

NOV 24 1993

MEMORANDUM-TO-FILE

This memorandum is to document that New York State Department of Health performed post remediation soil sampling for non-radioactive beryllium at Sacandaga Site on September 1, 1993. All samples taken were split between KAPL and New York State. KAPL personnel present were G. Racine, J. E. Hinzelman, and G. J. Vodapivc from SNR. The State representative was G. Litwin.

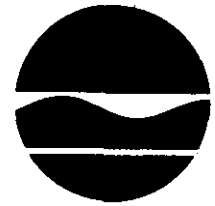
Samples were taken at eight locations in and around the site of the former concrete bunker.

Both KAPL and New York State sample results were below the established soil criteria of 13 $\mu\text{g/g}$. Attached are data sheets from New York State and a diagram showing sample locations.

ORIGINAL SIGNED BY
G. J. Vodapivc

Attachments:
As Stated

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233



Thomas C. Jorling
Commissioner

February 7, 1994

Mr. A. R. Seepo
Director
Radiological/Environmental Control
and Safety
U.S. Department of Energy/SNR
Schenectady Naval Reactors Office
P.O. Box 1069
Schenectady, New York 12301-1069

Dear Mr. Seepo:

This letter is in regards to the Sacandaga Road site close-out inspection Mr. John Mitchell and myself conducted on August 27, 1993. The Department's Bureau of Radiation was invited for verification of Knolls Atomic Power Laboratories (KAPL) remedial actions.

During that inspection Mr. John Mitchell and I surveyed the portions of the premises which were used a part of KAPL's past operations. Two soil cores were collected from an area near the corner of the building where we observed slightly elevated meter readings. The two cores were collected adjacent to each other so that KAPL could have one. A site illustration showing where the cores were collected is in attachment 1. No other areas were observed to have above background readings. An additional sample was obtained in an off-site area which collects runoff from the property. The area is south of the property of the east side of Sacandaga Road, also as shown on attachment 1.

Laboratory analysis results has determined there are no concentrations above background levels in this area. These analysis results are presented in attachment 2.

In conclusion, the radiological survey in addition to the laboratory analysis of the collected samples demonstrates that no radiological contamination exists on-site. If you have any questions or need further information, please do not hesitate to contact me at 457-2225.

Sincerely,

Paul J. Merges
Paul J. Merges, Ph.D.
Chief, Bureau of Radiation
Division of Hazardous
Substances Regulation

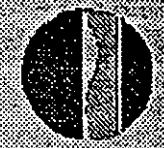
Attachments

II-71

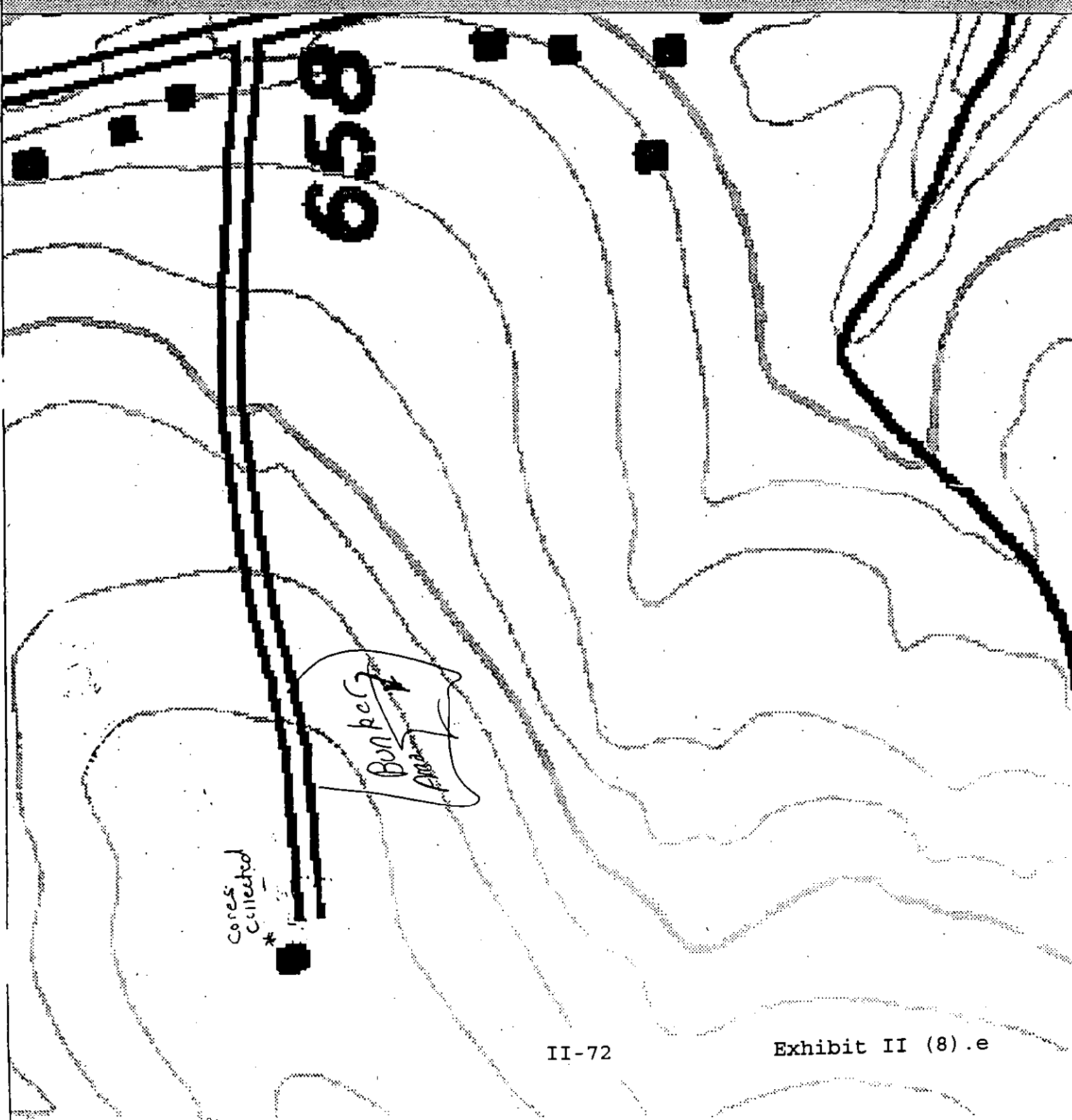
Exhibit II (8).e



- ▲ RCIS Facility
- ▲ Gas or Oil Well
- ★ Inactive Hazardous Waste Site
- ✕ Mine
- ✧ Natural Heritage
- ✧ Air Monitoring Station
- Top 400 Emitters
- Selected Top 400
- ▨ Freshwater Wetlands
- Hydrography

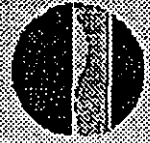


166 feet

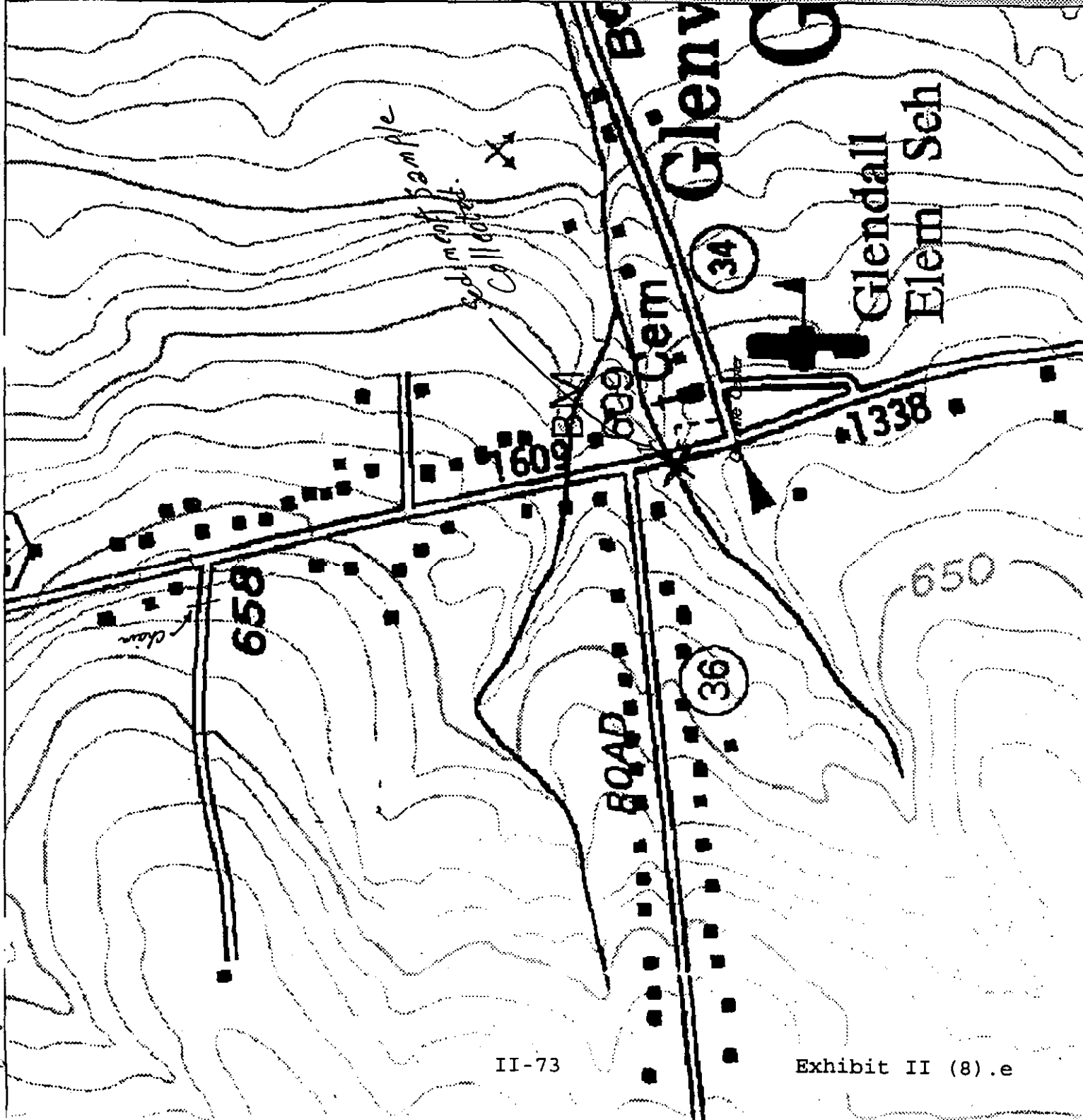


DEGIS

- ▲ RCIS Facility
- ⊗ Gas or Oil Well
- ★ Inactive Hazardous Waste Site
- ✕ Mine
- ⚡ Natural Heritage
- ⊙ Air Monitoring Station
- Top 400 Emitters
- Selected Top 400
- ▨ Freshwater Wetlands
- Hydrography



369 feet



CUSTOMER WESTON ANALYTICS LAB(NYS)
 ATTENTION Chuck Stefanosky/Judy Stone
 ADDRESS 208 Welsh Pool Rd.
 Lionville PA 19341-1313
 93-09-174



Soil-Gamma
 TYPE OF ANALYSIS

LL-1149-F4
 CUSTOMER ORDER NUMBER

09/21/93
 SAMPLES RECEIVED

Customer Identification	Date Collected	Type of Analysis	Tot. Wgt. wet/dry	pci/g(dry)
NR4930804S082701	08/27/93	Bi214	74.7/69.6	1.26±0.33
		Co60		<0.15
		Cs137		*<0.14
		K40		28.3±3.4
		Pb212		1.24±0.24
		Pb214		1.22±0.30
		Ra226		1.26±0.33
		Th228		0.99±0.49
		Th232		1.55±0.55
		Tl208		0.92±0.45
		U238		<2.2
		NR4930804S082702		08/27/93
Co60	<0.17			
Cs137	*<0.15			
K40	28.5±4.0			
Pb212	1.64±0.24			
Pb214	1.50±0.34			
Ra226	1.51±0.40			
Th228	1.23±0.52			
Th232	1.89±0.63			
Tl208	1.14±0.48			
U238	<5.1			
NR4930804S082703	08/27/93		Bi214	
		Co60	<0.13	
		Cs137	*<0.18	
		K40	28.9±3.2	
		Pb212	1.36±0.28	
		Pb214	1.33±0.27	
		Ra226	1.26±0.28	
		Th228	1.51±0.57	
		Th232	2.01±0.55	
		Tl208	1.40±0.53	
		U238	<3.6	

KAPL
 Core 1 0-4.5"

45-B"

8- End 12"

REPORTED VIA TELEPHONE FAX

TMA Eberline
 Thermo Analytical Inc.

7021 PAN AMERICAN FREEWAY, N.E.
 ALBUQUERQUE, NEW MEXICO 87109
 PHONE (505) 345-3461

APPROVED BY Cliff Gravel, Data Analyst

Cliff Gravel 09/24/93

CUSTOMER WESTON ANALYTICS LAB(NYS)
 ATTENTION Chuck Stefanosky/Judy Stone
 ADDRESS 208 Welsh Pool Rd.
 Lionville PA 19341-1313
 93-09-174



LL-1149-F4
 CUSTOMER ORDER NUMBER

09/21/93
 SAMPLES RECEIVED

Soil-Gamma
 TYPE OF ANALYSIS

Customer Identification	Date Collected	Type of Analysis	Tot. Wgt. wet/dry	pci/g(dry)
NR4930804S082704	08/27/93	Bi214	739/595	0.87±0.10
		Co60		<0.05
		Cs137		0.09±0.05
		K40		20.0±1.1
		Pb212		0.98±0.08
		Pb214		0.97±0.11
		Ra226		0.87±0.10
		Th228		1.08±0.19
		Th232		1.15±0.20
		Tl208		1.00±0.18
U238	2.0±1.4			

Offsite KAPL

ORDERED VIA TELEPHONE FAX

PAGE 2 OF 2

TMA Eberline
 Thermo Analytical Inc.

7021 PAN AMERICAN FREEWAY, N.E.
 ALBUQUERQUE, NEW MEXICO 87109
 PHONE (505) 345-3461
 FAX (505) 761-5416

APPROVED BY Cliff Gravel, Data Analyst

Cliff Gravel 10/2/93



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#94-58

NOV 29 1994

Dr. Paul J. Merges, Ph.D.
Chief, Bureau of Radiation
New York State
Department of Environmental Conservation
Division of Hazardous Substances Regulation
50 Wolf Road
Albany, New York 12233-7255

Dear Dr. Merges:

The Department of Energy (DOE) has completed remedial action at two sites in Schenectady County, New York, which were formerly operated for the Atomic Energy Commission. Previous surveys had identified low levels of radioactivity in a few small, localized areas at the Peek Street Site, Schenectady, New York. The surveys also had identified low levels of non-radioactive beryllium in a small area of outdoor soil and on indoor overhead surfaces such as roof beams at the Peek Street Site and in the gravel floor and soil surrounding a small isolated concrete structure at the Sacandaga Site, Glenville, New York. Remediation work has been completed at both sites. Following remediation, independent verification sampling was conducted by Oak Ridge National Laboratory. Representatives of New York also conducted additional independent overcheck surveys. The results of these surveys verified compliance with applicable cleanup guidelines. The Peek Street and Sacandaga Sites are now certified to be in compliance with applicable guidelines established by DOE and agreed to by the State of New York for unrestricted use of the property. Copies of the DOE Statement of Certification and applicable characterization, remediation, and verification documents are attached for your information. A DOE Notice of Certification will be published in the Federal Register within the next two weeks.

Please contact me if you have any questions on this matter. I can be reached at (518) 395-6366.

Sincerely,

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

NOV 29 1994

Attachments:

1. DOE Statement of Certification
2. ORNL-6623, Radiological Survey Results for the Peek Street Site Properties, Schenectady, New York, August 1992
3. ORNL-6623/SUPPLEMENT, Supplemental Radiological and Beryllium Characterization of the Facility at 425 Peek Street, Schenectady, New York, September 1994
4. KAPL-4803, Post Remedial Action Report for the Peek Street Site Property in Schenectady, New York, August 1994
5. ORNL-6808, Results of the Radiological and Beryllium Verification Survey at the Peek Street Site, Schenectady, New York, September 1994
6. ORNL-6638, Results of the Radiological Survey of the Sacandaga Site, Glenville, New York, August 1992
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Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#94-59

NOV 29 1994

Dr. Karim Rimawi, Director
New York State
Bureau of Environmental Radiation Protection
New York State Health Department
2 University Place - Room 375
Albany, New York 12203

Dear Dr. Rimawi:

The Department of Energy (DOE) has completed remedial action at two sites in Schenectady County, New York, which were formerly operated for the Atomic Energy Commission. Previous surveys had identified low levels of radioactivity in a few small, localized areas at the Peek Street Site, Schenectady, New York. The surveys also had identified low levels of non-radioactive beryllium in a small area of outdoor soil and on indoor overhead surfaces such as roof beams at the Peek Street Site and in the gravel floor and soil surrounding a small isolated concrete structure at the Sacandaga Site, Glenville, New York. Remediation work has been completed at both sites. Following remediation, independent verification sampling was conducted by Oak Ridge National Laboratory. Representatives of New York also conducted additional independent overcheck surveys. The results of these surveys verified compliance with applicable cleanup guidelines. The Peek Street and Sacandaga Sites are now certified to be in compliance with applicable guidelines established by DOE and agreed to by the State of New York for unrestricted use of the property. Copies of the DOE Statement of Certification and applicable characterization, remediation, and verification documents are attached for your information. A DOE Notice of Certification will be published in the Federal Register within the next two weeks.

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Sincerely,

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

NOV 29 1994

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Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#94-60

NOV 29 1994

Mr. Richard J. Fedigan
Program Research Specialist
Bureau of Environmental Exposure Investigation
New York State Health Department
2 University Place
Albany, New York 12203-3399

Dear Mr. Fedigan:

The Department of Energy (DOE) has completed remedial action at two sites in Schenectady County, New York, which were formerly operated for the Atomic Energy Commission. Previous surveys had identified low levels of radioactivity in a few small, localized areas at the Peek Street Site, Schenectady, New York. The surveys also had identified low levels of non-radioactive beryllium in a small area of outdoor soil and on indoor overhead surfaces such as roof beams at the Peek Street Site and in the gravel floor and soil surrounding a small isolated concrete structure at the Sacandaga Site, Glenville, New York. Remediation work has been completed at both sites. Following remediation, independent verification sampling was conducted by Oak Ridge National Laboratory. Representatives of New York also conducted additional independent overcheck surveys. The results of these surveys verified compliance with applicable cleanup guidelines. The Peek Street and Sacandaga Sites are now certified to be in compliance with applicable guidelines established by DOE and agreed to by the State of New York for unrestricted use of the property. Copies of the DOE Statement of Certification and applicable characterization, remediation, and verification documents are attached for your information. A DOE Notice of Certification will be published in the Federal Register within the next two weeks.

Please contact me if you have any questions on this matter. I can be reached at (518) 395-6366.

Sincerely,

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

NOV 29 1994

Attachments:

1. DOE Statement of Certification
2. ORNL-6623, Radiological Survey Results for the Peek Street Site Properties, Schenectady, New York, August 1992
3. ORNL-6623/SUPPLEMENT, Supplemental Radiological and Beryllium Characterization of the Facility at 425 Peek Street, Schenectady, New York, September 1994
4. KAPL-4803, Post Remedial Action Report for the Peek Street Site Property in Schenectady, New York, August 1994
5. ORNL-6808, Results of the Radiological and Beryllium Verification Survey at the Peek Street Site, Schenectady, New York, September 1994
6. ORNL-6638, Results of the Radiological Survey of the Sacandaga Site, Glenville, New York, August 1992
7. KAPL-4804, Post Remedial Action Report for the Sacandaga Site Property in Glenville, New York, August 1994
8. ORNL-6807, Results of the Radiological and Beryllium Verification Survey at the Sacandaga Site, Glenville, New York, September 1994



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#94-61

NOV 29 1994

Mr. Paul Giardina, Chief
Radiation Branch
U. S. Environmental Protection Agency
Region II
26 Federal Plaza - Room 105
New York, New York 10278

Dear Mr. Giardina:

The Department of Energy (DOE) has completed remedial action at two sites in Schenectady County, New York, which were formerly operated for the Atomic Energy Commission. Previous surveys had identified low levels of radioactivity in a few small, localized areas at the Peek Street Site, Schenectady, New York. The surveys also had identified low levels of non-radioactive beryllium in a small area of outdoor soil and on indoor overhead surfaces such as roof beams at the Peek Street Site and in the gravel floor and soil surrounding a small isolated concrete structure at the Sacandaga Site, Glenville, New York. Remediation work has been completed at both sites. Following remediation, independent verification sampling was conducted by Oak Ridge National Laboratory. Representatives of New York also conducted additional independent overcheck surveys. The results of these surveys verified compliance with applicable cleanup guidelines. The Peek Street and Sacandaga Sites are now certified to be in compliance with applicable guidelines established by DOE and agreed to by the State of New York for unrestricted use of the property. Copies of the DOE Statement of Certification and applicable characterization, remediation, and verification documents are attached for your information. A DOE Notice of Certification will be published in the Federal Register within the next two weeks.

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Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

REC&SD:ARS#94-62

NOV 29 1994

Mr. Jack Parisi
Director, Environmental Health
Schenectady County Public Health Service
Department of Environmental Health
1 Broadway Center, 8th Floor
Schenectady, New York 12305

Dear Mr. Parisi:

The Department of Energy (DOE) has completed remedial action at two sites in Schenectady County, New York, which were formerly operated for the Atomic Energy Commission. Previous surveys had identified low levels of radioactivity in a few small, localized areas at the Peek Street Site, Schenectady, New York. The surveys also had identified low levels of non-radioactive beryllium in a small area of outdoor soil and on indoor overhead surfaces such as roof beams at the Peek Street Site and in the gravel floor and soil surrounding a small isolated concrete structure at the Sacandaga Site, Glenville, New York. Remediation work has been completed at both sites. Following remediation, independent verification sampling was conducted by Oak Ridge National Laboratory. Representatives of New York also conducted additional independent overcheck surveys. The results of these surveys verified compliance with applicable cleanup guidelines. The Peek Street and Sacandaga Sites are now certified to be in compliance with applicable guidelines established by DOE and agreed to by the State of New York for unrestricted use of the property. Copies of the DOE Statement of Certification and applicable characterization, remediation, and verification documents are attached for your information. A DOE Notice of Certification will be published in the Federal Register within the next two weeks.

Please contact me if you have any questions on this matter. I can be reached at (518) 395-6366.

Sincerely,

A. R. Seepo, Director
Radiological/Environmental
Control and Safety Division

NOV 29 1994

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Exhibit II (9) - Restrictions

There are no radiologically based or residual beryllium based restrictions on future use of the former Sacandaga Site property.

Exhibit II (10) - Federal Register Notice

This section contains the text of the notice that was approved by the DOE for publication in the Federal Register. It documents the certification that the former Sacandaga Site property is in compliance with all applicable decontamination criteria and standards.

Department of Energy

Certification of the Radiological
and Beryllium Condition of the
Sacandaga and Peek Street Sites
Schenectady County, New York

AGENCY: Department of Energy

ACTION: Notice of Certification

SUMMARY: The Department of Energy (DOE) has completed remedial action at two sites in Schenectady County, New York, which were formerly operated for the Atomic Energy Commission (AEC). Previous surveys had identified low levels of radioactivity in a few small localized areas at the Peek Street Site, Schenectady, New York. The surveys had also identified low levels of non-radioactive beryllium in a small area of outdoor soil and in indoor overhead areas, such as roof beams at the Peek Street Site and in the gravel floor and soil surrounding a small isolated concrete structure at the Sacandaga Site, Glenville, New York. Remediation work has been completed at both sites. Both sites are certified to be in compliance with applicable cleanup guidelines established by DOE and agreed to by the State of New York. The properties are released for unrestricted use.

FOR FURTHER INFORMATION CONTACT:

Mr. Alan Muir, Public Information Officer

Schenectady Naval Reactors Office

P.O. Box 1069

Schenectady, New York 12301

(518) 395-6386

FAX: (518) 395-6345

SUPPLEMENTARY INFORMATION:

In the late 1940s and early 1950s, the General Electric Company operated two Federal Government facilities, known as the Peek Street Site in Schenectady, New York, and the Sacandaga Site in Glenville, New York, for AEC.

AEC-sponsored research at the site involved the use of radioactive materials and non-radioactive beryllium in support of breeder reactor development and other programs. After the sites had been decommissioned and surveyed to confirm that they met applicable unrestricted use standards in effect at the time, the sites were sold to private parties in the mid 1950s.

It is the policy of DOE to verify that environmental conditions at formerly utilized sites comply with current DOE guidelines. At the request of the DOE Office of Naval Reactors, characterization surveys were performed by representatives of the Oak Ridge National Laboratory (ORNL) between 1988 and 1991. Representatives from the New York State Departments of Environmental Conservation and Health also participated in the site characterizations.

At the Peek Street Site, the surveys identified low levels of fixed residual radioactivity in a few small localized sections of floor and wall areas inside the site's main building and in an approximate 5-square meter area of outdoor soil, which extended onto the adjacent State-owned property. The survey also identified low levels of residual beryllium in the same general area of outdoor soil and in indoor overhead areas, such as roof beams. At the Sacandaga Site, the surveys identified low levels of beryllium in the gravel floor and soil surrounding a small concrete structure. Because the levels of both radioactivity and beryllium were relatively low and the affected areas small and isolated, the residual radioactivity and beryllium present at these sites did not present a health hazard to members of the public or the environment. Posting or other institutional controls were not warranted.

Site-specific cleanup guidelines were established by DOE under DOE Order 5400.5 consistent with DOE Formerly Utilized Sites Remedial Action Program protocols; these guidelines were agreed to by the New York State Departments of Environmental Conservation and Health. Remediation of the residual radioactivity and beryllium was performed by a contractor under DOE direction and completed in 1993. Extensive post-remedial sampling was conducted to confirm that all site areas had been remediated in accordance with the applicable cleanup guidelines under DOE Order 5400.5.

Independent verification sampling was conducted by ORNL. Representatives of the New York State Departments of Environmental Conservation and Health also conducted additional independent overcheck surveys for residual

radioactivity and beryllium. The results of these surveys verified compliance with DOE Order 5400.5 and the applicable cleanup guidelines.

Information relating to the characterization, remediation, and post-remediation sampling of these sites has been compiled in the DOE Certification Docket for the Remedial Action Performed at the Peek Street Site, Schenectady, New York, and the DOE Certification Docket for the Remedial Action Performed at the Sacandaga Site, Glenville, New York.

These certification dockets will be available for review between 9:00 a.m. and 4:00 p.m., Monday through Friday (except Federal holidays) in the DOE Public Reading Room located in room 1E-190 of the Forrestal Building, 1000 Independence Avenue SW, Washington, D.C. Copies will also be available in the DOE Public Document Room at the Oak Ridge Operations Office, Oak Ridge, Tennessee, and in the Schenectady County Public Library, 99 Clinton St., Schenectady, New York.

The DOE has issued the following statement of certification:

**STATEMENT OF CERTIFICATION: PEEK STREET AND SACANDAGA
SITES IN SCHENECTADY COUNTY, NEW YORK**

The U.S. Department of Energy (DOE) established radiological and beryllium cleanup guidelines, which were agreed to by the State of New York, to certify property releasable for unrestricted use. Based on review of the radiological and non-radiological data obtained following the remedial action at the Peek Street and Sacandaga Sites to these guidelines, DOE hereby certifies that the properties described below are in compliance

with applicable DOE cleanup guidelines for unrestricted use of the property. This certification of compliance provides assurance to the public that future use of the property will result in no radiological or beryllium exposure above applicable guidelines established to protect members of the public and the environment.

421 Peek Street, Schenectady, New York, as described in deed book 1026, page 497, filed in Schenectady County Clerk's Office.

823 Sacandaga Road, Glenville, New York, as described in deed book 1068, page 914, filed in Schenectady County Clerk's Office.

Issued in Washington, D.C. on November 28, 1994.



John E. Baublitz
Acting Deputy Assistant Secretary
for Environmental Restoration
Office of Environmental Management



C. H. Schmitt
Deputy Director, Office of
Naval Reactors
Office of Nuclear Energy

Exhibit II (11) - Approved Certification Statement

The following statement documents the certification of the former Sacandaga Site property.



Department of Energy
Schenectady Naval Reactors Office
Post Office Box 1069
Schenectady, New York 12301-1069

**STATEMENT OF CERTIFICATION: PEEK STREET AND SACANDAGA
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By:


P. E. Salm, Manager
Schenectady Naval Reactors

Date:

NOV 01 1994