

*Certification Docket for the
Remedial Action Performed
at the Aliquippa Forge Site
in Aliquippa, Pennsylvania*

*Department of Energy
Former Sites Restoration Division
Oak Ridge Operations Office*

November 1996



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**CERTIFICATION DOCKET FOR THE REMEDIAL ACTION
PERFORMED AT THE ALIQUIPPA FORGE SITE
IN ALIQUIPPA, PENNSYLVANIA**

NOVEMBER 1996

Prepared for

UNITED STATES DEPARTMENT OF ENERGY

Oak Ridge Operations Office

Under Contract No. DE-AC05-91OR21949

By

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ACRONYMS

AEC	U.S. Atomic Energy Commission
ALARA	as low as reasonably achievable
ANL	Argonne National Laboratory
BNI	Bechtel National, Inc.
CEQ	Council on Environmental Quality
DCG	derived concentration guide
DOE	U.S. Department of Energy
FSRD	Former Sites Restoration Division
FUSRAP	Formerly Utilized Sites Remedial Action Program
HEPA	high-efficiency particulate air
IVC	independent verification contractor
LSA	low-specific-activity
NEPA	National Environmental Policy Act
ORISE	Oak Ridge Institute for Science and Education
PIC	pressurized ionization chamber
PRAR	post-remedial action report
TMA	Thermo Analytical

UNITS OF MEASURE

cm	centimeter
dpm	disintegrations per minute
ft	foot
g	gram
h	hour
in.	inch
L	liter
m	meter
μ Ci	microcurie
μ R	microroentgen
MeV	mega electron volt
mi	mile
ml	milliliter
mrad	millirad
mrem	millirem
pCi	picocurie
WL	working level
yd	yard
yr	year

INTRODUCTION

The U.S. Department of Energy (DOE) conducted a remedial action project at the Aliquippa Forge site in Aliquippa, Pennsylvania under the expedited protocol for remedial action at small sites (Ref. 1). Expedited protocol is an efficient, cost-effective approach that streamlines the remedial action process for cleanup of small sites. The work was administered by DOE's Formerly Utilized Sites Remedial Action Program (FUSRAP) under the direction of the Deputy Assistant Secretary for Environmental Restoration.

FUSRAP was created in 1974 by the U.S. Atomic Energy Commission (AEC), a predecessor of DOE, under the provisions of the Atomic Energy Act of 1954, as amended. It is an environmental restoration program that primarily addresses low levels of radioactive contamination on properties that are predominantly privately owned and have few if any institutional controls. FUSRAP's mission is to identify, investigate, and clean up or control sites where residual radioactivity exceeding current guidelines remains from the early years of the nation's atomic energy program and other sites assigned to DOE by Congress. The objectives of FUSRAP as they apply to the Aliquippa Forge site are to

- identify and evaluate sites used to support former U.S. Army Manhattan Engineer District and AEC nuclear development activities,
- remove or otherwise control contamination on sites identified as contaminated above current DOE guidelines,
- achieve and maintain compliance with applicable criteria for the protection of human health and the environment, and
- certify the site for use without radiological restrictions after remediation.

FUSRAP is managed by the DOE Oak Ridge Operations Office, Former Sites Restoration Division (FSRD). As the project management contractor for FUSRAP, Bechtel National, Inc. (BNI) assisted DOE in planning, managing, and implementing the remedial action. Thermo Analytical [(TMA) now known as Thermo NUtech] was the radiological support subcontractor and provided sampling, analysis, and health physics support for site activities. The Oak Ridge Institute for Science and Education (ORISE), the independent verification contractor (IVC), conducted appropriate analyses to verify that the site had been successfully remediated.

Environmental Regulations Applicable to FUSRAP

To assess the environmental impacts of federal actions, Executive Order 11991 empowered the Council on Environmental Quality (CEQ) to issue regulations to federal agencies for implementing the procedural provisions of the National Environmental Policy Act (NEPA) that are mandatory under the law. In June 1979, CEQ issued regulations containing guidance and specific requirements. DOE guidelines for implementing the NEPA process and satisfying the CEQ regulations were subsequently issued and became effective on March 28, 1980. These regulations were revised April 24, 1992 (57 FR 15122).

The NEPA process requires FUSRAP decision-makers to identify and assess the environmental consequences of proposed actions before beginning remedial activities, developing disposal sites, or transporting and managing or disposing of radioactive wastes. For the remedial activities discussed in this certification docket, the NEPA requirements were satisfied by the preparation and approval of a categorical exclusion for the remedial action. This NEPA document confirmed that there would be no adverse effects on the environment from the remedial activities.

Work performed under FUSRAP by the project management contractor or by architect-engineers, construction and service subcontractors, and other project subcontractors is governed by the quality assurance program for the project and is in compliance with DOE Order 5700.6C. The effectiveness of the quality assurance program is assessed regularly by the BNI quality assurance organization and by FSRD.

Property Identification

The Aliquippa Forge site, located at 100 First Street in Aliquippa, Pennsylvania, is owned by Beaver County Corporation for Economic Development. Interim remedial action was conducted at the site in 1988; final remedial action was performed from June 1993 through September 1994. DOE has certified that the property is in compliance with applicable DOE standards and criteria developed to protect health, safety, and the environment. A notice of certification was published in the *Federal Register* on October 30, 1996.

Docket Contents

The purpose of this docket is to document the successful decontamination of radioactively contaminated areas inside Buildings 3 and 8 and an outdoor area along the western side of Building 3 at the Aliquippa Forge site. This certification docket consists of documents supporting the DOE certification that conditions at the Aliquippa Forge site are in compliance with current radiological guidelines and standards determined to be applicable to the property and that future use

of the property without radiological restrictions will not result in any significant radiological hazard to the general public as a result of the past activities of DOE or its predecessor agencies.

Exhibit I of this docket is a summary of the remedial activities conducted at the Aliquippa Forge site. The exhibit provides a brief history of the origin of the radioactive contamination at the site, the radiological characterizations conducted, the remedial action performed, post-remedial action and verification activities, and waste disposal. Cost data covering all remedial action conducted at Aliquippa Forge are also included in Exhibit I. Appendix A of Exhibit I contains DOE guidelines for residual radioactive contamination at FUSRAP sites, including the Aliquippa Forge site.

Exhibit II consists of the letters, memos, and reports that document the entire remedial action process from designation of the site into FUSRAP to the certification that no radiological restrictions are appropriate at the site based on the radiological condition of the site. Documents that are brief are included in Exhibit II. Lengthy documents are referenced in the exhibit and are provided as attachments to the certification docket.

Exhibit III provides diagrams of the site identifying the areas of contamination that were remediated during the cleanup.

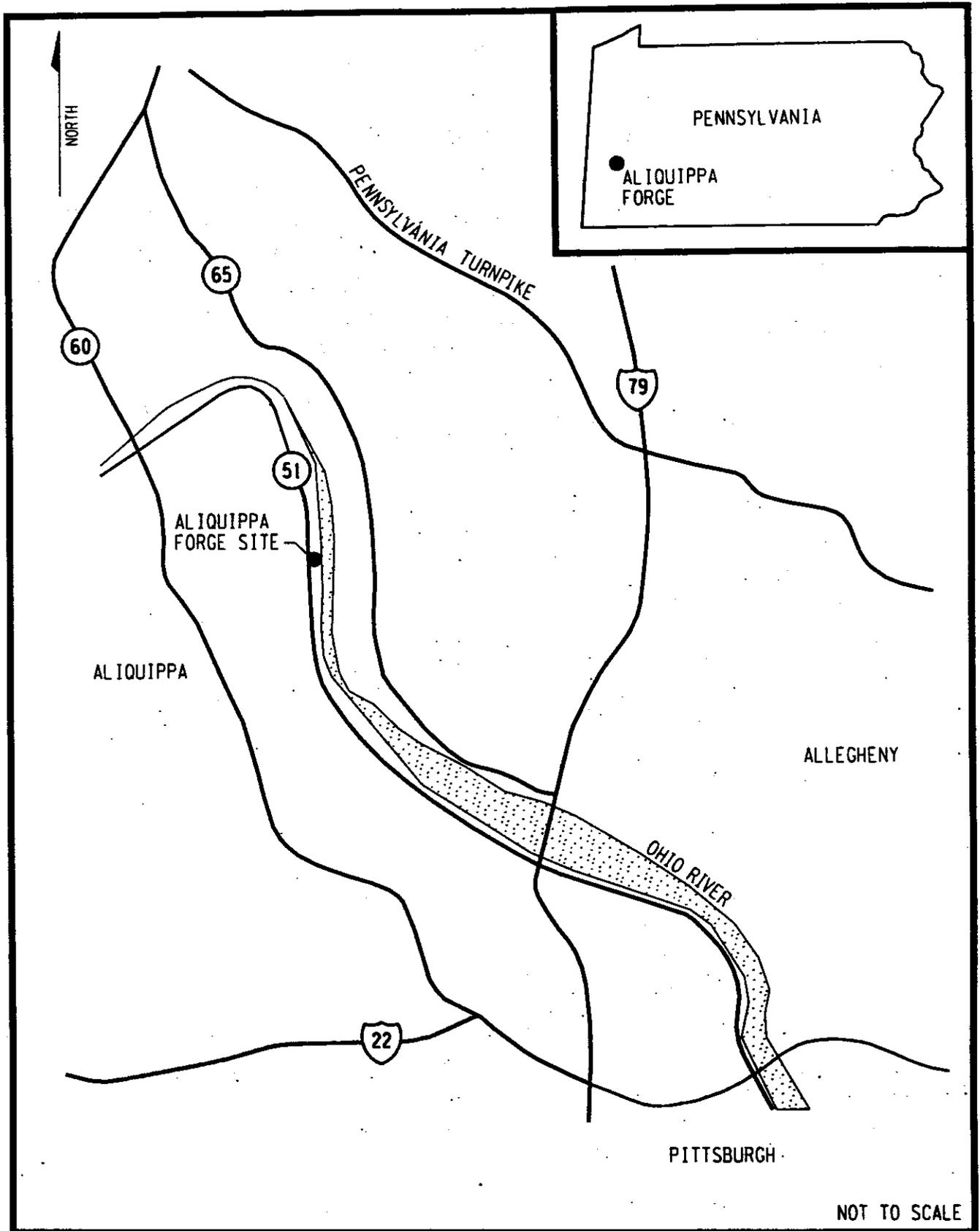
The certification docket and associated references will be archived by DOE through the Assistant Secretary for Management and Administration. Copies will be available for public review between 9:00 a.m. and 4:00 p.m., Monday through Friday (except federal holidays), at the DOE Public Reading Room located in Room 1E-190 of the Forrestal Building, 1000 Independence Avenue, S.W., Washington, D.C. Copies of the certification docket will also be available in the DOE Public Document Room, Federal Building, 200 Administration Road, Oak Ridge, Tennessee, and at the B.F. Jones Memorial Library, Main Branch, 663 Franklin Avenue, Aliquippa, Pennsylvania.

EXHIBIT I
SUMMARY OF REMEDIAL ACTION ACTIVITIES AT
THE ALIQUIPPA FORGE SITE
IN ALIQUIPPA, PENNSYLVANIA

1.0 INTRODUCTION

Exhibit I summarizes the activities culminating in the certification that radiological conditions at the Aliquippa Forge site are in compliance with applicable guidelines and that future use of the site will not result in exposure above DOE criteria and/or standards established to protect members of the general public and occupants of the site. These activities were conducted under FUSRAP (Ref. 2). This summary includes a discussion of the remedial action process at the site: the designation of the site as requiring remedial action, the remedial action performed, and verification that the radioactive contamination above cleanup guidelines has been removed. Further details of each activity described in Exhibit I can be found in the referenced documents.

The Aliquippa Forge site is located along the Ohio River in West Aliquippa, Pennsylvania, approximately 25 km (15.6 mi) northwest of Pittsburgh (Figure I-1).

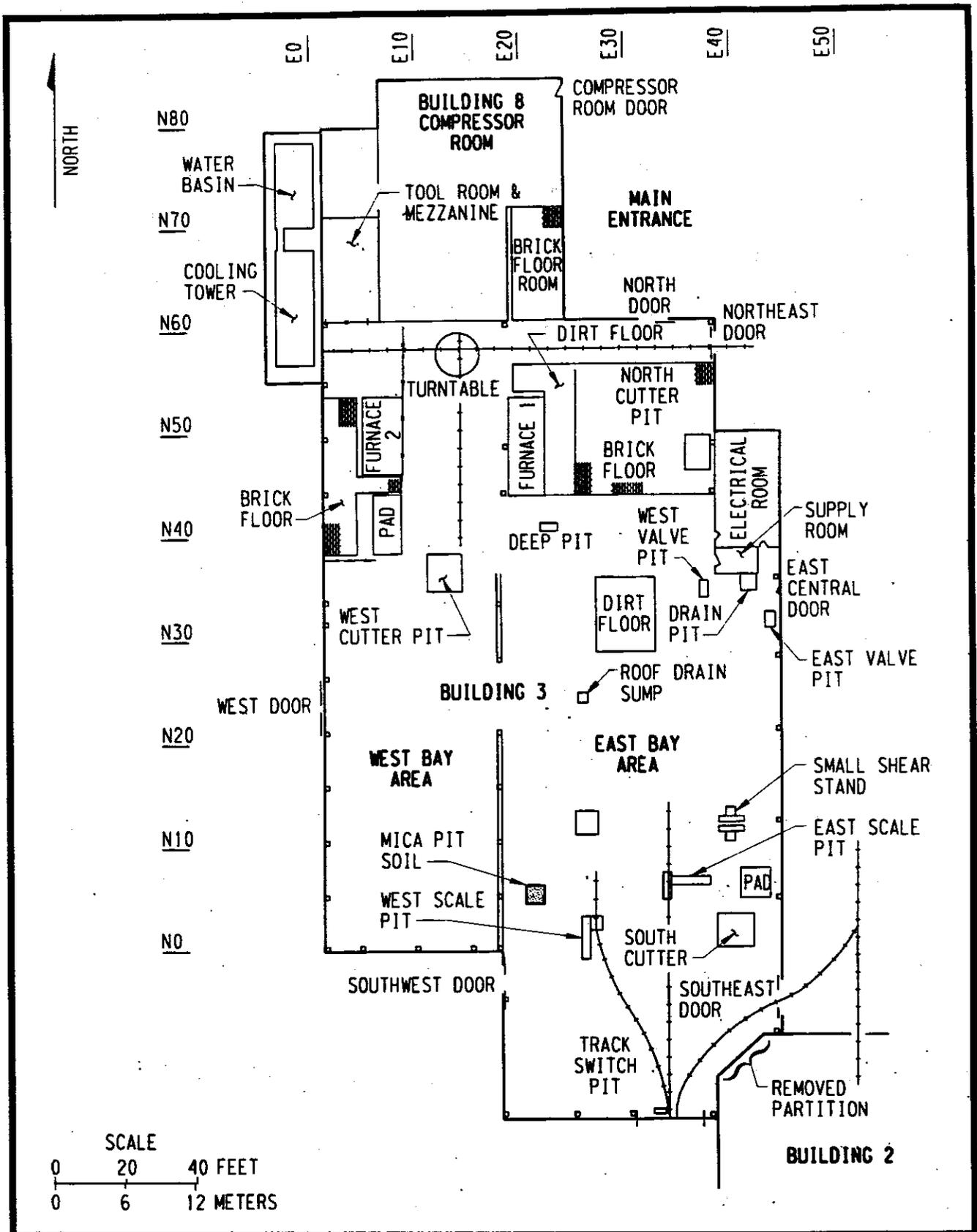


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**Figure I-1
Geographic Location of the Aliquippa Forge Site**

2.0 SITE HISTORY

From July 1948 to late 1949, Vulcan Crucible Steel Company operated a uranium-rolling process for AEC in Building 3 of the facility (Figure I-2). Uranium billets were sent to the Vulcan facility where they were formed into rods; finished rods were boxed and shipped to other AEC facilities. Following completion of AEC operations, the site was decontaminated to then-applicable guidelines (Ref. 3). The facility has since been owned by the Universal Cyclops Specialty Steel Division of the Cyclops Corporation and then Aliquippa Forge, Incorporated. The facility is currently owned by Beaver County Corporation for Economic Development.



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Figure 1-2
 Floor Plan of Buildings 3 and 8

3.0 SITE DESCRIPTION

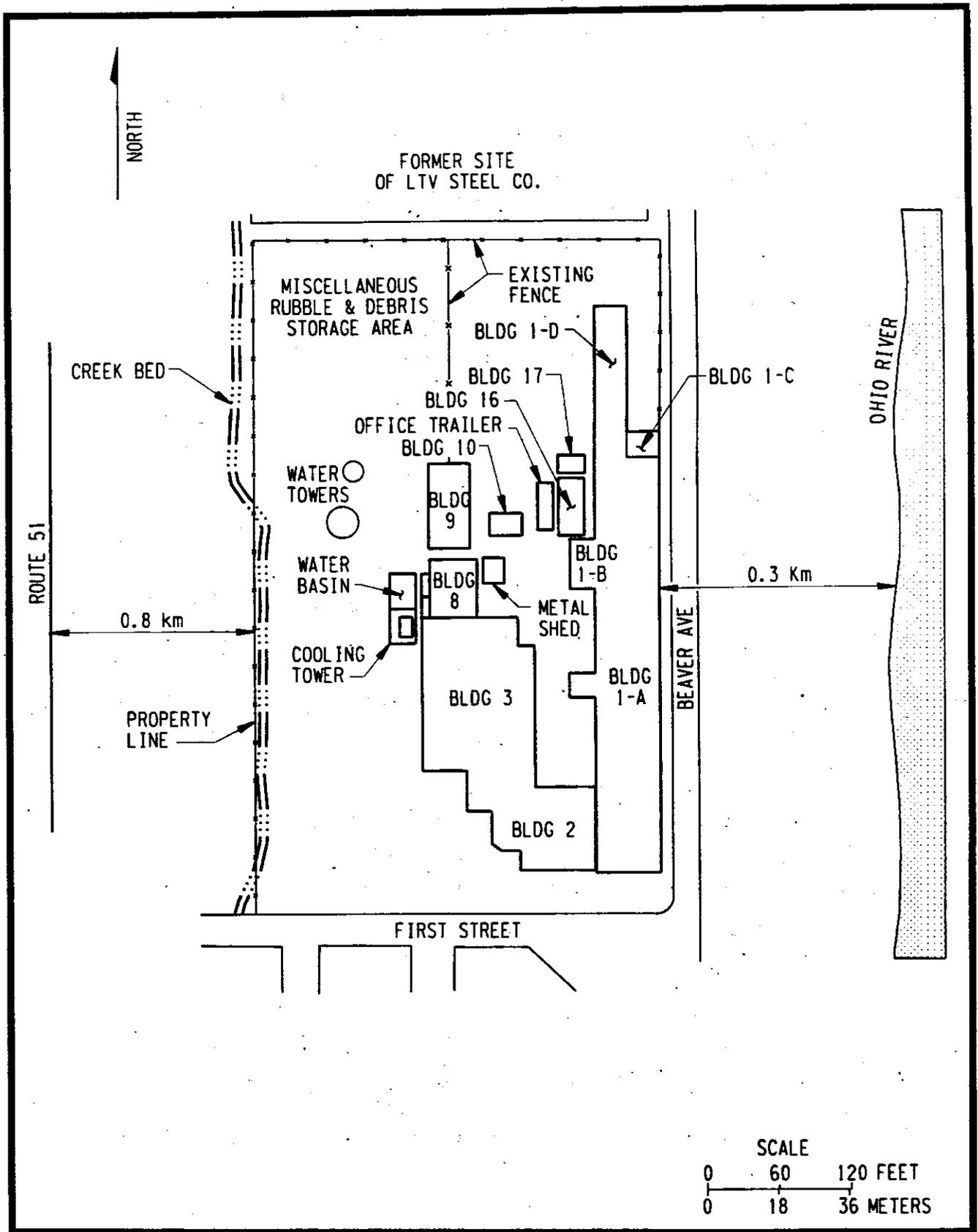
The Aliquippa Forge site covers 3.2 ha (8 acres) in a mixed industrial/residential area. The site is bordered by First Street to the south and Beaver Avenue to the east (Figure I-3). The Ohio River flows approximately 0.3 km (0.2 mi) east of the site. Route 51 is approximately 0.8 km (0.5 mi) from the western border of the site, and a railroad easement is located along the southern edge.

Prior to remediation, the site contained 10 buildings, an office trailer, a metal shed, 2 water towers, a cooling tower, and a small water basin (Figure I-3). Building 3 (Figure I-2) contains approximately 2,400 m² (26,000 ft²) of floor space and is divided into east and west bay areas. It is constructed primarily of sheet metal with structural steel beams on a raised concrete foundation. The west bay has a medium-pitch corrugated aluminum roof. The east bay roof is corrugated aluminum with skylights; roof apexes are approximately 11 m (35 ft) high. Roof drains extend from the gutters between the apexes to drainpipes under the concrete floor.

During remediation of Building 3, two large turret ventilators and three round ventilators were removed from the roof of the west bay. An elliptical ventilator that extended along the ridge of the roof was removed from the east bay. Two furnaces located in the north end of the building were dismantled during remedial activities. Contaminated material was removed from the cutter pit in the west bay. An area identified as a "suspected mica pit," reportedly used for cooling the rolled uranium billets, is located in the east bay; contaminated material was also removed from this pit. Portions of the building floor, which was mostly concrete with small areas of brick over dirt around the furnaces, were removed.

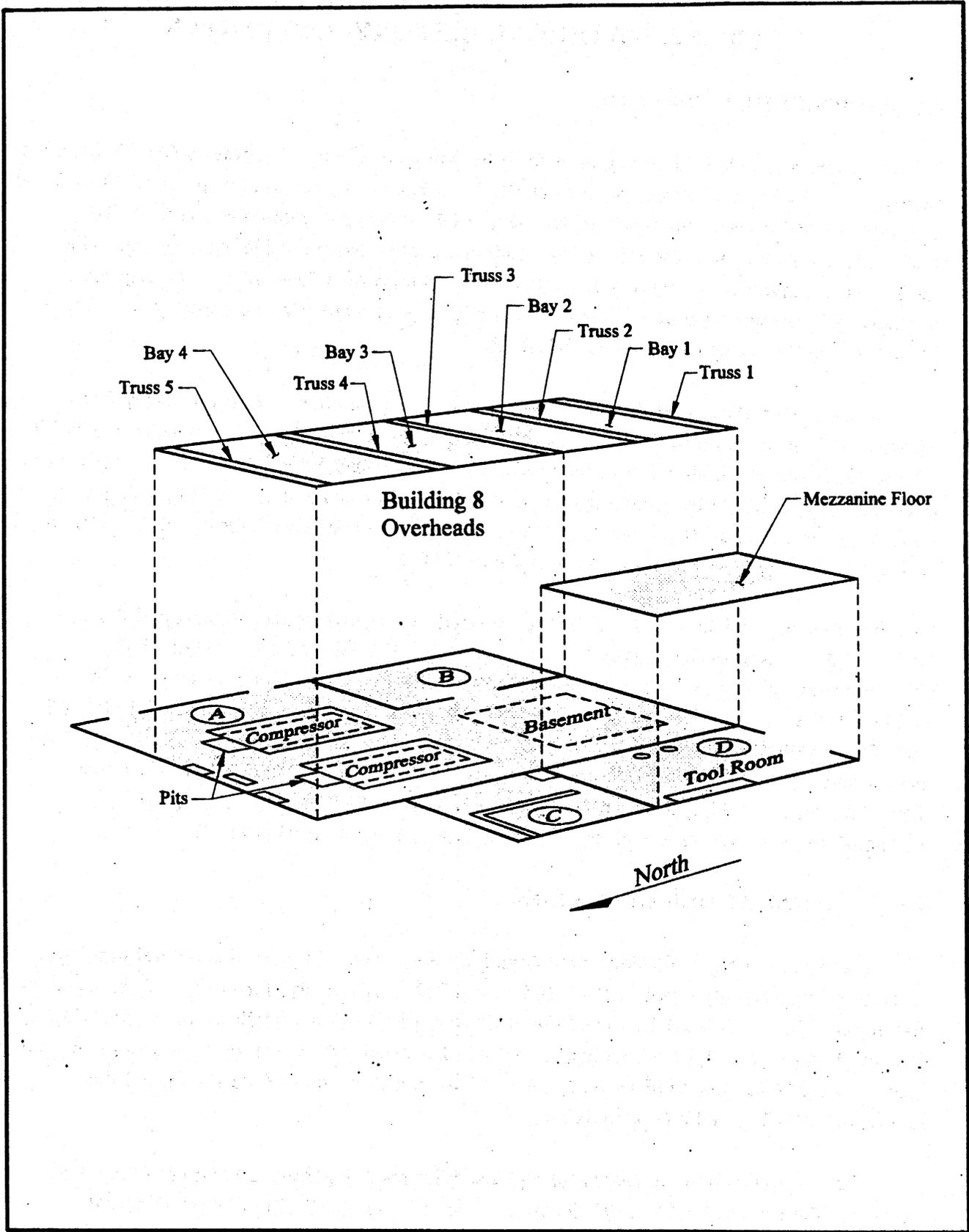
Building 8, which extends from the north of Building 3, houses two large two-piston air compressors. Building 8 consists of four areas, designated as rooms A-D (Figure I-4) and has a total floor space of approximately 500 m² (5,400 ft²). Wall and ceiling construction are the same as in Building 3. Two round ventilators are present on the roof apex. The floor is mostly concrete with the exception of Room B, where the floor is mainly brick over dirt. The mezzanine above Room D (Tool Room) has a wooden floor.

The outdoor area along the western side of Building 3 (adjacent to the loading dock) is bare soil, approximately 42 m (138 ft) long and 6 m (20 ft) wide. A cooling tower and water basin are enclosed by a chain link fence that borders the area to the north and west. A drain line extends along the western side of Building 3; there are 14 pipe penetrations on this side of the building.



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Figure I-3
Site Plan of the Aliquippa Forge Site



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Figure I-4
Perspective of Building 8

4.0 RADIOLOGICAL HISTORY AND STATUS

4.1 RADIOLOGICAL SURVEYS

In 1978, a radiological survey performed by Argonne National Laboratory (ANL) identified radioactive contamination exceeding current DOE guidelines on floors and walls of Building 3 and on overhead beams above the furnaces that were used for heating uranium billets (Ref. 3). Radioactive contamination was also found beside the cooling basin outside the building. The residual radioactive contamination exceeded DOE guidelines for release of the property for appropriate future use without radiological restrictions. Consequently, the property was designated in August 1983 for remediation under FUSRAP.

In December 1987, BNI conducted a limited radiological characterization survey that revealed 14 areas of contamination in and around Building 3. Interim remedial activities were conducted by BNI in 1988 (Ref. 5) to allow restricted use of the building by Aliquippa Forge, Inc. Most of the building was remediated by removing contaminated materials and equipment and placing a barricade around the remaining contaminated area. Post-remedial action surveys indicated that contamination was removed from a large portion of the building (Ref. 6).

During May and June 1992, ORISE performed its initial radiological survey of the site (Ref. 7). As a result of that survey DOE requested that ORISE perform a radiological characterization survey to determine the areal extent of residual uranium contamination in Building 3, the outdoor area along the western side of the building, and portions of Building 8 (Ref. 8). Areas inside Building 3 that were contaminated included the walls above 2 m (6.6 ft), interior and exterior surfaces of the two furnaces, floor surfaces within the barricaded area, structural steel and ceiling surfaces, and exterior soil areas at the perimeter of Building 3. Additional characterization was performed from July to October 1993 (Ref. 9).

4.2 REMEDIAL ACTION GUIDELINES

The source of contamination at the Aliquippa Forge site was processed natural uranium metal, characterized by activity ratios of 0.48, 0.5, and 0.022, respectively, for uranium-238, uranium-234, and uranium-235. Table I-1 lists the DOE residual contamination guidelines for release of formerly contaminated properties for use without radiological restrictions. These guidelines were adopted by DOE in accordance with DOE Order 5400.5, "Radiation Protection of the Public and the Environment," Chapter IV (Appendix I-A).

The remedial action guidelines for alpha activity resulting from residual uranium on structural surfaces at the site are 5,000 dpm/100 cm² average, 15,000 dpm/100 cm² maximum, and 1,000 dpm/100 cm² removable. The relevant remedial action guidelines for beta-gamma activity are summarized in Table I-1.

TABLE I-1
SUMMARY OF RESIDUAL CONTAMINATION GUIDELINES

BASIC DOSE LIMITS

The basic limit for the annual radiation dose (including all pathways except radon) received by an individual member of the general public is 100 mrem/yr above background. In implementing this limit, DOE applies as-low-as-reasonable achievable principles to set site-specific guidelines.

SOIL GUIDELINES

<u>Radionuclide</u>	<u>Soil Concentration (pCi/g) Above Background^{a,b,c}</u>
Radium-226 Radium-228 Thorium-230 Thorium-232	5 pCi/g when averaged over the first 15 cm of soil below the surface and over any contiguous 100-m ² surface area; 15 pCi/g when averaged over any 15-cm-thick soil layer below the surface layer and over any contiguous 100-m ² surface area.
Total Uranium	100 pCi/g when averaged over any 15-cm-thick soil layer and over any contiguous 100-m ² surface area.
Uranium-238	50 pCi/g when averaged over any 15-cm-thick soil layer and over any contiguous 100-m ² surface area.

STRUCTURE GUIDELINES

Airborne Radon Decay Products

Generic guidelines for concentrations of airborne radon decay products shall apply to existing occupied or habitable structures on private property that has no radiological restrictions on its use; structures that will be demolished or buried are excluded. The applicable generic guideline (40 CFR 192) is: In any occupied or habitable building, the objective of remedial action shall be, and reasonable effort shall be made to achieve, an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 WL^d. In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL. Remedial actions are not required in order to comply with this guideline when there is reasonable assurance that residual radioactive materials are not the cause.

External Gamma Radiation

The average level of gamma radiation inside a building or habitable structure on a site that has no radiological restrictions on its use shall not exceed the background level by more than 20 µR/h and will comply with the basic dose limits when an appropriate-use scenario is considered.

Indoor/Outdoor Structure Surface Contamination

<u>Radionuclide^f</u>	<u>Allowable Surface Residual Contamination^g</u> (dpm/100 cm ²)		
	<u>Average^{g,h}</u>	<u>Maximum^{h,i}</u>	<u>Removable^{h,j}</u>
Transuranics, Ra-226, Ra-228, Th-230, Th-228 Pa-231, Ac-227, I-125, I-129 ^k	100	300	20
Th-Natural, Th-232, Sr-90, Ra-223, Ra-224 U-232, I-126, I-131, I-133	1,000	3,000	200
U-Natural, U-235, U-238, and associated decay products	5,000 α	15,000 α	1,000 α
Beta-gamma emitters (radionuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above ^l	5,000 β - γ	15,000 β - γ	1,000 β - γ

**TABLE I-1
(CONTINUED)**

^aThese guidelines take into account ingrowth of radium-226 from thorium-230 and of radium-228 from thorium-232, and assume secular equilibrium. If either thorium-230 and radium-226 or thorium-232 and radium-228 are both present, not in secular equilibrium, the guidelines apply to the higher concentration. If other mixtures of radionuclides occur, the concentrations of individual radionuclides shall be reduced so that (1) the dose for the mixtures will not exceed the basic dose limit, or (2) the sum of ratios of the soil concentration of each radionuclide to the allowable limit for that radionuclide will not exceed 1 ("unity").

^bThese guidelines represent allowable residual concentrations above background averaged across any 15-cm-thick layer to any depth and over any contiguous 100-m² surface area.

^cIf the average concentration in any surface or below-surface area less than or equal to 25 m² exceeds the authorized limit or guideline by a factor of $(100/A)^{1/2}$, where A is the area of the elevated region in square meters, limits for "hot spots" shall also be applicable. Procedures for calculating these hot spot limits, which depend on the extent of the elevated local concentrations, are given in the DOE Manual for Implementing Residual Radioactive Materials Guidelines, DOE/CH/8901. In addition, every reasonable effort shall be made to remove any source of radionuclide that exceeds 30 times the appropriate limit for soil, irrespective of the average concentration in the soil.

^dA working level (WL) is any combination of short-lived radon decay products in 1 liter of air that will result in the ultimate emission of 1.3×10^5 MeV of potential alpha energy.

^eAs used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute measured by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

^fWhere surface contamination by both alpha- and beta-gamma-emitting radionuclides exists, the limits established for alpha- and beta-gamma-emitting radionuclides should apply independently.

^gMeasurements of average contamination should not be averaged over an area of more than 1 m². For objects of less surface area, the average should be derived for each such object.

^hThe average and maximum dose rates associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/h and 1.0 mrad/h, respectively, at a depth of 1 cm.

ⁱThe maximum contamination level applies to an area of not more than 100 cm².

^jThe amount of removable radioactive material per 100 cm² of surface area should be determined by wiping an area of that size with dry filter or soft absorbent paper, applying moderate pressure, and measuring the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of surface area less than 100 cm² is determined, the activity per unit area should be based on the actual area, and the entire surface should be wiped. It is not necessary to use wiping techniques to measure removable contamination levels if direct scan surveys indicate that total residual surface contamination levels are within the limits for removable contamination.

^kGuidelines for these radionuclides are not given in DOE Order 5400.5; however, these guidelines are considered applicable based on "DOE Guidelines for Residual Radioactive Materials at FUSRAP and Remote SFMP Sites," Revision 2, March 1987.

^lThis category of radionuclides includes mixed fission products, including the Sr-90 which is present in them. It does not apply to Sr-90 which has been separated from the other fission products or mixtures where the Sr-90 has been enriched.

Source: DOE Order 5400.5 and 40 CFR 192

The site-specific soil guideline is 100 pCi/g for total uranium (50 pCi/g for uranium-235) averaged over any 100-m² (1,100-ft²) area and any 15-cm-thick layer below the surface (Ref. 21). The average concentration of uranium-238 in background soil samples for the Aliquippa Forge site is 1.4 pCi/g. The background value was determined by analyzing several soil samples from areas chosen based on their proximity to the site, relative independence from potential influence of the site, and representativeness of area geology and land uses.

4.3 POST-REMEDIAL ACTION STATUS

Analytical results of post-remedial action surveys indicate that the levels of radioactivity in the remediated areas (except for the west bay area roof panels and three concrete pedestals) are in compliance with applicable DOE cleanup guidelines for residual radioactive contamination. A hazard assessment was conducted to establish supplemental limits for the contamination on the west bay roof panels and the concrete pedestals (Ref. 10).

In addition to its independent surveys, the IVC reviewed the post-remedial action surveys and results, measurement procedures, and quality assurance data to determine whether the measurements verify that these areas comply with the established DOE guidelines for the site. After completing the verification process, the IVC reported its findings and recommendations to DOE-Headquarters and the DOE Oak Ridge Operations Office (Ref. 21). With the exception of the residual radioactive material evaluated and discussed in the hazard assessment, the IVC verified that surface activity levels were within the DOE surface contamination guidelines and that exposure rate measurements and soil samples were in compliance with their respective guidelines.

DOE reviewed the data to determine whether the remedial action was successful. Based on this review, radiological conditions at the site were determined to be in compliance with DOE decontamination criteria and standards to protect health, safety, and the environment, and DOE certified the site as being appropriate for future use without radiological restrictions.

5.0 SUMMARY OF REMEDIAL ACTION

The following sections describe the remedial action process and the measures taken to protect the public and the environment during the process.

5.1 PRE-REMEDIAL ACTION ACTIVITIES

Before remedial action began, the contaminated areas were surveyed to accurately define the boundaries of radioactive contamination and to supplement existing characterization information. In addition, areas that were previously inaccessible (e.g., areas under heavy equipment) were surveyed as they became accessible during remedial action. These surveys defined a significant increase in area that would require remediation.

5.2 REMEDIAL ACTIVITIES

Various decontamination techniques were used at the Aliquippa Forge site (Table I-2). During remediation, approximately 840 m³ (1,100 yd³) of radioactively contaminated soil, brick, and concrete was excavated from inside the buildings and from an outside area west of Building 3. The brick material resulting from the dismantlement of the furnaces and a section of the brick floor was processed into a soil-like consistency using a commercial rock-crushing unit to a volume of approximately 46 m³ (60 yd³) and then placed into the excavation in Building 3. Although the crushed brick material contains a small amount of residual uranium (approximately 15 pCi/g of uranium-238), the amount is well below the cleanup guideline for the soils remaining in place at the site (50 pCi/g of uranium-238).

The state was informed of the plan to use the crushed brick and concrete as backfill in Building 3, and acknowledgment was received from the Pennsylvania Department of Environmental Resources documenting the state regulators' awareness of the plan (Refs. 11 and 12).

Approximately 380 m³ (500 yd³) of concrete rubble resulted from the removal of sections of floor slab. After being segregated from the soil that was excavated from beneath the floor slab, this rubble was also crushed. The average concentration of residual uranium in six representative samples of the crushed concrete was less than 10 pCi/g, well below the cleanup guideline of 50 pCi/g of uranium-238 for the soils remaining at the site. The crushed concrete was used as part of the backfill in restoring the excavated areas in Building 3.

After the material was excavated, direct gamma measurements were taken, and soil samples were collected from the excavations. Analytical results are presented in Section 5.3.

Table I-2

Decontamination Techniques Used at the Aliquippa Forge Site

Type	Description
HEPA vacuuming	High-efficiency particulate air- (HEPA-) filtered vacuum cleaners were used to remove loose contamination primarily in overhead areas and floors.
Hand wiping	Small areas or equipment that had loose dirt, dust, greasy film, etc., were wiped with a dry cloth or a cloth wetted with a non-hazardous detergent solution to remove the loose surface contamination. Putty knives, paint scrapers, and steel wool were used for heavy grease.
Wire brushing/grinding/ pneumatic scalers (needle guns)	Hard, nonporous surfaces (corners, steel beams) were decontaminated by using a wire brush to remove loosely adherent dirt, scale, rust, etc. A power hand grinder was used to remove the surface layer of more adherent contamination. Needle guns were used for "hot spot" removal.
Mechanical shot blasting	A commercially available shot-blast system, the VacuBlast™ decontamination system with self-contained dust collection, was used to clean floor, overhead, and wall surfaces by using metallic abrasive material on the work surface and removing incremental layers of contaminated material.
Cutting with a gasoline- powered concrete saw	A gasoline-powered concrete saw with a diamond tip blade, vented to the exterior of the building, was used to prepare sections of the floor slab for removal.
Jackhammering	Rubber-tired hoe-rams were used to remove chunks of concrete. Conventional jackhammers were used on small areas and in breaking individual pieces of concrete. Chipping hammers were used in spot areas and on horizontal surfaces as necessary.
Excavation	Contaminated concrete and soil were removed from interior and exterior areas by using rubber-tired backhoes, track excavator, truck loader, picks, and shovels.

Approximately 76 m³ (100 yd³) of contaminated building material waste, including material removed from the floors, walls, and overhead surfaces and miscellaneous building equipment (conduits, light fixtures, etc.) resulted from the building remediation. After size reduction, this material was packaged in accordance with applicable U.S. Department of Transportation regulations and sent to the Envirocare of Utah low-level radioactive waste disposal facility in Clive, Utah.

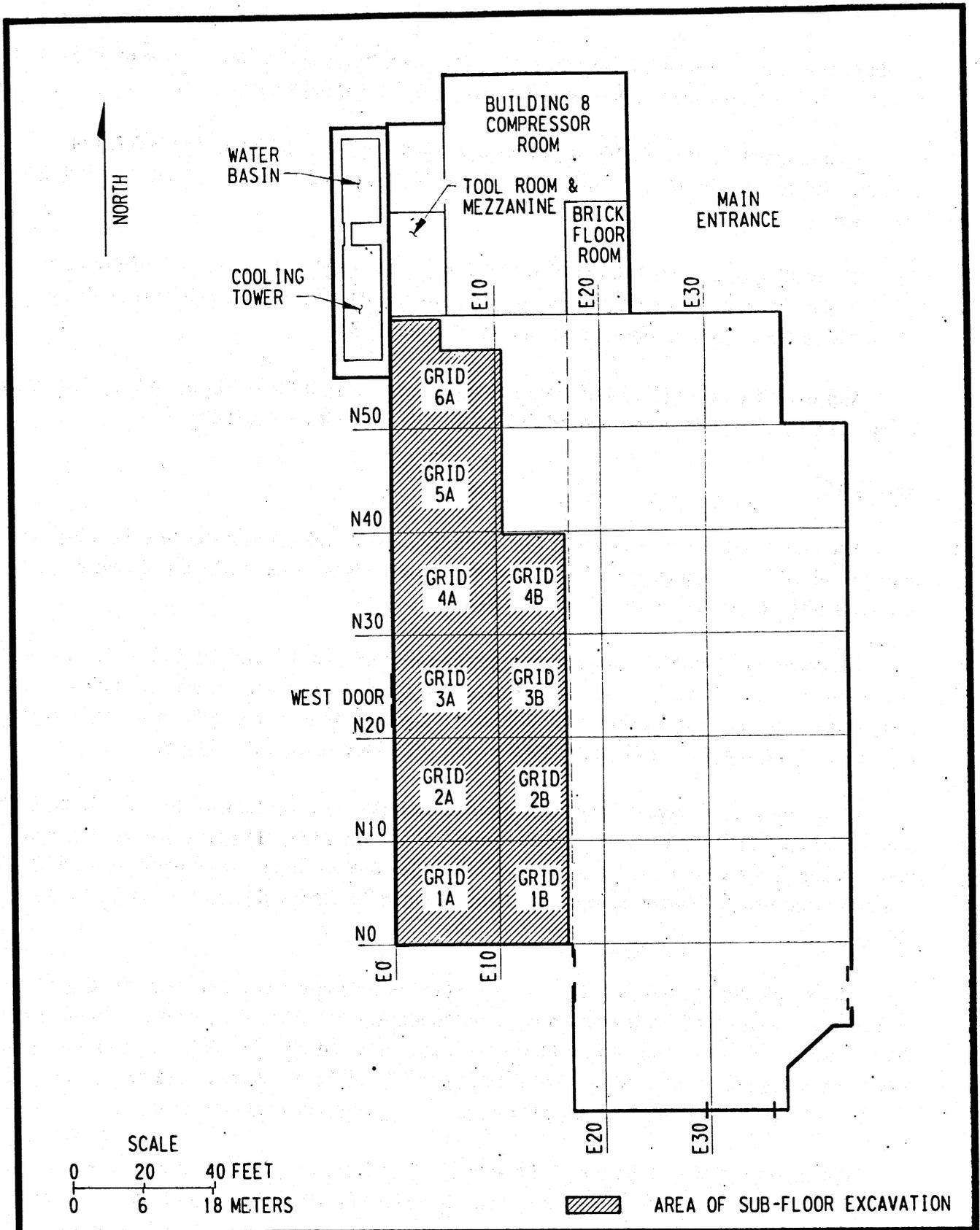
5.2.1 Interior Areas

Building 3

The pre-remedial action surveys revealed that residual radioactive contamination above DOE guidelines was present on the floor, walls, overhead surfaces (trusses, purlins, and roof panels), two furnaces, and miscellaneous areas inside Building 3.

A contaminated overhead area of approximately 1,000 m² (11,000 ft²) consisted of 11 trusses with purlins, roof panels, two exhaust turrets and associated ducts, and miscellaneous equipment such as light fixtures, wiring, and conduit. The areas were first decontaminated with a HEPA-filtered vacuum to remove dust. Light abrasive techniques (wire brushes, scrapers, and sandpaper) were then used to remove rust and other material that was resistant to vacuuming. More intrusive techniques (using the Vacublast™ unit and an electric drill with a wire wheel) were employed for areas that resisted the light abrasive techniques. The two exhaust turrets, three round ventilators, ductwork, and miscellaneous equipment were removed from the overhead areas and placed in low-specific-activity (LSA) boxes or in a controlled area awaiting disposal. Small localized areas of contamination remain in the contact area between the purlins and roof panels and in the overlapping roof panel. This limited area of contamination could not be remediated further without removal of the roof panels. A hazard assessment (Ref. 10) was conducted to evaluate the potential radiation dose to workers and the public from this residual radioactive material; it was determined that the potential dose is very small relative to the cost of further remedial action, and that no further action was warranted.

Approximately 760 m³ (990 yd³) of soil and concrete was excavated from the west bay area of the building (Figure I-5). The concrete was broken up with a concrete saw and jackhammering; the concrete and the soil beneath it were then removed. During excavation of the soil and concrete, three concrete pedestals supporting I-beam supports were found to contain residual radioactive contamination above the DOE guidelines. The three concrete pedestals were so deteriorated that any aggressive decontamination effort could have further jeopardized their integrity. Therefore, after initial decontamination efforts—which did not result in total removal of the contamination to levels below DOE criteria—the decision was made on the basis of economic factors, extent of contamination, potential exposure pathways, and other considerations to conduct a hazard assessment for the three pedestals. The hazard assessment (Ref. 10) concluded that the potential dose from the



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Figure I-5
Sub-Floor Excavation in Building 3

residual radioactive material on these concrete pedestals was extremely low relative to the cost of further remedial action and that use of supplemental limits was appropriate.

Approximately 100 m² (1,100 ft²) of contaminated walls and 1,800 m² (19,000 ft²) of contaminated floors were decontaminated using the HEPA-filtered vacuum and abrasive techniques as needed.

Dismantling of two brick furnaces resulted in approximately 65 m³ (85 yd³) of fire brick, which was crushed, reducing the volume to approximately 41 m³ (54 yd³). This material was used as backfill in the excavation on the eastern side of Building 3.

Approximately 4 m³ (5 yd³) of material was excavated from the mica pit, and approximately 11 m³ (14 yd³) of material was removed from the west cutter pit (Figure I-2).

Building 8

The pre-remedial action surveys in Building 8 revealed residual radioactive contamination above DOE guidelines on most of the floor, walls, overheads (trusses, purlins, and roof panels), two generator pits, and miscellaneous items and debris.

A contaminated overhead area of approximately 49 m² (530 ft²) consisted of three trusses and associated purlins and roof panels. This area was decontaminated using the same techniques described for the Building 3 overhead surfaces. Approximately 0.8 m³ (1 yd³) of miscellaneous building debris (piping, steel plates, conduit, etc.) was removed from Building 8.

Floor areas were decontaminated in the basement and the main floor of Building 8; the total area of decontaminated floor was approximately 430 m² (4,600 ft²). The HEPA-filtered vacuum was used in conjunction with abrasive techniques to remove contamination. In addition, two generator pits and associated equipment were decontaminated using the HEPA-filtered vacuum and light abrasion.

The supplemental surveys indicated residual radioactive contamination above DOE guidelines in Building 8 on most of the floors and walls in the tool room and the floor of the mezzanine above the tool room. Approximately 45 m² (480 ft²) of floor area and 20 m² (230 ft²) of wall area in the tool room and approximately 30 m² (320 ft²) of floor area in the mezzanine were decontaminated. These areas were decontaminated using the same techniques previously described.

The supplemental surveys revealed residual radioactive contamination above DOE guidelines in the brick floor room on most of the floor area; approximately 10 m³ (13 yd³) of brick and soil was excavated. Approximately 85 m² (910 ft²) of contaminated wall area was remediated using the same techniques previously described.

5.2.2 Exterior Areas

Remedial action involving the excavation of radioactively contaminated soil was performed along the western side of Building 3. Approximately 27 m³ (35 yd³) of soil was removed from this area.

5.3 POST-REMEDIAL ACTION MEASUREMENTS

As decontamination of various portions of the site was completed, post-remedial action surveys were performed to ensure that decontamination efforts were successful in meeting DOE cleanup criteria. The post-remedial action report provides a complete discussion of these measurements (Ref. 13). Initial post-remediation surveys were conducted by TMA, the BNI radiological support subcontractor. Survey techniques used during the post-remediation and verification surveys included direct (nontransferable and transferable) surface contamination measurements, walkover gamma scans, exposure rate measurements, and soil sampling. The post-remedial action survey plan (Ref. 14) references the methodologies for each of the survey techniques.

The potential annual dose to a member of the public or to a building employee is within the range of background exposure for the area. The potential annual dose to a future demolition worker would be approximately 15 mrem if one worker is assumed to perform all the removal work. DOE protocol allows the release of property without radiological restrictions in cases where residual radioactive material may exceed release guidelines but does not pose a present or future exposure risk and where the cost of remedial action is unreasonably high relative to the long-term benefits. The supplemental limits to be applied in such cases must achieve the primary dose limit of 100 mrem/yr to any member of the public and further reduce potential doses as low as reasonably achievable (ALARA). The hazard assessment (Ref. 10) for this site determined that residual radioactive materials on the roof panels in the west bay and on the concrete pedestals will not contribute a significant dose to current or future workers or the general public.

5.3.1 Interior Areas

Direct alpha measurements were taken inside the building (Ref. 13) and compared with the average residual contamination guideline of 5,000 dpm/100 cm² for an area 1 m² (11 ft²) (Table I-1). The maximum allowable concentration for residual contamination left in place is 15,000 dpm/100 cm² and applies to an area of 100 cm² (0.11 ft²) or smaller.

On floors and wall surfaces, before discrete post-remedial action survey locations were identified and measurements taken, the entire area was scanned to ensure that no small isolated areas of contamination were missed during the removal action. Measurements were biased within specific 1-m² (11-ft²) areas to demonstrate that previously contaminated areas were no longer contaminated

above criteria. Direct readings were also taken in adjacent areas within approximately 0.5 m (2 ft) of the formerly contaminated areas to verify that contaminants had not spread to previously clean areas during the removal activities.

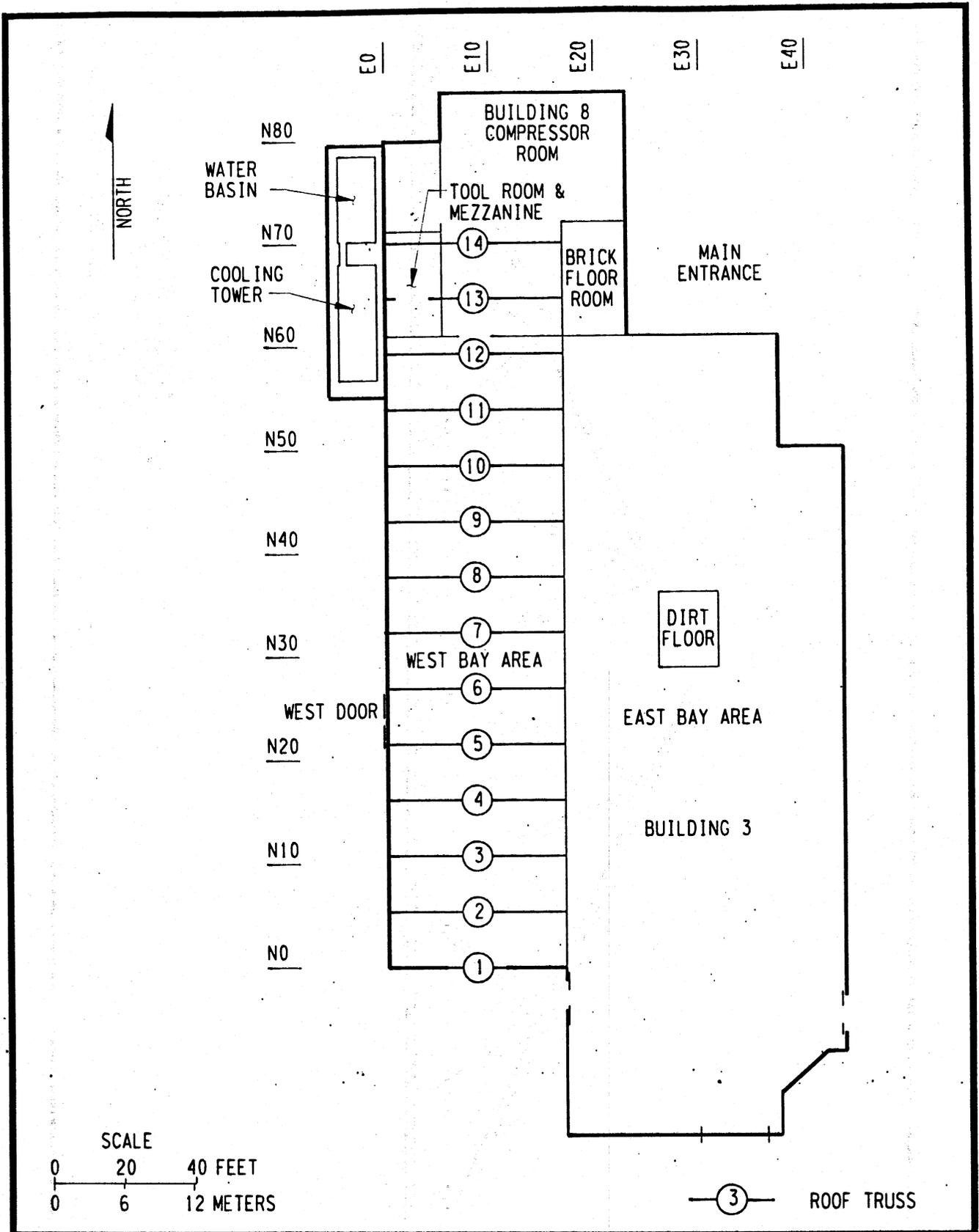
Transferable (removable) alpha and beta/gamma contamination was also measured, at a minimum, at any location that exhibited direct alpha or beta/gamma contamination above the guideline for removable contamination (1,000 dpm/100 cm²).

Composite post-remediation soil samples were also taken from all of the excavated floor areas and analyzed to determine the radionuclide concentrations in the remaining soil before the excavations were backfilled. Analytical results for soil samples include the background level of 1.4 pCi/g for uranium-238.

Building 3

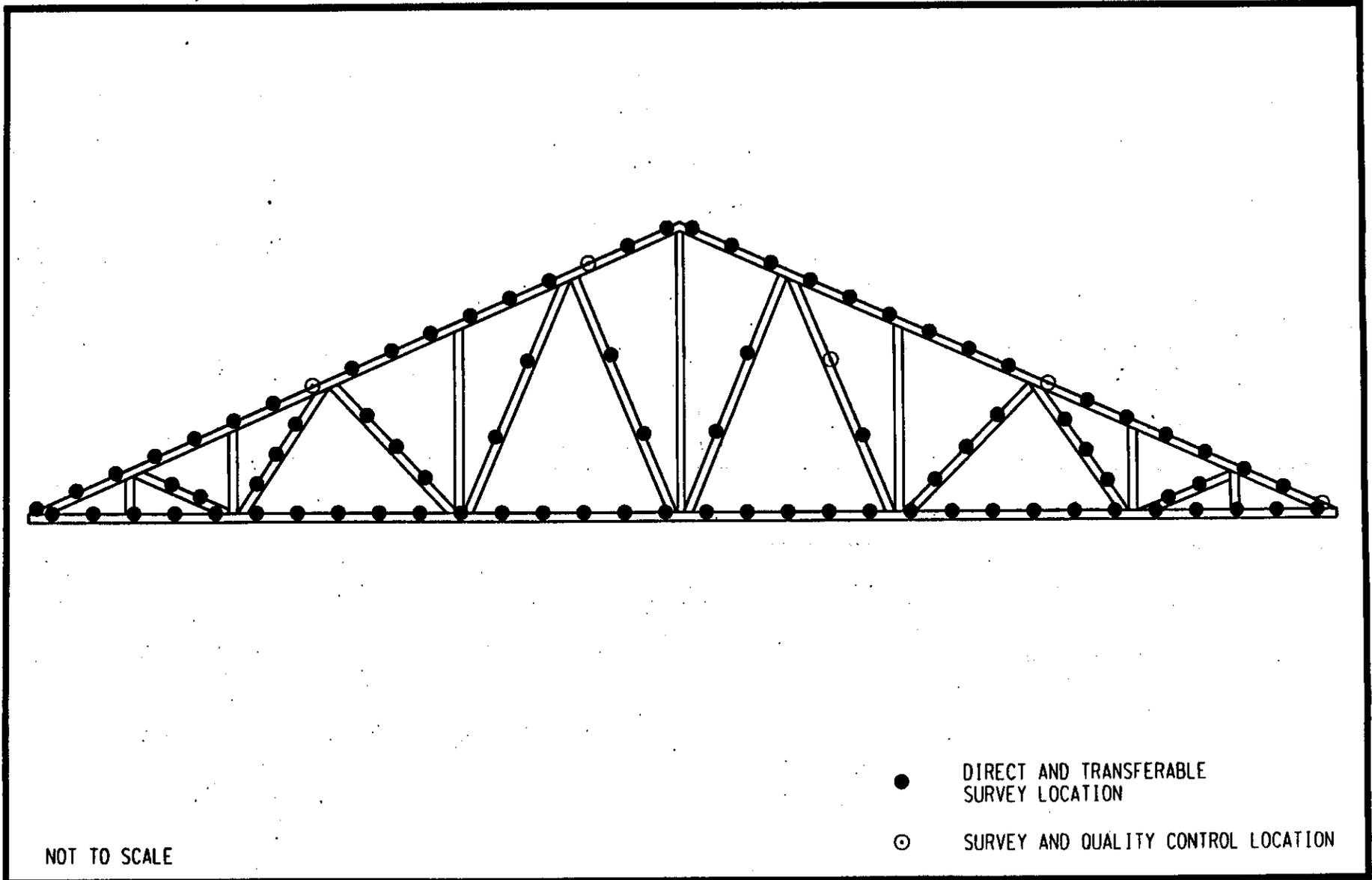
Most of the contamination at the Aliquippa Forge site that was subject to remedial action under FUSRAP has been removed. However, supplemental limits were justified for the roof panel joints, the area between the roof panels and purlins containing contaminated dust and debris, and the three concrete support pedestals in Building 3 because the exposure risk to workers and members of the public is very low relative to the high cost of performing remedial action. Conservative exposure scenarios that consider all credible internal and external pathways for a hypothetical employee in the building, and for a future demolition worker involved in the demolition of Building 3, have been calculated in the hazard assessment (Ref. 10). The potential annual dose to a building employee is within the range of background exposure for the area. The potential annual dose to a future demolition worker would be approximately 15 mrem if one worker is assumed to perform all of the removal work.

Direct and transferable contamination measurements were made on remediated surfaces in Building 3, including overhead surfaces (trusses and purlins), floors, walls, and equipment in the west cutter pit. Figures I-6 through I-11 show remediated areas and survey measurement locations. The sample activity range for direct surface contamination was 0 to 3,415 dpm/100 cm² for alpha and 0 to 13,001 dpm/100 cm² for beta/gamma. For transferrable contamination, the sample activity range was 0 to 131 dpm/100 cm² for alpha and 0 to 283 dpm/100 cm² for beta/gamma. The complete results are presented in the post-remedial action report for the site (Ref. 13). Following confirmation that remediation was complete, no residual contamination above DOE guidelines was detected in any area of Building 3 except for the small quantity of radioactive material evaluated and discussed in the hazard assessment (Ref. 10). Although some direct beta/gamma results for individual isolated areas were above the average guideline of 5,000 dpm/100 cm², they were below DOE guidelines when averaged with the other measurements over the surrounding 1-m² (11-ft²) area, as directed in DOE's verification and certification protocol (Ref. 16). All direct beta/gamma results were below the maximum DOE guideline of 15,000 dpm/100 cm².



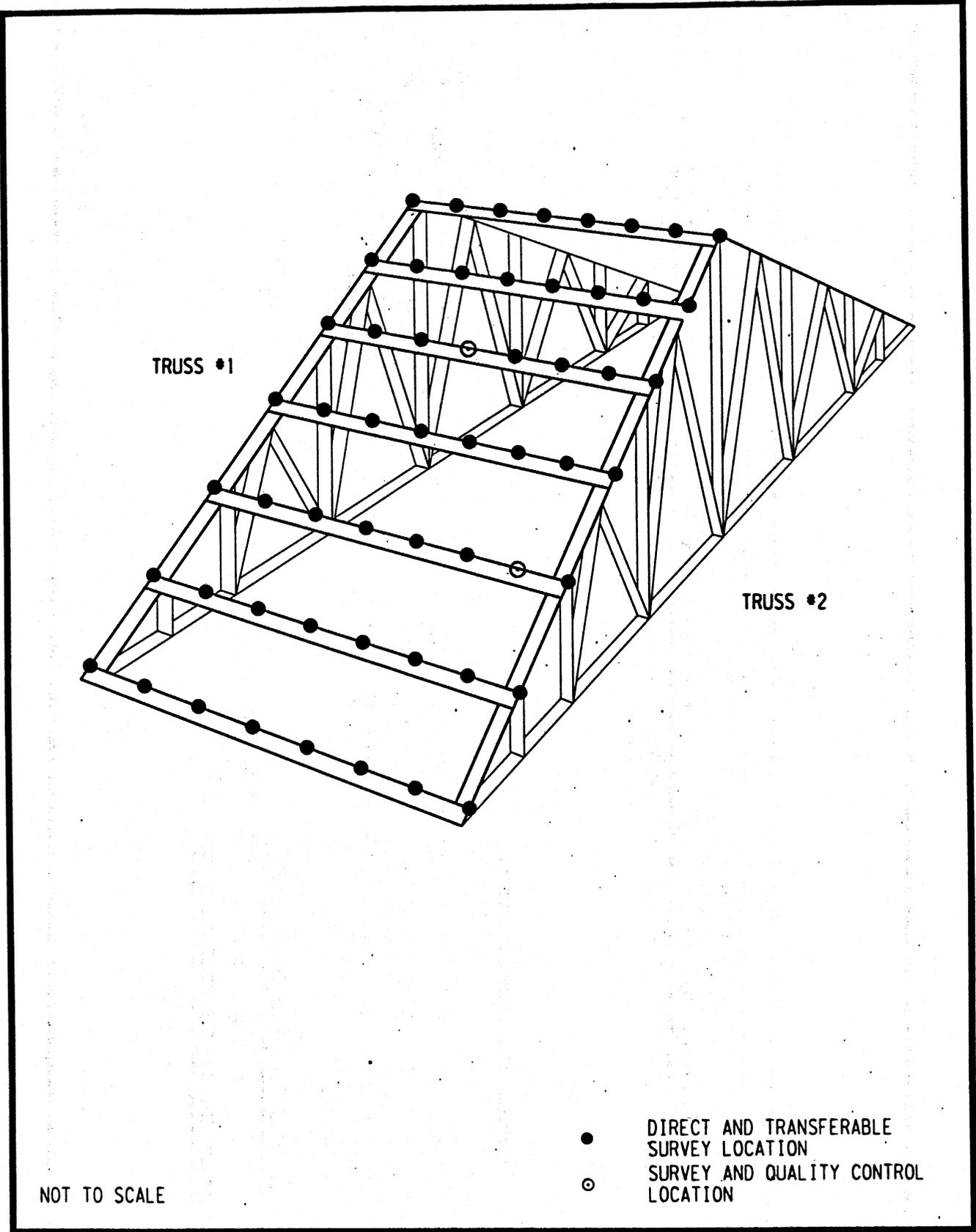
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Figure I-6
Locations of Trusses in West Bay of Buildings 3 and 8



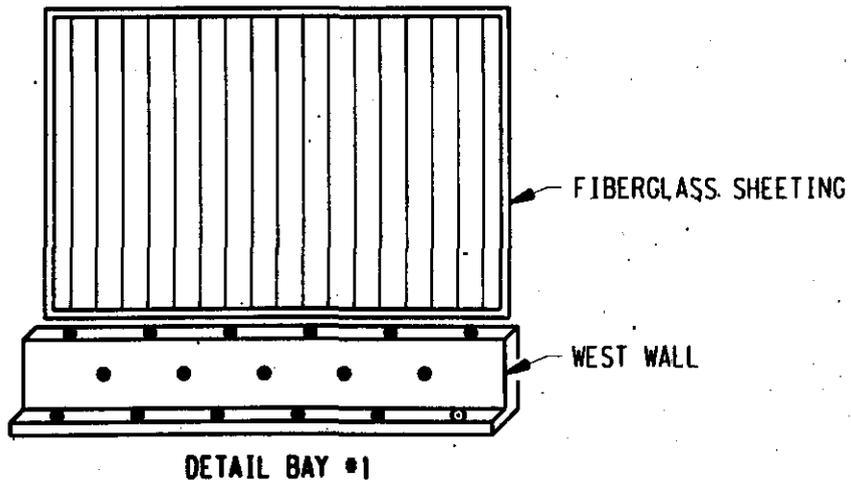
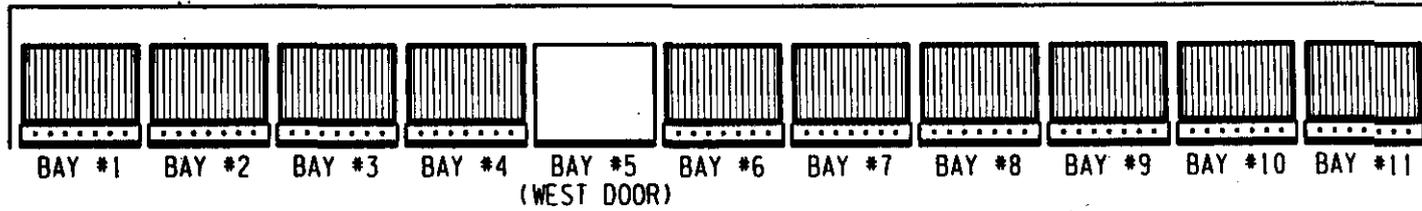
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Figure I-7
Typical Survey Points on West Bay Trusses



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Figure I-8
Typical Purlin Survey Locations

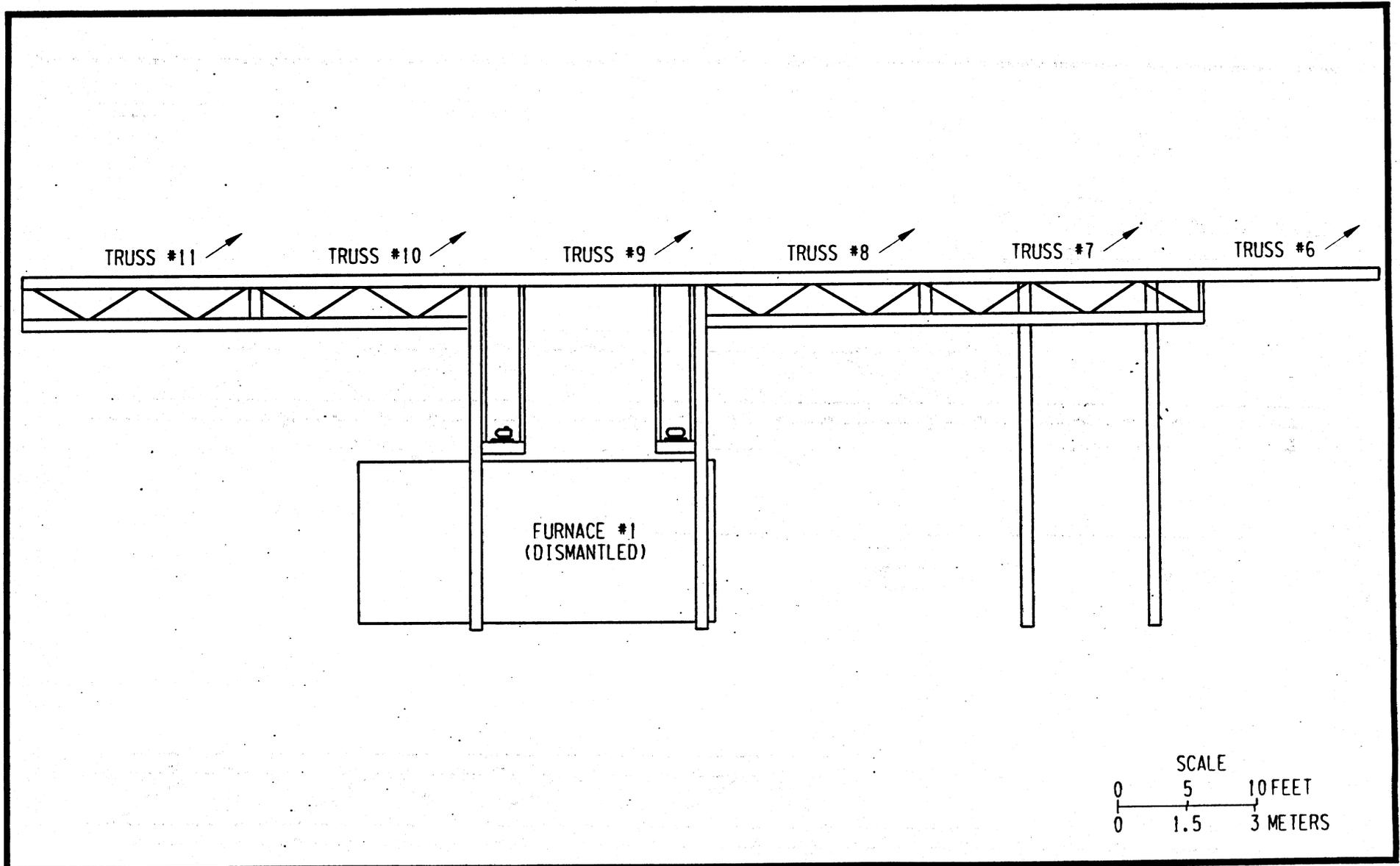


- DIRECT AND TRANSFERABLE SURVEY LOCATION
- ⊙ SURVEY AND QUALITY CONTROL LOCATION

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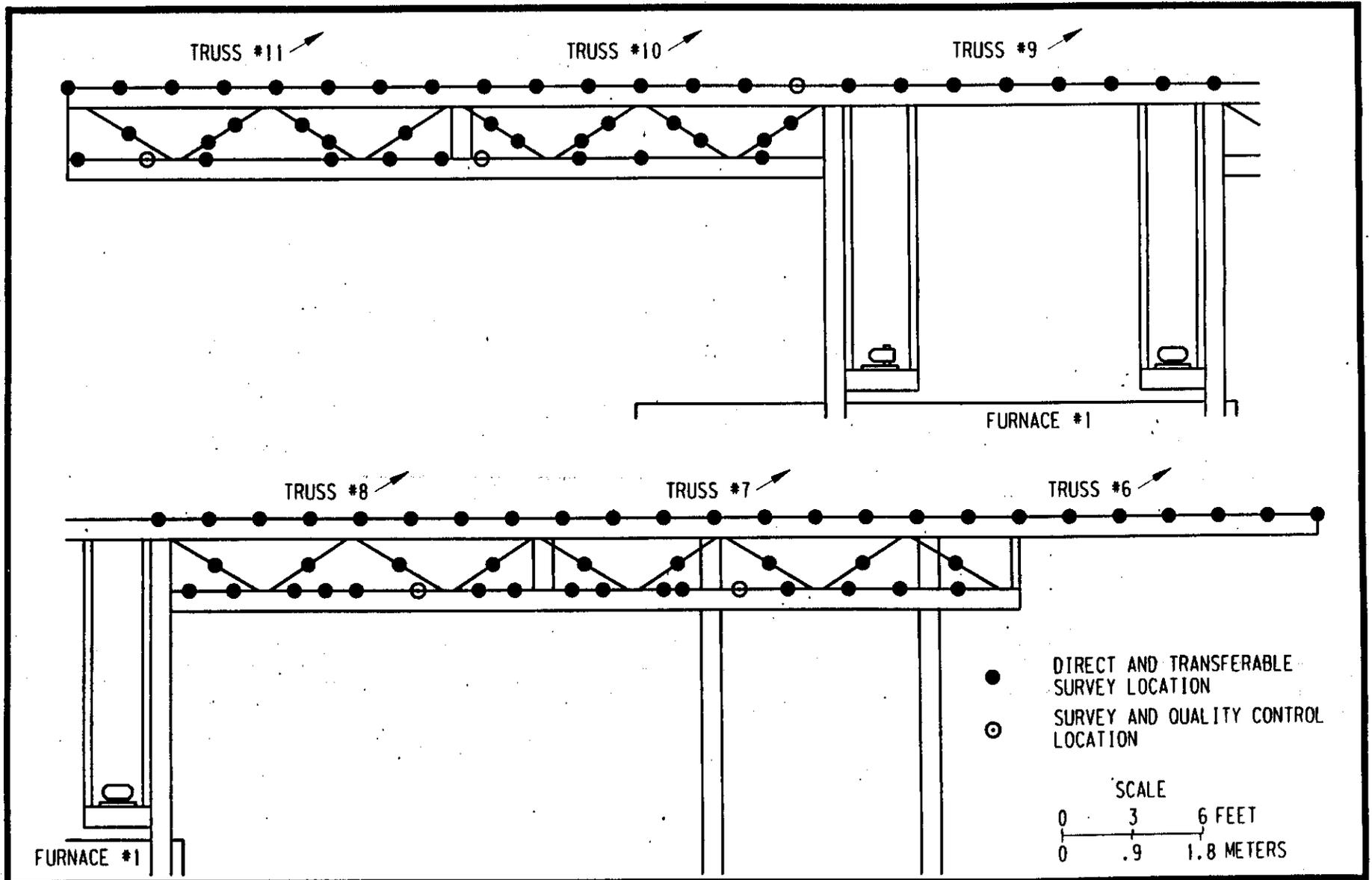
Figure I-9
Post-Remedial Action Measurement Locations
Interior West Bay Wall - Building 3

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Figure I-10
Building 3 Superstructure



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Figure I-11
Post-Remedial Action Measurement Locations
Building 3 Superstructure

Results for the composite soil samples collected in the west bay area and the mica pit are presented in the post-remedial action report (Ref. 13). One sample was composited from the mica pit and one from each of the grids shown in Figure I-5. The concentration of uranium-238 in these soil samples ranged from 2.7 to 13.4 pCi/g. All results are below the site-specific guideline.

In addition to the composite soil samples collected, biased soil samples were collected from locations that exhibited elevated readings revealed by a 100 percent survey (using an HP-260 detector) of the west bay area in Building 3. Sampling locations are shown in Figure I-12; the concentrations of uranium-238 ranged from 2.8 to 36.6 pCi/g. All results for these soil samples are below the DOE guideline presented in Table I-1.

After remediation of the east bay floor, no residual contamination above DOE guidelines was detected. Measurements of direct alpha activity ranged from indistinguishable from background to 403 dpm/100 cm², and measurements of direct beta/gamma activity ranged from indistinguishable from background to 4,636 dpm/100 cm². Measurements of transferable alpha activity ranged from indistinguishable from background to 23 dpm/100 cm², and measurements of transferable beta/gamma activity ranged from indistinguishable from background to 84 dpm/100 cm².

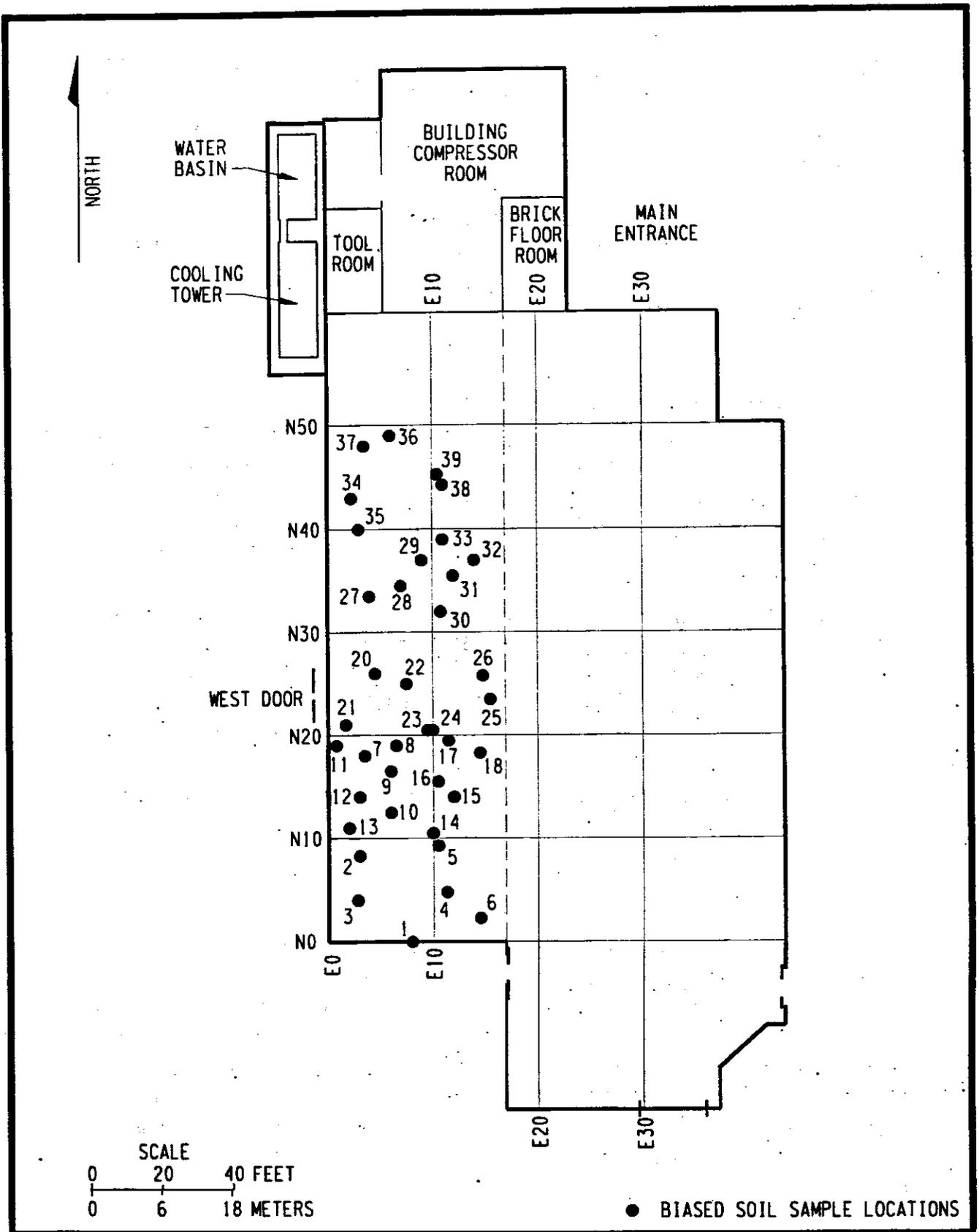
After remediation was completed, air sampling was performed to ensure that the annual radon decay product concentration inside the building did not exceed 0.03 Working Level (WL), as required by DOE Order 5400.5. A WL is any combination of short-lived radon decay products in one liter of air that will result in the ultimate emission of 1.3×10^5 MeV of potential alpha energy. The WLs for the three air samples ranged from 0.004 to 0.010, with an average of 0.007.

Gamma radiation exposure rates for the interior of Building 3 ranged from 7.2 to 11.6 μ R/h, indistinguishable from background (10.1 μ R/h).

Building 8

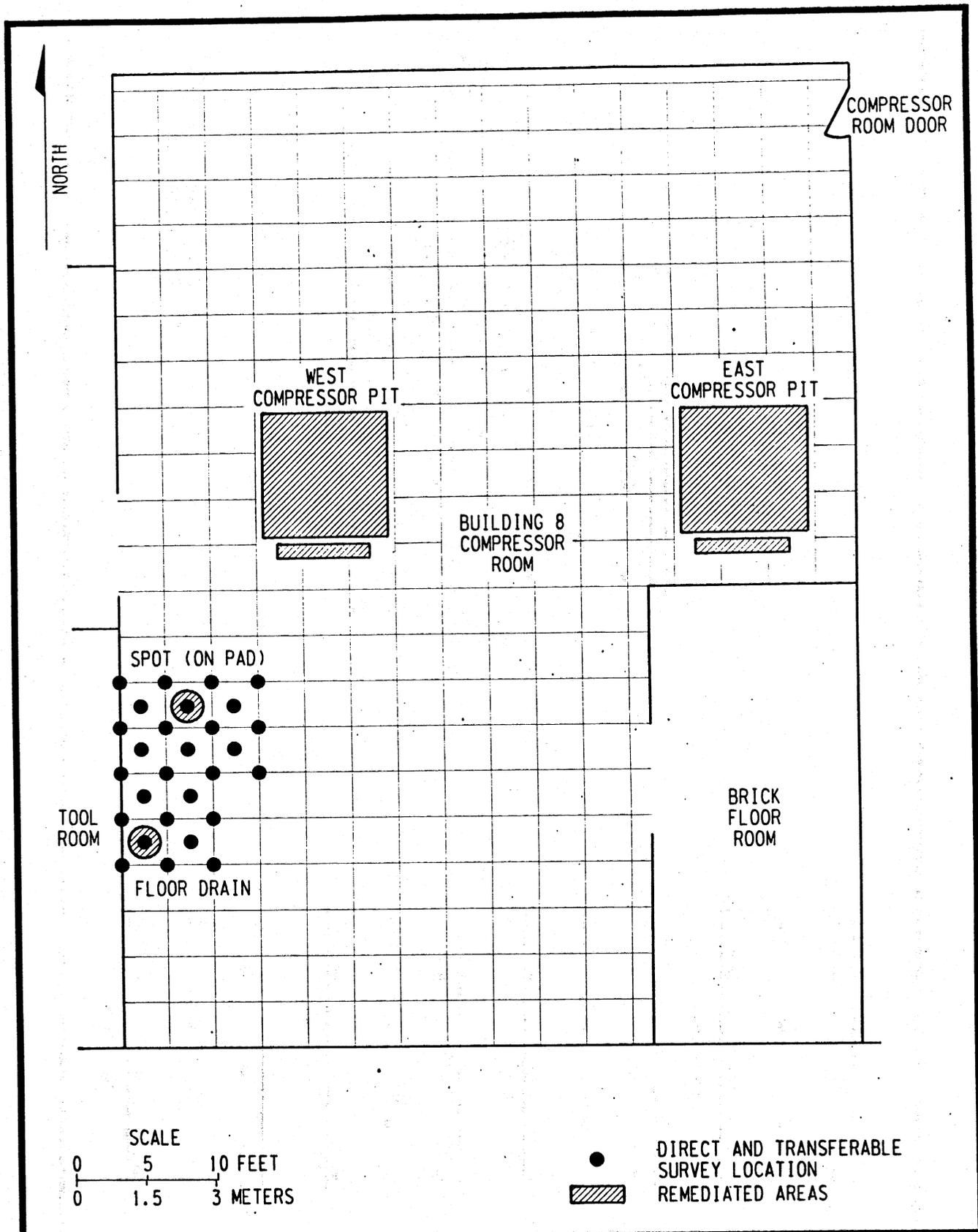
Direct and transferable contamination measurements were made on remediated surfaces in Building 8, including overhead surfaces (trusses and purlins), floors, and walls. Figures I-13 through I-16 show remediated areas and survey measurement locations. The sample activity range for direct surface contamination was 0 to 296 dpm/100 cm² for alpha and 0 to 3,864 dpm/100 cm² for beta/gamma. For transferable contamination, the sample activity range was 0 to 27 dpm/100 cm² for alpha and 0 to 139 dpm/100 cm² for beta/gamma. The complete results are presented in the post-remedial action report (Ref. 13). No residual contamination above DOE guidelines was detected in any area of Building 8 following confirmation that remediation was complete.

Measurements of direct and transferable contamination were made on remediated surfaces in the tool room and the mezzanine directly above it, including floors and walls. Figures I-17 and I-18



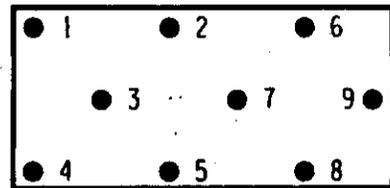
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Figure I-12
Hot Spot Locations in Building 3

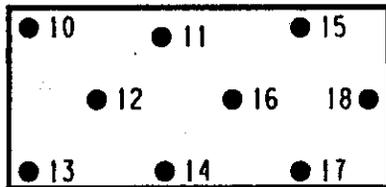


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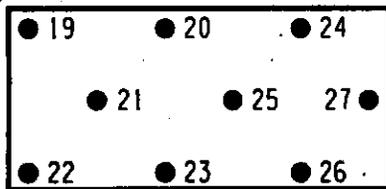
Figure I-13
Remediated Floor Areas and Survey Locations in
Building 8 Compressor Room



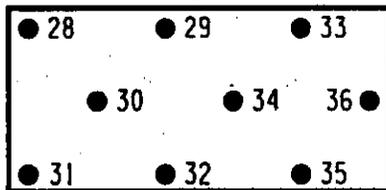
NORTH WALL



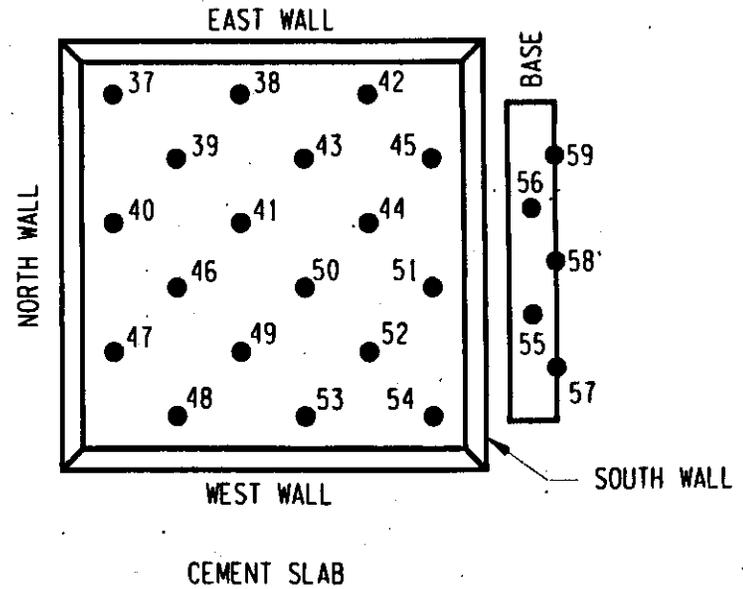
SOUTH WALL



EAST WALL



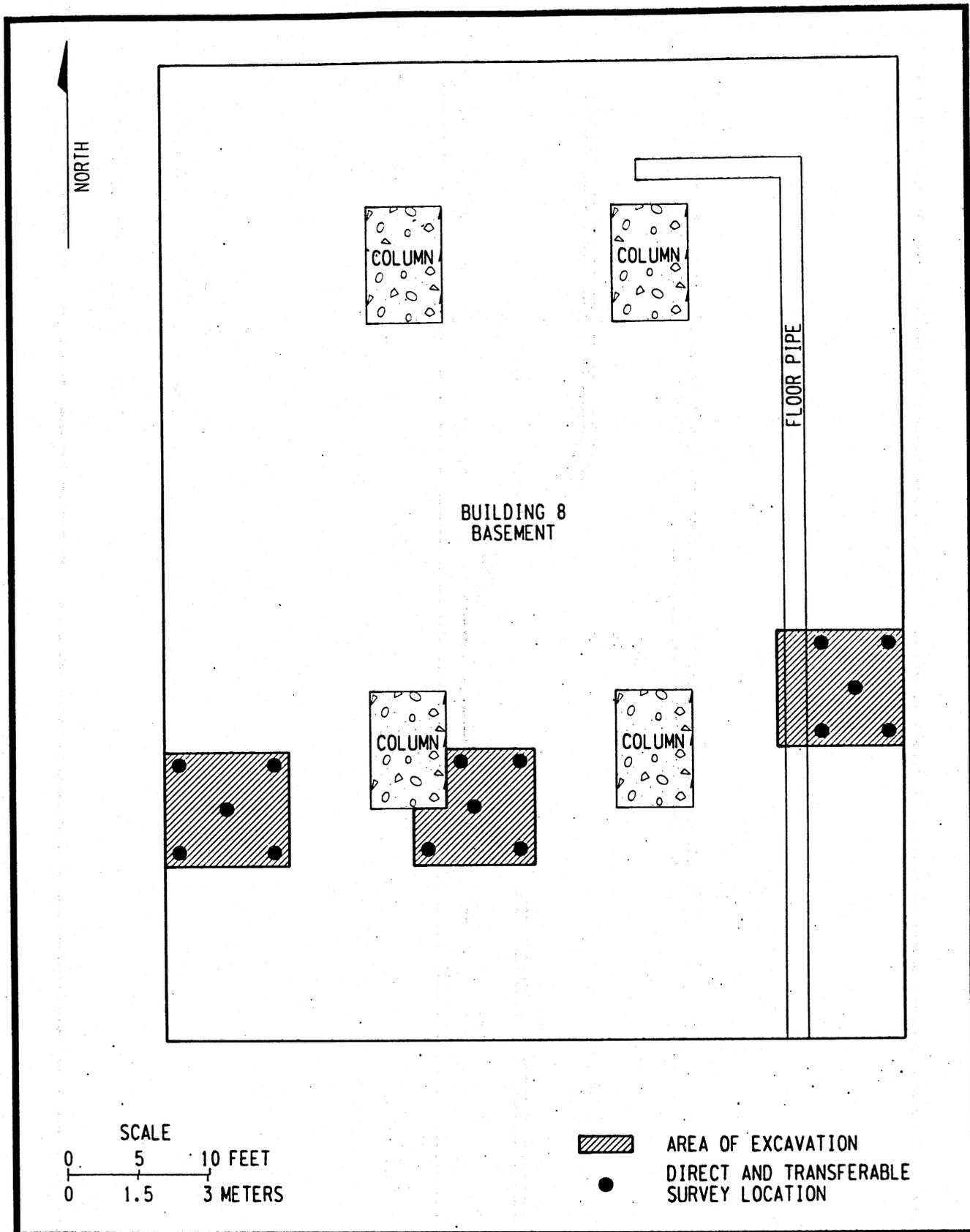
WEST WALL



● DIRECT AND TRANSFERABLE SURVEY LOCATION

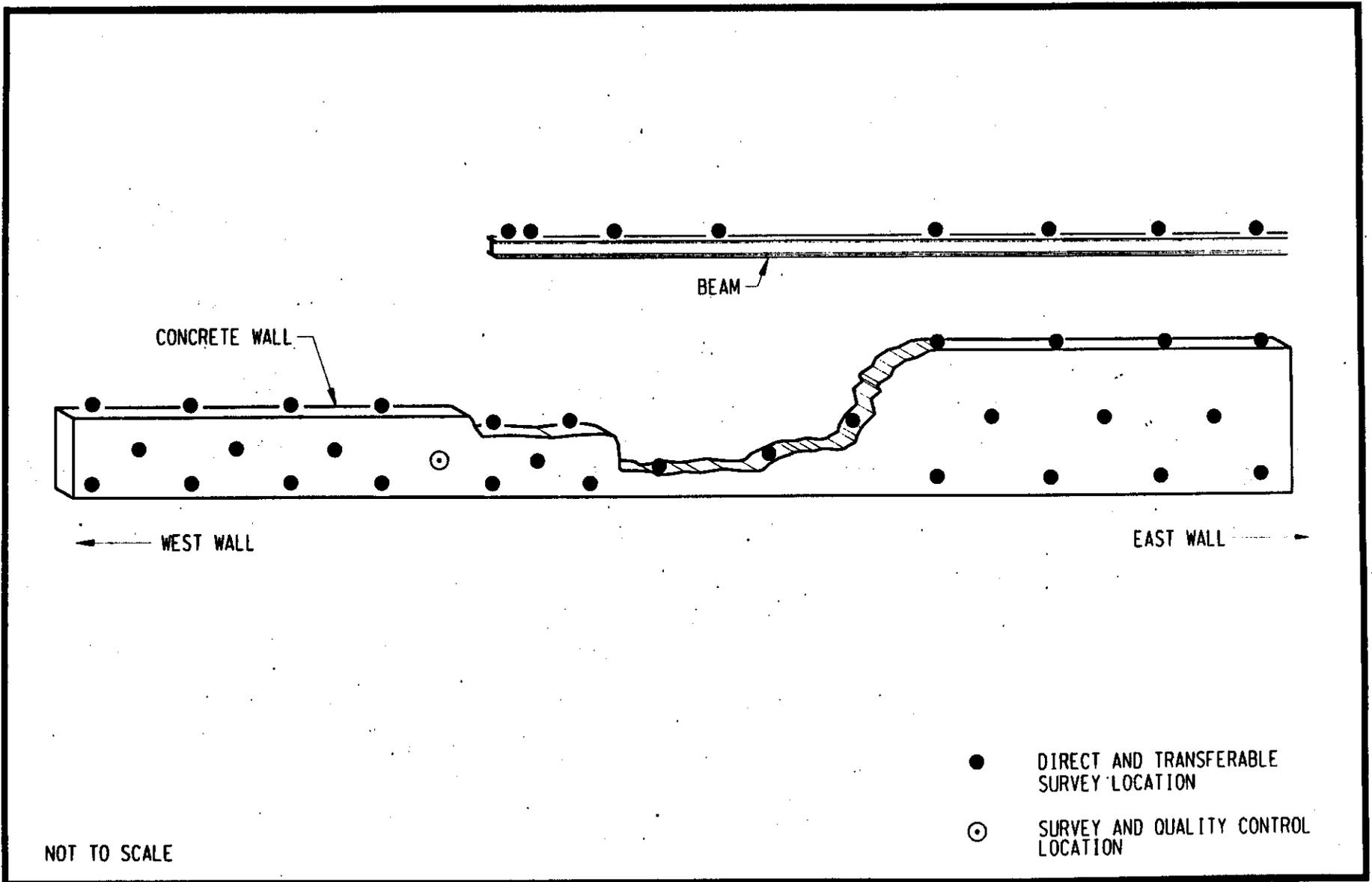
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Figure I-14
Locations of Post-Remedial Action Measurements in a
Typical Compressor Pit



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Figure I-15
Survey Locations in Building 8 Basement



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Figure I-16
Post-Remedial Action Survey Locations on
Southern Wall of Compressor Room

show remediated areas and survey measurement locations. No residual contamination above DOE guidelines was detected in any of the areas remediated.

Measurements of direct and transferable contamination were made on remediated surfaces in the brick floor room, including walls and overheads. Figures I-19 through I-21 show remediated areas and survey measurement locations. No residual contamination above DOE guidelines was detected in any of the areas remediated. In addition, results of a composite soil sample collected from the excavation in the brick floor room showed that contaminant concentrations are well below the site-specific DOE guideline and within range of natural background.

External gamma radiation exposure rates were measured in two locations following excavation in the brick floor room. Both measurements were below DOE guidelines. Measurement results and locations are shown in Figure I-22.

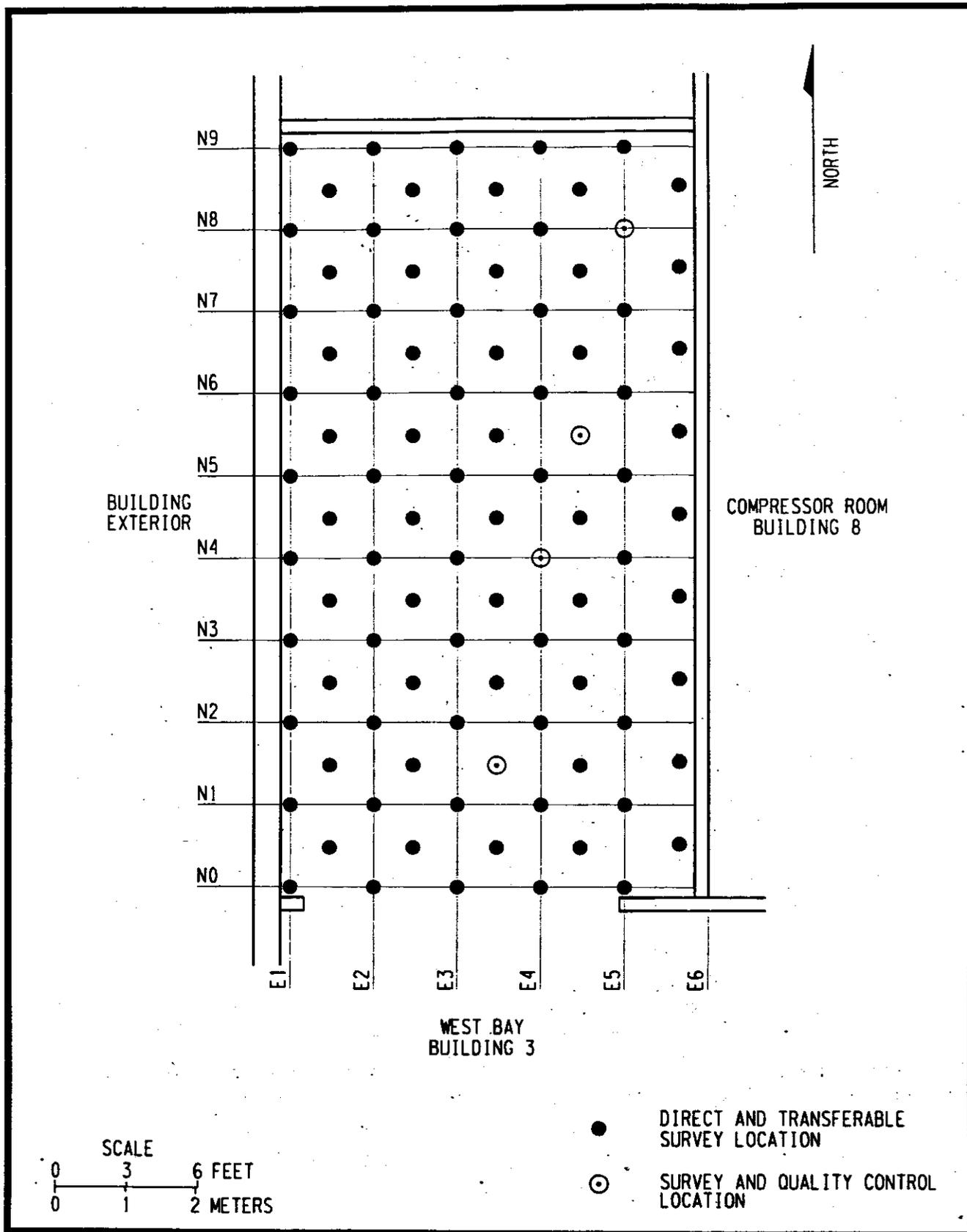
5.3.2 Exterior Areas

An exterior area of soil along the western side of Building 3 was determined to be contaminated above the site-specific guidelines for uranium-238. The soil was excavated (Figure I-23), and the excavations were then surveyed to obtain direct gamma measurements, using a gamma scintillation detector connected to a scaler. Post-remediation soil samples were obtained from each excavation and analyzed to verify that the remaining soil met established cleanup criteria.

Surface Gamma Radiation Scans and Dose Measurements

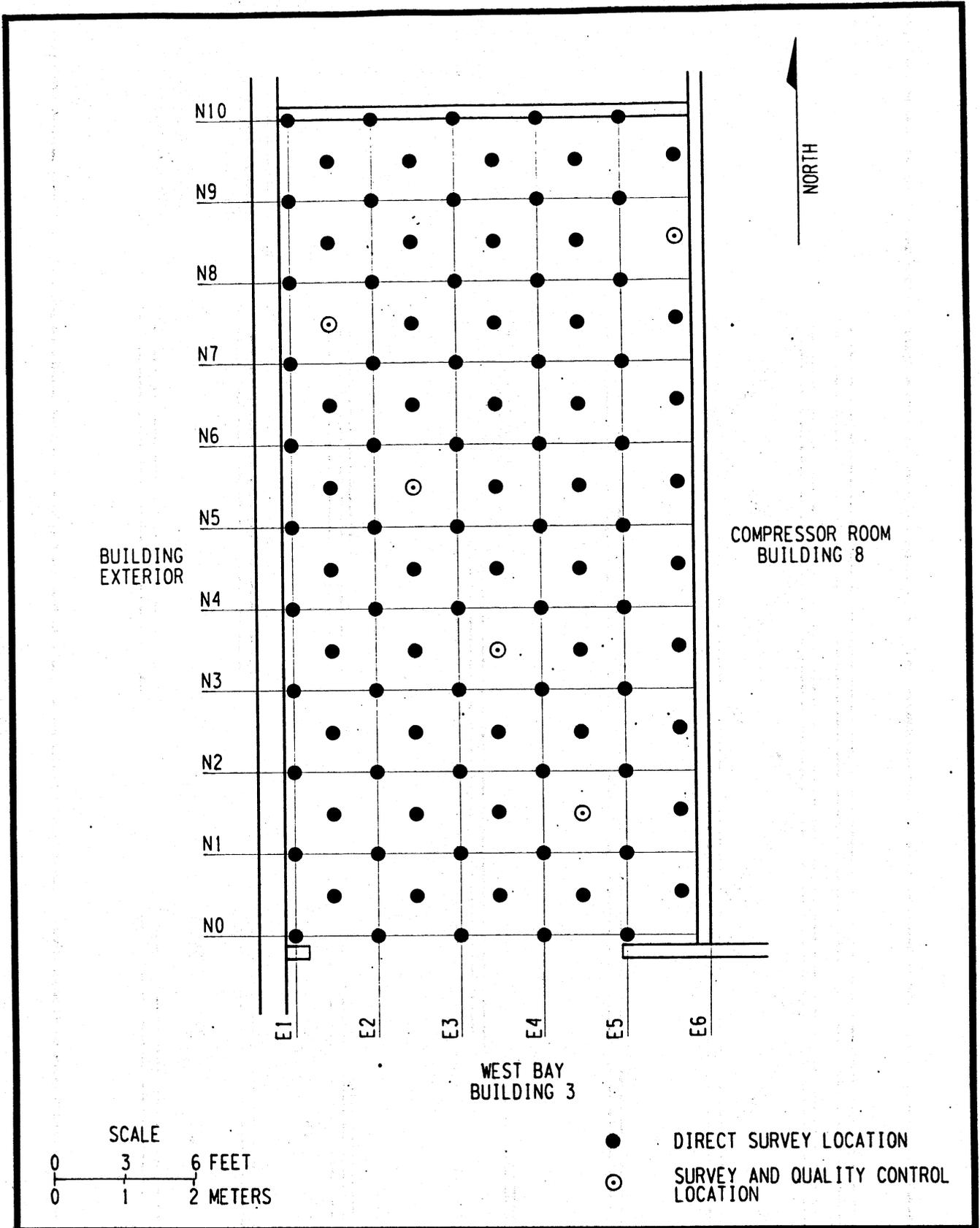
As excavation proceeded in exterior areas, post-remediation walkover surface scans were conducted to determine whether the remaining soil met site-specific cleanup criteria. A gamma scintillation detector connected to a scaler was used for the surveys. The walkover survey provided immediate feedback so that additional excavation and surveying could be performed if residual contamination appeared to exceed remedial action guidelines.

After excavation was completed, gamma radiation exposure rates were measured with a pressurized ionization chamber (PIC) at 1 m (3 ft) above the ground surface. Measurements were recorded in $\mu\text{R/h}$. The results in $\mu\text{R/h}$ were then converted to mrem/yr by multiplying the measured value by the number of hours in a year that a person would be expected to be near the contamination and by a unit conversion factor of 1,000. The average offsite background exposure rate for the area is $10.1 \mu\text{R/h}$. Exposure rates for the exterior areas ranged from 8.7 to $9.6 \mu\text{R/h}$, indistinguishable from background; locations are shown in Figure I-22. Complete results are presented in the post-remedial action report for the site (Ref. 13).



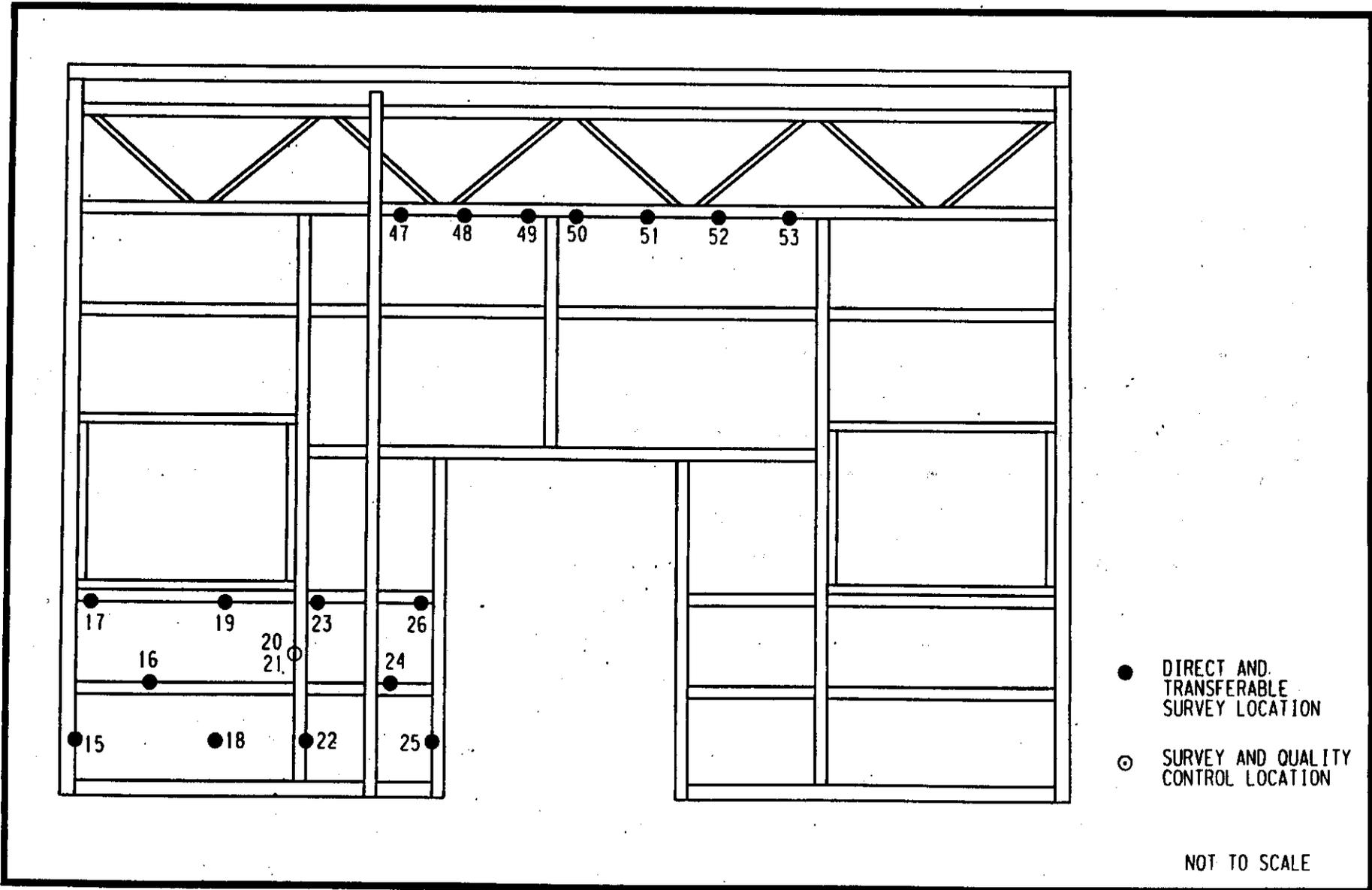
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Figure I-17
Post-Remedial Action Measurements
of the Tool Room Floor



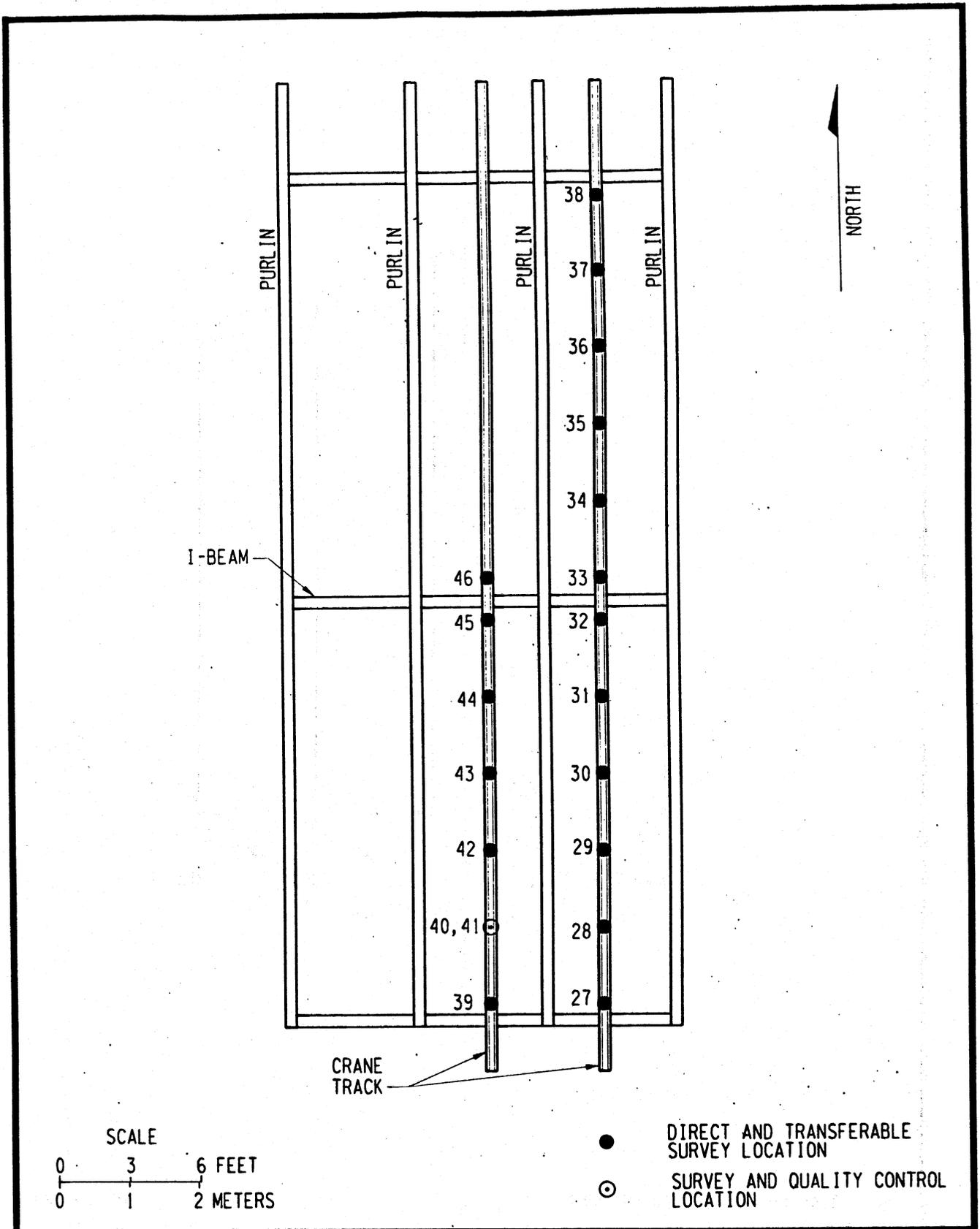
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Figure I-18
Post-Remedial Action Measurements of the Mezzanine Floor



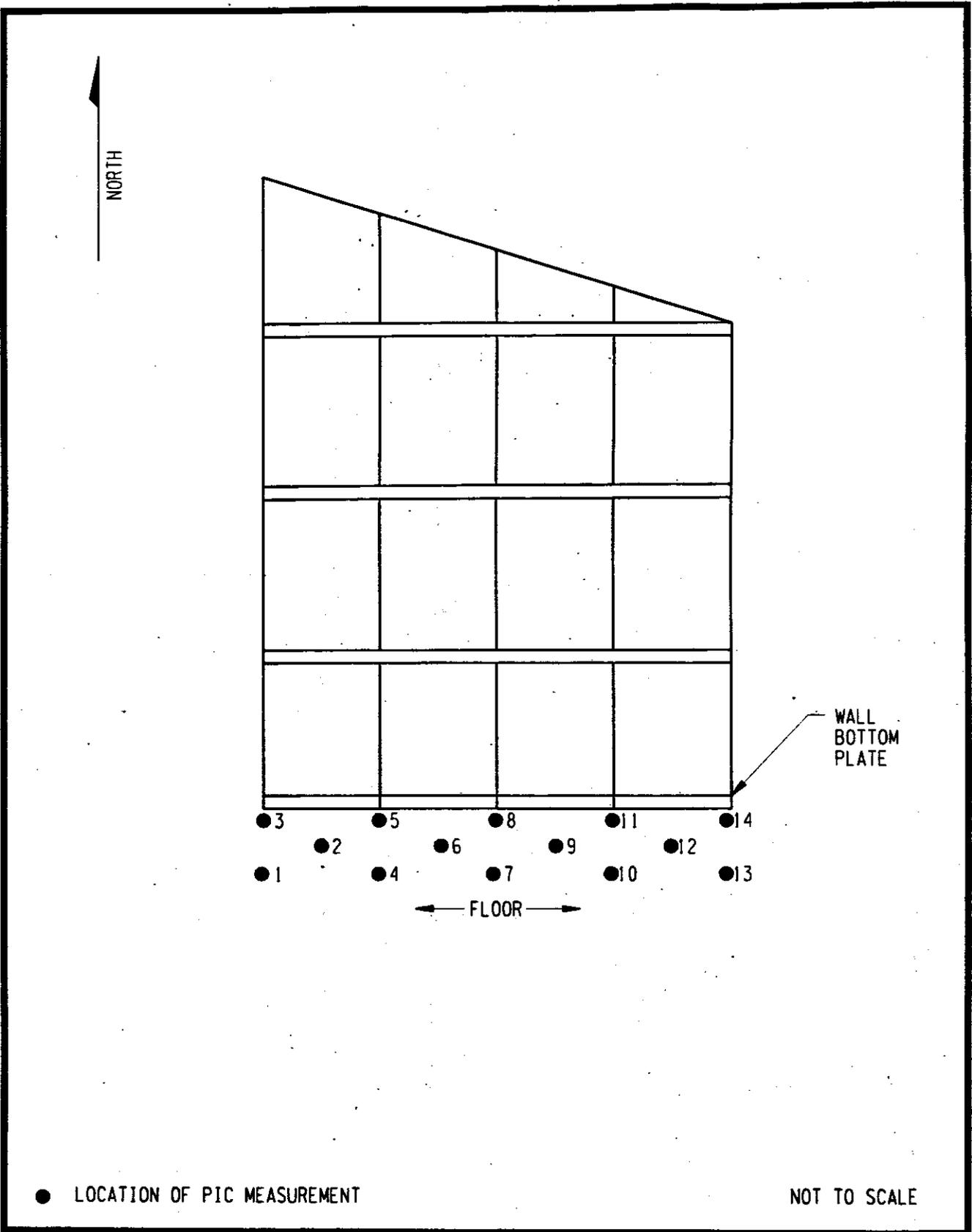
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Figure I-19
Post-Remedial Action Measurements on Western Wall of Brick Floor Room



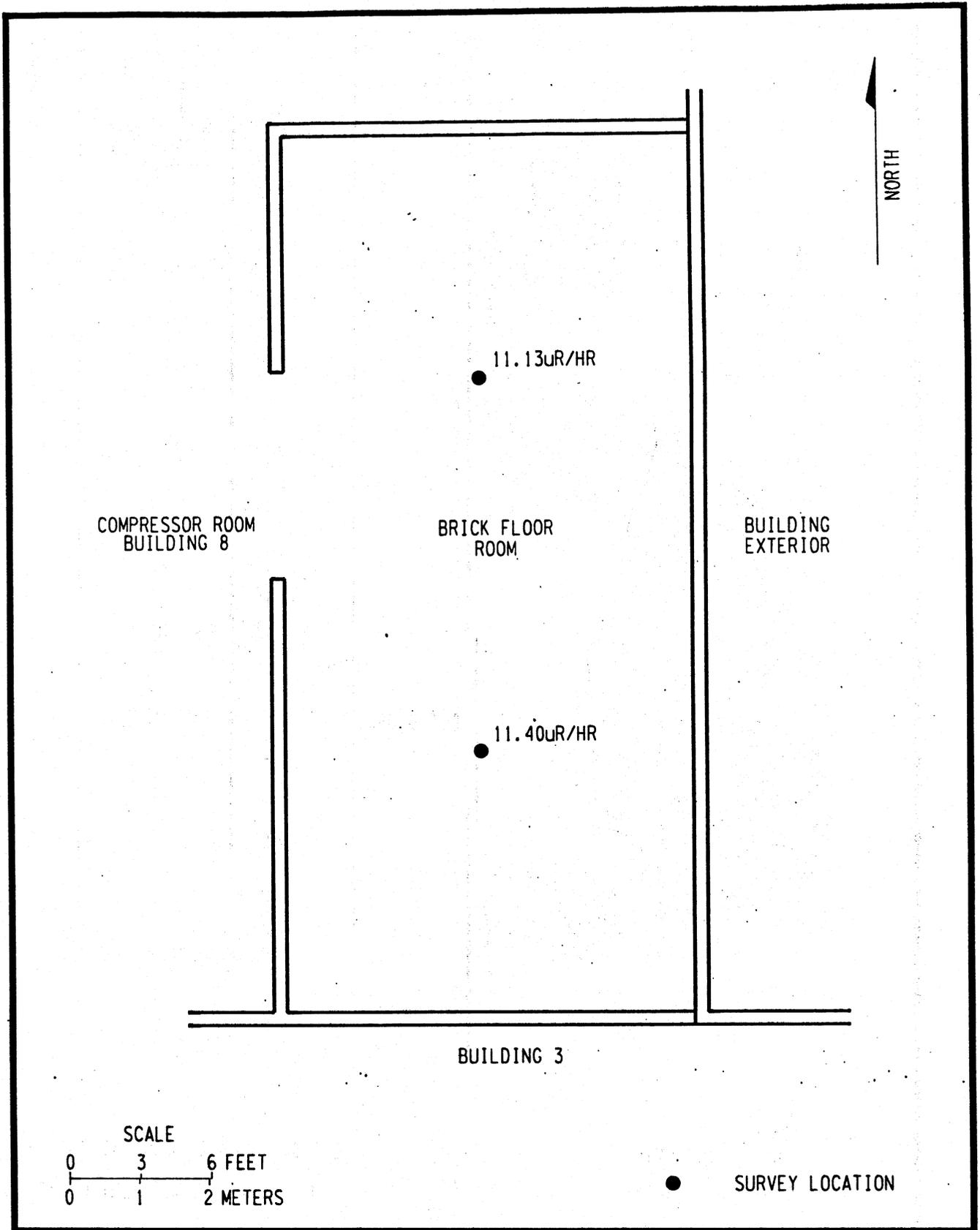
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Figure I-20
Post-Remedial Action Measurements on
Brick Floor Room Overheads



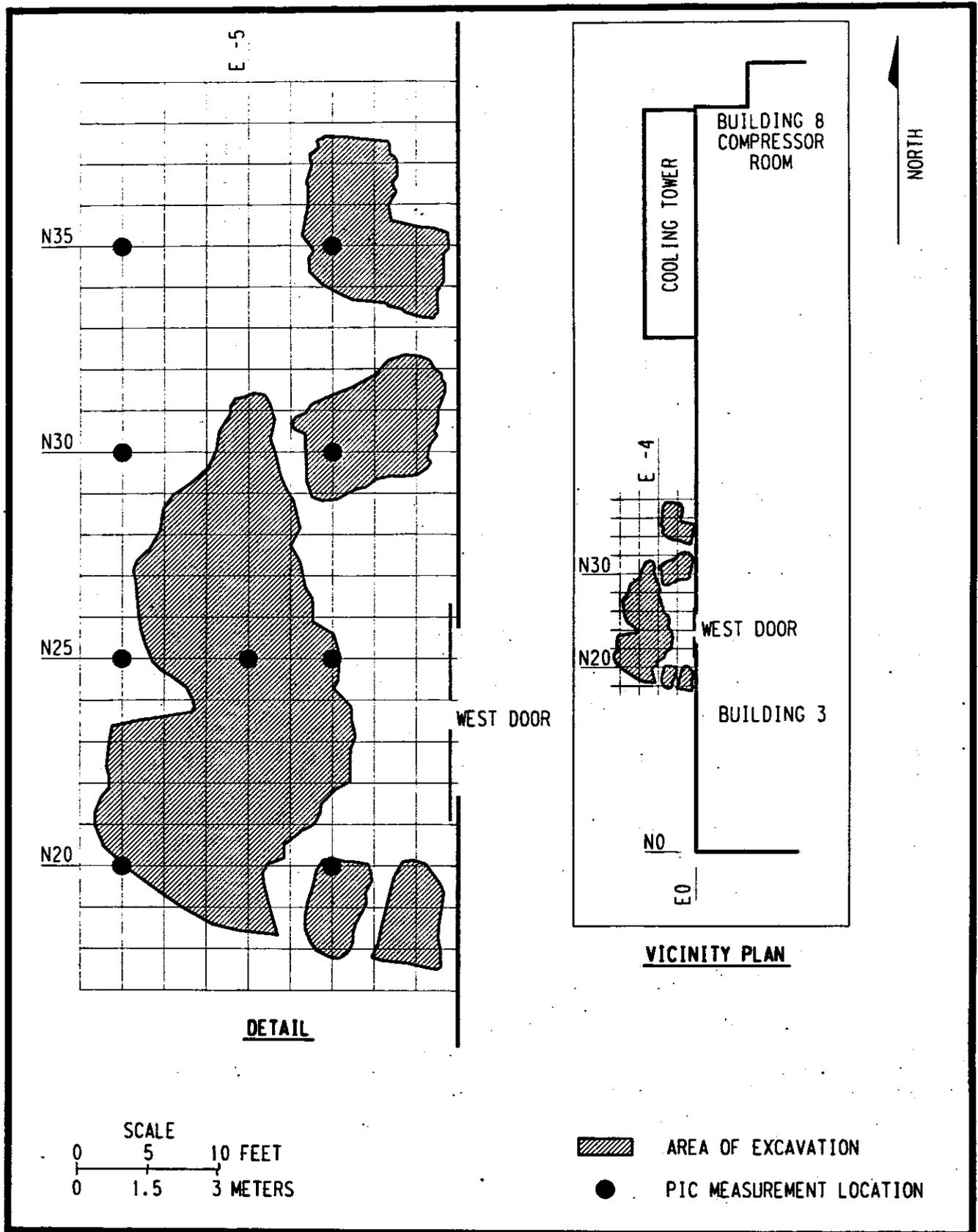
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Figure I-21
Post-Remedial Action PIC Measurement Locations in Brick Floor Room



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Figure I-22
Post-Remedial External Gamma Exposure Rate Measurements on
Brick Floor Room Northern Wall



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Figure I-23
Outside Excavation Areas
and PIC Measurement Locations

Soil Sampling

Soil sampling was the primary method used to confirm that all radioactively contaminated soil exceeding DOE cleanup guidelines was removed. Composite post-remediation soil samples were taken from the excavated areas and analyzed to determine the radionuclide concentrations in the remaining soil before the excavation was backfilled. Composite samples were collected to provide samples representative of a 100-m² (1,100-ft²) area. Twenty-five evenly spaced locations within the 100-m² (1,100-ft²) area were composited to provide each composite sample. Analytical results for soil samples include the background level of 1.4 pCi/g for uranium-238. Composite sample results ranged from <2.7 to 13.4 pCi/g, well below the site-specific guideline. Biased samples were also collected from areas indicating the highest surface radiation measurements; these samples ranged from 2.8 to 36.6 pCi/g, also below the site-specific guideline. Complete results are presented in the post-remedial action report (Ref. 13).

5.4 VERIFICATION ACTIVITIES

Analytical results for post-remedial action surveys indicate that the concentration of residual radioactivity in the remediated areas (except for the roof panels on the western side of the building and three concrete pedestals) are in compliance with applicable DOE cleanup guidelines for radioactive contamination. The IVC reviewed the post-remedial action surveys and results, measurement procedures, and quality assurance data to determine whether the measurements obtained verify that these areas comply with the established DOE guidelines for the site. After completing the verification survey, the IVC reported its findings and recommendations to DOE-Headquarters and the DOE Oak Ridge Operations Office (Ref. 21).

5.5 PUBLIC AND OCCUPATIONAL EXPOSURE

The total radiological dose from all pathways to the public during and following remedial action is well below the primary dose limit of 100 mrem/yr above background.

During the removal action, engineering controls, administrative controls, work practice controls, and personal protective equipment were used to protect remediation workers and members of the public from exposure to radiation above applicable standards, as outlined in a site-specific health and safety plan. These measures also prevented radioactive material from migrating to adjacent uncontaminated areas of the site.

All personnel working in contaminated areas were required to use personal protective equipment specified in the hazardous work permit. If conditions warranted, additional protective clothing and equipment such as hoods and respirators were used.

Workers leaving radioactively contaminated work areas were subjected to a whole-body scan (frisk) at the control point by a health physics technician, who used a hand-held radiation detection instrument to ensure that the workers were not radioactively contaminated and to prevent the potential spread of radioactive contamination to a clean area. If large portions of disposable protective clothing were contaminated, the clothing was disposed of as radioactive waste. To minimize the amount of radioactive waste, if only small areas of the clothing were contaminated, those areas were cut out and disposed of as radioactive waste.

The potential primary exposure pathways for onsite personnel during remediation activities were exposure to external gamma radiation and the inhalation and ingestion of radioactively contaminated airborne dust from the mechanical decontamination of interior structural surfaces. HEPA filtration units and the VacuBlast™ decontamination system were used to control the spread of dust and minimize the potential for contaminants to become airborne.

Potential exposure pathways for members of the public included inhalation and ingestion of radioactively contaminated airborne dust generated during the excavation of contaminated soil outside Building 3. During excavation of the exterior area, the potential for dust migration was minimized by maintaining adequate soil moisture with a fine mist of water.

During remediation, area air particulate sampling was performed adjacent to areas being remediated to ensure that no member of the public was exposed to radioactivity above DOE guidelines (DOE Order 5400.5). This guideline was established to protect members of the general public and the environment against undue risk from radiation. A RAS-1 high-volume air sampler was used; the filters were collected daily and counted after a period of time to allow for radon decay. The limits expressed in DOE Order 5400.5 are derived concentration guides (DCGs), the concentration of a particular radionuclide that would yield a committed effective dose equivalent of 100 mrem/yr (the DOE basic dose limit) to an individual continuously inhaling the radionuclide for an entire year. Concentrations of uranium-238 measured by area particulate air samplers at the access control point within Building 3 ranged from indistinguishable from background to 4.2×10^{-12} $\mu\text{Ci/ml}$ (0.004 pCi/L) and averaged 1.8×10^{-13} $\mu\text{Ci/ml}$ (0.0018 pCi/L). The DCG is 2.0×10^{-12} $\mu\text{Ci/ml}$ (0.002 pCi/L) for uranium-238. Although the maximum concentration of uranium-238 over one work-day as measured by the area particulate air sampler exceeded the DCG, the average concentration over the duration of the remediation indicates that the annual dose limit of 100 mrem/yr was not exceeded. In addition, placing the air sampler at the access-control point rather than at the property line resulted in very conservative uranium-238 concentration results. Exposure of the public to radioactivity at the property line was well below the annual dose limit.

Particulate air monitoring devices were also placed in the areas being remediated. The concentrations of uranium-238 ranged from indistinguishable from background to 1.1×10^{-10} $\mu\text{Ci/ml}$ (0.11 pCi/L). These concentrations were conservatively derived by collecting air particulate samples daily from lapel air samplers worn by workers. After the gross activity per volume of air that

passed through the filter was determined, the source of all activity on the filter was conservatively assumed to be uranium-238. The measured airborne concentrations were then compared with the applicable DOE guideline, the derived air concentrations (DACs). For occupational exposures (DOE Order 5480.11) to airborne uranium-238, the DAC is 2.0×10^{-11} $\mu\text{Ci/ml}$ (0.02 pCi/L). The high concentration of uranium-238 was measured by a lapel monitor worn by a worker in respiratory protection over a period of 3 hours and 45 minutes during the decontamination of the west furnace and therefore does not represent an actual occupational exposure. A high-volume air sampler at the perimeter of the work area during the same day measured a concentration of 1.9×10^{-13} $\mu\text{Ci/ml}$ (0.00019 pCi/L) over 9 hours, well below the DCG.

5.6 COSTS

The costs associated with the remedial action performed at the Aliquippa Forge site are listed in Table I-3.

Table I-3
Cost of Remedial Action at the Aliquippa Forge Site

Description	Amount
Characterization	\$ 185,000
Design Engineering	28,000
Remedial Action Operations	3,704,000
Waste Transportation and Disposal	396,000
Final Engineering Reports	85,000
Project Management ^a	<u>2,620,000</u>
TOTAL	<u>\$ 7,018,000</u>

^aProject support cost includes all travel, materials and supplies, leased equipment, and administrative cost.

REFERENCES

1. Memorandum from A. Wallo (DOE-HQ) to J. Fiore (DOE-HQ), "Expedited Procedures for Remedial Actions at Small Sites," June 1990 (BM CCN 069397).
2. U.S. Department of Energy (DOE), Description of the Formerly Utilized Sites Remedial Action Program, ORO-777, Oak Ridge, Tenn., September 1980.
3. Argonne National Laboratory (ANL), Radiological Survey of Universal Cyclops, Inc., Titusville Plant (Formerly Vulcan Crucible Steel Company), Aliquippa, Pennsylvania, May 2-8, 1978, May 1978.
4. ANL, Action Description Memorandum, Interim Cleanup of Contaminated Materials from Building 3 at the Universal Cyclops Site, Aliquippa, Pennsylvania, BNI CCN 056574, October 1988.
5. Bechtel National, Inc. (BNI), Site Plan for Universal Cyclops, Aliquippa, Pennsylvania, DOE/OR/20722-122 revision 1), prepared for U.S. Department of Energy, Oak Ridge Operations, Oak Ridge, Tenn., August 1988.
6. Letter Report, R. R. Harbert (BNI) to William M. Seay (DOE-FSRD), "Post-Remedial Action Summary of the Aliquippa Forge 1988 Decontamination of Building 3," BNI CCN 061787, May 16, 1989.
7. Oak Ridge Institute for Science and Education (ORISE), Radiological Survey of the Aliquippa Forge Site, West Aliquippa, Pennsylvania, Environmental Survey and Site Assessment Program, December 1992.
8. ORISE, Characterization Survey of Portions of the Aliquippa Forge Site, West Aliquippa, Pennsylvania, Environmental Survey and Site Assessment Program, December 1992.
9. ORISE, Additional Characterization Survey of Buildings 3 and 8, Aliquippa Forge Site, West Aliquippa, Pennsylvania, ORISE 94/B-77, Oak Ridge, Tenn., February 1994.
10. BNI, Hazard Assessment for Radioactive Contamination at the Aliquippa Forge Site, Aliquippa, Pennsylvania, January 1995.
11. Letter from J. D. Kopotic (DOE-FSRD) to J. G. Yusko (Pennsylvania Dept. of Environmental Resources), "Progress Report and Plans Regarding the Cleanup of the Aliquippa Forge Site," BM CCN 120432, August 17, 1994.
12. Letter from J. D. Kopotic (DOE-FSRD) to J. G. Yusko (Pennsylvania Dept. of Environmental Resources), "Disposition of Crushed Concrete Debris Resulting from the Cleanup of the Aliquippa Forge Site," BNI CCN 120433, August 30, 1994.
13. BNI, Post-Remedial Action Report for the Aliquippa Forge Site, DOE/OR/21949-384, Oak Ridge, Tenn., May 1996.

14. [Memorandum from T. M. Xing \(BNI\) to M. W. Davis \(BNI\), "Post-Remedial Action Survey Plan," BNI CCN 105432, June 23, 1993.](#)
15. Environmental Protection Agency, 40 CFR 192, "Standards for Protection Against Uranium Mill Tailings," April 1980.
16. DOE, Verification and Certification Protocol for the Office of Environmental Restoration FUSRAP and D&D Program, Revision 3, November 1990.
- 17.** DOE, FUSRAP Summary Protocol - Identification, Characterization, Designation, Remedial Action, Certification, January 1986.
18. DOE, Design Criteria for Formerly Utilized Sites Remedial Action Program (FUSRAP) and Surplus Facilities Management Program (SFMP), 14501-00-DC-01, Rev. 2, Oak Ridge, Tenn., March 1986.
19. [ANL, Derivation of Uranium Residual Radioactive Material Guidelines for the Aliquippa Forge Site, prepared for DOE by ANL Environmental Assessment and Information Services Division, Argonne, September 1992.](#)
- 20.** DOE, Environmental Compliance Assessment for the Aliquippa Forge Site, Aliquippa, Pennsylvania, July 1990.
21. ["RISE, Verification Survey of Buildings 3. and 8, Aliquippa Forge Site, West Aliquippa, Pennsylvania, Oak Ridge, Tenn., July 1995.](#)
22. DOE, Historical American Engineering Record for the Vulcan Crucible Steel Company (Aliquippa Forge), HAER No: PA-278 and HAER No: PA-278-A, June 1994.
23. U.S. Code of Federal Regulations, 40 CFR 192, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings," July 1, 1995.

APPENDIX I-A
DOE ORDER 5400.5, CHAPTER IV
RESIDUAL RADIOACTIVE MATERIAL

CHAPTER IV

RESIDUAL RADIOACTIVE MATERIAL

1. **PURPOSE.** This chapter presents radiological protection requirements and guidelines for cleanup of residual radioactive material and management of the resulting wastes and residues and release of property. These requirements and guidelines are applicable at the time the property is released. Property subject to these criteria includes, but is not limited to sites identified by the Formerly Utilized Sites Remedial Action Program (FUSRAP) and the Surplus Facilities Management Program (SFMP). The topics covered are basic dose limits, guidelines and authorized limits for allowable levels of residual radioactive material, and control of the radioactive wastes and residues. This chapter does not apply to uranium mill tailings or to properties covered by mandatory legal requirements.
2. **IMPLEMENTATION.** DOE elements shall develop plans and protocols for the implementation of this guidance. FUSRAP sites shall be identified, characterized, and designated, as such, for remedial action and certified for release. Information on applications of the guidelines and requirements presented herein, including procedures for deriving specific property guidelines for allowable levels of residual radioactive material from basic dose limits, is contained in DOE/CH 8901, "A Manual for Implementing Residual Radioactive Material Guidelines, A Supplement to the U.S. Department of Energy Guidelines for Residual Radioactive Material at FUSRAP and SFMP Sites," June 1989.
 - a. **Residual Radioactive Material.** This chapter provides guidance on radiation protection of the public and the environment from:
 - (1) Residual concentrations of radionuclides in soil (for these purposes, soil is defined as unconsolidated earth material, including rubble and debris that might be present in earth material);
 - (2) Concentrations of airborne radon decay products;
 - (3) External gamma radiation;
 - (4) Surface contamination; and
 - (5) Radionuclide concentrations in air or water resulting from or associated with any of the above.
 - b. **Basic Dose Limit.** The basic dose limit for doses resulting from exposures to residual radioactive material is a prescribed standard from which limits for quantities that can be monitored and controlled are derived; it is specified in terms of the effective dose equivalent as defined in this Order. The basic dose limits are used for deriving guidelines for residual concentrations of radionuclides in soil. Guidelines for residual concentrations of thorium and radium in soil, concentrations of airborne radon decay products, allowable indoor external gamma radiation levels, and residual surface contamination concentrations are based on existing radiological protection standards (40 CFR Part 192; NRC Regulatory Guide 1.86 and subsequent NRC guidance on residual radioactive material). Derived guidelines or limits based on the basic dose limits for those quantities are used only when the guidelines provided in the existing standards are shown to be inappropriate.

- c. **Guideline.** A guideline for residual radioactive material is a level of radioactive material that is acceptable for use of property without restrictions due to residual radioactive material. Guidelines for residual radioactive material presented herein are of two kinds, generic and specific. The basis for the guidelines is generally a presumed worst-case plausible-use scenario for the property.
- (1) Generic guidelines, independent of the property, are taken from existing radiation protection standards. Generic guideline values are presented in this chapter.
 - (2) Specific property guidelines are derived from basic dose limits using specific property models and data. Procedures and data for deriving specific property guideline values are given by DOE/CH-8901.
- d. **Authorized Limit.** An authorized limit is a level of residual radioactive material that shall not be exceeded if the remedial action is to be considered completed and the property is to be released without restrictions on use due to residual radioactive material.
- (1) The authorized limits for a property will include:
 - (a) Limits for each radionuclide or group of radionuclides, as appropriate, associated with residual radioactive material in soil or in surface contamination of structures and equipment;
 - (b) Limits for each radionuclide or group of radionuclides, as appropriate, in air or water; and
 - (c) Where appropriate, a limit on external gamma radiation resulting from the residual material.
 - (2) Under normal circumstances expected at most properties, authorized limits for residual radioactive material are set equal to, or below, guideline values. Exceptional conditions for which authorized limits might differ from guideline values are specified in paragraphs IV-5 and IV-7.
 - (3) A property may be released without restrictions if residual radioactive material does not exceed the authorized limits or approved supplemental limits, as defined in paragraph IV.7a, at the time remedial action is completed. DOE actions in regard to restrictions and controls on use of the property shall be governed by provisions in paragraph IV.7b. The applicable controls and restrictions are specified in paragraph IV.6 and IV.7.c.
- e. **ALARA Applications.** The monitoring, cleanup, and control of residual radioactive material are subject to the ALARA policy of this Order. Applications of ALARA policy shall be documented and filed as a permanent record.

3. **BASIC DOSE LIMITS.**

- a. **Defining and Determining Dose Limits.** The basic public dose limits for exposure to residual radioactive material, in addition to natural occurring "background" exposures, are 100 mrem (1 mSv) effective dose equivalent in a year, as specified in paragraph II.1a.

- b. Unusual Circumstances. If, under unusual circumstances, it is impracticable to meet the basic limit based on realistic exposure scenarios, the respective project and/or program office may, pursuant to paragraph II.1a(4), request from EH-1 for a specific authorization for a temporary dose limit higher than 100 mrem (1 mSv), but not greater than 500 mrem (5 mSv), in a year. Such unusual circumstances may include temporary conditions at a property scheduled for remedial action or following the remedial action. The ALARA process shall apply to the selection of temporary dose limits.

4. GUIDELINES FOR RESIDUAL RADIOACTIVE MATERIAL.

- a. Residual Radionuclides in Soil. Generic guidelines for thorium and radium are specified below. Guidelines for residual concentrations of other radionuclides shall be derived from the basic dose limits by means of an environmental pathway analysis using specific property data where available. Procedures for these derivations are given in DOE/CH-8901. Residual concentrations of radioactive material in soil are defined as those in excess of background concentrations averaged over an area of 100 m².

- (1) Hot Spots. If the average concentration in any surface or below-surface area less than or equal to 25 m², exceeds the limit or guideline by a factor of $(100/A)^{0.5}$, [where A is the area (in square meters) of the region in which concentrations are elevated], limits for "hot-spots" shall also be developed and applied. Procedures for calculating these hot-spot limits, which depend on the extent of the elevated local concentrations, are given in DOE/CH-8901. In addition, reasonable efforts shall be made to remove any source of radionuclide that exceeds 30 times the appropriate limit for soil, irrespective of the average concentration in the soil.

- (2) Generic Guidelines. The generic guidelines for residual concentrations of Ra-226, Ra-228, Th-230, and Th-232 are:

- (a) 5 pCi/g, averaged over the first 15 cm of soil below the surface; and
(b) 15 pCi/g, averaged over 15-cm-thick layers of soil more than 15 cm below the surface.

- (3) Ingrowth and Mixtures. These guidelines take into account ingrowth of Ra-226 from Th-230 and of Ra-228 from Th-232, and assume secular equilibrium. If both Th-230 and Ra-226 or both Th-232 and Ra-228 are present and not in secular equilibrium, the appropriate guideline is applied as a limit for the radionuclide with the higher concentration. If other mixtures of radionuclides occur, the concentrations of individual radionuclides shall be reduced so that either the dose for the mixtures will not exceed the basic dose limit or the sum of the ratios of the soil concentration of each radionuclide to the allowable limit for that radionuclide will not exceed 1. Explicit formulas for calculating residual concentration guidelines for mixtures are given in DOE/CH-8901.

- b. Airborne Radon Decay Products. Generic guidelines for concentrations of airborne radon decay products shall apply to existing occupied or habitable structures on private property that are intended for release without restriction; structures that will be demolished or buried are excluded. The applicable generic guideline (40 CFR Part 192) is: In any occupied or habitable building, the objective of remedial action shall be, and a reasonable effort shall be made to achieve, an annual average (or equivalent) radon

decay product concentration (including background) not to exceed 0.02 WL. [A working level (WL) is any combination of short-lived radon decay products in 1 L of air that will result in the ultimate emission of 1.3×10^5 MeV of potential alpha energy.] In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL. Remedial actions by DOE are not required in order to comply with this guideline when there is reasonable assurance that residual radioactive material is not the source of the radon concentration.

- c. External Gamma Radiation. The average level of gamma radiation inside a building or habitable structure on a site to be released without restrictions shall not exceed the background level by more than 20 μ R/h and shall comply with the basic dose limit when an "appropriate-use" scenario is considered. This requirement shall not necessarily apply to structures scheduled for demolition or to buried foundations. External gamma radiation levels on open lands shall also comply with the basic limit and the ALARA process, considering appropriate-use scenarios for the area.
- d. Surface Contamination. The generic surface contamination guidelines provided in Figure IV-1 are applicable to existing structures and equipment. These guidelines are generally consistent with standards of the NRC (NRC 1982) and functionally equivalent to Section 4, "Decontamination for Release for Unrestricted Use," of Regulatory Guide 1.86, but apply to nonreactor facilities. These limits apply to both interior equipment and building components that are potentially salvageable or recoverable scrap. If a building is demolished, the guidelines in paragraph IV.6a are applicable to the resulting contamination in the ground.
- e. Residual Radionuclides in Air and Water. Residual concentrations of radionuclides in air and water shall be controlled to the required levels shown in paragraph II.1a and as required by other applicable Federal and/or State laws.

5. AUTHORIZED LIMITS FOR RESIDUAL RADIOACTIVE MATERIAL.

- a. Establishment of Authorized Limits. The authorized limits for each property shall be set equal to the generic or derived guidelines unless it can be established, on the basis of specific property data (including health, safety, practical, programmatic and socioeconomic considerations), that the guidelines are not appropriate for use at the specific property. The authorized limits shall be established to (1) provide that, at a minimum, the basic dose limits of in paragraph IV.3, will not be exceeded under the "worst-case" or "plausible-use" scenarios, consistent with the procedures and guidance provided in DOE/CH-8901, or (2) be consistent with applicable generic guidelines. The authorized limits shall be consistent with limits and guidelines established by other applicable Federal and State laws. The authorized limits are developed through the project offices in the field and are approved by the Headquarters Program Office.

Figure IV-1
Surface Contamination Guidelines

Radionuclides ²	Allowable Total Residual Surface Contamination (dpm/100 cm ²) ¹		
	Average^{3,4}	Maximum^{4,5}	Removable^{4,6}
Transuranics, I-125, I-129, Ra-226, Ac-227, Ra-228, Th-228, Th-230, Pa-231	RESERVED 100*	RESERVED 300*	RESERVED 20*
Th-Natural, Sr-90, I-126, I-131, I-133, Ra-223, Ra-224, U-232, Th-232	1,000	3,000	200
U-Natural, U-235, U-238, and associated decay product, alpha emitters	5,000	15,000	1,000
Beta-gamma emitters(radionuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above. ⁷	5,000	15,000	1,000

¹ As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute measured by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

² Where surface contamination by both alpha- and beta-gamma-emitting radionuclides exists, the limits established for alpha- and beta-gamma-emitting radionuclides should apply independently.

³ Measurements of average contamination should not be averaged over an area of more than 1 m². For objects of less surface area, the average should be derived for each such object.

⁴ The average and maximum dose rates associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/h and 1.0 mrad/h, respectively, at 1 cm.

⁵ The maximum contamination level applies to an area of not more than 100 cm².

⁶ The amount of removable material per 100 cm² of surface area should be determined by wiping an area of that size with dry filter or soft absorbent paper, applying moderate pressure, and measuring the amount of radioactive material on the wiping with an appropriate instrument of known efficiency. When removable contamination on objects of surface area less than 100 cm² is determined, the activity per unit area should be based on the actual area and the entire surface should be wiped. It is not necessary to use wiping techniques to measure removable contamination levels if direct scan surveys indicate that the total residual surface contamination levels are within the limits for removable contamination.

⁷ This category of radionuclides includes mixed fission products, including the Sr-90 which is present in them. It does not apply to Sr-90 which has been separated from the other fission products or mixtures where the Sr-90 has been enriched.

* Because no values are presented in this order, FUSRAP uses the values shown based on "DOE Guidelines for Residual Radioactive Materials at FUSRAP and Remote SFMP Sites," Revision 2, March 1987 (CCN 046176).

b. Application of Authorized Limits. Remedial action shall not be considered complete until the residual radioactive material levels comply with the authorized limits, except as authorized pursuant to paragraph IV.7 for special situations where the supplemental limits and exceptions should be considered and it is demonstrated that it is not appropriate to decontaminate the area to the authorized limit or guideline value.

6. CONTROL OF RESIDUAL RADIOACTIVE MATERIAL. Residual radioactive material above the guidelines shall be managed in accordance with Chapter II and the following requirements.

a. Operational and Control Requirements. The operational and control requirements specified in the following Orders shall apply to interim storage, interim management, and long-term management.

- (1) DOE 5000.3B, Occurrence Reporting and Processing of Operations Information
- (2) DOE 5440.1E, National Environmental Policy Act Compliance Program
- (3) DOE 5480.4, Environmental Protection, Safety, and Health Protection Standards
- (4) DOE 5482.1B, Environmental, Safety, and Health Appraisal Program
- (5) DOE 5483.1A, Occupational Safety and Health Program for DOE Employees at Government-Owned, Contractor-Operated Facilities
- (6) DOE 5484.1, Environmental Protection, Safety, and Health Protection Information Reporting Requirements
- (7) DOE 5820.2A, Radioactive Waste Management.

b. Interim Storage.

- (1) Control and stabilization features shall be designed to provide, to the extent reasonably achievable, an effective life of 50 years with a minimum life of at least 25 years.
- (2) Controls shall be designed such that Rn-222 concentrations in the atmosphere above facility surfaces or openings in addition to background levels, will not exceed:
 - (a) 100 pCi/L at any given point;
 - (b) An annual average concentration of 30 pCi/L over the facility site; and
 - (c) An annual average concentration of 3 pCi/L at or above any location outside the facility site.
 - (d) Flux rates from the storage of radon producing wastes shall not exceed 20 pCi/sq.m-sec., as required by 40 CFR Part 61.
- (3) Controls shall be designed such that concentrations of radionuclides in the groundwater and quantities of residual radioactive material will not exceed applicable Federal or State standards.

- (4) Access to a property and use of onsite material contaminated by residual radioactive material should be controlled through appropriate administrative and physical controls such as those described in 40 CFR Part 192. These control features should be designed to provide, to the extent reasonable, an effective life of at least 25 years.

c. Interim Management.

- (1) A property may be maintained under an interim management arrangement when the residual radioactive material exceeds guideline values if the residual radioactive material is in inaccessible locations and would be unreasonably costly to remove provided that administrative controls are established by the responsible authority (Federal, State, or local) to protect members of the public and that such controls are approved by the appropriate Program Secretarial Officer.
- (2) The administrative controls include but are not limited to periodic monitoring as appropriate; appropriate shielding; physical barriers to prevent access; and appropriate radiological safety measures during maintenance, renovation, demolition, or other activities that might disturb the residual radioactive material or cause it to migrate.
- (3) The owner of the property should be responsible for implementing the administrative controls and the cognizant Federal, State, or local authorities should be responsible for enforcing them.

d. Long-Term Management.

(1) Uranium, Thorium, and Their Decay Products.

- (a) Control and stabilization features shall be designed to provide, to the extent reasonably achievable, an effective life of 1,000 years with a minimum life of at least 200 years.
- (b) Control and stabilization features shall be designed to limit Rn-222 emanation to the atmosphere from the wastes to less than an annual average release rate of 20 pCi/m²/s and prevent increases in the annual average Rn-222 concentration at or above any location outside the boundary of the contaminated area by more than 0.5 pCi/L. Field verification of emanation rates shall be in accordance with the requirements of 40 CFR Part 61.
- (c) Before any potentially biodegradable contaminated wastes are placed in a long-term management facility, such wastes shall be properly conditioned so that the generation and escape of biogenic gases will not cause the requirement in paragraph IV.6d(1)(b) to be exceeded and that biodegradation within the facility will not result in premature structural failure in violation of the requirements in paragraph IV.6d(1)(a).
- (d) Ground water shall be protected in accordance with legally applicable Federal and State standards.

(e) Access to a property and use of onsite material contaminated by residual radioactive material should be controlled through appropriate administrative and physical controls such as those described in 40 CFR Part 192. These controls should be designed to be effective to the extent reasonable for at least 200 years.

(2) Other Radionuclides. Long-term management of other radionuclides shall be in accordance with Chapters II, III, and IV of DOE 5820.2A, as applicable.

7. SUPPLEMENTAL LIMITS AND EXCEPTIONS. If special specific property circumstances indicate that the guidelines or authorized limits established for a given property are not appropriate for any portion of that property, then the DOE Field Office Manager may request, through the Program Office, that supplemental limits or an exception be applied. The responsible DOE Field Office Manager shall document the decision that the subject guidelines or authorized limits are not appropriate and that the alternative action selected will provide adequate protection, giving due consideration to health and safety, the environment, costs, and public policy considerations. The DOE Field Office Manager shall obtain approval for specific supplemental limits or exceptions from Headquarters as specified in paragraph IV.5, and shall provide to the Headquarters Program Office those materials required by Headquarters for the justification as specified in this paragraph and in the FUSRAP and SFMP protocols and subsequent guidance documents. The DOE Field Office Manager shall also be responsible for coordination with the State and local government regarding the limits or exceptions and associated restrictions as appropriate. In the case of exceptions, the DOE Field Office Manager shall be responsible for coordinating with the State and/or local governments to ensure the adequacy of restrictions or conditions of release and that mechanisms are in place for their enforcement.

a. Supplemental Limits. Any supplemental limits shall achieve the basic dose limits set forth in Chapter II of this Order for both current and potential unrestricted uses of a property. Supplemental limits may be applied to any portion of a property if, on the basis of a specific property analysis, it is demonstrated that

(1) Certain aspects of the property were not considered in the development of the established authorized limits for that property; and

(2) As a result of these certain aspects, the established limits either do not provide adequate protection or are unnecessarily restrictive and costly.

b. Exceptions to the authorized limits defined for a property may be applied to any portion of the property when it is established that the authorized limits cannot reasonably be achieved and that restrictions on use of the property are necessary. It shall be demonstrated that the exception is justified and that the restrictions will protect members of the public within the basic dose limits of this Order and will comply with the requirements for control of residual radioactive material as set forth in paragraph IV.6.

c. Justification for Supplemental Limits and Exceptions. The need for supplemental limits and exceptions shall be documented by the DOE Field Office on a case-by-case basis using specific property data. Every reasonable effort should be made to minimize the use of supplemental limits and exceptions. Examples of specific situations that warrant DOE use of supplemental standards and exceptions are:

- (1) Where remedial action would pose a clear and present risk of injury to workers or members of the public, notwithstanding reasonable measures to avoid or reduce risk.
- (2) Where remedial action, even after all reasonable mitigative measures have been taken, would produce environmental harm that is clearly excessive compared to the health benefits to persons living on or near affected properties, now or in the future. A clear excess of environmental harm is harm that is long-term, manifest, and grossly disproportionate to health benefits that may reasonably be anticipated.
- (3) Where it is determined that the scenarios or assumptions used to establish the authorized limits do not apply to the property or portion of the property identified, or where more appropriate scenarios or assumptions indicate that other limits are applicable or appropriate for protection of the public and the environment.
- (4) Where the cost of remedial action for contaminated soil is unreasonably high relative to long-term benefits and where the residual material does not pose a clear present or future risk after taking necessary control measure. The likelihood that buildings will be erected or that people will spend long periods of time at such a property should be considered in evaluating this risk. Remedial action will generally not be necessary where only minor quantities of residual radioactive material are involved or where residual radioactive material occurs in an inaccessible location at which specific property factors limit its hazard and from which it is difficult or costly to remove. Examples include residual radioactive material under hard-surfaced public roads and sidewalks, around public sewer lines, or in fence-post foundations. A specific property analysis shall be provided to establish that the residual radioactive material would not cause an individual to receive a radiation dose in excess of the basic dose limits stated in paragraph IV.3, and a statement specifying the level of residual radioactive material shall be provided to the appropriate State and/or local agencies for appropriate action, e.g., for inclusion in local land records.
- (5) Where there is no feasible remedial action.

8. SOURCES.

- a. Basic Dose Limits. Dosimetry model and dose limits are defined in Chapter II of this Order.
- b. Generic Guidelines for Residual Radioactive Material. Residual concentrations of radium and thorium in soil are defined in 40 CFR Part 192. Airborne radon decay products are also defined in 40 CFR Part 192, as are guidelines for external gamma radiation. The surface contamination definition is adapted from NRC (1982).
- c. Control of Radioactive Wastes and Residues. Interim storage is guided by this Order and DOE 5820.2A. Long-term management is guided by this Order, 40 CFR Part 192, and DOE 5820.2A.

EXHIBIT II
DOCUMENTS SUPPORTING THE CERTIFICATION OF
THE REMEDIAL ACTION PERFORMED AT THE
ALIQUIPPA FORGE SITE
IN ALIQUIPPA, PENNSYLVANIA

1.0 CERTIFICATION PROCESS

The purpose of this certification docket is to provide a consolidated and permanent record of DOE activities at the Aliquippa Forge site and of the radiological conditions of this property at the time of certification. A summary of the remedial action activities conducted at the site was provided in Exhibit I. Exhibit II contains the letters, memos, reports, and other documents that encompass the entire remedial action process from designation of the site under FUSRAP to certification that no radiological restrictions limit the future use of the site, based on the levels of residual radioactivity remaining at the site.

2.0 SUPPORTING DOCUMENTATION

For the convenience of the reader, Sections 2.1 through 2.11 are paginated continuously. Each page number begins with the designator "II" to distinguish the numbering systems used in the supporting documentation that constitutes Exhibit II. These page numbers are listed in the table of contents at the beginning of this docket and in Sections 2.1 through 2.11. Lengthy documents are incorporated by reference only and are designated as such with the abbreviation "Ref."; the actual documents are provided as attachments to the certification docket.

2.1 DECONTAMINATION OR STABILIZATION CRITERIA

The following documents contain the guidelines that determine the need for remedial action. The Aliquippa Forge site has been decontaminated to comply with these guidelines. The first document listed is included as Appendix A of Exhibit I.

	Page
U.S. Department of Energy (DOE), "Radiation Protection of the Public and the Environment," DOE Order 5400.5, Chapter IV, Washington, D.C., January 1993	App. I-A
DOE, <i>Description of the Formerly Utilized Sites Remedial Action Program</i> , ORO-777, Oak Ridge, Tenn., September 1980.	Ref. 2
DOE, <i>Design Criteria for Formerly Utilized Sites Remedial Action Program (FUSRAP) and Surplus Facilities Management Program (SFMP)</i> , 14501-00-DC-01, Rev. 2, Oak Ridge, Tenn., March 1986.	Ref. 18
ANL, <i>Derivation of Uranium Residual Radioactive Material Guidelines for the Aliquippa Forge Site</i> , prepared for DOE by ANL Environmental Assessment and Information Services Division, Argonne, Ill., September 1992.	Ref. 19
U.S. Code of Federal Regulations, 40 CFR 192, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings," July 1, 1995.	Ref. 23
Memorandum from J. W. Wagoner (DOE) to W. M. Seay (DOE), "Uranium Guidelines for the Aliquippa Forge Site," BNI CCN 102603, April 2, 1993.	II-4

memorandum

DATE: APR 2 1993
REPLY TO: EM-421 (W. A. Williams, 903-8149)
ATTN OF:
SUBJECT: Uranium Guidelines for the Aliquippa, Pennsylvania, Site
TO: W. Seay, OR

1993 APR -5 PM 1:41

This is in response to the request for approval of uranium guidelines for the Aliquippa, Pennsylvania, FUSRAP site, pursuant to DOE Order 5400.5. This site is located in West Aliquippa, Pennsylvania, and was used by DOE's predecessor for machining uranium metal. While most of the residual uranium is found inside the buildings, a small outdoor area is also contaminated. The DOE Oak Ridge Field Office (OR) requested approval of a residual uranium guideline of 100 pCi/g of total uranium for the outdoor area. These recommendations were made based on a supporting analysis by Argonne National Laboratory (ANL) and estimates of the waste volume which would result from different uranium guidelines.

Basic Dose Requirement:

The Aliquippa site is located a short distance from the Ohio River and is the site of a now-closed metal processing facility. The ANL analysis calculated a maximum residual concentration of total uranium in soil of 20 pCi/g to 3,900 pCi/g, depending on future land use. These concentrations are equivalent to 100 millirem per year for various land uses. The recommended 100 pCi/g is equivalent to 6 millirem per year for an industrial worker (Scenario A in the ANL Report). For recreational use, the exposure is less than 3 millirem per year (Scenario B). For residential farming use, the recommended guideline is 20 millirem per year, assuming that off-site water is used for drinking water purposes (Scenario D).

In the ANL analysis, one scenario (Scenario C) considered the use of an on-site well for drinking water purposes. This assumed well water use is not plausible. First, the site currently has a municipal water hookup. Second, the nearby Ohio River would provide a subsistence farmer (or other resident) an ample, nearby source of water if municipal water were not available. Third, as mentioned in the OR recommendation, the on-site ground water is "not potable without extensive treatment." Based on these facts, the use of an on-site well water by future residents is not plausible. I understand that the staff of the Pennsylvania Department of Natural Resources have informally agreed to this conclusion.

Based on the ANL analysis, the recommended value of 100 pCi/g of total uranium is within DOE's dose guideline of 100 millirem per year, which must be met under all worst case, plausible scenarios, including the assumed residential and recreational use.

ALARA Analysis:

In addition to meeting the basic radiation protection guideline, any cleanup guideline must be analyzed to keep exposures as low as reasonably achievable (ALARA). In the application of ALARA, practical considerations, costs, and benefits are also taken into account. For practical considerations, it is likely that the contaminated areas will be cleaned up to a level below whatever guideline is established. This is likely for two reasons. First, in order to remove all material above the guideline, some soil contaminated below the guideline will be removed. This will have the practical effort of lowering the guideline as it is applied during cleanup operations. Second, during cleanup operations, it is difficult to precisely delineate the point at which contamination above the guideline ends. As a result, remedial personnel will remove all suspect materials to avoid repeated cleanup operations on the same property. For these reasons, it is likely that cleanup will be accomplished at some level lower than the approved cleanup guideline.

A final practical consideration is the use of clean fill material to replace excavated materials. This will cause a shielding and covering effect on the remaining soils, reducing gamma ray, dust, and radon exposures. If the sites were to be used for residential or agricultural use in the future, the clean fill would also reduce the projected doses by diluting the residual contamination. The ANL analysis does not assume that there is any clean fill or cover placed over the site after cleanup. For this reason, the doses calculated in the ANL report are clearly a worst case scenario. In the actual application of a cleanup guideline, it is very likely that a cleanup level substantially below the established guideline will be achieved.

A further ALARA consideration is that of costs and benefits. A review of the contaminated soil volume as a function of the cleanup guideline indicates an increasing volume of contaminated soil as the guideline becomes smaller.

Between the cleanup guidelines of 530 and 200 pCi/g, the volume of contaminated soil increased by five cubic yards. For the current industrial use of the sites, this increase in waste volume and cost is equivalent to a reduction in the calculated dose from 31 millirem per year to 12. A reduction from 200 to the recommended 100 pCi/g decreases the dose for the current industrial use from 12 millirem per year to less than 5. This same reduction increases waste volume by another 25 cubic yards. Reducing the guideline to 40 pCi/g will reduce the dose for industrial use to less than 3 millirem per year and increase waste volume by 65 cubic yards. A final reduction to a guideline of 20 pCi/g would reduce the dose to almost one millirem per year, while increasing the waste volume another 50 cubic yards.

If the costs of excavating, packaging, transporting, and disposing the soil are estimated to be more than \$500 per cubic yard, the reduction in the guideline from the recommended 100 pCi/g to 40 pCi/g would cost more than \$30,000 with little benefit.

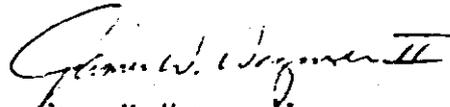
The possible residential and agricultural use of the site in the future must be also considered. Scenario D examines this possible use and assumes a resident farmer will:

1. reside at the site after cleanup;
2. drink water from an uncontaminated, off-site source;
3. eat plant foods grown in the decontaminated area;
4. drink milk and eat meat from cattle grown on the site; and
5. ingest 100 milligrams per day of soil at the site.

These assumptions are very unlikely but may be plausible in the distant future. OR's recommended guideline of 100 pCi/g is equivalent to an annual exposure of 19 millirem per year under these assumptions. A review of the ANL report indicates that the significant pathway for this scenario is via inhalation of contaminated dust. The mass loading factor used for airborne dust in the calculations (200 micrograms per cubic meter) is much higher than would be expected at the site under ambient conditions and reflects the level of dust loading expected from plowing or digging in the soil. Such a high dust load is unlikely on a continual basis.

Summary and Approval:

Based on the above considerations, a guideline of 100 pCi/g for total uranium above background levels is approved for use in the remediation of the Aliquippa Site, pursuant to DOE Order 5400.5, Chapter IV, Section 5a. Please provide ANL with post-remedial action data to permit the preparation of another dose estimate report to reflect the actual doses after completion of the cleanup. We also recommend that your staff discuss the site characterization data and the approved guidelines with the State and the Environmental Protection Agency staff at an appropriate time.



James W. Wagoner II
Director
Division of Off-Site Programs
Office of Eastern Area Programs
Office of Environmental Restoration

Attachment

cc:
T. Perry, OR
C. Yu, ANL
W. Adams, OR

2.2 DESIGNATION OR AUTHORIZATION DOCUMENTATION

The following documents pertain to designation or authorization for remedial action at the Aliquippa Forge site.

	Page
Memorandum from F. E. Coffman (DOE-Office of Nuclear Energy) to J. La Grone (DOE-Oak Ridge Operations Office), "Designation of Universal Cyclops, Inc." BNI CCN E-06686, August 5, 1983.	II-8
Letter from E. G. DeLaney (DOE-Office of Nuclear Energy) to R. Tate (Cyclops Corporation), re: authorization of Universal Cyclops Corporation Plant in Aliquippa, Pennsylvania, for remedial action, BNI CCN E-06793, January 27, 1986.	II-9

E-06686
U.S. DEPARTMENT OF ENERGY
memorandum
9687

~~CONFIDENTIAL~~
DATE **AUG 5 1983**

REPLY TO
ATTN OF **NE-24**

SUBJECT **Designation of Universal Cyclops, Inc., Titusville Plant, Aliquippa,
Pennsylvania, for Remedial Action under the Formerly Utilized Sites
Remedial Action Program (FUSRAP)**

TO

**J. LaGrone, Manager
Oak Ridge Operations Office**

Based on the data in the attached report, it has been determined that the subject site is contaminated with radioactive residues as a result of Manhattan Engineer District/Atomic Energy Commission operations at the site. The contamination is in excess of acceptable guidelines and warrants designation for remedial action under the FUSRAP. Although the contamination levels exceed guidelines, the risk of exposure and associated health effects are low under current use and/or potential future use of the site; therefore, the site is designated as a low priority site for remedial action.

I am attaching five copies of the radiological survey report, "Radiological Survey of Universal Cyclops, Inc. Titusville Plant (Formerly Vulcan Crucible Steel Company), Aliquippa, Pennsylvania," May 2-8, 1978 (DOE/EV-0005/33).

If there are any questions, please call Mr. Arthur J. Whitman on FTS 233-5439.


Franklin E. Coffman, Director
Office of Terminal Waste Disposal
and Remedial Action
Office of Nuclear Energy

Attachment (5)



Department of Energy
Washington, D.C. 20545

E-06793

(2)
JAN 30 1986

Clark

JAN 27 1986

Mr. Robert Tate
Assistant Secretary
Cyclops Corporation
650 Washington Road
Pittsburgh, Pennsylvania 15228

Dear Mr. Tate:

As you discussed with Gale Turi of my staff, the Cyclops Corporation, Titusville Plant in Aliquippa, Pennsylvania, has been authorized for remedial action. This action will be conducted under the Department of Energy's Formerly Utilized Sites Remedial Action Program. The Department will consult with the Cyclops Corporation before taking any action. I understand that representatives from the Department of Energy (Larry Clark) and the Department's contractor, Bechtel National, Inc. will be meeting with you in the near future to discuss remedial action at the Titusville Plant.

As stated in the August 2, 1982, letter to you from the Department, based on the results of the radiological survey, it appears that the potential for radiation exposure to occupants of the buildings at the Titusville Plant is remote. However, access to the contaminated areas should be restricted and care taken to prevent the inadvertent spreading of contamination.

We would appreciate your cooperation in the Department's efforts to eliminate any potential radiological hazard.

Sincerely,

Edward G. DeLaney, Director
Division of Facility and Site
Decommissioning Projects
Office of Nuclear Energy

cc:
T. Gerusky, PA Dept. of
Environmental Resources
L. Clark, DOE Oak Ridge
Operations Office
T. Voltaggio, EPA Region III
Philadelphia, Pa.

2.3 RADIOLOGICAL CHARACTERIZATION REPORTS

The pre-remedial action status of the Aliquippa Forge site is documented in the following reports.

	Page
Argonne National Laboratory (ANL), <i>Radiological Survey of Universal Cyclops, Inc., Titusville Plant (Formerly Vulcan Crucible Steel Company), Aliquippa, Pennsylvania, May 2-8, 1978, May 1978.</i>	Ref. 3
Oak Ridge Institute for Science and Education (ORISE), <i>Characterization Survey of Portions of the Aliquippa Forge Site, West Aliquippa, Pennsylvania,</i> BNI CCN 099186, December 1992.	Ref. 8
ORISE, <i>Additional Characterization Survey of Buildings 3 and 8, Aliquippa Forge Site, West Aliquippa, Pennsylvania,</i> BNI CCN 114364, February 1994.	Ref. 9
Letter from E. W. Abelquist (ORISE) to W. A. Williams (DOE-HQ), "Additional Contaminated Areas/Items at the Aliquippa Forge Site," BNI CCN 106814, July 29, 1993.	II-11
Letter from E. W. Abelquist (ORISE) to W. A. Williams (DOE-HQ), "Additional Contaminated Areas/Items at the Aliquippa Forge Site," BNI CCN 108143, August 20, 1993.	II-21
Letter from E. W. Abelquist (ORISE) to W. A. Williams (DOE-HQ), "Additional Contaminated Areas at the Aliquippa Forge Site," BNI CCN 108544, September 10, 1993.	II-23
Letter from E. W. Abelquist (ORISE) to W. A. Williams (DOE-HQ), "Additional Contaminated Areas at the Aliquippa Forge Site," BNI CCN 109041, September 24, 1993.	II-24
Letter from E. W. Abelquist (ORISE) to W. A. Williams (DOE-HQ), "Revised Floor Plans of Areas Exceeding Guidelines at the Aliquippa Forge Site," BNI CCN 109190, September 24, 1993.	II-28

July 29, 1993

W. Alexander Williams, Ph.D.
Designation and Certification Manager
EM-421
Trevion II
U.S. Department of Energy
Washington, DC 20585-0002

SUBJECT: ADDITIONAL CONTAMINATED AREAS/ITEMS AT THE ALIQUIPPA FORGE SITE

Dear Mr. Williams:

During the period of July 7 - 15, the Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) performed additional characterization activities at the Aliquippa Forge Site. Based on this characterization survey the following areas/items contain areas of elevated direct radiation in excess of the guidelines:

- (1) North Turret on Building 3.
- (2) South Turret on Building 3.
- (3) Tool room (Figure 1).
- (4) Mezzanine and overhead beam surfaces (Figures 2 and 3).
- (5) Base of air compressors/steam generators (Figure 4).
- (6) Pipe penetration #6 (Figure 5).
- (7) Overhead beam surfaces in Buildings 3 and 8 (near vents #3 and #4, Figures 6 and 7).
- (8) Building 8 basement floor (Figure 8).

Additional areas/items may be identified based on further subfloor soil sampling.

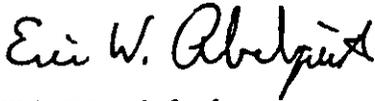
W. Alexander Williams

- 2 -

July 29, 1993

If you have any questions concerning the subject results please contact me at (615) 576-3740 or Michele Landis at (615) 576-2908.

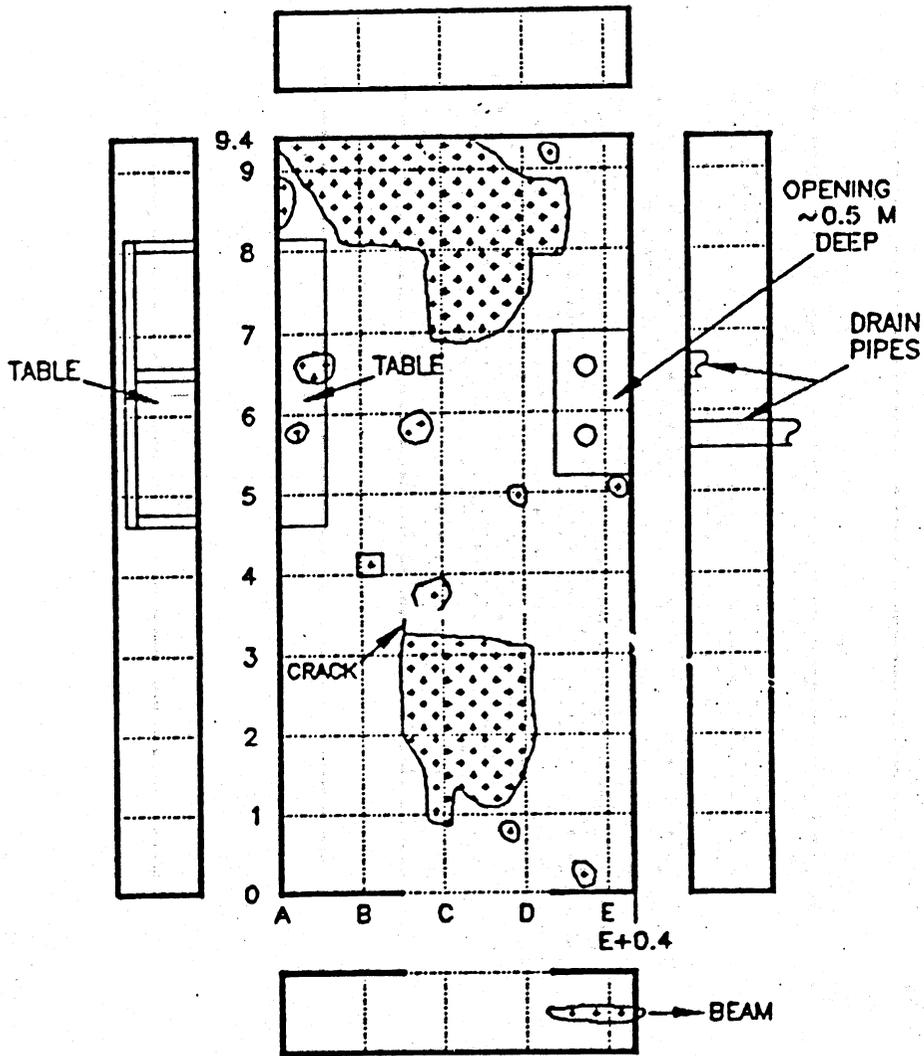
Sincerely,



Eric W. Abelquist
Project Leader
Environmental Survey and
Site Assessment Program

Enclosures

- cc: M. Davis/BNI
- T. Perry/DOE-OR
- M. Redmon/BNI
- W. Seay/DOE-OR
- J. Berger, ORISE
- M. Landis, ORISE
- File/329



 AREAS EXCEEDING GUIDELINES

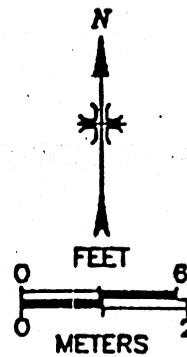


FIGURE 1: Tool Room - Areas Exceeding Guidelines

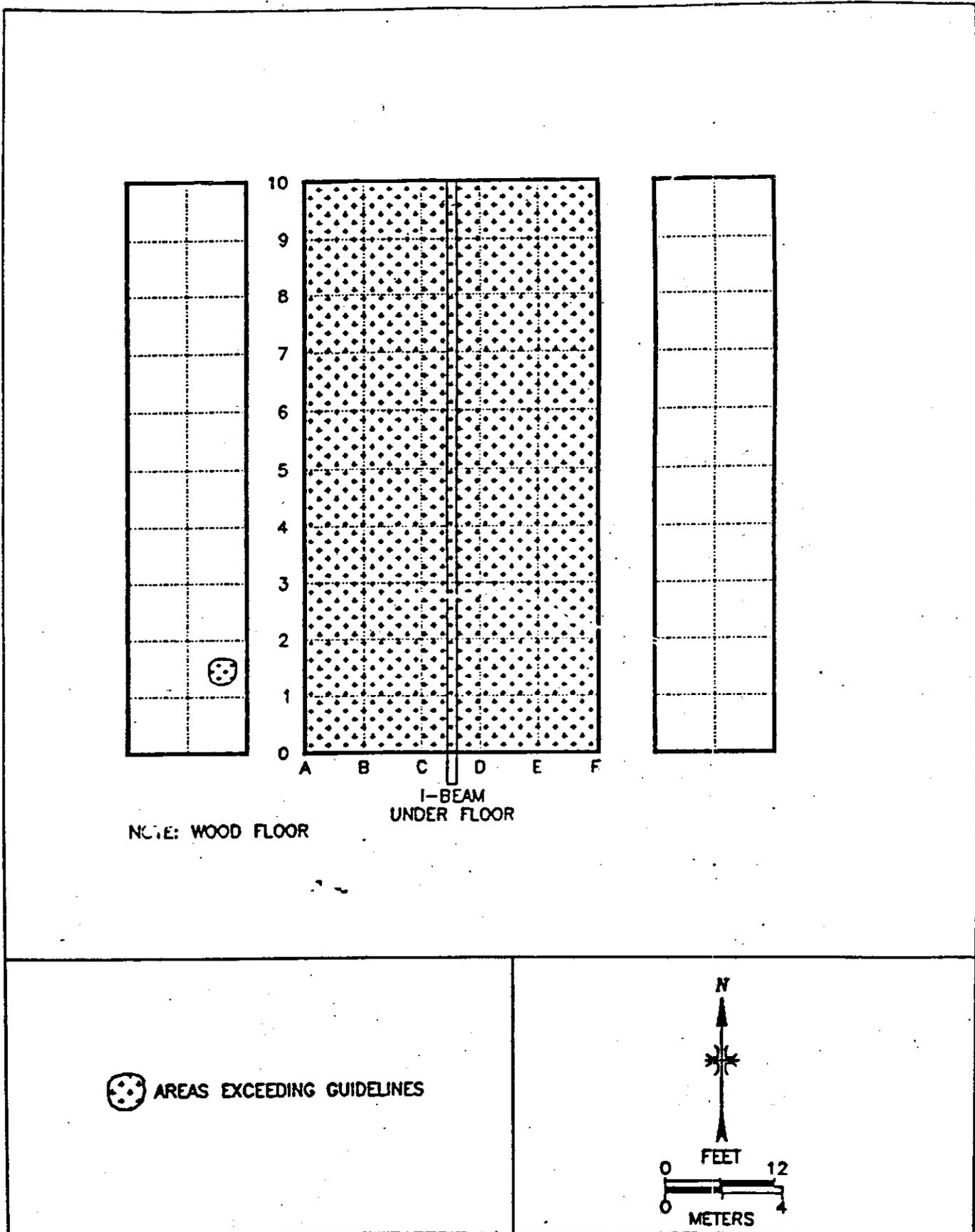


FIGURE 2: Mezzanine Floor and Walls – Areas Exceeding Guidelines

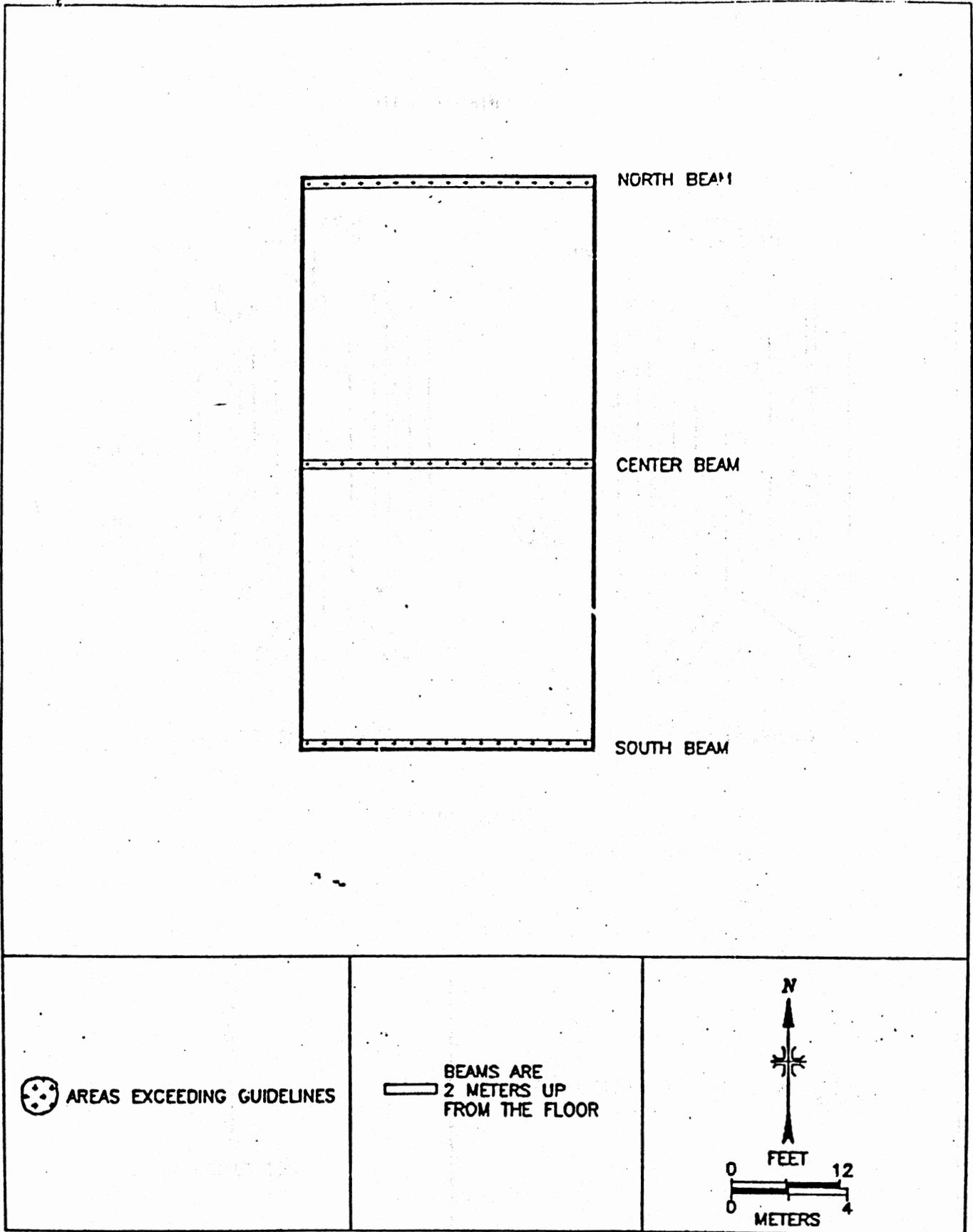
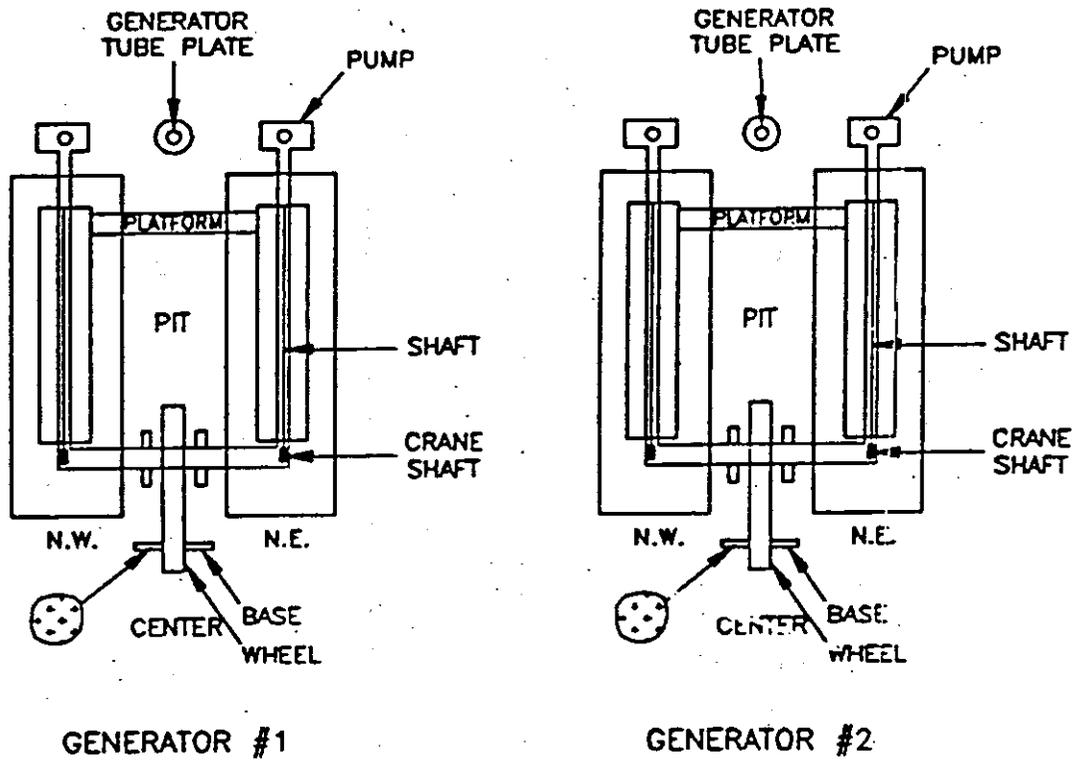


FIGURE 3: Mezzanine, Overhead Beams – Areas Exceeding Guidelines



"PLAN" VIEW

 AREAS EXCEEDING GUIDELINES



NOT TO SCALE

FIGURE 4: Steam Generators - Areas Exceeding Guidelines

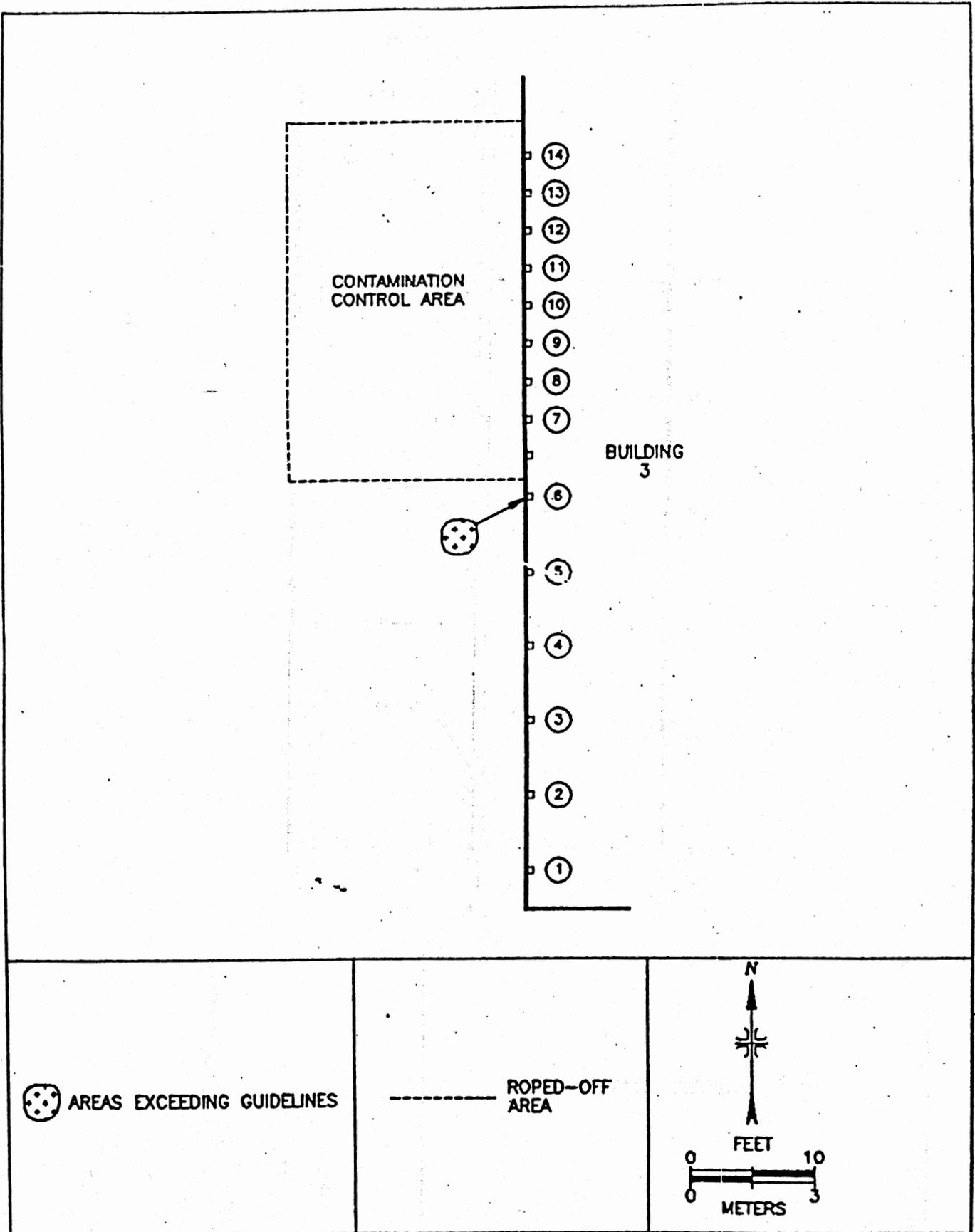


FIGURE 5: Pipe Penetration #6 - Areas Exceeding Guidelines

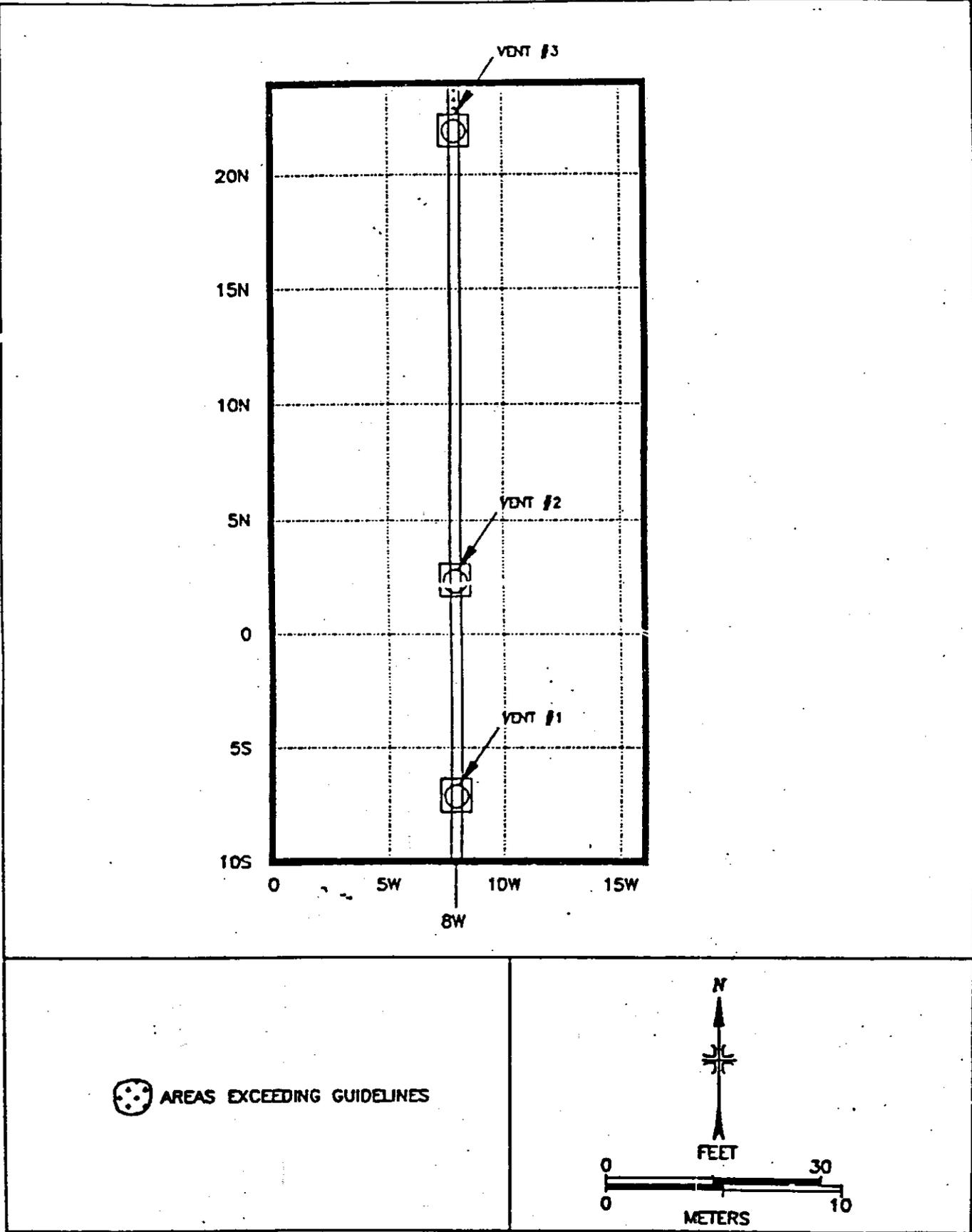


FIGURE 6: Building 3, Overhead Beam Surfaces Near Vent #3 - Areas Exceeding Guidelines

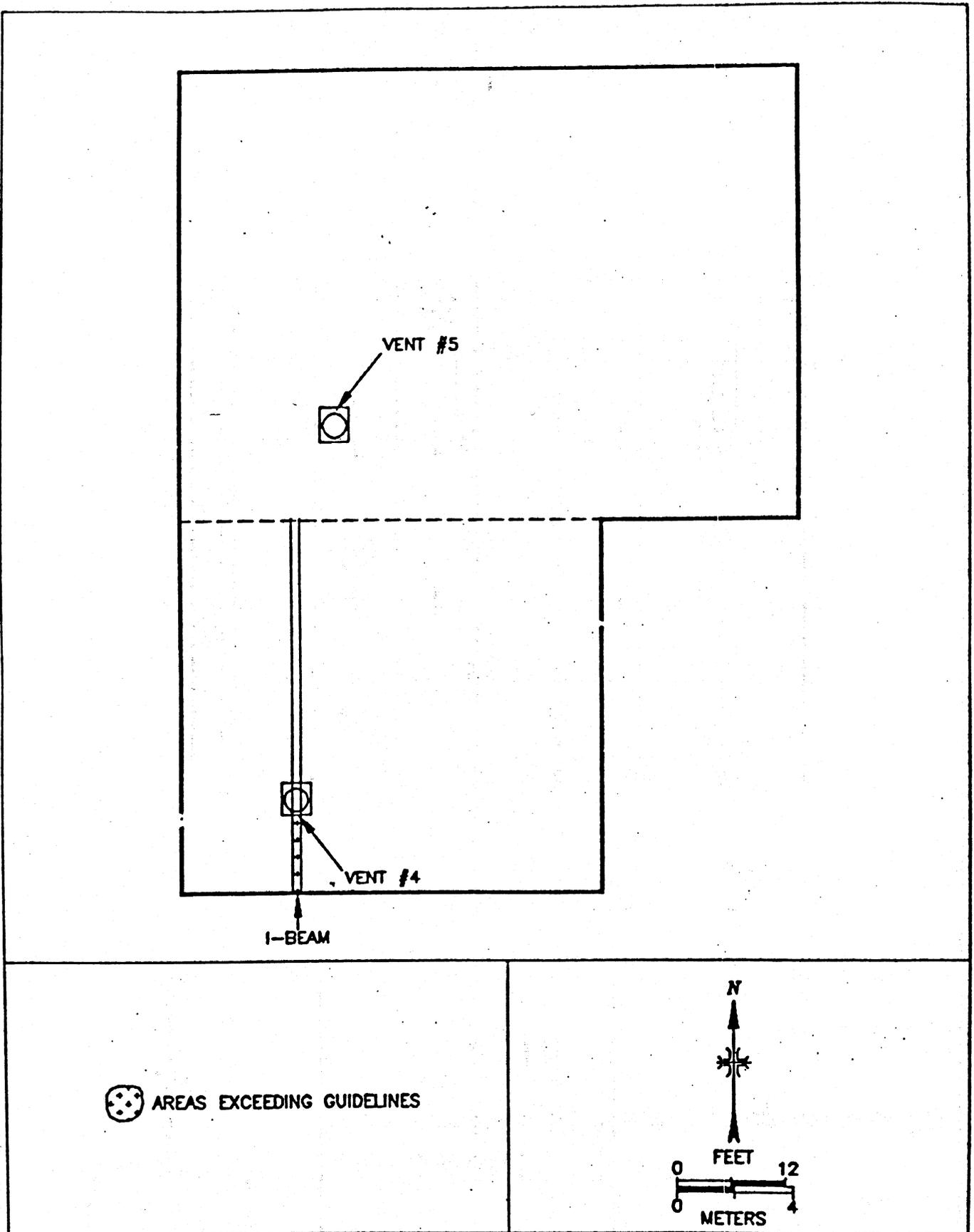
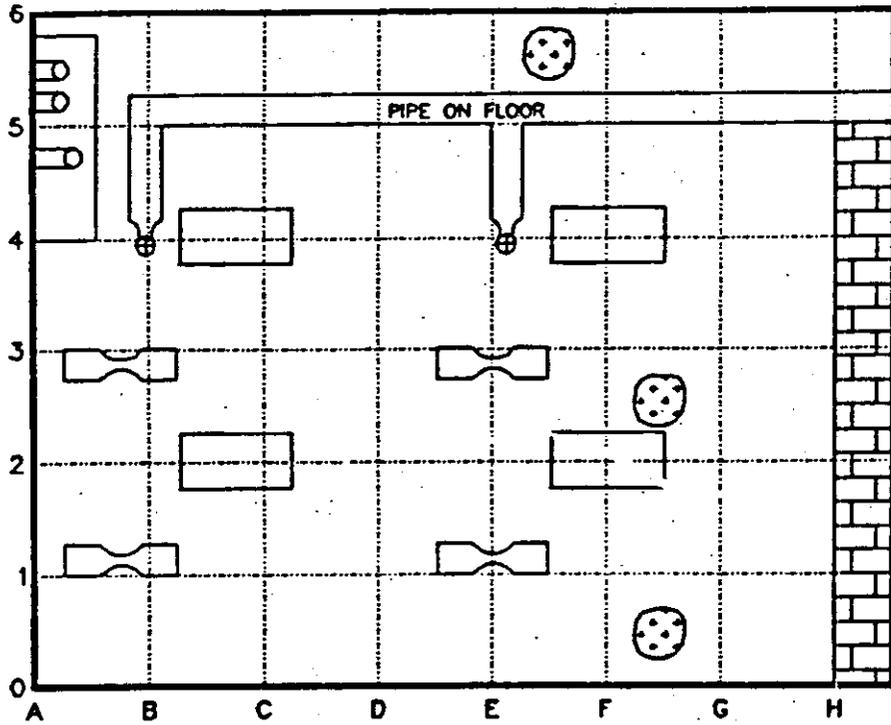


FIGURE 7: Steam Generator Room, Overhead Beam Surfaces Near Vent #4 - Areas Exceeding Guidelines



 AREAS EXCEEDING GUIDELINES

 BRICK
 PIPE
 TANK SUPPORT BASE
 SUPPORT COLUMN

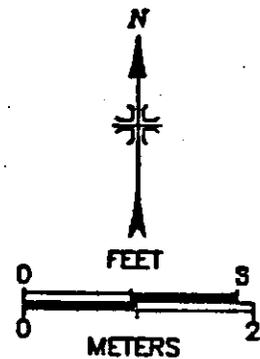


FIGURE 8: Building 8 Basement - Areas Exceeding Guidelines

Coram - 108143

ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

August 20, 1993

ENERGY/ENVIRONMENT SYSTEMS DIVISION

W. Alexander Williams, Ph.D
Designation and Certification Manager
EM-421
Trevion II
U.S. Department of Energy
Washington, DC 20585-0002

SUBJECT: ADDITIONAL CONTAMINATED AREAS/ITEMS AT THE ALIQUIPPA FORGE SITE

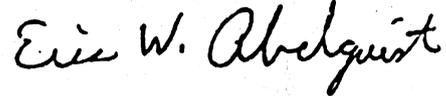
Dear Dr. Williams:

During the period of August 2-5, the Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) performed additional characterization activities at the Aliquippa Forge Site. The primary activity was the collection of subfloor soil samples in Building 3 to define the areas exceeding guidelines (Figure 1).

Additional survey activities included the collection of sediment samples from inside the air compressor pits in Building 8. The sample from the east air compressor pit exceeded the soil guidelines (112.4 pCi/g), while the sample from the west air compressor pit was below guidelines (19.5 pCi/g).

If you have any questions concerning the subject results please contact me at (615) 576-3740 or Michele Landis at (615) 576-2908.

Sincerely,



Eric W. Abelquist
Project Leader
Environmental Survey and
Site Assessment Program

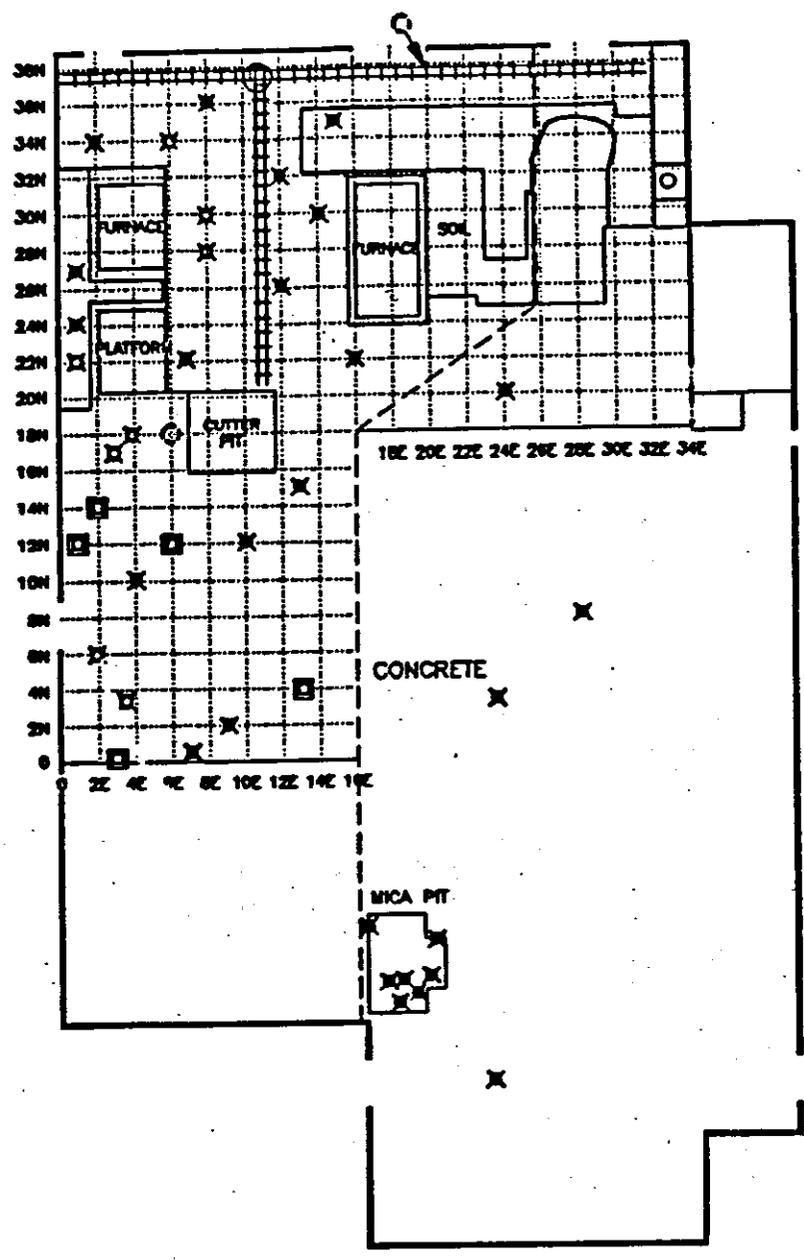
EWA:ttc

Enclosure

cc: M. Davis/BNI
J. Kopotic/DOE-OR
M. Redmon/BNI
W. Seay/DOE/OR
J. Berger, ORISE
M. Landis, ORISE
File/329

P. O. BOX 117, OAK RIDGE, TENNESSEE 37831-0117

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<p>SAMPLING LOCATIONS</p> <ul style="list-style-type: none"> SUBSURFACE SOIL SUBSURFACE SOIL EXCEEDS GUIDELINES (100 pCi/g) SUBSURFACE SOIL EXCEEDS 60 pCi/g, BUT BELOW GUIDELINES HIT REFUSAL WITHOUT OBTAINING SOIL SAMPLES 	<p>----- CONTROLLED AREA BOUNDARY</p> <p>##### RAILROAD</p>	<p>N</p> <p>0 FEET 24</p> <p>0 METERS 8</p>
--	---	---

FIGURE 1: Building 3 - Borehole Locations



1993 SEP 15 PM 1:47

September 10, 1993

W. Alexander Williams, Ph.D
Designation and Certification Manager
EM-421
Trevion II
U.S. Department of Energy
Washington, DC 20585-0002

**SUBJECT: ADDITIONAL CONTAMINATED AREAS AT THE
ALIQUIPPA FORGE SITE**

Dear Dr. Williams:

During the period of August 23-28, 1993, the Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) performed additional characterization and verification activities at the Aliquippa Forge Site. The primary characterization activity was the collection of direct measurements and smears on the overhead surfaces in Building 8 to define the areas exceeding guidelines.

Locations of elevated direct radiation were identified on Truss 1 (which comprises the upper south wall in Building 8), Truss 2 and Truss 3. The purlins, I-beams and wooden beams within Bays 1 and 2 were also identified as having locations of elevated direct radiation. The contamination appears to be dust from past operations that settled onto the horizontal surfaces, as in Building 3.

If you have any questions concerning the subject results please contact me at (615) 576-3740 or Michele Landis at (615) 576-2908.

Sincerely,


Eric W. Abelquist
Project Leader
Environmental Survey and
Site Assessment Program

EWA:tc

cc: M. Davis/BNI
J. Kopotic/DOE-OR
M. Redmon/BNI
W. Seay/DOE-OR

J. Berger, ORISE
M. Landis, ORISE
File/329

September 24, 1993

ENERGY/ENVIRONMENTAL SYSTEMS DIVISION

1993 SEP 29 AM 9:26

W. Alexander Williams, Ph.D
Designation and Certification Manager
EM-421
Trevion II
U.S. Department of Energy
Washington, DC 20585-0002

**SUBJECT: ADDITIONAL CONTAMINATED AREAS AT THE ALIQUIPPA
FORGE SITE**

Dear Dr. Williams:

During the period of September 8-15, the Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) performed additional characterization activities at the Aliquippa Forge Site. The characterization activity included the collection of direct measurements and smears on the overhead and wall surfaces in Building 8, Room B, to define the areas exceeding guidelines (Figures 1, 2, and 3).

If you have any questions concerning the subject results please contact me at (615) 576-3740 or Michele Landis at (615) 576-2908.

Sincerely,

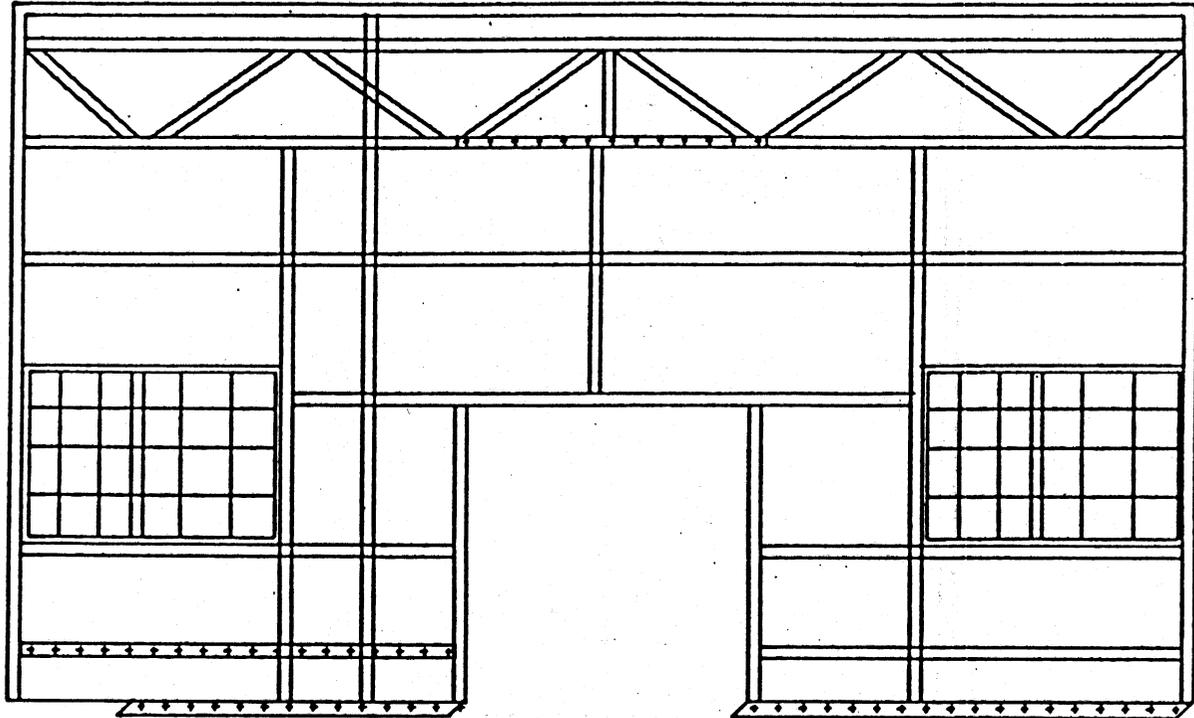


Eric W. Abelquist
Project Leader
Environmental Survey and
Site Assessment Program

EWA:dac

cc: M. Davis/BNI
J. Kopotic/DOE-OR
M. Redmon/BNI
W. Seay/DOE/OR

J. Berger, ORISE
M. Landis, ORISE
File/329



 ELEVATED DIRECT RADIATION

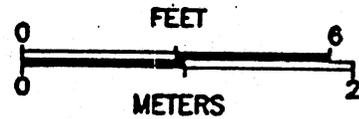
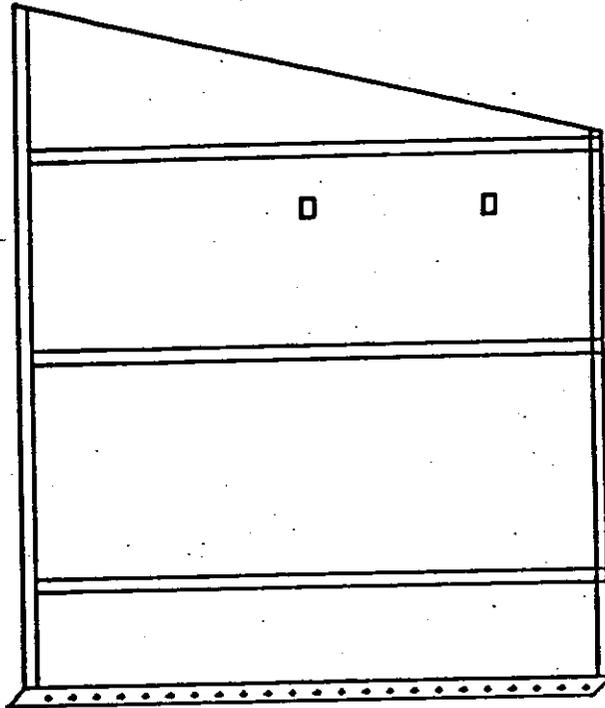


FIGURE 1: Building 8, Room B, West Wall – Areas Exceeding Guidelines



 ELEVATED DIRECT RADIATION

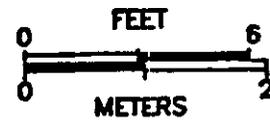


FIGURE 2: Building 8, Room B, North Wall - Areas Exceeding Guidelines

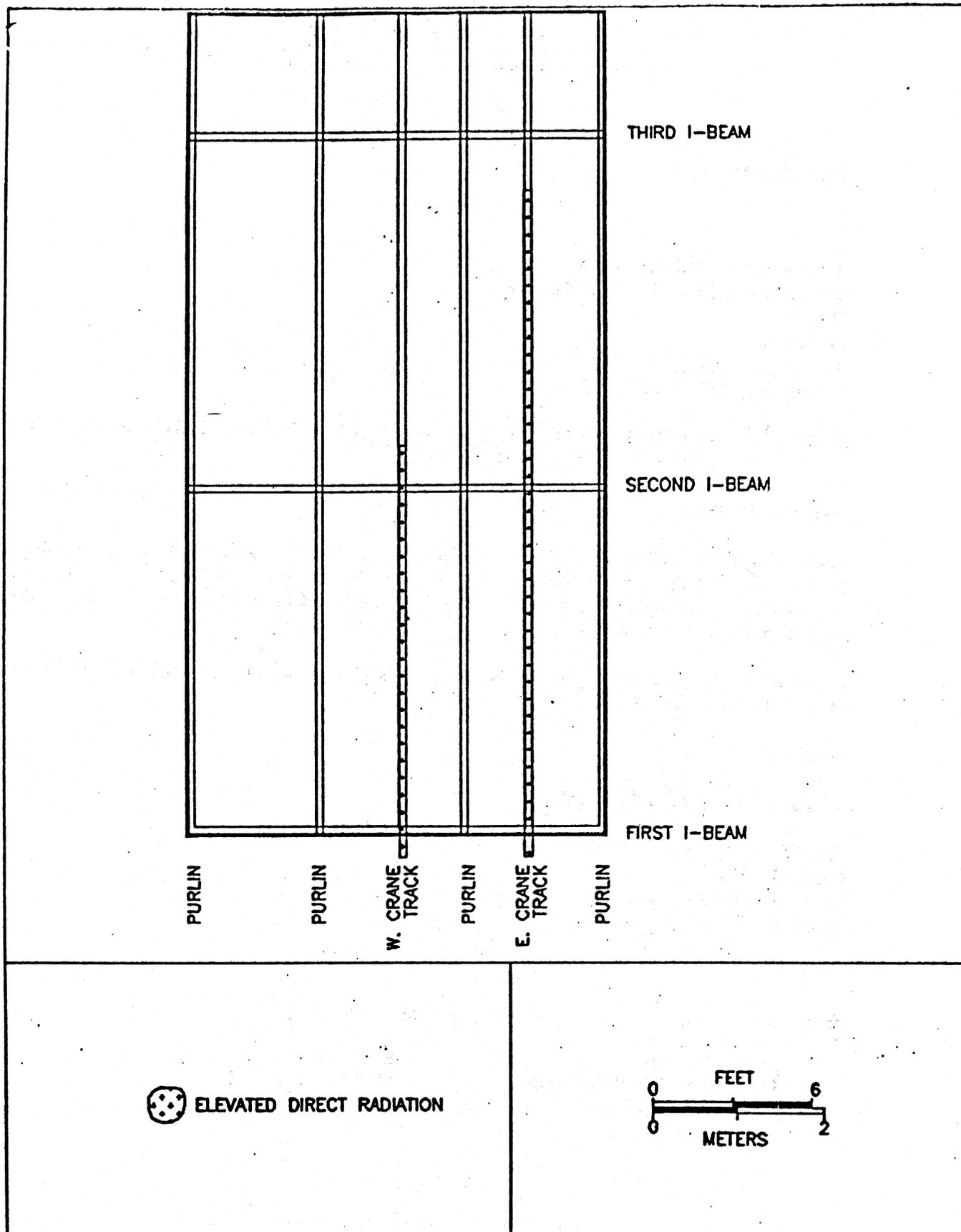


FIGURE 3: Building 8, Room B, Overheads (Looking Down From Above) – Areas Exceeding Guidelines



ORISE

 OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

September 24, 1993

W. Alexander Williams, Ph.D
 Designation and Certification Manager
 EM-421
 Trevion II
 U.S. Department of Energy
 Washington, DC 20585-0002

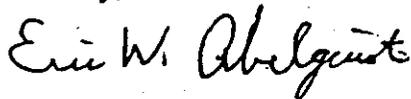
SUBJECT: REVISED FLOOR PLANS OF AREAS EXCEEDING GUIDELINES AT THE ALIQUIPPA FORGE SITE

Dear Dr. Williams:

Enclosed are the revised floor plans identifying areas exceeding guidelines at the Aliquippa Forge Site. This information is up-to-date, including the results of the additional characterization survey performed in Building 8, Room B and the verification activities on the outside excavation and mica pit.

If you have any questions regarding the floor plans please contact me at (615) 576-3740 or Michele Landis at (615) 576-2908.

Sincerely,



Eric W. Abelquist
 Project Leader
 Environmental Survey and
 Site Assessment Program

Enclosure

cc w/ attachments:

M. Davis, BNI
 J. Kopotic, DOE/OR-FSRD
 M. Redmon, BNI

cc w/o attachments:

J. Berger, ORISE
 M. Landis, ORISE
 File: ALI/329

P. O. BOX 117, OAK RIDGE, TENNESSEE 37831-0117

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CHRONOLOGICAL FILE

CCN: 109190

TITLE OF PORTION ON A/C:

Plot 45 (0001)

Aliquippa Forge Bldg 3 & 8
Area Exceeding Guidelines

SPECIFICATION/MATERIAL REQUISITION

SPECIFICATION/MATERIAL REQUISITION NUMBER AND REV.:

TITLE OF PORTION ON A/C:

CALCULATION

CALCULATION IDENTIFICATION:

TITLE OF PORTION ON A/C:

OTHER

DOCUMENT IDENTIFICATION:

TITLE OF PORTION ON A/C:

A/C NUMBER(S)

[i.e., SUPPLEMENT SEQUENCE NUMBER(S)]

DOCUMENT ON APERTURE CARD (A/C)

THIS DOCUMENT WAS TOO LARGE TO BE FILMED AS PART OF THIS ROLL OF FILM. IT WAS FILMED SEPARATELY AND MOUNTED ON AN APERTURE CARD THAT IS CROSS-REFERENCED TO THIS FILM CARTRIDGE.



CHRONOLOGICAL FILE

CCN: 109190

TITLE OF PORTION ON A/C:

Aligippa Forge, Bldg 348
Area exceeding guidelines Plot 46 (0002)



SPECIFICATION/MATERIAL REQUISITION

SPECIFICATION/MATERIAL REQUISITION NUMBER AND REV.: _____

TITLE OF PORTION ON A/C: _____



CALCULATION

CALCULATION IDENTIFICATION: _____

TITLE OF PORTION ON A/C: _____



OTHER

DOCUMENT IDENTIFICATION: _____

TITLE OF PORTION ON A/C: _____



A/C NUMBER(S)

(i.e., SUPPLEMENT SEQUENCE NUMBER(S))

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2.4 ENVIRONMENTAL COMPLIANCE DOCUMENTATION

Documents listed in this section fulfill the NEPA documentation requirements for the Aliquippa Forge site.

	Page
<i>ANL, Action Description Memorandum, Interim Cleanup of Contaminated Materials from Building 3 at the Universal Cyclops Site, Aliquippa, Pennsylvania, BNI CCN 056574, October 1988.</i>	Ref. 4
<i>DOE, Environmental Compliance Assessment for the Aliquippa Forge Site, Aliquippa, Pennsylvania, BNI CCN 069613, July 1990.</i>	Ref. 20
Memorandum from J. E. Baublitz (DOE-Office of Nuclear Energy) to File, "NEPA Review of the Interim Cleanup of Contaminated Materials Within Building 3 at the Universal Cyclops Site, Pennsylvania," BNI CCN 057188, November 15, 1988.	II-32
Memorandum from J. E. Baublitz (DOE-Office of Nuclear Energy) to File, "NEPA Review of Disposal of Contaminated Materials Stored at the Aliquippa Forge Site, Pennsylvania," (Attachment: "Supplement to Action Description Memorandum, Interim Cleanup of Contaminated Materials from Building 3 at the Universal Cyclops Site, Aliquippa, Pennsylvania") BNI CCN 061544, May 19, 1989.	II-36
Memorandum from J. La Grone (DOE) to C. M. Borgstrom (Office of NEPA Oversight), "Categorical Exclusion (CX) Determination - Removal Action at the Aliquippa Forge Site," BNI CCN 091264, June 30, 1992.	II-39

memorandum

DATE: NOV 15 1988

REPLY TO
ATTN OF:

NE-20

SUBJECT:

NEPA Review of the Interim Cleanup of Contaminated Materials Within Building 3 at the Universal Cyclops Site, Pennsylvania

TO:

File

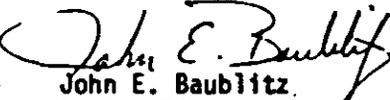
- * The attached Action Description Memorandum (ADM) addresses proposed interim cleanup activities to be conducted at the Universal Cyclops site in Alliquippa, Pennsylvania. Portions of this site are radioactively contaminated as a result of programs previously conducted by the Manhattan Engineer District and the U.S. Atomic Energy Commission.

The proposed action consists of those activities necessary to remove or otherwise control residual contamination within Building 3 on the site so that the owner may use portions of the building for bulk storage and a small forging operation. The debris generated by the proposed activities will be containerized and stored in an area of Building 3 which is subject to access controls.

The environmental impacts of the proposed action will be minimal because the activities are limited to the interior of Building 3, include no below-grade activities or discharges to water bodies, and mitigating procedures such as filtering vacuum exhausts will reduce the potential for air releases to negligible quantities. Additionally, the radiation exposure levels on the exterior of the stored containers is estimated to be indistinguishable from that due to natural background.

Based on a review of all pertinent facts, including additional information furnished in the attached Oak Ridge Operations Office memorandum, I have determined that the proposed interim cleanup action will have a clearly insignificant impact on the quality of the human environment within the meaning of the National Environmental Policy Act (NEPA), 42 U.S.C. 4321 et seq, and that this is the appropriate document to satisfy the requirements of NEPA.

- * (Attachment included as Ref. 4)


John E. Baublitz
Acting Director
Office of Remedial Action
and Waste Technology
Office of Nuclear Energy

2 Attachments

CC:

C. Borgstrom, EH-25
H. Garson, GC-11
P. Gross, OR-TSD (w/o attachment)

bcc:
W. Seay, OR-TSD (w/o attachments) ✓

NE-23 RF
Wagoner RF
NEG (4)

NE-23:Wagoner:ks:353-4937:11/10/88:IBM:313/88

NE-23
W
Wagoner

11/19/88

NE-23

Flore
[Signature]
11/16/88

NE-20

Baubitz
[Signature]
11/16/88

memorandum

DATE: November 10, 1988

REPLY TO
ATTN OF: CE-53: Seay

SUBJECT: Additional Information Regarding Interim Cleanup of the Universal Cyclops Site

TO: Jim Wagoner, NE-23, GTN-HQ

In addition to the action description memo (ADM) prepared by Argonne National Laboratory (ANL), the following information is provided to clarify the scope of activities associated with the interim remedial action. As stated in the ADM, the purpose of the interim cleanup is to remove or otherwise control residual contamination within the building as necessary to allow the owner use a portion of Building 3 for bulk storage and a small forging operation.

Both isotopic analysis of site soil samples and information on historical processing activities indicate that contamination at the site is natural processed uranium without daughter products. Accordingly, surface contamination guidelines for natural uranium, as identified in Table 1 of Appendix A of the ADM, will be used as cleanup standards for the remedial effort.

As stated in the ADM, debris generated by the effort will be containerized and stored in an area of the building subject to access controls. To ensure the continued adequacy of the interim measures, semi-annual site visits will be conducted to perform routine surveillance and maintenance activities. An active radiological air monitoring system will be left at the site for two months after completion of the interim effort to confirm that no significant airborne contamination potential remains. In addition, the site owner will be instructed that there is to be no access in the controlled areas and that DOE should be notified of any noticeable changes to the containers for the stored material. Also, DOE will be notified prior to any modifications to Building 3. Compliance with these measures will be assured through a written agreement to be developed with the building's current owner.

Although the generated wastes are not expected to contain any hazardous wastes subject to Subtitle C of the Resource Conservation and Recovery Act, representative samples will be chemically and radiologically analyzed to confirm the material's regulatory status and to support subsequent applications for permanent disposal.

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United States Government

Department of Energy

memorandum

DATE: MAY 19 1988

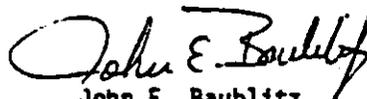
REPLY TO
ATTN OF: NE-20SUBJECT: NEPA Review of Disposal of Contaminated Materials Stored at the
Aliquippa Forge Site, Pennsylvania

TO: File

In the fall of 1988, interim cleanup actions were conducted at the Aliquippa Forge Site (formerly the Universal Cyclops Site) in Aliquippa Forge, Pennsylvania. Wastes generated from this cleanup activity were packaged and stored on-site in a controlled area of Building 3. These proposed actions were detailed in an Action Description Memorandum (ADM) and the NEPA review was documented in a Memorandum-to-File (dated November 15, 1988).

The attached Supplement to the Aliquippa Forge Site ADM has been prepared to describe the current proposed action involving transport of the stored waste materials to the DOE Hanford Site for disposal. The environmental impacts of this proposed action will be negligible because the wastes are already packaged for shipment, the external exposure rates on the containers are indistinguishable from the background levels at the site, and the risk analysis for a single truck traversing the 2300 miles to Hanford results in very low probabilities for injuries or fatalities enroute.

Based on a review of all pertinent facts, I have determined that the proposed shipment and disposal action will have a clearly insignificant impact on the quality of the human environment within the meaning of the National Environmental Policy Act (NEPA), 42 U.S.C. 4321 et seq., and that this is the appropriate document to satisfy the requirements of NEPA.



John E. Baublitz
Acting Director
Office of Remedial Action
and Waste Technology
Office of Nuclear Energy

Attachment

cc:
C. Osborne, EH-25
B. Walker, OR/TSD
W. Seay, OR/TSD

**SUPPLEMENT
TO
ACTION DESCRIPTION MEMORANDUM**

**INTERIM CLEANUP OF CONTAMINATED MATERIALS FROM
BUILDING 3 AT THE UNIVERSAL CYCLOPS SITE,
ALIQUPPA, PENNSYLVANIA**

Under its Formerly Utilized Sites Remedial Action Program, the U.S. Department of Energy (DOE), Oak Ridge Operations, performed a limited cleanup and consolidation of radioactively contaminated materials within Building 3 at the Universal Cyclops site in Aliquippa, Pennsylvania. This action was performed in November and December 1988 and consisted of:

- Cleaning up radioactively contaminated materials from floors, walls, and equipment in Building 3,
- Packaging these materials in containers suitable for storage and transport of low-specific-activity radioactive materials, i.e., six 55-gallon drums and three 90-ft³ metal boxes, and
- Storing these packages on an interim basis within a controlled area of Building 3 behind wire fencing posted with warning signs.

The total volume of contaminated materials in interim storage is about 8.9 m³ (315 ft³). The DOE is proposing to transport these materials to the Hanford site near Richland, Washington, for disposal. This supplement has been prepared to address the potential impacts associated with loading, transporting, and disposing of these wastes at the Hanford site.

The exposure rates associated with the packages are very low. The measured exposure rate at the fence demarking the controlled area within Building 3 is at the background level for the Aliquippa area, which is about 10 μ R/h. The contact exposure rate from these packages has been estimated to be about 0.1 μ R/h above background. The occupational dose commitment from loading, transporting, and disposing of these wastes would be negligible in comparison to the dose received from background sources of radiation during this same period of time. The entire action would be completed within one week. No airborne releases of radioactivity to the environment would occur because the wastes are packaged. Thus, the radiological impacts to the general public would be negligible.

The wastes would be transported to the Hanford site in a vehicle consigned for exclusive use; only one trip would be required. All transportation activities would comply with applicable federal and state requirements for shipment of low-specific-activity radioactive materials. The total distance to the Hanford site is about 3,700 km (2,300 mi). It is very unlikely that any transportation-related injuries or accidents would occur as a result of this planned action. Using unit-risk factors of 5.1×10^{-7} injuries and

3.0×10^{-8} fatalities per vehicle-km for truck transportation (Wolff 1984), the number of injuries and fatalities is estimated to be 0.002 and 0.0001, respectively.

The proposed action would be carried out in compliance with all applicable health, safety, environmental, and transportation regulations. This analysis indicates that the proposed action would not have a significant impact on the general public, workers, or the environment.

REFERENCE

Wolff, T.A., 1984, *The Transportation of Nuclear Materials*, SAND-0062; TTC-0471, Transportation Technology Center Department, Sandia National Laboratories, Albuquerque, N.M. (Dec.).

United States Government

Department of Energy
Oak Ridge Field Office

memorandum

DATE: June 30, 1992

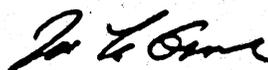
REPLY TO
ATTN OF: EW-93:Hartman

SUBJECT: CATEGORICAL EXCLUSION (CX) DETERMINATION - REMOVAL ACTION AT THE ALIQUIPPA FORGE SITE

TO: Carol M. Borgstrom, Director, Office of NEPA Oversight, EH-25

Attached is a categorical exclusion (CX) determination describing the proposed removal and disposal of radiologically contaminated materials at the Aliquippa Forge site. Removal action at this site is being undertaken as part of DOE's Formerly Utilized Sites Remedial Action Program (FUSRAP) and is being conducted under the expedited response process. I have determined that this action conforms to an existing NEPA Subpart D CX and may be categorically excluded from further NEPA review and documentation. This CX determination was made pursuant to Subpart D of the DOE NEPA Guidelines, 57 FR 15156, as referenced on the attached determination.

Questions you have concerning NEPA compliance issues may be directed to Patricia W. Phillips, OR NEPA Compliance Officer, at (615) 576-4200.



Joe La Grone
Manager

Attachment

cc w/attachment:
C. R. Hickey, BNI
S. D. Liedle, BNI
Frank Petelka, SAIC
Lynn Lawson, EM-431, TREV.
R. S. Scott, EM-20, GTN
J. W. Wagoner, EM-421, GTN
P. W. Phillips, SE-311, OR
L. K. Price, EW-93, OR
T. C. Perry, EW-93, OR

**CATEGORICAL EXCLUSION (CX) FOR
REMOVAL OF RADIOLOGICALLY CONTAMINATED MATERIALS
AT THE ALIQUIPPA FORGE (ALIQUIPPA) SITE**

PROPOSED ACTION: Removal of radiologically contaminated materials.

LOCATION: Aliquippa Forge (Aliquippa) Site, Aliquippa, Pennsylvania
[FUSRAP site]

DESCRIPTION OF PROPOSED ACTION: The proposed action is to safely remove, temporarily store, and transport for disposal radiologically contaminated materials at the Aliquippa Site, thereby eliminating potential exposure of workers and the public to contamination exceeding applicable cleanup guidelines. There are no known hazardous wastes at the site; however, if hazardous wastes are determined to be commingled with radioactive waste, removal and temporary storage would be done in accordance with applicable requirements; the mixed waste would then be disposed of at an existing facility designed to accept these wastes. The action includes excavation of radiologically contaminated material; decontamination of a radiologically contaminated building and equipment; and packaging, transportation, and disposal of low-level radiologically contaminated materials to existing facilities at the Hanford Reservation near Richland, Washington, or another existing appropriately licensed disposal site. In the event that disposal delays require temporary on-site storage of wastes, storage would be conducted in accordance with all applicable regulations. Removal action at this site would be undertaken as part of DOE's Formerly Utilized Sites Remedial Action Program (FUSRAP).

The proposed removal action would be conducted under DOE authorities pursuant to the Atomic Energy Act (AEA); would not threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including requirements of DOE orders; would not require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators and facilities for treating wastewater, surface water, and groundwater); would not disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; and would be consistent with the final remedial action for the site. The proposed action would not adversely affect any environmentally sensitive resources defined in the Federal Register Notice referenced below, including archaeological or historical sites; potential habitats of endangered or threatened species; floodplains; wetlands; areas having a special designation such as Federally- and state-designated wilderness areas, national parks, national natural landmarks, wild and scenic rivers, state and Federal wildlife refuges, and marine sanctuaries; prime agricultural lands; special sources of water such as sole-source aquifers; and tundra, coral reefs, or rain forests.

The estimated cost for this action is less than \$2 million and the action would take less than 12 months from the time activities begin on site.

EW-93:Hartman

CATEGORICAL EXCLUSION (CX) DETERMINATION - REMOVAL ACTION AT THE ALIQUIPPA FORGE SITE

Carol M. Borgstrom, Director, Office of NEPA Oversight, EH-25

Attached is a categorical exclusion (CX) determination describing the proposed removal and disposal of radiologically contaminated materials at the Aliquippa Forge site. Removal action at this site is being undertaken as part of DOE's Formerly Utilized Sites Remedial Action Program (FUSRAP) and is being conducted under the expedited response process. I have determined that this action conforms to an existing NEPA Subpart D CX and may be categorically excluded from further NEPA review and documentation. This CX determination was made pursuant to Subpart D of the DOE NEPA Guidelines, 57 FR 15156, as referenced on the attached determination.

Questions you have concerning NEPA compliance issues may be directed to Patricia W. Phillips, OR NEPA Compliance Officer, at (615) 576-4200.

Joe La Grone
Manager

Attachment

- cc w/attachment:
- C. R. Hickey, BNI
- S. D. Liedle, BNI
- Frank Petelka, SAIC
- Lynn Lawson, EM-431, TREV
- R. S. Scott, EM-20, GTN
- J. W. Wagoner, EM-421, GTN
- P. W. Phillips, SE-311, OR
- L. K. Price, EW-93, OR
- T. C. Perry, EW-93, OR

EW-93:GSHartman:6-0273:MADyke:6-4452:5/28/92

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APPROVED
Smithwick
DATE 6/29/92

M-1
La Grone

2.5 ACCESS AGREEMENTS

The documents in this section are the access agreements obtained for the site before remedial action activities began.

	Page
Letter from R. R. Harbert (BNI-FUSRAP) to W. M. Seay (DOE-FSRD), "Access Agreements for DOE's Signature," BNI CCN E-06156, October 6, 1988.	II-44
Letter from R. R. Harbert (BNI-FUSRAP) to W. M. Seay (DOE-FSRD), "Amendment to Aliquippa Forge, Inc. Access Agreement," BNI CCN 056998, November 10, 1988.	II-51
Letter from G. K. Hovey (BNI-FUSRAP) to R. E. Crouse, Sr. (President, Aliquippa Forge, Inc.), "Transmittal of Signed Access Agreement," BNI CCN 090020, June 2, 1992.	II-53

E-06156

Bechtel National, Inc
Systems Engineers — Constructors



Jackson Plaza Tower
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37830

Mail Address: P.O. Box 350, Oak Ridge, TN 37831-0350
Telex: 3785873

OCT 06 1988

U.S. Department of Energy
Oak Ridge Operations
Post Office Box 2001
Oak Ridge, Tennessee 37831-8723

Attention: William M. Seay, Site Manager
Technical Services Division

Subject: Bechtel Job No. 14501, FUSRAP Project
DOE Contract No. DE-AC05-81OR20722
Access Agreements for DOE's Signature
Code: 2600/WBS: 126

Dear Mr. Seay:

Enclosed for DOE's signature are three copies of the access agreement for the following property:

Aliquippa Forge, Inc.

Please sign all three copies and return two copies to BNI. We will forward a copy to the property owner.

Also enclosed is a copy underlining the changes made to the approved Remedial Action Access Agreement. Please refer any questions on this matter to Jeannie Houston at 6-2142.

Very truly yours,

A handwritten signature in dark ink, appearing to read "R. R. Harbert". The signature is written in a cursive, somewhat stylized font.

R. R. Harbert
Project Manager - FUSRAP

JMH:pja:8589A
Enclosures: As stated

010814

DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS OFFICE
P.O. BOX E
OAK RIDGE, TENNESSEE 37830

CONTRACT NO. DE-AC05-81OR20722

AGREEMENT

THIS AGREEMENT, entered into this 29th day of SEP, 1988, effective as of the 29th day of SEP, between THE UNITED STATES OF AMERICA (hereinafter called the "Government"), acting through the DEPARTMENT OF ENERGY (hereinafter called the "DOE"), and ALIQUIPPA FORGE, INC., RONALD CROUSE, SR., PRESIDENT, owner (hereinafter called the "Principal") of the parcel of land described as parcels 08,001,0100 at the Aliquippa, PA assessors office and shown on the attached area map.

WITNESSETH THAT:

WHEREAS, the DOE through its contractor, Bechtel National, Inc., is conducting a low-level radioactive waste remedial action program in the environs of the former Universal Cyclops Plant in Aliquippa, PA; and

WHEREAS, the Principal has agreed to such remedial action under the terms set forth below:

NOW THEREFORE, in consideration of the mutual promises, the parties hereto agree as follows:

1. The Principal hereby grants to the DOE or its designees a permit giving: (a) the right to enter upon his/her property at 100 First Street, Aliquippa, PA, for the purpose of decontaminating a portion of said property in accordance with the attached Remedial Action Plan; and (b) the right to enter upon his/her property to take soil samples, perform radiological 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 restrict access to such parts of his/her property, as may be necessary, to facilitate remedial action; and (d) the right to periodically enter upon his/her property after completion of the interim remedial action for the purpose of conducting follow-up radiological surveys.

2. The Government shall be responsible for any loss or destruction of or damage to the Principal's real or personal property caused by the activities of the DOE or its designees in exercising any of the rights given in this Agreement. This responsibility shall be limited to the cost of restoring the property to a condition comparable to its original condition by techniques of backfilling, seeding, 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 the terms and conditions of this Agreement.

3. The Principal will notify the DOE in writing if his/her property is, or at any time during the term of this Agreement shall become, leased, sold or otherwise transferred to another party. The Principal 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 Principal hereby consents to any Lessee of the property entering into a suitable agreement with the Government to cover any part of the remedial action that may affect such Lessee.

4. 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.

5. The Principal 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 Principal 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.

6. The work covered by this agreement is an interim measure necessary to allow occupational use by the owner of one portion of the property. Further remedial action to fully decontaminate the property will be necessary at a later date.

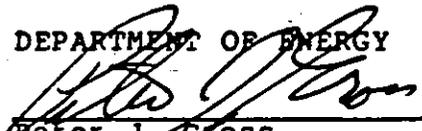
7. This Agreement shall terminate upon completion of the decontamination work in accordance with the terms and conditions of this Agreement and upon verification by the DOE that the area affected by this work meets applicable radiological criteria to the maximum extent practicable to allow occupational use by the owner.

IN WITNESS WHEREOF, the parties have executed this Ex 06456
several counterparts.

THE UNITED STATES OF AMERICA

BY: DEPARTMENT OF ENERGY

BY:


Peter J. Gross

TITLE: Director, Technical
Services Division

DATE:

10/7/88

ALIQUIPPA FORGE INC.

[Printed name of Property Owner(s)]


(Signature of Owner)

Signature of Owner (if multiple)

22 SEP 88

(Date)

1-800-321-3596

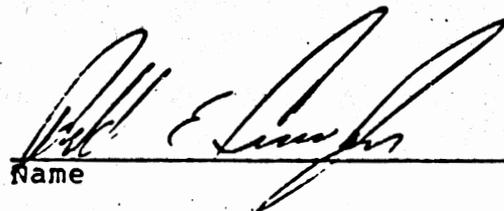
(phone)

If the signator is a corporation or a company, please complete the following:

CORPORATE CERTIFICATE

I, RONALD E. GROUSE, certify that I am the duly qualified PRESIDENT of the corporation named herein as the consentor; that RONALD E. GROUSE JR., who signed this consent form on behalf of the consentor, was then SECRETARY of said corporation by authority of its governing body and is within the scope of its powers. Witness my hand and the seal of said corporation.

SEAL


Name 9-30-88
Date

OCT 12 1988

Mr. Dick Harbert
Bechtel National, Inc.
P.O. Box 350
Oak Ridge, Tennessee 37831

Dear Mr. Harbert:

ACCESS AGREEMENT FOR ALIQUIPPA FORGE, INC.

The purpose of this letter is to transmit for your disposition, the two copies of the enclosed Access Agreement for Aliquippa Forge, Inc. as identified in the agreement.

If you have any questions concerning this correspondence contact me at 576-1830.

Sincerely,

Original Signed By
Bill Seay
William M. Seay
Site Manager
Technical Services Division

CE-53:Seay

Enclosure:
As stated

CE-53:WMSeay:sm:6-1830:10/12/88
IBM (WP)B SEAY A:SEAY.LTR

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bcc: R. Harbert
R. Land
J. Houston

056998

Bechtel National, Inc.

Systems Engineers — Constructors

Jackson Plaza Tower
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37833

Mail Address: P.O. Box 380, Oak Ridge, TN 37831-0380
Telex: 3785873



NOV 10 1988

U.S. Department of Energy
Oak Ridge Operations
P. O. Box 2001
Oak Ridge, Tennessee 37831-8723

Attention: William M. Seay, Site Manager
Technical Services Division

Subject: Bechtel Job No. 14501, FUSRAP Proj. ---
DOE Contract No. DE-AC05-81OR20722
Amendment to Aliquippa Forge, Inc. Access Agreement
Code: 2620/WBS: 126

Dear Mr. Seay:

Enclosed for DOE's signature are three copies of the amendment to the Aliquippa Forge, Inc. access agreement.

This amendment reflects the disposal of miscellaneous scrapped equipment left in Building 3 and \$500.00 compensation paid to Aliquippa Forge, Inc. for restoring the floor in Building 3.

Please have all three copies signed and return two copies to Bechtel National, Inc. We will forward a copy to the property owner.

Please refer any questions on this matter to Jeannie Houston at 576-2142.

Very truly yours,

R. R. Harbert
Project Manager - FUSRAP

JMH:jhu:8780A
Enclosure: As stated

CONCURRENCE

JMH				
-----	--	--	--	--

56998

DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS OFFICE
P.O. BOX E
OAK RIDGE, TENNESSEE 37831

CONTRACT NO. DE-AC05-81OR20722

AMENDMENT

THIS AMENDMENT, entered into this 30th day of OCTOBER, 1988, effective as of the 30th day of OCTOBER, 1988, is part of the AGREEMENT dated September 29, 1988, between the U.S. DEPARTMENT OF ENERGY (DOE) and ALIQUIPPA FORGE, INC.

The above referenced AGREEMENT is hereby amended to allow the DEPARTMENT OF ENERGY and its contractors to dispose of waste, miscellaneous scraped equipment left in Building 3 with no compensation being paid to ALIQUIPPA FORGE, INC.

It is also agreed the DEPARTMENT OF ENERGY will pay ALIQUIPPA FORGE, INC. \$500.00 compensation for restoring the floor in Building 3 following the completion of Remedial Action.

IN WITNESS WHEREOF, the parties have executed this AMENDMENT in several counterparts.

THE UNITED STATES OF AMERICA
BY: DEPARTMENT OF ENERGY
BY: _____
TITLE: _____
DATE: _____

ALIQUIPPA FORGE, INC.
Donald E. Cravens, Pres
(Signature)
10/30/88
(Date)

090020

Bechtel

Oak Ridge Corporate Center
151 Lafayette Drive
P.O. Box 350
Oak Ridge, Tennessee 37831-0350
Facsimile: (615) 220-2100

Bechtel Job No. 14501, FUSRAP Project
DOE Contract No. DE-AC05-91OR21949
Code: 2600/WBS: 126

JUN 02 1992

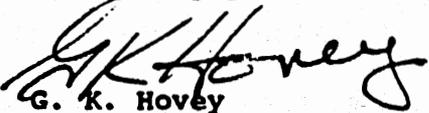
Mr. Ronald E. Crouse, Sr.
President
Aliquippa Forge, Inc.
7670 St. Clair Avenue
Mentor, Ohio 44060

Subject: Transmittal of Signed Access Agreement

Dear Mr. Crouse:

Enclosed for your files is a fully executed copy of the agreement between you and the U.S. Department of Energy. If you have any further questions, please call our toll free number 1-800-253-9759 and leave a message.

Very truly yours,


G. K. Hovey
Vice President and
Program Manager - FUSRAP

JFS:nbm
Enclosure: Access Agreement

Concurrence: Nancy B. Myers 
John F. Schlatter 

ACTION REQ'D	() YES (X) NO	DUE DATE _____
RESPONSE TO CHRON NO.	_____	



Bechtel National, Inc.

LICENSE AGREEMENT

THIS AGREEMENT, entered into this 1ST day of MAY, 1992, effective as of the 1ST day of MAY, 1992 between THE UNITED STATES OF AMERICA, (hereinafter called the "Government"), acting through the DEPARTMENT OF ENERGY (hereinafter called "DOE"), and ALIQUIPPA FORGE, INC. (hereinafter called the "Licensor") who is the fee owner of the parcel of land (hereinafter called the Premises) which is described as parcels 08,001,0100 filed in the Aliquippa, Pennsylvania, assessor's office.

WITNESSETH THAT:

WHEREAS, the DOE through its contractor, Bechtel National, Inc., is conducting a low-level radioactive waste remedial action program in the environs of the Aliquippa Forge, Inc. in Aliquippa, Pennsylvania; 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 low-level radioactive 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 radiological 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 radiological 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

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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 radiological 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 radioactive 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 license.

4. All notices to the DOE may be given by delivering same to the Department of Energy, Director of the Former Sites Restoration Division, Administration Road, Oak Ridge, TN or by mailing same to the Department of Energy, Oak Ridge Operations, Director of the Former Sites Restoration Division, P. O. Box 2001, Oak Ridge, TN 37831-8723.

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 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,

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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 all FUSRAP remedial action and restoration at the Licensor's Premises and upon certification by the DOE that the Licensor's Premises meet applicable radiological 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: Lester K. Price
Lester K. Price
TITLE: Director, Former Sites
Restoration Division
DATE: 5/20/92

14P

ALIQUIPPA FORGE INC.
Printed Name of Property Owner
Donald E. Brian, Pres.
Signature of Owner
Signature of Owner (if Multiple)
DATE: 5-1-92
PHONE: 1-800-359-5859

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ADDENDUM
ALIQUIPPA FORGE, INC.
100 First Street
Aliquippa, PA 15001

Radiological surveys have shown that small amounts of low-level radioactive contamination are present on the property. The description below describes the work to be done. The following sequence of remedial action operations is anticipated for this property:

- A. Radiological measurements and sampling to precisely establish and mark contamination limits to guide the excavation.
- B. Removal of personal property items from the affected areas for storage by owner or by the remedial action contractor in an uncontaminated area during the cleanup operation.
- C. Removal of vegetation such as trees and shrubs, if required, from the affected area.
- D. Excavation of contaminated soil from the affected areas.
- E. Radiological sampling and analysis to verify that contamination has been removed. It is anticipated that the time required for analysis prior to backfilling will be one week or less.
- F. Backfilling of the affected area to its original grade prior to the start of remedial action.
- G. Return of previously removed property items.
- H. Restoration of buildings and grounds to a condition comparable to the condition prior to remedial action.
- I. Vacuuming of interior surfaces in Building 3 to remove contamination.
- J. Decontamination of floor surfaces through techniques such as scabbling or chemical cleaning.
- K. Equipment such as two (2) brick lined furnaces, determined to be radiologically contaminated and possibly having asbestos contaminated bricks and mortar, will be decontaminated. Decontamination of the equipment may require some destructive cutting, etc., of the furnace prior to final decontamination.

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- L. Contaminated soils and building materials will be placed in containers and stored in Building 3 temporarily to await final off-site disposition.
- M. Temporary office space, such as trailers, will be set up while the work is underway.

2.6 POST-REMEDIAL ACTION REPORT

The following items document the remedial action activities and the post-remedial action radiological status for the Aliquippa Forge site:

	Page
Letter from R. R. Harbert (BNI-FUSRAP) to W. M. Seay (DOE-FSRD), "Post-Remedial Action Summary of the Aliquippa Forge 1988 Decontamination of Building 3," BNI CCN 061787, May 16, 1989.	II-60.
BNI, <i>Post-Remedial Action Report for the Aliquippa Forge Site</i> , DOE/OR/21949-384, Oak Ridge, Tenn., May 1996.	Ref. 13

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-061256

Bechtel National, Inc.

Systems Engineers — Constructors

Jackson Plaza Tower
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37830



Mail Address: P.O. Box 350, Oak Ridge, TN 37831-0350
Telex: 3785873

MAY 16 1989

U.S. Department of Energy
Oak Ridge Operations
Post Office Box 2001
Oak Ridge, Tennessee 37831-8723

Attention: William M. Seay, Site Manager
Technical Services Division

Subject: Bechtel Job No. 14501, FUSRAP Project
DOE Contract No. DE-AC05-81OR20722
Post-Remedial Action Summary
of the Aliquippa Forge 1988
Decontamination of Building 3
Code: 7330/126

- References:
- (1) Argonne National Laboratory. Radiological Survey of Universal Cyclops, Inc., Titusville Plant (Formerly Vulcan Crucible Steel Company, Aliquippa, Pennsylvania, DOE/EV-0005/33, ANL-OHS/HP-82-104, Argonne, IL, May 1982.
 - (2) U.S. Department of Energy. "U.S. Department of Energy Guidelines for Residual Radioactivity at Formerly Utilized Sites Remedial Action Program and Remote Surplus Facilities Management Program Sites," Rev. 1, July 1985.

Dear Mr. Seay:

The purpose of this letter is to document the radiological condition of the Aliquippa Forge facility in West Aliquippa, Pennsylvania, following a limited decontamination effort. This letter provides background information on the site, the methods used to perform the decontamination activity, the radiological survey methods used to evaluate the effectiveness of the decontamination effort, and the current radiological status of the facility.

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The subject remedial action was conducted for the Department of Energy (DOE) by Bechtel National, Inc. (BNI) from October 1988 to December 1988. The work was performed under the Formerly Utilized Sites Remedial Action Program (FUSRAP), a DOE program to identify, decontaminate, or otherwise control sites where residual radioactive contamination (exceeding current guidelines) remains from the early years of the nation's atomic energy program. BNI is the Project Management Contractor for DOE and represents DOE in the planning, management, and implementation of FUSRAP.

Summary

A survey of Building 3, after the decontamination efforts, indicated remedial action was effective in removing contamination from a large portion of the building. After evaluation of the survey results, it was concluded that although the controlled area is still contaminated; this area does not pose a significant risk to occupants of the building under current use patterns.

To ensure that building occupants are not subjected to any risks, the area designated as the controlled area should not be used at this time and access should be restricted. The remaining contamination in Building 3 will be remediated at a later date.

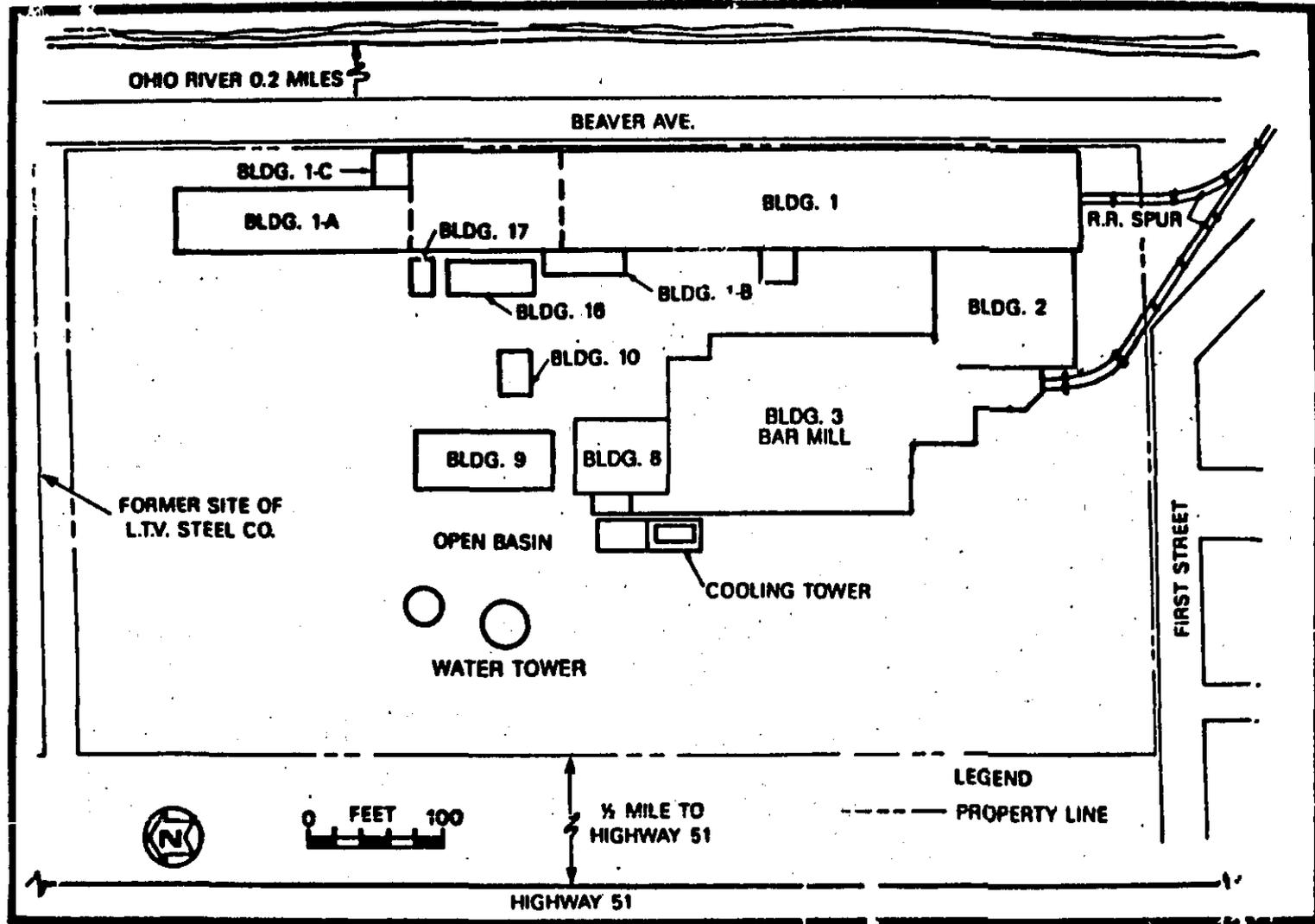
Site Background

The Aliquippa Forge facility is located on an 8-acre parcel of land along the Ohio River in West Aliquippa, Pennsylvania. Once owned by the Universal Cyclops Specialty Steel Division of the Cyclops Corporation, it is currently owned by Aliquippa Forge, Inc. The site (Figure 1) includes several buildings, the largest of which (Building 3) was formerly used for uranium processing. The site is partially fenced at the property line on the east and north sides. Work is in progress five days a week, 24 hours a day at a small on-site forging operation, which currently does not involve Building 3.

From July 1948 to late 1949 Building 3, then owned by the Vulcan Crucible Steel Company, was used for a uranium-rolling operation. Uranium billets produced at other facilities were heated and formed into rods which were subsequently shipped off-site. After these operations ceased, a decontamination effort was conducted at the site in compliance with then-applicable guidelines (Ref. 1).

In 1978, a radiological survey performed for DOE by Argonne National Laboratory (ANL) in and around Building 3 identified radioactive contamination in excess of more recently developed guidelines (Ref. 1). The principal radioactive contaminant identified was processed natural uranium. Radioactive contamination was found in Building 3 on isolated dirt and

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FIGURE 1 ALIQUIPPA FORGE SITE

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concrete floor areas, on steel floor plates, and on the overhead beams above the furnaces that were used for heating billets. In addition, some contaminated steel flooring was found outside the building around a cooling basin.

Based on the results from the ANL survey, it was concluded that additional remedial efforts at the site were warranted due to residual contamination exceeding guidelines. Accordingly, in 1983 the site was designated by DOE for inclusion in FUSRAP.

In December 1987, at the request of the current owner who wanted to use the building for storage, DOE had BNI perform a limited radiological characterization of Building 3. Survey measurements within the building included a walkover scan, isotopic soil sample analyses, direct alpha and beta-gamma measurements, checks for transferable contamination (using smears), and external exposure dose rates. After the survey was completed, storage activities commenced in Building 3 in areas that the survey identified as noncontaminated and suitable for storage (Figure 2).

In May 1988, the owner of Aliquippa Forge, Inc. requested that DOE expedite remedial efforts to allow use of Building 3 for expansion of the forging operation. This report documents efforts undertaken by the FUSRAP program to accommodate this request.

Remedial Activities

The purpose of the 1988 interim remedial effort was to decontaminate a major portion of Building 3 to allow restricted use of the building by the present owner/operator, Aliquippa Forge, Inc. An access agreement was executed between the owner/operator and DOE prior to implementation of limited remedial measures. These measures included decontaminating most areas of the building by direct removal of contaminated materials, and stabilizing and fencing off the remaining area. Figure 3 delineates areas which were remediated. Specific activities included:

1. All loose debris, bird carcasses and droppings, wood, bricks, etc. present in the building were collected and placed in standard metal containers used for storage of low-specific activity materials.
2. All exposed wall areas below a height of six (6) feet and all floor surfaces were vacuumed with a high-volume vacuum cleaner fitted with high efficiency particulate air (HEPA) filters.

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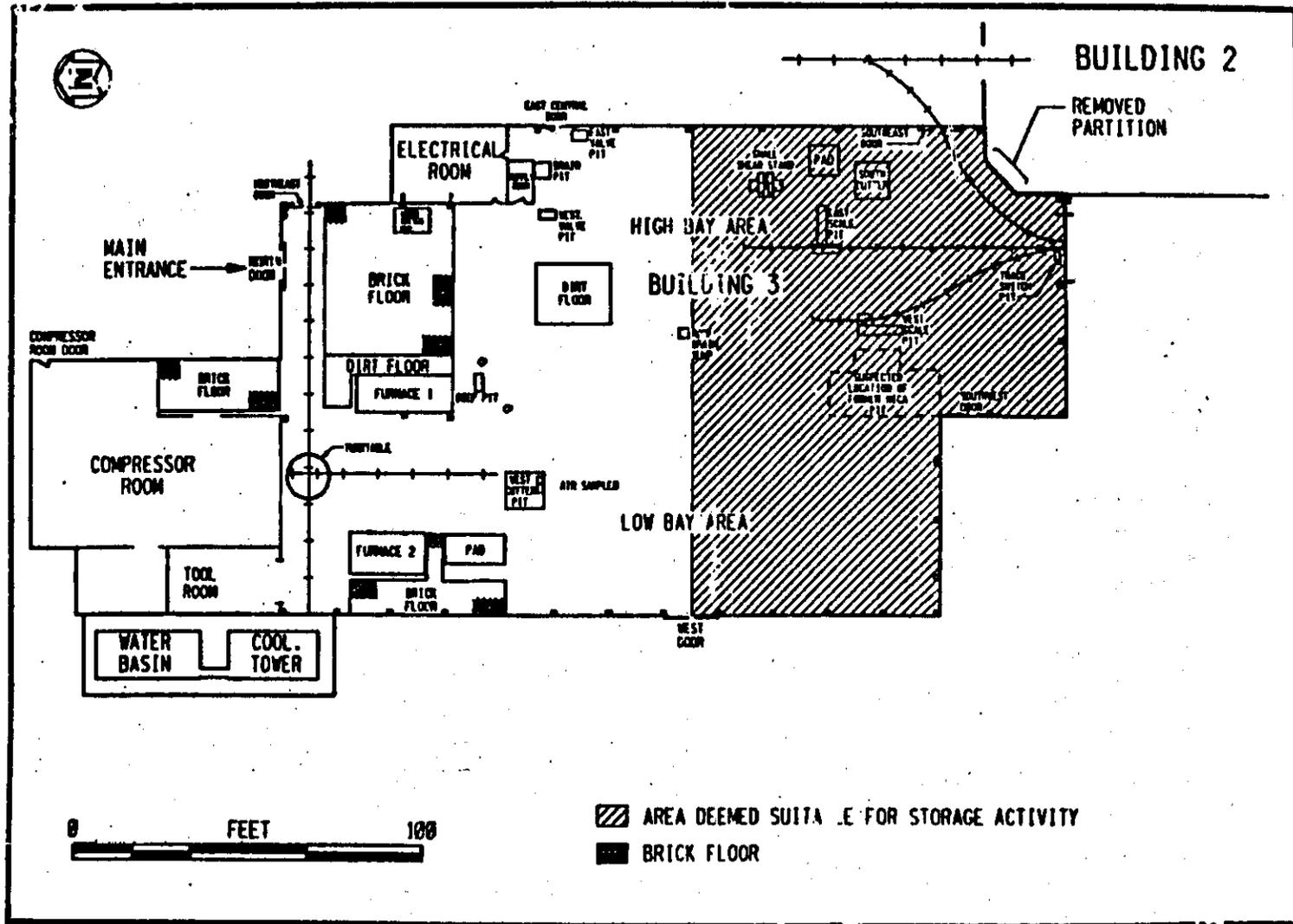
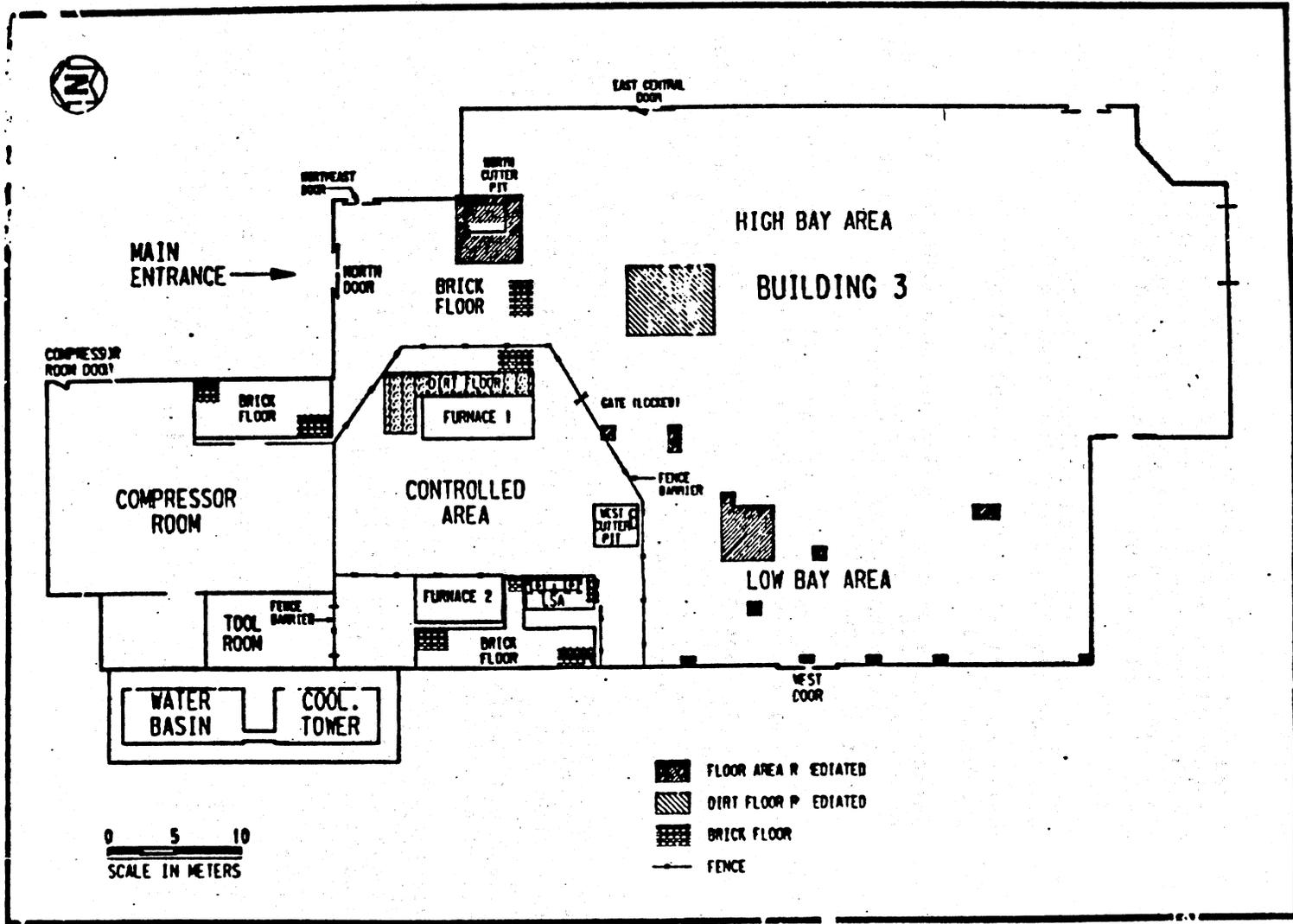


FIGURE 2 AREA DEEMED SUITABLE FOR STORAGE ACTIVITY IN BUILDING 3

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FIGURE 3 AREAS REMEDIATED

3. Where vacuuming was not successful in removing contamination, scraping, wire brushing, scabbling and chipping succeeded in removing the remaining contamination. Approximately 200 square feet of surface contaminated above guidelines required more than vacuuming.
4. Twenty-three (23) metal rollers stacked in the northwest corner of Building 3 were decontaminated.
5. Thirteen (13) 4' x 4' x 1" metal plates were decontaminated.
6. Furnace doors on the eastern furnace (Furnace 1), and openings on the western furnace (Furnace 2) were closed and secured with lumber and plastic sheeting to prevent migration of contaminants.
7. Metal cutting machinery in the northeastern corner of Building 3 was disassembled, removed, and decontaminated.
8. A fenced, controlled area (Figure 3) in the northwest corner of Building 3 was created to provide an area for interim storage of wastes generated by the limited remedial effort, and to prevent unauthorized access to remaining contaminated areas.

Three Low Specific Activity (LSA) containers (90 ft³ capacity) and six 55-gallon steel drums (a total of 12 cubic yards) were filled with wastes generated by the interim remedial effort. These waste containers were appropriately labeled, placed on an elevated pad in the controlled area, and covered with plastic sheeting to prevent intrusion of water.

Several items found in Building 3, such as the metal rollers, metal plates, and metal cutting machinery, were decontaminated and released to Aliquippa Forge, Inc. having no radiological restriction on their use. This was accomplished by decontaminating all surfaces, then surveying them to confirm that all contamination exceeding applicable cleanup guidelines had been removed.

During remedial action operations, measures were taken to prevent the spread of contamination and to keep exposure rates as low as possible for the remedial action workers. Measures were also taken to detect airborne radioactivity resulting from dust generation.

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Post-Remedial Survey Methods and Results

Several survey methods were implemented to ensure that remedial measures were successful in removing or controlling above-guideline contamination. These methods included direct surface measurement for total alpha and beta-gamma emitting contamination, isotopic analysis of soil samples, and external gamma exposure rate measurements. All post-remedial action survey measurements were conducted in accordance with FUSRAP Environmental Health and Safety Project Instructions and applicable TMA/Eberline Health Physics Operational Procedures.

To determine if remediated surfaces had been adequately cleaned, post-remedial surface measurements were taken and compared to applicable guidelines. The applicable guidelines for residual uranium contamination at the Aliquippa site are contained in Table 1 (Ref. 2). In particular, the surface contamination guidelines for natural uranium, and beta-gamma emitters were applied. Direct readings indicated that contaminant levels did not exceed guidelines. Since all surfaces were subjected to aggressive vacuuming, any transferable contamination that did exist should have been removed. Systematic swipe samples were not taken because results from a limited number of wipes taken indicated that residual contamination on building surfaces was "fixed" to these surfaces.

Sample locations one meter square were established at selected points in the decontaminated area outside the controlled area, as shown in Figure 4. Alpha and beta-gamma measurements were taken at five uniformly spaced points (C, N, S, E, W) within each square (see Enclosure 1). Measurements were also taken at the intersections of the 10-meter grid coordinates (Figure 4) for areas outside the controlled area to provide data confirming that these areas remain uncontaminated. Results from all direct surface measurements taken are presented in Enclosure 1.

At the controlled area fence-line, external exposure measurements were taken to ensure that levels did not exceed 100 millirad annually (mrad/year). Figure 4 identifies the controlled area fence-line along which the external exposure measurements were taken. Results of this survey are listed in Enclosure 2.

In addition a post-remedial soil sample was taken in the area of dirt flooring outside the controlled area (Figure 4). Analysis of this soil sample indicates that no significant levels of radionuclides remain at this location. Specifically, the composite sample obtained from this area contained 8.0 pCi/g of uranium-238; less than 1.0 pCi/g of radium-226, and less than 1.0 pCi/g thorium-232.

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TABLE 1

SUMMARY OF RESIDUAL CONTAMINATION GUIDELINES
FOR THE ALIQUIPPA FORGE SITE

Page 1 of 2

BASIC DOSE LIMITS

The basic limit for the annual radiation dose received by an individual member of the general public is 100 mrem/yr.

SOIL (LAND) GUIDELINES

Radionuclide

Soil Concentration (pCi/g) above background^{a,b,c}

Radium-226
Radium-228
Thorium-230
Thorium-232

5 pCi/g, averaged over the first 15 cm of soil below the surface; 15 pCi/g when averaged over any 15-cm-thick soil layer below the surface layer.

STRUCTURE GUIDELINES

Airborne Radon Decay Products

Generic guidelines for concentrations of airborne radon decay products shall apply to existing occupied or habitable structures on private property that has no radiological restrictions on its use; structures that will be demolished or buried are excluded. The applicable generic guideline (40 CFR 192) is: In any occupied or habitable building, the objective of remedial action shall be, and reasonable effort shall be made to achieve, an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 WL.^d In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL. Remedial actions are not required in order to comply with this guideline when there is reasonable assurance that residual radioactive materials are not the cause.

External Gamma Radiation

The average level of gamma radiation inside a building or habitable structure on a site that has no radiological restrictions on its use shall not exceed the background level by more than 20 µR/h.

Indoor/Outdoor Structure Surface Contamination

<u>Radionuclide^f</u>	<u>Allowable Surface Residual Contamination^e</u> <u>(dpm/100 cm²)</u>		
	<u>Average^{g,h}</u>	<u>Maximum^{h,i}</u>	<u>Removable^{h,j}</u>
Transuranics, Ra-226, Ra-228, Th-230, Th-228 Pa-231, Ac-227, I-125, I-129	100	300	20
Th-Natural, Th-232, Sr-90, Ra-223, Ra-224 U-232, I-126, I-131, I-133	1,000	3,000	200

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TABLE 1
(continued)

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Indoor/Outdoor Structure Surface Contamination (continued)

Radionuclide ^f	Allowable Surface Residual Contamination ^g (dpm/100 cm ²)		
	Average ^{g,h}	Maximum ^{h,i}	Removable ^{h,j}
U-Natural, U-235, U-238, and associated decay products	5,000 α	15,000 α	1,000 α
Beta-gamma emitters (radionuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above	5,000 B - γ	15,000 B - γ	1,000 B - γ

^aThese guidelines take into account ingrowth of radium-226 from thorium-230 and of radium-228 from thorium-232, and assume secular equilibrium. If either thorium-230 and radium-226 or thorium-232 and radium-228 are both present, not in secular equilibrium, the guidelines apply to the higher concentration. If other mixtures of radionuclides occur, the concentrations of individual radionuclides shall be reduced so that the dose for the mixtures will not exceed the basic dose limit.

^bThese guidelines represent allowable residual concentrations above background averaged across any 15-cm-thick layer to any depth and over any contiguous 100-m² surface area.

^cLocalized concentrations in excess of these limits are allowable provided that the average over a 100-m² area is not exceeded.

^dA working level (WL) is any combination of short-lived radon decay products in 1 liter of air that will result in the ultimate emission of 1.3 x 10⁵ MeV of potential alpha energy.

^eAs used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

^fWhere surface contamination by both alpha- and beta-gamma-emitting radionuclides exists, the limits established for alpha- and beta-gamma-emitting radionuclides should apply independently.

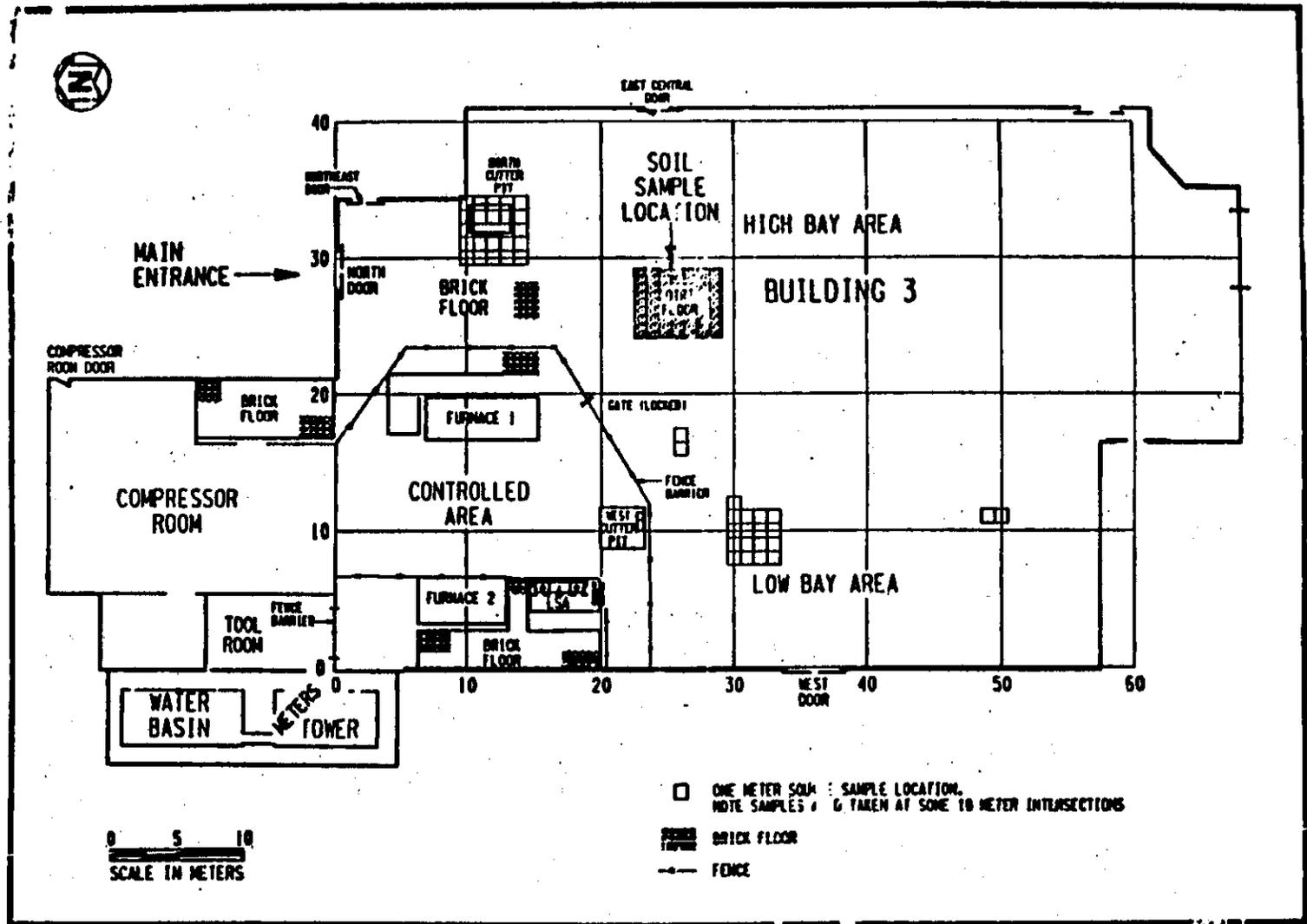
^gMeasurements of average contamination should not be averaged over more than 1 m². For objects of less surface area, the average shall be derived for each such object.

^hThe average and maximum radiation levels associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/h and 1.0 mrad/h, respectively, at 1 cm.

ⁱThe maximum contamination level applies to an area of not more than 100 cm².

^jThe amount of removable radioactive material per 100 cm² of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and measuring the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of surface area less than 100 cm² is determined, the activity per unit area should be based on the actual area and the entire surface should be wiped. The numbers in this column are maximum amounts.

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FIGURE 4 SOIL SAMPLING LOCATION AND GRID FOR SURFACE MEASUREMENTS

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Current Site Status

The interior of Building 3 can be divided into two areas--the fenced controlled area in the northwest corner of the building, and the remaining uncontrolled portion of the building (Figure 4). All accessible radioactively contaminated surfaces in the uncontrolled area have been remediated, so no restrictions on the use of this part of the building are necessary to protect against radiological exposure. Until final building characterization and remediation can be completed, construction and demolition activity in the uncontrolled area should be avoided to prevent the release of undiscovered contamination. Survey measurements taken within the controlled area indicate that residual surface contamination exceeding guidelines remains in place. Accordingly, unauthorized access into the controlled area should be restricted.

The containers stored in the controlled area have been labeled to indicate their contents, and appropriate radiation hazard signs have been affixed to the fence that restricts access to the controlled area. Samples taken from the containers were analyzed for uranium-238, radium-226, and thorium-232. Analytical results indicate that radionuclide contents are low, with the highest observed uranium-238 level at 80 pCi/g. Concentrations of other radionuclides never exceeded this level, and were all in the 1-30 pCi/g range. Chemical analyses conducted on the samples indicate that hazardous wastes, as defined by the Resource Conservation and Recovery Act, are not present.

Future Activities

Several additional activities at the Aliquippa Forge site are planned under FUSRAP. These include completing characterization activities, remediation of any additional contamination identified and transporting remedial action wastes to a final disposal location. In particular, the building roof, subfloor materials, materials within the controlled area, and surrounding grounds will require additional characterization and possibly further remediation. After completion of all cleanup activities, a comprehensive post-remedial action survey will be conducted and documented to confirm site compliance with applicable DOE remedial action guidelines. All remedial activities, including the interim measures described by this letter, will be documented in a post-remedial action report after completion of final remedial measures.

To ensure the continued effectiveness of the Aliquippa Forge interim remedial action, DOE and Aliquippa Forge, Inc. have amended the original access agreement to place certain restrictions on activities conducted in Building 3. In

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particular, Aliquippa Forge, Inc. has agreed to provide notice to their employees that they are not allowed access to the controlled area except in emergency situations, DOE will be notified of any physical changes to the controlled area or adjoining structures, DOE will be allowed access to inspect the controlled area, and DOE will be notified prior to any modification of the floors or structure of Building 3. Adherence to these terms will ensure the continued effectiveness of the interim measures implemented.

If you have any questions concerning this matter, please contact me or David Adler at (615) 576-1714.

Very truly yours,



R. R. Harbert
Project Manager - PUSRAP

DA:gmh:9636A
Enclosure: As stated

2.7 VERIFICATION STATEMENT, INTERIM VERIFICATION LETTERS TO PROPERTY OWNERS, AND VERIFICATION REPORTS

This section contains the documents related to the successful decontamination of the subject property.

	Page
Letter from R. E. Kirk (DOE-FSRD) to R. E. Crouse, Sr. (President, Aliquippa Forge, Inc.), "FUSRAP Remedial Actions at the Aliquippa Forge Plant, West Aliquippa, Pennsylvania," BNI CCN 087405, March 27, 1992.	II-74
Letter from J. D. Kopotic (DOE-FSRD) to J. Palmer (Beaver County Corporation for Economic Development), "Aliquippa Forge Site Building 3 Floor Restoration," BNI CCN 121387, September 22, 1994.	II-75
BNI, <i>Hazard Assessment for Radioactive Contamination at the Aliquippa Forge Site</i> , June 1995.	Ref. 10
ORISE, <i>Verification Survey of Buildings 3 and 8, Aliquippa Forge Site, West Aliquippa Forge, Pennsylvania, Oak Ridge, Tenn.</i> , July 1995.	Ref. 21

**Department of Energy**

Oak Ridge Operations
P.O. Box 2001
Oak Ridge, Tennessee 37831- 8723

March 27, 1992

Mr. Ronald E. Crouse, Sr.
President
Aliquippa Forge, Inc.
P.O. Box 831
Willoughby, Ohio 44094

Dear Mr. Crouse:

FUSRAP REMEDIAL ACTIONS AT THE ALIQUIPPA FORGE PLANT, WEST ALIQUIPPA FORGE, PENNSYLVANIA

I am writing in response to your request for information concerning the U.S. Department of Energy's plans for the removal of radiologically contaminated material located at the Aliquippa Forge Plant located in West Aliquippa Forge, Pennsylvania.

The site was designated in 1983 to be remediated under DOE's Formerly Utilized Sites Remedial Action Program (FUSRAP). In late 1988, a portion of Building 3 was remediated under the program and approximately eighty percent of the building was deemed suitable for conditional use. The remaining area was fenced to restrict unauthorized access to areas with residual contamination that exceeds recommended guidelines.

FUSRAP is currently planning to begin remediating the remaining areas this fiscal year. Remediation of the plant is expected to extend through the end of the calendar year and access to the plant will be necessary to complete characterization activities and remedial actions. Should the property change ownership during this time, I request that any access agreements we have with you be included in the terms of the sale.

Upon completion of remedial actions, a verification report will be prepared to document that the site meets DOE guidelines for use with no radiological restrictions.

I, or my representative, will be contacting you in the near future to coordinate our plans with you and obtain the necessary access agreements. If you have any questions, please contact me at (615) 576-7477.

Sincerely,

Ronald E. Kirk

Ronald E. Kirk, Site Manager
Former Sites Restoration Division



Department of Energy

Oak Ridge Operations
P.O. Box 2001
Oak Ridge, Tennessee 37831— 8723

RECEIVED
9-27-94
B.C.C.E.O.

September 22, 1994

Oct 5 8 36 AM '94

Mr. James Palmer
President
Beaver County Corporation
798 Turnpike Street
Beaver, Pennsylvania 15009

Dear Mr. Palmer:

ALIQUIPPA FORGE SITE BUILDING 3 FLOOR RESTORATION

In response to your letter of June 1, 1994 on the above referenced subject, we acknowledge that the Beaver County Corporation for Economic Development (CED) prefers that DOE not repour a new concrete floor in the affected areas. Restoration backfill will be used in areas of open excavation that exist at the site. As such, it is DOE's current plan to use backfill in restoring the excavated areas to a grade 6 inches from top of existing slab that will allow the subsequent placement of a new concrete floor slab.

Based on the current work schedule, DOE expects to complete the Aliquippa Forge cleanup, site verification, and restoration activities by the end of September. If you have any questions or comments regarding the cleanup progress, or the plans for completion of the project, please feel free to call me at (615) 576-9441. For purposes of documenting CED's awareness of DOE's progress and plans, I would appreciate your acknowledging this letter below and returning a copy to me. Thank you in advance for your consideration.

Sincerely,

James D. Kopotic
James D. Kopotic, Site Manager
Former Sites Restoration Division

ACKNOWLEDGEMENT:

James Palmer 9/28/94

James Palmer, President
Beaver County Corporation
For Economic Development

2.8 STATE, COUNTY, AND LOCAL COMMENTS ON REMEDIAL ACTION

This section contains correspondence with the state, county, or local governments.

	Page
Memorandum from J. D. Mazzone (BNI-FUSRAP) to S. D. Liedle (BNI-FUSRAP), "Aliquippa Historical Site Information," BNI CCN 092630, August 5, 1992.	II-78
Letter from T. C. Perry (DOE-FSRD) to B. D. Glass (Pennsylvania Historical and Museum Commission (PHMC), "National Historic Preservation Act (NHPA) Section 106 Determination - Aliquippa Forge Site," (Attachment not included), BNI CCN 101729, September 8, 1992.	II-81
Letter from T. C. Perry (DOE-FSRD) to B. Barrett (PHMC), "Aliquippa Forge Site - File No. ER-92-3858-007-B," BNI CCN 098842, January 6, 1993.	II-83
Letter from B. Barrett (PHMC) to T. C. Perry (DOE-FSRD), "Aliquippa Forge Site," BNI CCN 100304, February 2, 1993.	II-85
Letter from T. C. Perry (DOE-FSRD) to T. LeCoff (National Park Service), "Aliquippa Forge site - Information for Determining the Level of Recordation Required for the Memorandum of Agreement Between the Department of Energy and the Pennsylvania Historic and Museum Commission," BNI CCN 101729, March 16, 1993.	II-87
Letter from T. C. Perry (DOE-FSRD) to J. G. Yusko (Pennsylvania Department of Environmental Resources), "Aliquippa Forge Site - Notification of Uranium Guidelines to be Used in Remediation Activities," (Attachment not included: Derivation of Uranium Residual Radioactive Material Guidelines for the Aliquippa Forge Site), BNI CCN 104085, May 17, 1993.	II-88
Letter from J. G. Yusko (Pennsylvania Department of Environmental Resources) to T. C. Perry (DOE-FSRD), "Aliquippa Forge Site," BNI CCN 105315, June 17, 1993.	II-90

Letter from J. D. Kopotic (DOE-FSRD) to J. G. Yusko (Pennsylvania Dept. of Environmental Resources), "Progress Report and Plans Regarding the Cleanup of the Aliquippa Forge Site," BNI CCN 120432, August 17, 1994.

Ref. 11

Letter from J. D. Kopotic (DOE-FSRD) to J. G. Yusko (Pennsylvania Dept. of Environmental Resources), "Disposition of Crushed Concrete Debris Resulting from the Cleanup of the Aliquippa Forge Site," BNI CCN 120433, August 30, 1994.

Ref. 12

DOE, *Historical American Engineering Record for the Vulcan Crucible Steel Company (Aliquippa Forge)*, HAER No: PA-278 and HAER No: PA-278-A, June 1994.

Ref. 22

Bechtel

Interoffice Memorandum

To	S. D. Liedle	File No.	7440/126
Subject	Aliquippa Historical Site Information	Date	August 5, 1992
		From	J. D. Mazzone <i>JM</i>
		Of	FUSRAP EHS&WM
Copies to	M. E. Redmon E. A. Rudek G. R. Galen <i>GR</i> T. E. Morris	At	Oak Ridge Ext. 4-3643

As per our discussion on August 3, 1992, I have spoken with the Pennsylvania Historic and Museum Commission (PHMC), Bureau of Historic Preservation, Division of Archeology and Protection, regarding the historical status of the Aliquippa Forge site (see attached telecon). The historical status of the site must be determined prior to the proposed soil remediation activity.

According to Mr. Bruce Bomberger of the PHMC, under the National Historical Preservation Act (NHPA) Section 106, federal agencies having direct or indirect jurisdiction over a proposed federal or federally assisted undertaking must consider the effects of the undertaking on any site, building, structure, or object that is included or eligible for inclusion on the National Registry of Historic Places. The regulations governing the process for identifying historic properties are listed in 36 CFR Part 800 Protection of Historic and Cultural Properties. Section 800.4(a)(i) of this Part requires the Agency Official (DOE designee) to assess the site for historic value by requesting the views of the State Historic Preservation Officer. Mr. Bomberger further mentioned that Pennsylvania has adopted the federal regulations.

Mr. Bomberger stated that the Aliquippa Forge site is not designated as a historical site per the NHPA's National Register of Historic Places. Mr. Bomberger also stated that this did not necessarily mean that the site could not be a historic site as per the NHPA. Site historic information (ie. age, photographs) and the proposed activity would need to be submitted to the PHMC for review. Upon review of this information, the PHMC would make a determination according to 36 CFR 400 as to the historic value of the site. The PHMC would then issue a letter to the DOE regarding the historical evaluation of the site and whether the proposed activity would have any adverse effects on the historical value of the site.

If you have any questions or require additional information, please feel free to contact me or Liz Rudek at 4-3632.



092630 / of 2



TELEPHONE CALLS

ROUTE File

FROM	Joe Mezzoni	OF	FOSRAD RNS+WM	FILE	7440/126	DATE	8/4/92
TO	Bruce Bomberger (717) 783-6012	OF	PA Bureau of Hist. Research	JOB NO.	14501	TIME	1:45pm

ITEMS OF DISCUSSION	ACTION REQ'D. (INCLUDE NAMES & DATES)
Is Aliquippa Forge listed in the as a historical site?	According to Mr. Bruce Bomberger of the PA Historical Historical and Museum Commission, Aliquippa Fg. was not design. by his Bureau as a historical site. However, Mr. Bomberger stated that they shall must be provided with information on the site to make the a determination as whether to list it or not. He said he will need a site history along with prior photographs of the building. After receiving this information, his department will make a determination and issue a letter to Bechtel stating their determination.
What regulations state this?	This is regulated in 36 CFR 800.4 which incorporates the requirements of the National Historic Preservation Act. <u>section 10C</u> The state of Pennsylvania has incorporated these rules into its regulatory framework. If you comply with the Federal Regs.

0046 (8-82)



098842

93-014

Department of Energy

Field Office, Oak Ridge

P.O. Box 2501

Oak Ridge, Tennessee 37831-8723

January 6, 1993

Brenda Barrett
Director
Pennsylvania Historical and Museum Commission (PHMC)
Bureau of Historic Preservation
P. O. Box 1026
Harrisburg, Pennsylvania 17108-1026

Dear Ms. Barrett:

ALIQUPPA FORGE SITE - FILE NO. ER-92-3858-007-B

Reference: Your letter to me dated October 23, 1992.

As requested in the referenced letter, DOE is providing the additional information needed to make the National Historic Preservation Act Section 106 evaluation of whether the proposed remedial action at the Aliquippa Forge Site will impact the historical value of the property. This information includes a historical description of the equipment to be dismantled and decontaminated, the process the equipment was used for, and the mica pit and its purpose.

The equipment to be dismantled and decontaminated consists of two industrial furnaces. These furnaces are currently not in use and are asbestos and radiologically contaminated. The furnaces were installed approximately July 1948 by the previous owner, Vulcan Crucible Steel Company. The furnaces were used to heat bars of uranium (billets) to make rods for the Atomic Energy Commission (AEC). The billets measured 1.5 to 2 feet in length and 4 to 5 inches in diameter. The billets were formed into rods 18 feet in length and 1.5 inches in diameter. Finished rods were boxed and shipped to other AEC facilities.

Decontamination will consist of removing the asbestos and radiological contamination from the furnaces. Upon finishing the decontamination effort, the furnaces shall be further dismantled and disposed of at a licensed disposal facility. Photographs of the decontamination and dismantling effort will be documented throughout the procedure.

The "mica pit" is an area in the floor that was used to hold high temperature rods which were removed from the furnaces to cool. The term "mica" refers to a flakelike mineral which lined the pit. Currently, the mica pit is filled with soil and covered with concrete. Since this area was noted to be radiologically contaminated, an area of concrete and soil approximately 300 square feet to a depth of 5 feet or less will be excavated and disposed of at an approved disposal facility. No photographs exist for the mica pit. The excavation of this area shall be documented throughout the procedure.

101729

~~794226~~

Erent D. Glass

2

September 8, 1992

If you have any questions or require additional information, please call me at
(615) 576-8956.

Sincerely,



Teresa C. Perry, Site Manager
Former Sites Restoration Division

Enclosures

bcc: L. Synnott, CC-10
R. Moore, SE-51



101729

094226

~~00-272~~**Department of Energy**

Oak Ridge Operations
P.O. Box 2001
Oak Ridge, Tennessee 37831-8723

September 8, 1992

Mr. Brent D. Glass
State Historic Preservation Officer
Division of Archeology and Protection
Bureau of Historic Preservation
Pennsylvania Historical and Museum Commission (PHMC)
P. O. Box 1026
Harrisburg, Pennsylvania 17108-1026

Dear Mr. Glass:

**NATIONAL HISTORIC PRESERVATION ACT (NHPA) SECTION 106 DETERMINATION -
ALIQIPPA FORGE SITE**

The purpose of this letter is to bring to your attention the performance of remediation activities by the Department of Energy (DOE) at the Aliquippa Forge site located in Aliquippa Forge, Pennsylvania. The site is being investigated by the DOE under the Department's Formerly Utilized Sites Remedial Action Program (FUSRAP), a DOE program to decontaminate or otherwise control sites where residual radioactivity materials remain from the early years of the nation's energy program.

In accordance with Section 106 of the NHPA, your evaluation is requested in the determination of whether the proposed removal of radiological contamination at the Aliquippa Forge site will have an effect on properties included, or eligible for inclusion, on the National Registry of Historic Places (NRHP). The DOE has determined that the proposed activities will have no effect on the historic eligibility of site structures, fixtures, or property. The Aliquippa Forge work was discussed in a phone conversation on August 8, 1992 between Mr. Bruce Bomberger of your office and Mr. Joseph Mazzoni of Bechtel National, Inc. (DOE's FUSRAP Project Management Contractor). Your written confirmation that these activities will not affect historic eligibility is requested by September 18, 1992.

Background information on the site, a description of the scope of work detailing the planned site activities, site sketch, and site photographs are enclosed.

098842

Brenda Barrett

2

January 6, 1993

It is DOE's opinion that decontamination activities at this site will not alter the historical value of the facility. Any areas disrupted by cleanup activities will be restored to their original condition.

If you have any questions or require additional information, please call me at (615) 576-8956.

Sincerely,

A handwritten signature in cursive script that reads "Teresa Perry".

Teresa C. Perry, Site Manager
Former Sites Restoration Division

10 17 29

100304



Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Post Office Box 1026
Harrisburg, Pennsylvania 17108-1026

003 FEB -3 PM 1:45

February 2, 1993

Teresa C. Perry
Department of Energy
Field Office, Oak Ridge
P O Box 2001
Oak Ridge, Tennessee 37831-8723

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

Re: ER 92-0858-007-C
Aliquippa Forge Site, Aliquippa,
Beaver County

Dear Ms. Perry:

The above named project has been reviewed by the Bureau for Historic Preservation (the State Historic Preservation Office) in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation. These requirements include consideration of the project's potential effect upon both historic and archaeological resources.

Thank you for supplying the additional information on the Mica Pit and the Uranium Billet Furnaces present at the Aliquippa Forge Site. In our opinion these resources, while not yet 50 years in age, represent a significant industrial site in Pennsylvania associated with the Nuclear industry and are therefore eligible for the National Register of Historic Places under Criterion A and C. In our opinion the demolition and removal of these resources will adversely effect the historic and architectural qualities that make the property eligible. To comply with the regulations of the Advisory Council on Historic Preservation, you must follow the procedures outlined in 36 CFR 800.5 (e), when the effect is adverse. You will need to notify the Advisory Council of the effect finding and continue to consult with the Bureau for Historic Preservation to seek ways to avoid or reduce the effects on historic properties.

Please prepare a Memorandum of Agreement which stipulates that these resources are recorded to the standards of the Historic American Engineering Record. The Department of Energy must contact the National Park Service, Historic American Engineering Record, U.S. Custom House, Room 251, Philadelphia, PA 19106, Attention: Tina LeCoff (215) 597-6484, to determine the level of recordation necessary.

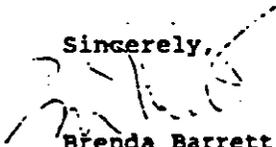
10 17 29

~~100304~~

Page 2
T. Perry
Feb. 2, 1993

If you need further information in this matter please
consult Susan M. Zacher at (717) 783-8946 or 783-8947.

Sincerely,



Brenda Barrett
Director

cc: Advisory Council on Historic Preservation
BB/snz



101729

3

Department of Energy

Field Office Oak Ridge
P.O. Box 2001
Oak Ridge, Tennessee 37831-8723

March 10, 1993

Ms. Tina LeCoff
National Park Service
U.S. Custom House
Room 251
Second and Chestnut Streets
Philadelphia, PA 19106

Dear Ms. LeCoff:

**ALTIQUIPPA FORGE SITE - INFORMATION FOR DETERMINING THE LEVEL OF RECORDATION
REQUIRED FOR THE MEMORANDUM OF AGREEMENT BETWEEN THE DEPARTMENT OF ENERGY AND
THE PENNSYLVANIA HISTORIC AND MUSEUM COMMISSION**

Per your request, please find enclosed information to determine the level of recordation required to meet the standards of the Historic American Engineering Record (HAER). In order to complete the Memorandum of Agreement required by the Pennsylvania Historic and Museum Commission (PHMC), the Department of Energy (DOE) must record the two brick-lined furnaces at the Aliquippa Forge Site according to the HAER requirements.

This information includes the response letter from the PHMC to DOE on the PHMC's eligibility determination and the historic eligibility package and additional information which was submitted to the PHMC to make this determination.

We hope to receive your determination by April 9, 1993 so we can finalize our plans for environmental cleanup which is scheduled to begin later this spring.

If you have any questions or require additional information, please contact me at (615) 576-8956.

Sincerely,

Teresa C. Perry
Teresa C. Perry, Site Manager
Former Sites Restoration Division

Enclosures



104085

93-401

Department of Energy

Field Office, Oak Ridge
P.O. Box 2001
Oak Ridge, Tennessee 37831-8723

May 17, 1993

Mr. James Yusko
Pennsylvania Department of Environmental Resources
Radiation Protection Division
400 Waterfront Drive
Pittsburgh, PA 15222-4745

Dear Mr. Yusko:

**ALTIQUIPPA FORGE SITE - NOTIFICATION OF URANIUM GUIDELINES TO BE USED IN
REMIEDIATION ACTIVITIES**

This letter is to inform you of the uranium guidelines to be implemented in upcoming remediation activities at the Aliquippa Forge site located in West Aliquippa, Pennsylvania. These activities are in response to soil concentrations of uranium above U. S. Department of Energy (DOE) guidelines as specified in DOE Order 5400.5, "Radiation Protection of the Public and the Environment." The cleanup guidelines for the total uranium will be 100 picocuries per gram (pCi/g) and will result in the excavation of approximately 205 cubic yards (cu. yd.) of uranium contaminated soil from two onsite areas. Approximately 170 cu. yd. and 35 cu. yd. of contaminated soil will be excavated from within an onsite building and an area adjacent to an onsite building, respectively. The excavated soil will be disposed at an out-of-state licensed low-level radioactive waste disposal facility. Once work is initiated, it is expected to last no more than six months.

The site is being remediated by the DOE under the Department's Formerly Utilized Sites Remedial Action Program (FUSRAP), a DOE program to decontaminate or otherwise control sites where residual radioactively contaminated materials remain from the early years of the nation's energy program.

The site became contaminated between 1948 and late 1949 by the Vulcan Crucible Steel Company. The Vulcan Crucible Steel Company conducted uranium-rolling operations in an onsite building under contract to the Atomic Energy Commission (AEC), a predecessor of DOE. When AEC operations ceased, the site was decontaminated to levels of radioactivity acceptable at that time. In 1976, DOE contamination guidelines were revised to be more restrictive; sites that had been restored under AEC's guidelines were relisted as possibly contaminated under DOE's guidelines. A radiological survey conducted in 1978 identified radioactive contamination (primarily, uranium-238) in and around onsite buildings. The site was designated for further remediation under FUSRAP, and the small operation run by Aliquippa Forge was shut down and the building evacuated.

104085

James Yusko

2

May 17, 1993

In late 1988, DOE performed decontamination of a large portion of the floor in an onsite building in order to make it available for industrial use by the owner. Radiologically contaminated materials were disposed of at an out-of-state approved disposal facility. A small portion of the building was fenced and identified by signs as a restricted area prohibiting entry. At this time, the building is no longer in use and is kept locked by the owner. Due to budget constraints, cleanup of remaining contamination was delayed until a later date. Our current plans are to begin remediation this summer.

Please find enclosed a copy of the DOE Memorandum from James W. Wagoner II to William Seay approving the uranium guidelines for the site and a copy of the Argonne National Laboratory report, *Derivation of Uranium Residual Radioactive Material Guidelines for the Aliquippa Forge Site*, September 1992.

If you have any questions or require additional information, please call me at (615) 576-8956.

Sincerely,



Teresa C. Perry, Site Manager
Former Sites Restoration Division

Enclosures



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

Radiation Protection - Field Operations
400 Waterfront Drive
Pittsburgh, PA 15222-4745
(412) 442-4000 [answers 24 hours]
June 17, 1993

Ms. Teresa C. Perry
Site Manager
Former Sites Restoration Division
U.S. Department of Energy
Oak Ridge Field Office
P.O. Box 2001
Oak Ridge, TN 37831-8723

Dear Ms. Perry:

RE: Aliquippa Forge Site

We have received the information package you sent, dated May 17, regarding the Aliquippa Forge Site and the proposed residual uranium concentration target for the remediation activities.

Although the analysis supports the statement that the total dose to an individual will be less than the 1 mSv (100 mrem) annual limit, the Department prefers and recommends that the residual contamination concentration cleanup guideline be less than 100 pCi/g. One major reason for this is the need for consistency: another facility is presently undergoing decontamination and decommissioning, and although the facility has an active NRC license, part of the cleanup costs are being funded by the Department of Energy. For that facility, the target residual contamination limit is 30 pCi/g total uranium. Similarly, the Department also participated in an Uranium Mill Tailings Remedial Action Project, and the target concentration for remediated properties was 5 pCi/g radium above background. For this site, an encapsulation cell was constructed, and residual radioactive materials whose concentrations of radium, either actual or projected through ingrowth, exceeded 100 pCi/g were required to be encapsulated in the disposal cell. Reducing the residual concentration to 40 pCi/g does increase the volume of material to be disposed, but the additional expenditure provides social benefit.

The scenarios considered various future uses of the property. The Department agrees that Scenario A (industrial worker) is most likely, Scenario B (recreational user) is plausible, Scenario D (resident farmer using off-site water) is possible but unlikely, and that Scenario C (resident farmer using only on-site water) is possible but extremely unlikely. We have also performed a RESRAD

105315

Ms. Teresa C. Perry

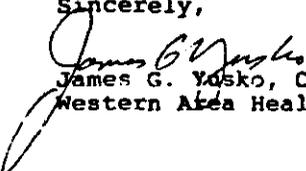
June 17, 1993

analysis of the site, using the information you provided in the appendix to your letter, and have come up with equivalent values for doses and concentrations.

Staff from the Pittsburgh office of Radiation Protection will be visiting the site throughout the remediation activities. While no inspector will be at this site on a full time basis, visits will be made to check progress and to provide assistance.

If you have any questions concerning this, please do not hesitate in contacting me.

Sincerely,


James G. Yosko, CHP
Western Area Health Physicist

c: C. A. Duritsa
W. P. Dornsife

2.9 RESTRICTIONS

There are no radiological restrictions based on residual radioactive contamination at the Aliquippa Forge site.

2.10 FEDERAL REGISTER NOTICE

This section contains a copy of the published *Federal Register* notice. It documents the certification that the subject property is in compliance with all applicable decontamination criteria and standards.

comment will be provided a maximum of 5 minutes to present their comments.

Minutes: The minutes of this meeting will be available for public review and copying at the Freedom of Information Public Reading Room, 1E-190, Forrestal Building, 1000 Independence Avenue, SW, Washington, DC 20585 between 9:00 a.m. and 4 p.m., Monday-Friday, except Federal holidays. Minutes will also be available by writing to Jon Yerxa, Department of Energy Richland Operations Office, P.O. Box 550, Richland, WA 99352, or by calling him at (509)-376-9628.

Issued at Washington, DC, on October 25, 1996.

Gail Cephas,

Acting Deputy Advisory Committee Management Officer.

[FR Doc. 96-27798 Filed 10-29-96; 8:45 am]

BILLING CODE 6450-01-P

either before or after the meeting. Members of the public who wish to make oral statements pertaining to agenda items should contact Margie D. Biggerstaff at the address or telephone number listed above. Requests must be received at least five days prior to the meeting and reasonable provisions will be made to include the presentation on the agenda.

Transcript: Available for public review and copying at the Public Reading Room, Room 1E-190, Forrestal Building, 1000 Independence Avenue, SW., Washington, DC, between 9:00 a.m. and 4:00 p.m., Monday through Friday, except Federal holidays.

Issued at Washington, DC, on October 25, 1996.

Gail Cephas,

Acting Deputy Advisory Committee Management Officer.

[FR Doc. 96-27795 Filed 10-29-96; 8:45 am]

BILLING CODE 6450-01-P

permitted to do so, either before or after the meeting. Members of the public who wish to make oral statements pertaining to agenda items should contact Ms. Margie D. Biggerstaff at the address or telephone number listed above. Requests must be received at least five days prior to the meeting and reasonable provisions will be made to include the presentation on the agenda.

Transcript: Available for public review and copying at the Public Reading Room, Room 1E-190, Forrestal Building, 1000 Independence Avenue, S.W., Washington, D.C., between 9:00 AM and 4:00 PM, Monday through Friday, except Federal holidays.

Issued at Washington, D.C., on October 25, 1996.

Gail Cephas,

Acting Deputy Advisory Committee Management Officer.

[FR Doc. 96-27796 Filed 10-29-96; 8:45 am]

BILLING CODE 6450-01-P

Office of Fossil Energy, National Coal Council; Notice of Open Meeting

Pursuant to the provisions of the Federal Advisory Committee Act (Pub. L. 92-463, 92-463, 86 Stat. 770), notice is hereby given of the following meeting:

Name: National Coal Council.

Date and Time: Thursday, November 14, 1996, 9:00 am.

Place: Ritz-Carlton Washington, 2100 Massachusetts Avenue, NW., Washington, DC.

Contact: Margie D. Biggerstaff, U.S. Department of Energy, Office of Fossil Energy (FE-5), Washington, DC 20585, Telephone: 202/586-3867.

Purpose of the Council: To provide advice, information, and recommendations to the Secretary of Energy on matters relating to coal and coal industry issues.

Tentative Agenda:

—Call to order and opening remarks by Clifford Miercort, Chairman of the National Coal Council.

—Approve agenda.

—Remarks by the Honorable Hazel R. O'Leary, Secretary of Energy (invited).

—Remarks by Kurt Yeager, President Electric Power Research Institute (invited).

—Report of the Coal Policy Committee.

—Membership to consider draft report entitled "Consumption Issues Affecting the Role of Coal in Energy and the Environment."

—Administrative matters.

—Discussion of any other business properly brought before the Council.

—Public comment—10-minute rule.

—Adjournment.

Public Participation: The meeting is open to the public. The Chairman of the Council is empowered to conduct the meeting in a fashion that will facilitate the orderly conduct of business. Any member of the public who wishes to file a written statement with the Council will be permitted to do so,

Office of Fossil Energy, Coal Policy Committee, National Coal Council; Notice of Open Meeting

Pursuant to the provisions of the Federal Advisory Committee Act (Pub. L. 92-463, 86 Stat. 770), notice is hereby given of the following meeting:

Name: Coal Policy Committee of the National Coal Council.

Date and Time: Wednesday, November 13, 1996 at 1:30 p.m.

Place: Ritz-Carlton Washington, 2100 Massachusetts Avenue, N.W., Washington, DC.

Contact: Margie D. Biggerstaff, U.S. Department of Energy, Office of Fossil Energy (FE-5), Washington, D.C. 20585, Telephone: 202/586-3867.

Purpose of the Parent Council: To provide advice, information, and recommendations to the Secretary of Energy on matters relating to coal and coal industry issues.

Purpose of the meeting: To report on the status of the consumption issues study and to receive comments and recommendations.

Tentative Agenda:

—Opening remarks by Steven Leer, Chairman of the Coal Policy Committee.

—Approve agenda.

—Remarks by Department of Energy representative (The Honorable Patricia Fry Godley, Assistant Secretary for Fossil Energy (invited)).

—Discussion and Consideration of the draft report entitled "Consumption Issues Affecting the Role of Coal in Energy and the Environment."

—Discussion of any other business to be properly brought before the Committee.

—Public comment—10-minute rule.

—Adjournment.

Public Participation: The meeting is open to the public. The Chairman of the Committee is empowered to conduct the meeting in a fashion that will facilitate the orderly conduct of business. Any member of the public who wishes to file a written statement with the Committee will be

Certification of the Radiological Condition of the Aliquippa Forge Site in Aliquippa, Pennsylvania, 1995

AGENCY: Office of Environmental Management, Department of Energy.
ACTION: Notice of Certification.

SUMMARY: The Department of Energy (DOE) has completed remedial action to decontaminate the Aliquippa Forge site (hereinafter "site") in Aliquippa, Pennsylvania. This site was found to contain quantities of radioactive material from Atomic Energy Commission activities conducted at the former Aliquippa Forge facility, which records indicate operated from 1948 to 1950. Radiological surveys show that the site meets applicable requirements for use without radiological restrictions, and the docket related to cleanup activities is now available.

ADDRESSES:

Public Reading Room, Room 1E-190, Forrestal Building, U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, D.C. 20585.

B. F. Jones Memorial Library, 663 Franklin Avenue, Aliquippa, Pennsylvania 15001.

Public Document Room, Oak Ridge Operations Office, U.S. Department of Energy, 200 Administration Road, Oak Ridge, Tennessee 37831.

FOR FURTHER INFORMATION CONTACT: Mr. John Lehr, Acting Director, Office of Eastern Area Programs, Office of Environmental Restoration (EM-42), U.S. Department of Energy, Germantown, Maryland 20874, (301) 903-2328 Fax: (301) 903-2385.

SUPPLEMENTARY INFORMATION:

The Department of Energy (DOE), Office of Environmental Management,

Office of Eastern Area Programs, Formerly Utilized Sites Remedial Action Program (FUSRAP) Team, has conducted remedial action at the Aliquippa Forge site in Aliquippa, Pennsylvania, as part of FUSRAP. The objective of the program is to identify and remediate or otherwise control sites where residual radioactive contamination remains from activities carried out under contract to the Manhattan Engineer District/Atomic Energy Commission (MED/AEC) during the early years of the nation's atomic energy program or from commercial operations causing conditions that Congress has authorized DOE to remedy. In August 1983, the Aliquippa Forge site was designated for cleanup under FUSRAP.

The Aliquippa Forge facility was originally owned by the Universal Cyclops Specialty Steel Division of the Cyclops Corporation and is currently owned by the Beaver County Corporation for Economic Development. From July 1948 to late 1949, the Vulcan Crucible Steel Company operated a uranium-rolling process for AEC in Building 3 of the facility. Uranium billets were sent to the Vulcan facility where they were formed into rods; finished rods were boxed and shipped to other AEC facilities. The site was decontaminated to then-applicable guidelines in 1950 following completion of AEC operations.

In 1978, a radiological survey performed in and around Building 3 identified radioactive contamination exceeding current DOE guidelines for release of the property for use without radiological restrictions. DOE conducted an interim remedial action at the Aliquippa Forge site in 1988 to allow restricted use of the facility. Final remedial action was conducted at the site from June 1993 to September 1994.

Post-remedial action surveys have demonstrated, and DOE has certified, that the site is in compliance with DOE radiological decontamination criteria and standards. The standards are established to protect members of the general public and occupants of the property and to ensure that reasonably foreseeable future use of the site will result in no radiological exposure above current radiological guidelines. Accordingly, this site is released from the FUSRAP program.

The certification docket 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, S.W., Washington, D.C. 20585. Copies of the

certification docket will also be available in the DOE Public Document Room, U.S. Department of Energy, Oak Ridge Operations Office, Oak Ridge, Tennessee 37831, and at the B. F. Jones Memorial Library, 663 Franklin Avenue, Aliquippa, Pennsylvania 15001.

DOE, through the Oak Ridge Operations Office, Former Sites Restoration Division, has issued the following statement:

Statement of Certification: Aliquippa Forge Site in Aliquippa, Pennsylvania

DOE, Oak Ridge Operations Office, Former Sites Restoration Division, has reviewed and analyzed the radiological data obtained following remedial action at the Aliquippa Forge site (described as parcels 08, 001, and 0100 in the Aliquippa, Pennsylvania, assessor's office). Based on analysis of all data collected, including post-remedial action surveys, DOE certifies that any residual contamination at the site falls within current guidelines for use without radiological restrictions. This certification of compliance provides assurance that reasonably foreseeable future use of the site will result in no radiological exposure above current radiological guidelines established to protect members of the general public as well as occupants of the site.

Property owned by: Beaver County Corporation for Economic Development, 100-First Street, Aliquippa, Pennsylvania 15001.

Issued in Washington this 14th day of October, 1996.

James M. Owendoff,
Deputy Assistant Secretary for Environmental Restoration.

[FR Doc. 96-27801 Filed 10-29-96; 8:45 am]
BILLING CODE 6450-01-P

Office of Arms Control and Nonproliferation

Draft Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Material Storage and Plutonium Disposition Alternatives

AGENCY: Department of Energy.
ACTION: Correction.

SUMMARY: In notice document 61 FR 51092 published in the issue of Monday, September 30, 1996, the following correction is made.

The public meeting schedule for the Rocky Flats Environmental Technology Site scheduled for November 4 has been changed to November 8: Rocky Flats Environmental Technology Site, Ramada Limited, 110 W. 104th Avenue, Mount Evans Room, Northglenn, CO

80234; 1:00 pm-4:00 pm 5:00 pm-8:30 pm

Dated: October 24, 1996.

Michael V. McClary,

Acting Director Office of Arms Control and Nonproliferation.

[FR Doc. 96-27800 Filed 10-29-96; 8:45 am]

BILLING CODE 6450-01-P

Bonneville Power Administration

Methow Valley Irrigation District Fisheries Enhancement Project

AGENCY: Bonneville Power Administration (BPA), Department of Energy (DOE).

ACTION: Notice of floodplain and wetlands involvement.

SUMMARY: This notice announces BPA's proposal to jointly fund, along with the Washington State Department of Ecology, a plan to replace Methow Valley Irrigation District's current canal system with a pressurized pipe system fed by groundwater wells, to improve instream flows of the Methow and Twisp Rivers for fish habitat. This project would be in the floodplain and wetlands located in the Methow River Valley of Okanogan County, between the towns of Twisp and Carlton, Washington. In accordance with DOE regulations for compliance with floodplain and wetlands environmental review requirements (10 CFR Part 1022), BPA will prepare a floodplain and wetlands assessment and will perform this proposed action in a manner so as to avoid or minimize potential harm to or within the affected floodplain and wetlands. The assessment will be included in the environmental assessment being prepared for the proposed project in accordance with the requirements of the National Environmental Policy Act. A floodplain statement of findings will be included in any finding of no significant impact that may be issued following the completion of the environmental assessment.

DATES: Comments are due to the address below no later than November 14, 1996.

ADDRESSES: Submit comments to the Public Involvement and Information Manager, Bonneville Power Administration—CKP, P.O. Box 12999, Portland, Oregon 97212. Internet address: comment@bpa.gov.

FOR FURTHER INFORMATION CONTACT: Lauri Croff - ECN, Bonneville Power Administration, P.O. Box 3621, Portland, Oregon, 97208-3621, phone number 503-230-5138, fax number 503-230-5699.

2.11 APPROVED CERTIFICATION STATEMENT

The following memorandum and statement document the certification of the subject property for future use.

memorandum

DATE: **OCT. 07. 1996**

REPLY TO: EM-42 (W. A. Williams, 301-903-8149)
ATTN OF:

SUBJECT: **RECOMMENDATION FOR CERTIFICATION OF REMEDIAL ACTION AT THE FORMER ALIQUIPPA FORGE SITE IN ALIQUIPPA, PENNSYLVANIA**

TO: J. Owendoff, EM-40

I am attaching for your signature a Federal Register Notice concerning the cleanup of contamination associated with the former Atomic Energy Commission activities at the Aliquippa Forge site in Aliquippa, Pennsylvania.

The Department of Energy (DOE), Office of Environmental Restoration, Office of Eastern Area Programs, Formerly Utilized Sites Remedial Action Program (FUSRAP) Team, has conducted remedial action at the Aliquippa Forge site in Aliquippa, Pennsylvania, as part of FUSRAP. The objective of the program is to identify and remediate or otherwise control sites where residual radioactive contamination remains from activities carried out under contract to the Manhattan Engineer District/Atomic Energy Commission (MED/AEC) during the early years of the nation's atomic energy program or from commercial operations causing conditions that Congress has authorized DOE to remedy. In August 1983, the Aliquippa Forge site was designated for cleanup under FUSRAP.

The Aliquippa Forge facility was originally owned by Universal Cyclops Specialty Steel Division of the Cyclops Corporation and is currently owned by the Beaver County Corporation for Economic Development. From July 1948 to late 1949, the Vulcan Crucible Steel Company operated a uranium-rolling process for AEC in Building 3 of the facility. Uranium billets were sent to the Vulcan facility where they were formed into rods; finished rods were boxed and shipped to other AEC facilities. The site was decontaminated to then applicable guidelines in 1950 following completion of AEC operations.

In 1978, a radiological survey performed in and around Building 3 by Argonne National Laboratory identified radioactive contamination exceeding current DOE guidelines for release of properties for use without radiological restrictions. Bechtel National, Inc. (BNI) conducted interim remedial action at the Aliquippa Forge site in 1988 to allow restricted use of the facility. BNI conducted the remaining remedial action from June 1993 to September 1994.

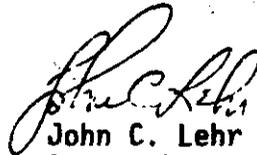
Post-remedial action surveys have demonstrated, and DOE has certified, that the subject property is in compliance with DOE radiological decontamination criteria and standards. The standards are established to protect members of the general public and occupants of the property and to ensure that reasonably foreseeable future use of the property will result in no radiological exposure above current radiological guidelines. Accordingly, this property is released from the FUSRAP program.



Based on a review of all documents related to the subject property, we have concluded that the site is in compliance with the criteria and standards that were established to be in accordance with DOE Guidelines and Orders, to be consistent with other appropriate Nuclear Regulatory Commission and Environmental Protection Agency guidelines, and to protect the public health and environment.

The Office of Eastern Area Programs is preparing the certification docket for the subject property. The Federal Register Notice will be part of the docket.

I recommend that you sign the attached Federal Register Notice, as well as the transmittal memorandum to the Federal Register Liaison Officer. This office will notify interested State and local agencies, the public, local land offices, and the specific property owners of the certification actions by correspondence and local newspaper announcements, as appropriate. The documents transmitted with the certification statement and the Federal Register Notice will be compiled in the final docket for the Office of Eastern Area Programs for retention in accordance with 36 CFR 200.



John C. Lehr
Acting Director
Office of Eastern Area Programs
Office of Environmental Restoration

Attachments

[6450-01-P]
DEPARTMENT OF ENERGY

CERTIFICATION OF THE RADIOLOGICAL CONDITION OF THE ALIQUIPPA FORGE SITE IN ALIQUIPPA, PENNSYLVANIA, 1995

AGENCY: Office of Environmental Management, Department of Energy

ACTION: Notice of Certification

SUMMARY: The Department of Energy (DOE) has completed remedial action to decontaminate the Aliquippa Forge site (hereinafter "site") in Aliquippa, Pennsylvania. This site was found to contain quantities of radioactive material from Atomic Energy Commission activities conducted at the former Aliquippa Forge facility, which records indicate operated from 1948 to 1950. Radiological surveys show that the site meets applicable requirements for use without radiological restrictions, and the docket related to cleanup activities is now available.

ADDRESSES: Public Reading Room
Room 1E-190
Forrestal Building
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

B. F. Jones Memorial Library
663 Franklin Avenue
Aliquippa, Pennsylvania 15001

Public Document Room
Oak Ridge Operations Office
U.S. Department of Energy
200 Administration Road
Oak Ridge, Tennessee 37831

FOR FURTHER INFORMATION CONTACT:

Mr. John Lehr, Acting Director
Office of Eastern Area Programs
Office of Environmental Restoration (EM-42)
U.S. Department of Energy
Germantown, Maryland 20874
(301) 903-2328 Fax: (301) 903-2385

SUPPLEMENTARY INFORMATION:

The Department of Energy (DOE), Office of Environmental Management, Office of Eastern Area Programs, Formerly Utilized Sites Remedial Action Program (FUSRAP) Team, has conducted remedial action at the Aliquippa Forge site in Aliquippa, Pennsylvania, as part of FUSRAP. The objective of the program is to identify and remediate or otherwise control sites where residual radioactive contamination remains from activities carried out under contract to the Manhattan Engineer District/Atomic Energy Commission (MED/AEC) during the early years of the nation's atomic energy program or from commercial operations causing conditions that Congress has authorized DOE to remedy. In August 1983, the Aliquippa Forge site was designated for cleanup under FUSRAP.

The Aliquippa Forge facility was originally owned by the Universal Cyclops Specialty Steel Division of the Cyclops Corporation and is currently owned by the Beaver County Corporation for Economic Development. From July 1948 to late 1949, the Vulcan Crucible Steel Company operated a uranium-rolling process for AEC in Building 3 of the facility. Uranium billets were sent to the Vulcan facility where they were formed into rods; finished rods were boxed and shipped to other AEC facilities. The site was decontaminated to then-applicable guidelines in 1950 following completion of AEC operations.

In 1978, a radiological survey performed in and around Building 3 identified radioactive contamination exceeding current DOE guidelines for release of the property for use without radiological restrictions. DOE conducted an interim remedial action at the Aliquippa Forge site in 1988 to allow restricted use of the facility. Final remedial action was conducted at the site from June 1993 to September 1994.

Post-remedial action surveys have demonstrated, and DOE has certified, that the site is in compliance with DOE radiological decontamination criteria and standards. The standards are established to protect members of the general public and occupants of the property and to ensure that reasonably foreseeable future use of the site will result in no radiological exposure above current radiological guidelines. Accordingly, this site is released from the FUSRAP program.

The certification docket 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, S.W., Washington, D.C. 20585. Copies of the certification docket will also be available in the DOE Public Document Room, U.S. Department of Energy, Oak Ridge Operations Office, Oak Ridge, Tennessee 37831, and at the B. F. Jones Memorial Library, 663 Franklin Avenue, Aliquippa, Pennsylvania 15001.

DOE, through the Oak Ridge Operations Office, Former Sites Restoration Division, has issued the following statement:

**STATEMENT OF CERTIFICATION: ALIQUIPPA FORGE SITE
IN ALIQUIPPA, PENNSYLVANIA**

DOE, Oak Ridge Operations Office, Former Sites Restoration Division, has reviewed and analyzed the radiological data obtained following remedial action at the Aliquippa Forge site (described as parcels 08, 001, and 0100 in the Aliquippa, Pennsylvania, assessor's office). Based on analysis of all data collected, including post-remedial action surveys, DOE certifies that any residual contamination at the site falls within current guidelines for use without radiological restrictions. This certification of compliance provides

assurance that reasonably foreseeable future use of the site will result in no radiological exposure above current radiological guidelines established to protect members of the general public as well as occupants of the site.

Property owned by:

Beaver County Corporation for Economic Development
100 First Street
Aliquippa, Pennsylvania 15001

Issued in Washington this 14th day of October, 1996.



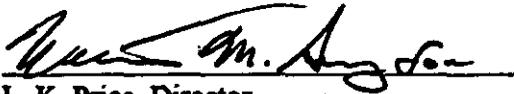
James M. Owendoff
Deputy Assistant Secretary
for Environmental Restoration

**STATEMENT OF CERTIFICATION: ALIQUIPPA FORGE SITE
IN ALIQUIPPA, PENNSYLVANIA**

DOE, Oak Ridge Operations Office, Former Sites Restoration Division, has reviewed and analyzed the radiological data obtained following remedial action at the Aliquippa Forge site (described as parcels 08, 001, 0100 in the Aliquippa, Pennsylvania, assessor's office). Based on analysis of all data collected, including post-remedial action surveys, DOE certifies that any residual contamination remaining onsite falls within current guidelines for use without radiological restrictions. This certification of compliance provides assurance that reasonably foreseeable future use of the property will result in no radiological exposure above current radiological guidelines established to protect members of the general public as well as occupants of the site.

Property owned by:

Beaver County Corporation for Economic Development
Aliquippa Forge, Inc.
100 First Street
Aliquippa, Pennsylvania 15001

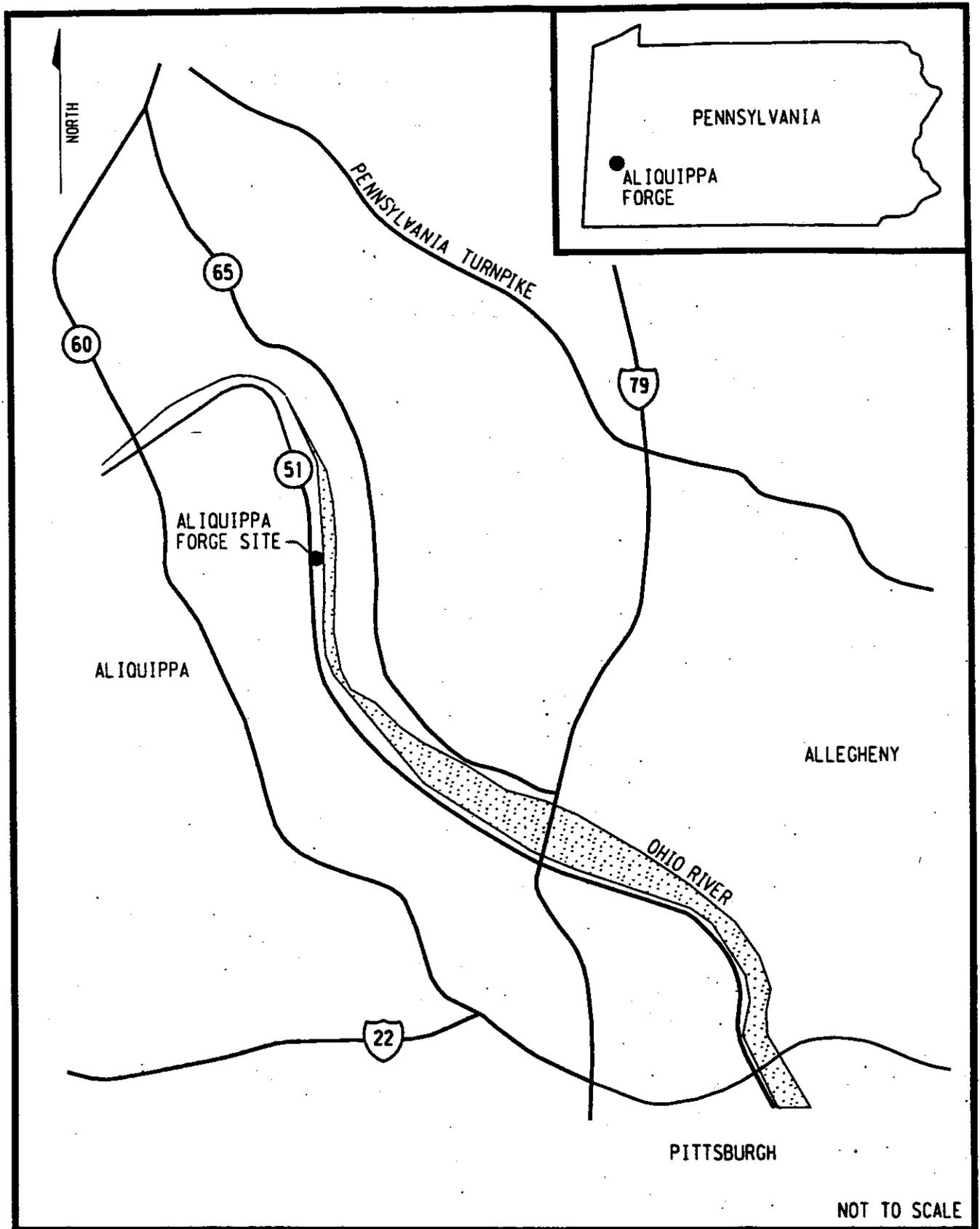


Date: 6/11/96

L. K. Price, Director
Former Sites Restoration Division
Oak Ridge Operations Office
U.S. Department of Energy

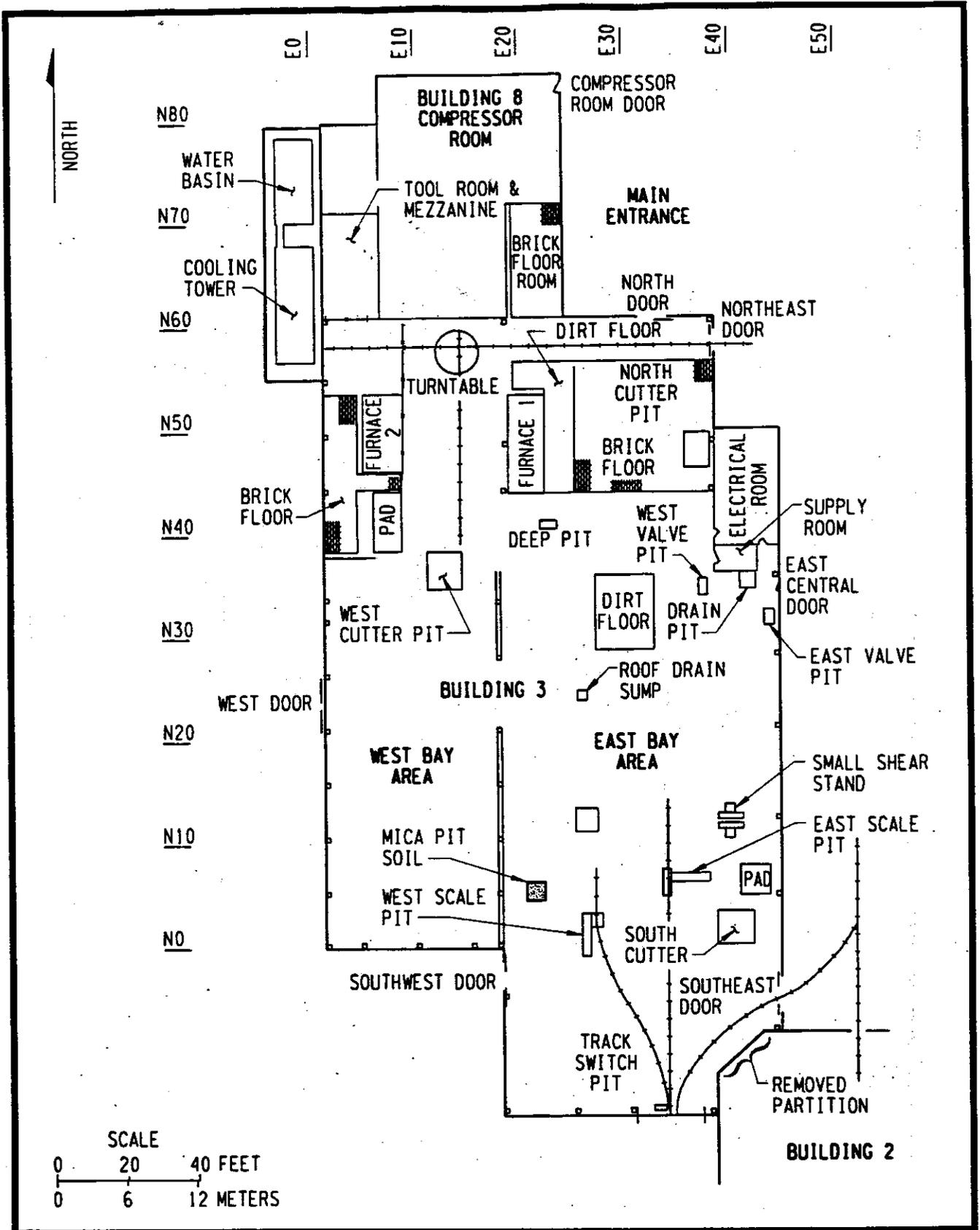
EXHIBIT III
DIAGRAMS OF THE REMEDIAL ACTION PERFORMED AT THE
ALIQUIPPA FORGE SITE
IN ALIQUIPPA, PENNSYLVANIA

The figures provided on the following pages are taken from the post-remedial action report; they show the location of Aliquippa, Pennsylvania, the floor plans of Building 3 and Building 8, and the locations of remedial action at the site.



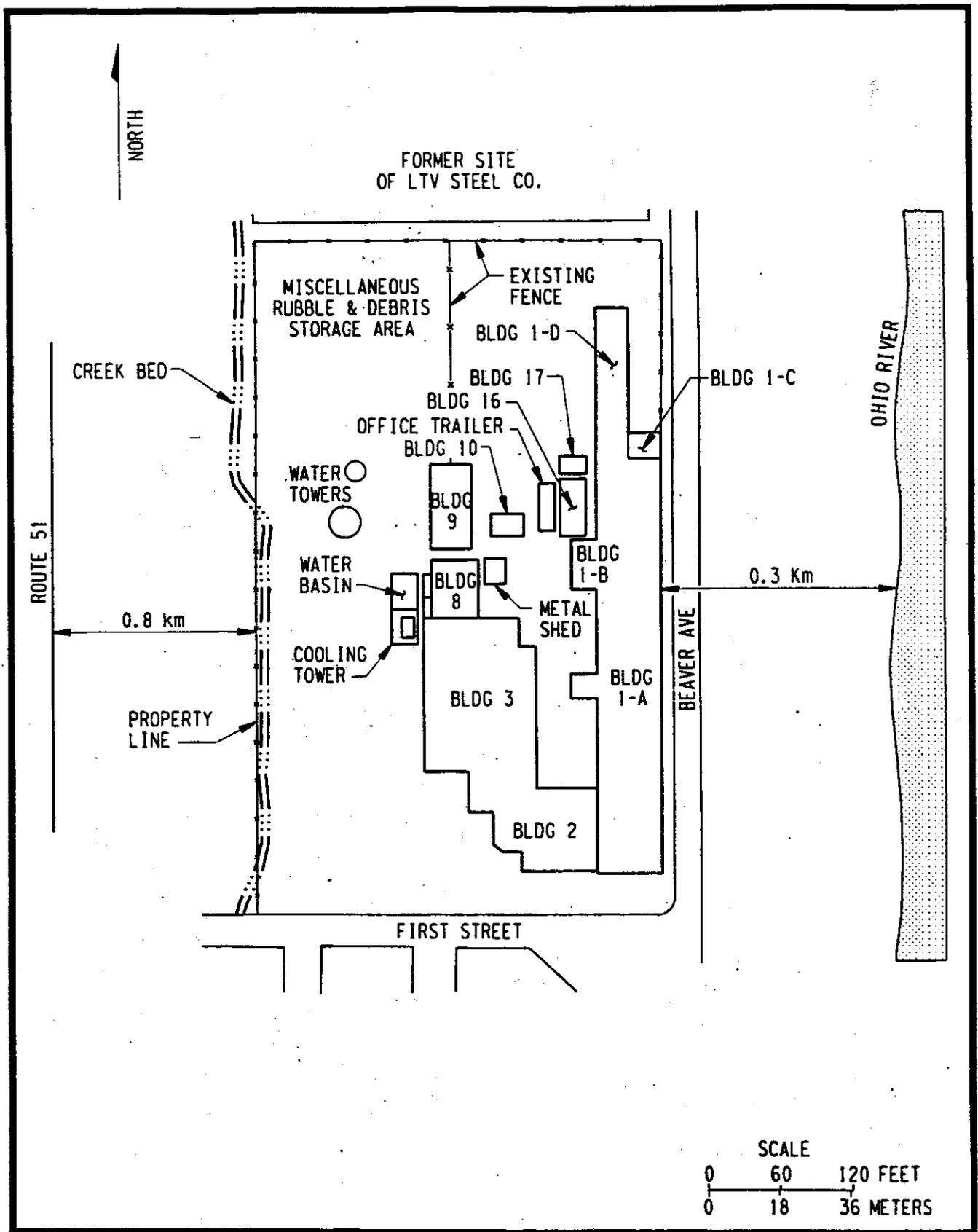
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Figure III-1
Geographic Location of the Aliquippa Forge Site



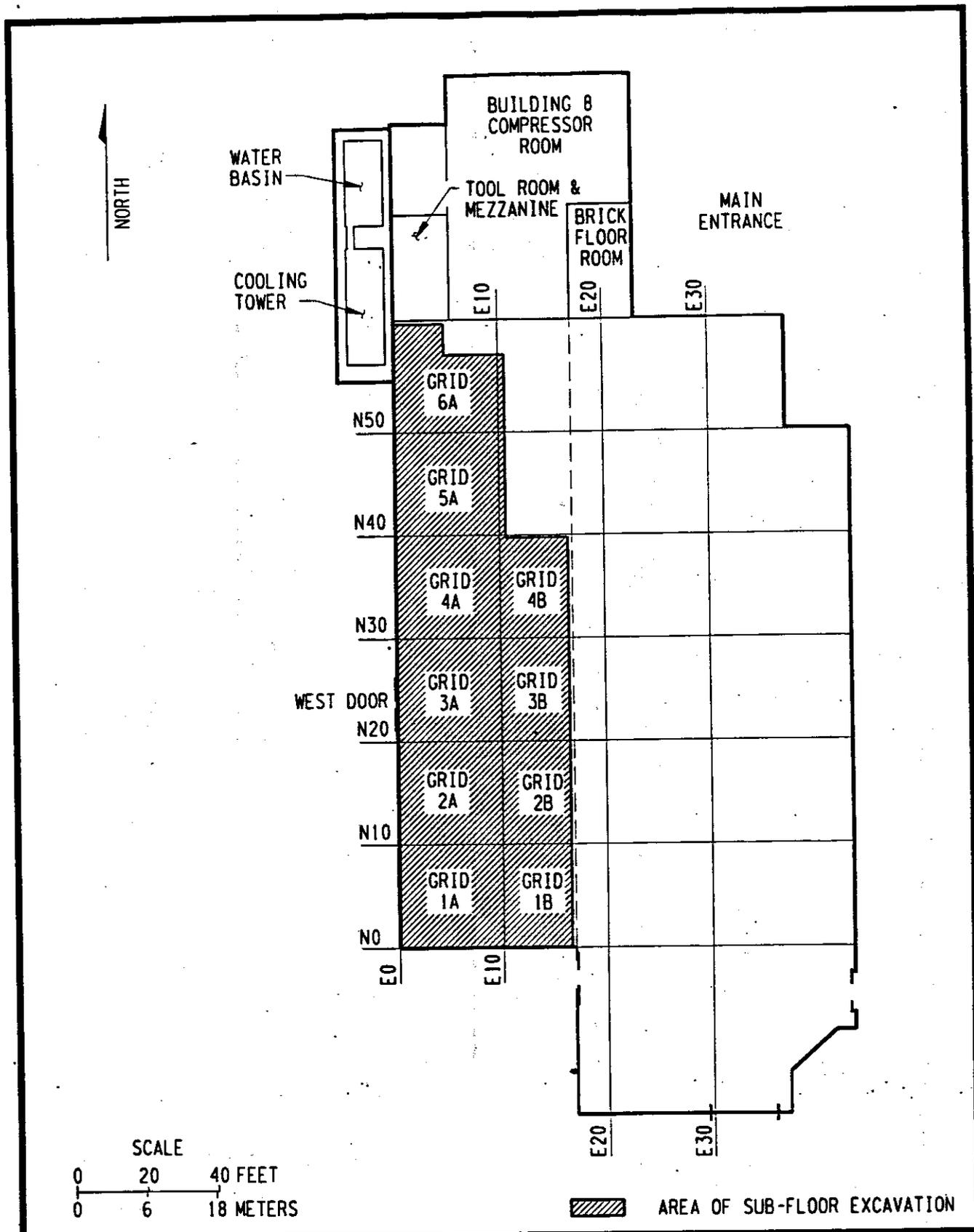
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Figure III-2
Floor Plan of Buildings 3 and 8



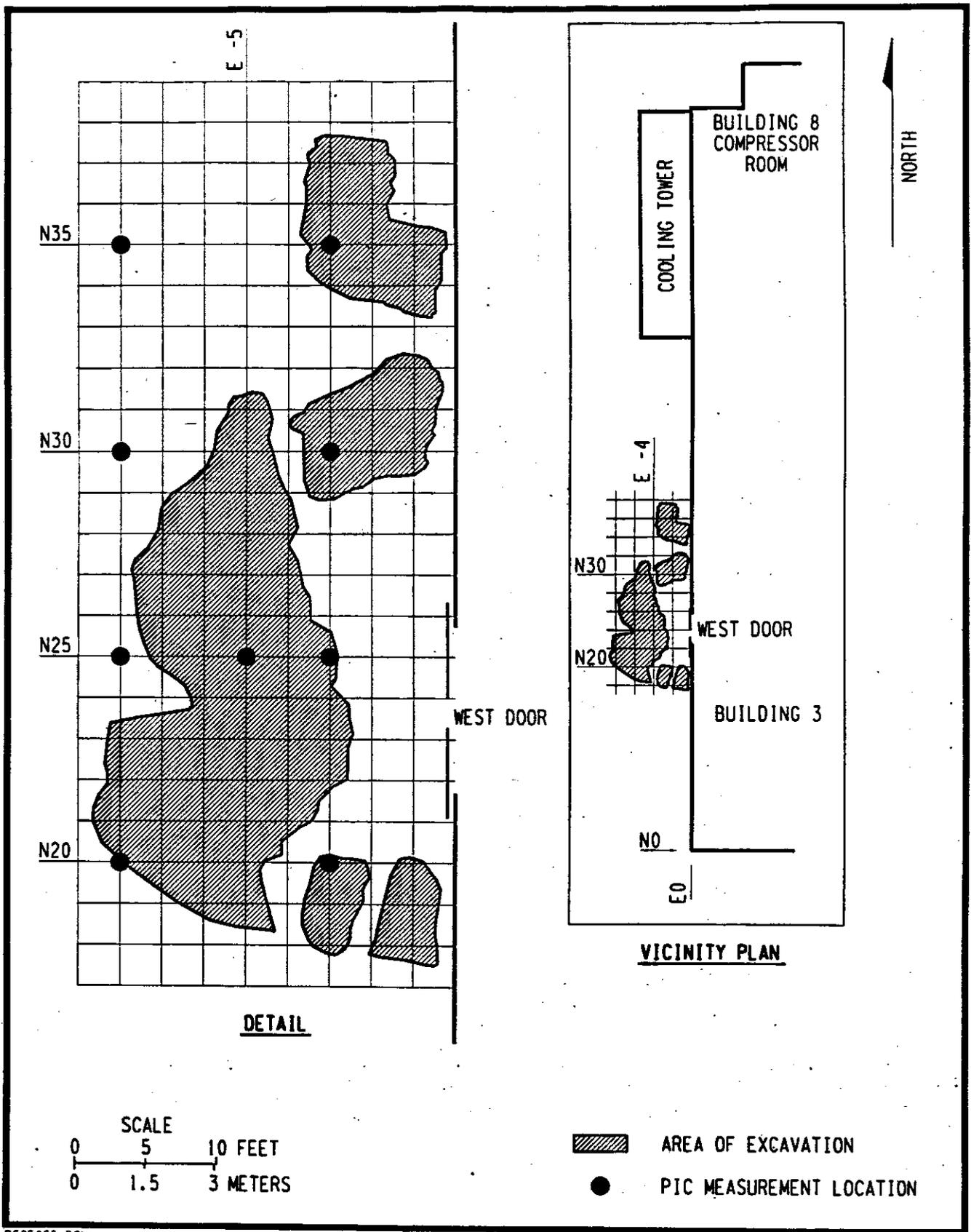
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Figure III-3
Site Plan of the Aliquippa Forge Site



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9/27/96

Figure III-4
Sub-Floor Excavation in Building 3



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 9/27/96

Figure III-5
Outside Excavation Areas
and PIC Measurement Locations