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**REMOVAL SITE EVALUATION HEATING AND
VENTILATION SYSTEM IMPROVEMENTS IN
BUILDING 12A SEPTEMBER 1993**

10/19/93

DOE-FN/FERMCO

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RSE

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REMOVAL SITE EVALUATION

HEATING AND VENTILATION SYSTEM IMPROVEMENTS IN BUILDING 12A

FERNALD SITE OFFICE

U. S. DEPARTMENTS OF ENERGY

SEPTEMBER 1993

1.0 INTRODUCTION

This Removal Site Evaluation (RSE) is for renovation of the existing heating and ventilation system within Building 12A. This activity will require replacing the existing heating and ventilation units and providing additional airways for the exhaust systems and dust collector system. Existing exhaust fans will be replaced, new fans and dampers will be installed, and ductwork for new heating and ventilating unit supply, return, and outdoor air intake will be installed. Pneumatic controls for the heating and ventilation units with necessary steam piping for these units will also be installed.

The waste estimated to be generated for the project includes: 2 cu. ft. of rubble (concrete, block, etc.); 160 cu. ft. of metal such as ductwork; air intakes and piping; 1450 cu. ft. of process equipment from the heating and ventilating units; 25 cu. ft. of asbestos from insulation; and 30 cu. ft. of conduit and wire.

This RSE has been completed by the Department of Energy (DOE) under authorities delegated by Executive Order 12580 under Section 104 of CERCLA and is consistent with Section 300.410 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This RSE addresses the existing conditions with the Heating & Ventilation System in Building 12A and the proposed upgrades. This RSE has been completed to support the decision as to whether the project conditions warrant a removal action. Controls implemented to support this construction activity are also presented in the RSE to demonstrate that the proposed construction will not cause deterioration of the existing site conditions.

2.0 SOURCE TERM

Consistent with 40 CFR 300.410(a), this RSE includes a removal preliminary assessment which is based upon readily available information as described in 40 CFR 300.410(c). Building 12A was constructed in the 1950's. The heating and ventilation systems are approximately 30 years old and are in poor condition. The ductwork and piping associated with the heating and ventilation system are covered with lead based paint and asbestos insulation, respectively.

Lead-based paint on ductwork at the FEMP has been analyzed and repeatedly exceeds the TCLP limit of 5.0 ppm. If paint residues are left behind at the project site or are allowed to migrate during demolition, a pathway for the spread of lead contamination exists.

The radiological survey report of the project site (Attachment 1) indicates slightly elevated levels of radioactive contamination. Maximum levels of contamination detected were 16,000 dpm/100 cm² beta-gamma removable and 38,000 dpm/100 cm² beta-gamma fixed plus removable. Controls must be implemented to prevent the spread or release of radioactive contamination from this project.

Asbestos insulation poses a hazard to humans when it becomes friable and the asbestos fibers are inhaled. Asbestos materials could be released into the environment during this construction activity if the material is removed and handled improperly. The potential release of asbestos could result from the suspension of particles and fibers to the atmosphere and the potential migration of the contaminants through the wind.

3.0 EVALUATION OF THE MAGNITUDE OF THE POTENTIAL THREAT

To manage the hazards and prevent the spread or release of contamination, the following controls, among others, will be implemented during construction.

- Abatement measures including use of respirators and HEPA vacuums when burning, welding, or cutting ductwork will be used as required.
- Physical barriers will be positioned around the work area to prevent unauthorized access.
- Protective clothing and respiratory protection will be provided for workers, as required.

These controls will ensure that the spread of lead and radioactive contamination is prevented and the threat from these materials is mitigated.

The asbestos removal shall be planned and supervised by AHERA certified "Asbestos Hazard Abatement Contractor/Supervisor" and certified asbestos workers. Work performed to remove asbestos will meet the requirements of OSHA 29 CFR 1910.120 and 40 CFR 761. Asbestos will be removed in accordance with Removal Action 26 "Asbestos Removals (Asbestos Program, Procedures)." Additionally, the following controlling activities will occur at the time of removal to prevent a release of asbestos:

- Wetting materials before and during removal
- Using glove-bag or full enclosure with negative air pressure
- Using HEPA vacuum to clean area
- Sealing materials into leak-tight containers

Asbestos insulation that is removed shall be handled in accordance with site procedures for asbestos to prevent release of fibers. The waste shall be wrapped in plastic or bagged, and labeled as asbestos. These controls will prevent the release of and mitigate the threat from asbestos at this project site.

All activities performed in support of this project will follow applicable site policies and procedures written to control such activities. These procedures include, but are not limited to, the following:

- SP-P35-010 "Unrestricted Release of Materials from FMPC"
- SSOP-0044, "Management of Soil, Debris, and Waste from a Project".
- Removal Action 17, "Improved Storage of Soil and Debris"
- Removal Action 26, "Asbestos Removals (Asbestos Program, Procedures)"

4.0 ASSESSMENT OF THE NEED FOR REMOVAL ACTION

Consistent with 40 CFR 300.410 of the NCP, the DOE shall determine the appropriateness of a removal action. Eight factors to be considered in this determination are listed in 40 CFR 300.415(b)(2). Based on the data presented above, the following of the eight criteria listed in the NCP applies to this project.

40 CFR 300.415(b)(2)(i)

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.

As discussed previously, the preventive measures taken in the field during this construction activity mitigate the threat of a release. Therefore, while the above criterion can be applied to the Heating & Ventilation Improvements in Building 12A, the level of threat is negligible and a removal action is not required.

5.0 APPROPRIATENESS OF A RESPONSE

Based on the evaluation of all the above factors, it has been determined that a removal action will not be necessary and this project should be continued as a construction activity in support of the CERCLA remediation process and waste management. Furthermore, the controls planned in conjunction with this construction activity are adequate to mitigate any hazards at this site and to prevent deterioration of existing site conditions.

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Attachment 1

Fernald Site
 IRS&T - RADIOLOGICAL SAFETY
RADIOLOGICAL SURVEY REPORT

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LOCATION BLDG 12	PRINT NAME Marshall Linton / Bill Gant	PAGE 1 of 4
LEVEL 550	SIGNATURE <i>Bill Gant</i>	
PERSON OR SURVEY This survey was done on Air Handling Units, Unit Heaters and air conditioning units shown on the attached drawing and listed on the sheet. NOTE: Complete list of units to be attended to is attached to this report.		

INSTRUMENTS							INSP./PERFORMANCE TEST SAT	
MODEL	SERIAL NUMBER	TYPE (α, β, γ)	CALIBRATION DUE DATE	BKGD. (cpm)	EFF./CF	MDA (dpm)	YES	NO
-	-7120	Bγ	12-92	50	1/1	1K	✓	

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EM BER	LOCATION AND/OR DESCRIPTION	DPM/100cm ² ALPHA		DPM/100cm ² BETA-GAMMA		CORRECTED DOSE RATE (MREM/HR)			
		REMOVABLE	FIXED PLUS REMOVABLE	REMOVABLE	FIXED PLUS REMOVABLE	γ	β/γ	γ	β/γ
						CONTACT	CONTACT	AT FT.	AT FT.
1	AHU		EX ²	8K	9K				
2	UH			3K	22K				
3	UH			5K	20K				
4	UH			5K	5K				
5	UH			4K	6K				
6	UH			3K	10K				
7	UH			4K	38K				
8	AHU			2K	12K				
9	AC			16K	16K				
10	AC Duct work			<1K	1K				
11	AC Duct work (outside)			<1K	<1K				
12	UH			10K	10K				
13	UH			1K	5K				
14	AHU			2K	4K				
15	AHU			2K	8K				
16	UH			1K	1K				
17	UH			2K	4K				
18	UH			4K	5K				

N/A

DISTRIBUTION OF COPIES	
1	Radiological Safety Supervisor
2	Facility Supervisor
3	Operable Unit Manager

NOTIFICATION OF SURVEY RESULTS					
SUPERVISOR NOTIFIED	TIME	DATE	NOTIFIED BY	REVIEWED BY	DATE

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FMPC

INDUSTRIAL, RADIOLOGICAL SAFETY & TRAINING - RADIOLOGICAL SAFETY

RADIOLOGICAL SURVEY REPORT (CONTINUATION SHEET)

UNIT NUMBER	GRID COORDINATES	DESCRIPTION	CORRECTED DOSE RATE (mRem/hr)				DPM ALPHA		DPM BETA-GAMMA	
			γ	β/γ	γ	β/γ	100 CM ²	PROBE	100 CM ²	PROBE
			CONTACT	CONTACT	3 FT.	3 FT.				
19		UH						4K	5K	
20		UH						1K	1K	
21		UH						1K	1K	
22		UH						1K	1K	
23		UH						2K	6K	
24		UH						4K	6K	
25		UH						2K	5K	
26		UH						1K	3K	
27		UH						4K	5K	

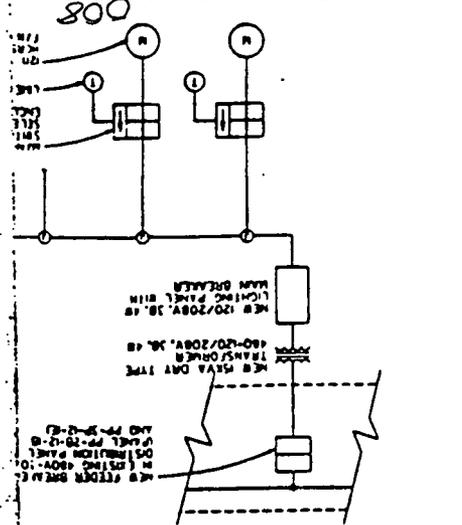
N/A

N/A

NOTE: UNITS UNAVAILABLE FOR SURVEY ARE
C-11, C-12, G-2?

N/A

TYPICAL POWER DISTRIBUTION FOR 120VAC LN



BUILDING 12 - TYPICAL SINGLE LINE DIAGRAMS

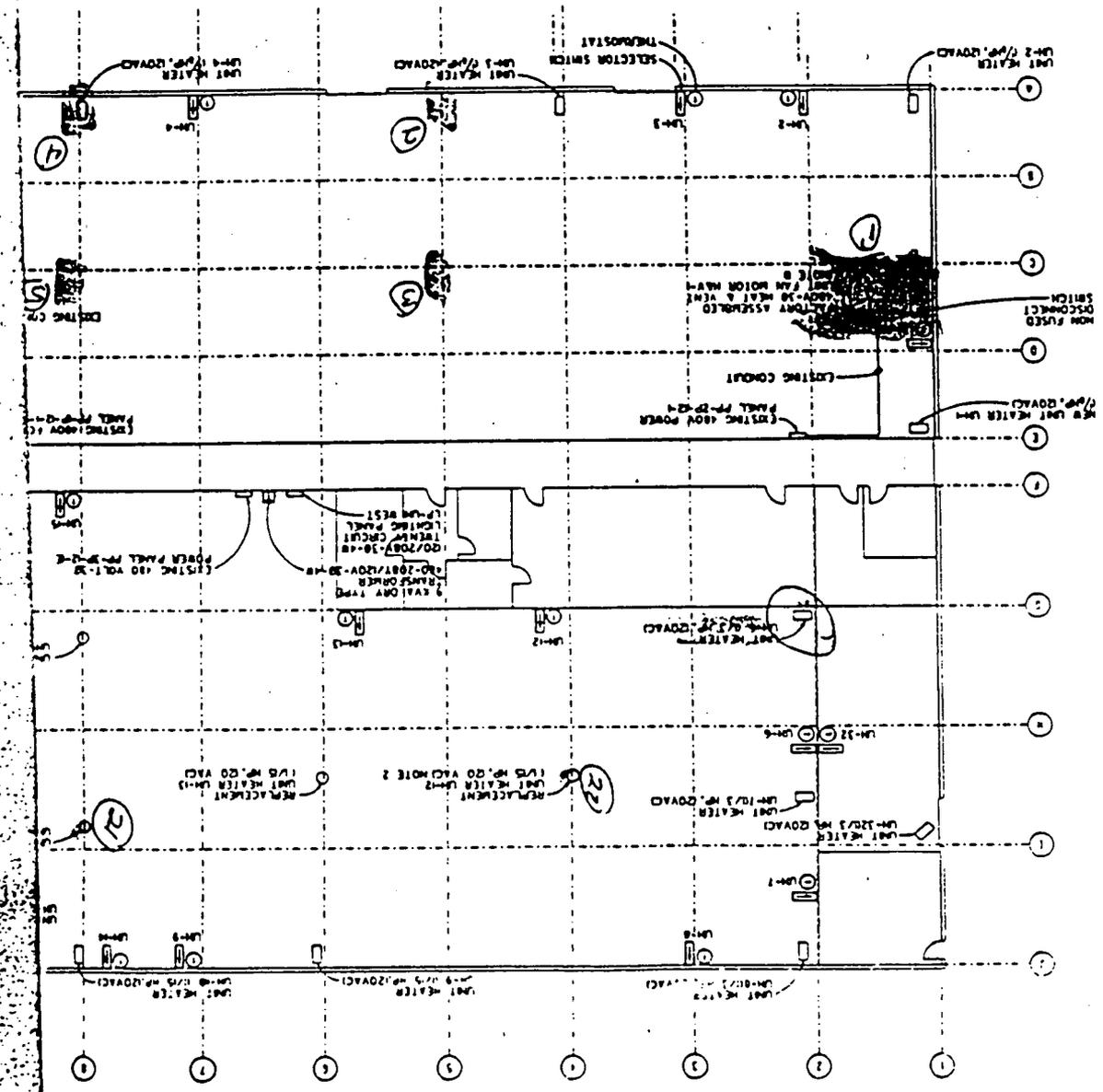
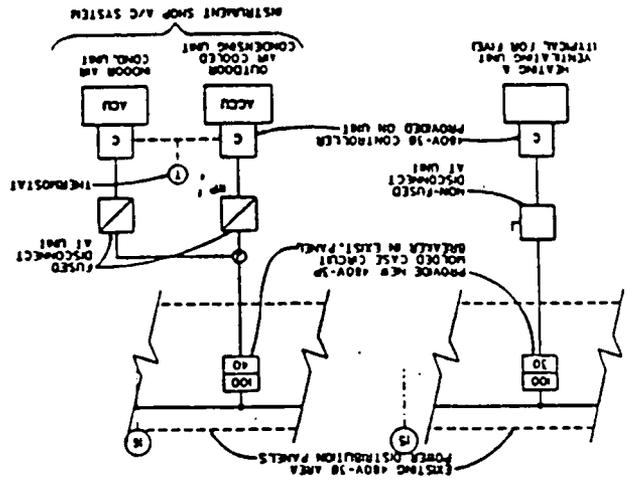


FIGURE 1

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