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**RISK MANAGEMENT PLAN FOR OBTAINING PIT
5, 6 AND CLEARWELL SAMPLES FOR
OPERABLE UNIT 1 TREATABILITY STUDIES**

10/30/91

**RMP-91-0001-B-O
WEMCO/DOE-FN
30
WORK PLAN
OU1**

RMP No.RMP-91-0001-B-0

RISK MANAGEMENT PLAN

for

OBTAINING PIT 5, 6 CLEARWELL SAMPLES

for

OPERABLE UNIT 1 TREATABILITY STUDIES

prepared by

Westinghouse Environmental Management Company of Ohio

for

**U.S. DEPARTMENT OF ENERGY
FERNALD OFFICE**

OCTOBER 30, 1991

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RISK MANAGEMENT PLAN

for

RMP No. RMP-91-0001-B-0

PIT 5, 6 CLEARWELL SAMPLE COLLECTION

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for

RMP No. RMP-91-0001-B-0

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PIT 5, 6 CLEARWELL SAMPLING FOR OPERABLE UNIT 1 TREATABILITY STUDIES**RISK MANAGEMENT PLAN****I. INTRODUCTION**

This Risk Management Plan (RMP) [herein referred to as the "Plan"] is intended to describe the specific actions and responsibilities to mitigate or eliminate the consequences of failure or concern identified in the Risk Assessment Report, titled "Obtaining Pit 5, 6 & Clearwell Samples for Operable Unit 1 Treatability Studies" (RAR-91-0001-B-0) and approved for this project.

Remedial Investigation & Feasibility Studies (RI/FS) are underway to determine the best method to remediate the waste pits. Samples taken from Waste Pits 5, 6 and the Clearwell will be used in the treatability development studies performed by IT Corporation, the University of Cincinnati, Oak Ridge National Laboratories, Catholic Universities/Duratek, and other subcontractors.

Sample collection will be performed by WEMCO personnel. All work will be performed during daylight hours and not during adverse weather conditions. The existing roadways will be used to access the waste pits. The scope of work will require the collection of eight (8) 55-gallon drums of waste material from each waste pit. The drums will have a plastic liner to protect the exterior surface from contamination. Excess water collected during the sampling will be decanted and returned to the appropriate waste pit. Upon collection of drum samples, material will be collected from each drum for characterization purposes. At the completion of the collection of the drum samples, the drums will be sealed, decontaminated, and transported to the respective subcontractors. Temporary on-site storage of the 55-gallon sample drums will be required due to limitations on the quantity of material the subcontractors may receive.

II. SUMMARY

The Pit 5, 6 and Clearwell sample collection effort involves 13 potential failures or concerns that merit special attention due to the severity of their consequences.

These consequences can be managed, minimized, or eliminated by close

adherence to the risk control measures identified. Specific control measures directed by management and implemented by pertinent personnel provide the effective risk control and/or mitigation required. This plan specifies the control and mitigation for the management of risk associated with this effort.

III. RISK REQUIRING INCLUSION IN THE PLAN

The Risk Assessment Report (RAR) identifies 13 possible failures or concerns (risks) associated with the sample collection activities that merit special management attention. No concerns have been identified as Quality Level 1. Eight (8) concerns are identified as Quality Level 2. The five (5) remaining concerns are identified as Quality Level 3. These concerns are listed below:

A. QUALITY LEVEL 1

NONE.

B. QUALITY LEVEL 2

- **Electrical equipment presents electrical shock hazard. (RAR 1)**
- **Fuel or lubricant spilled while refueling equipment or during storage. (RAR 4)**
- **Rigging devices for crane may fail, i.e. slings, shackles, eyebolts, cables, etc. (RAR 6)**
- **Crane safety features are not operational or are incorrectly set, i.e., brakes, horn, stops and load limiter devices. (RAR 7)**
- **Emergency eyewash and shower not available. (RAR 8)**
- **Open water hazards. (RAR 12)**
- **Airborne release of asbestos material from Pit 6. (RAR 13)**
- **Breach of liner by the sample collection device. (RAR 14)**

C. QUALITY LEVEL 3

- **No sway control for crane boom during periods of high winds. (RAR 3)**

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- Lightning protection not attached or is unavailable. (RAR 5)
- Personnel other than those designated are permitted to operate crane. Crane operated by unqualified personnel. (RAR 9)
- Fire or explosion results from improper handling/storage of flammable and combustible liquids. (RAR 10)
- Toxic chemical or radiological contamination of personnel or equipment. (RAR 11)

IV. DESCRIPTION OF CONTROLS, MITIGATORS, AND REQUIREMENTS

A. GENERAL RISK CONTROLS, MITIGATORS, AND REQUIREMENTS

All design, pre-construction planning, and inspections shall be accomplished in accordance with the following written procedures, regulations and instructions:

- National Electric Code, 1990 Edition or Later
- FMPC 719, Energy Control
- FEMP Site Policies and Procedures
- FMPC-2201 Project Management Procedures
- DOE 6430.1A, General Design Criteria
- OSHA Standards
- DOE Hoisting and Rigging manual
- FEMP Standard Operating Procedures (SOP's)

- B. The Sampling Plan and procedures, contained in the Project Specific Health and Safety Plan for "Obtaining Pit 5, 6 and Clearwell Samples for Operable Unit 1 Treatability Studies", details the normal activities expected during the effort. The guidance, procedures and regulations above provide details for addressing the potential failures or concerns identified.

Specific activities which address the identified risk as listed in Section III, Risk Requiring Inclusion In The Plan, are as detailed below:

- B.1 Project Team reviews the sufficiency of the electrical supply for the equipment requiring power. The supervisor tests and inspects the connections. Field Engineer verifies testing and inspection is performed. Supervisor performs periodic inspection and maintenance.
- B.2 Project Team review verifies NFPA-30 code for flammable and combustible liquids. Refueling precautions specified in ANSI A10.5, Para. 16.16. Field Engineer verifies compliance with requirements.
- B.3 Crane inspections per IHS-S-10 and the DOE Hoisting and Rigging manual. Crane operator, Field Engineer, and supervisor will perform the inspection. Field Engineer verifies test and inspections are performed.
- B.4 Certified crane operator and supervisor establishes settings and test requirements for crane safety features based on manufacturer's instructions. Crane operator makes settings and performs tests. Field Engineer to verify testing is performed.
- B.5 Safety and fire protection engineering determines the location and quantity of emergency eye wash and shower stations based on ANSI Z358.1. Project Team review verifies the emergency wash stations are specified per the ANSI requirements. Field Engineer verifies installation and testing are performed per requirements. Field Engineer verifies that the proper maintenance and inspection is performed on the wash stations per SOP 43-C-301.
- B.6 All personnel working or located within the secondary restricted area or within five (5) feet of the edge of the water, shall be required to wear a U.S. Coast Guard personnel flotation device at all times. The Field Engineer verifies that all personnel are wearing the necessary equipment.
- B.7 The asbestos material in Waste Pit 6 is completely submerged to prevent the potential for release to the environment. During the sampling a low pressure spray hose will be used to spray water over the sample during the collection. Upon completion of the sample collection, all waste material in the pit will be submerged. The Field Engineer will verify that this is being performed.
- B.8 Markings will be placed upon the crane cable to identify the maximum depth that the equipment will be lowered into the pit. This marking will be such to allow sufficient clearance between the pit liner and the maximum depth of the sample collection device. Project Team will determine the extent of

the penetration based upon the depth of the individual pit. The Field Engineer verifies that this depth is not exceeded.

- C.1 Project Team review verifies crane boom sway control features are in place. Field Engineer and crane operator verifies installation, inspection and testing of the equipment.
- C.2 Project Team verifies lightning protection & structural grounding specifications conform to the requirements in DOE Order 6430.1A, Section 1630-5 and 1639, and NFPA 78 and 70, respectively. Field Engineer verifies installation is inspected and tested. Area supervisor initiates a work request to electrical maintenance to periodically inspect lightning and grounding systems per FEMP-715.
- C.3 Training requirements are developed at beginning of project, and implemented prior to start. Project Team verifies training/certification per FEMP-102 and 29 CFR 1910.120. Personnel to operate heavy equipment will have certification of successful completion of National Crane Institute Operators Course. WEMCO performs training as required for WEMCO personnel. Project Team establishes requirements for crane safety based on the requirements of OSHA 1910.160 and WEMCO IHS-S-10, which specifies that only trained and authorized personnel shall operate cranes.
- C.4 Project Team review verifies NFPA-30 code for handling and storage of flammable and combustible liquids. Field Engineer and Project Engineer verifies compliance with requirements.
- C.5 Radiological Safety performs daily area surveys for sources of contamination levels and posts work restrictions at area entrances per OSH-P-35-017. Radiological Safety also monitors area for contamination levels which may build up in excess of 100 mrem/hr. Field Engineer initiates work permit per FEMP - 515 for controlled access. WEMCO performs training as required for WEMCO personnel. Radiological Safety surveys area to verify enforcement of work restrictions.

V. TRAINING

The special training requirements are listed in the Project Specific Health and Safety Plan and are as follows:

- Training of the Health and Safety Plan for this work including site specified hazards and procedures. New issues will be addressed and documented in the daily safety meeting(s).

- Site radiation safety training.
- Site annual respiratory training and quantitative fit test or equivalent approved by site Industrial Hygiene when applicable.
- Site nuclear criticality training (Criticality Training).
- 40-hour OSHA training.
- 8-hour annual refresher training, as necessary
- 8-hour supervisory training (for supervisors)
- 24-hour supervised field experience
- FEMP site orientation video
- Fire extinguisher training
- All heavy equipment operators shall have certification of successful completion of Basic Crane Operation School
- Training on the project specific hazards and Risk Assessment Report
- Training of all Material Safety Data Sheets (MSDS's) for chemicals or materials present in the waste pits
- Operational Procedures which will include:
 - Spill Prevention and Cleanup
 - Equipment decontamination
 - Drum sampling
 - Lot Marking and Coding Procedures
 - Hazardous Waste Shipment Preparation
 - Overpackaging of drums
 - Housekeeping

VI. ATTACHMENTS

1. Risk Assessment Report (RAR-91-0001-B-0), "Sampling Plan - Obtaining Pit 5, 6 & Clearwell Samples - Operable Unit 1 Treatability Study" dated October 18, 1991
2. Crane inspection checksheet

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CHECK LIST FOR CRITICAL LIFTS

DATE _____

1. ACC. No/W.O. No. _____

2. JOB DESCRIPTION _____

3. LOCATION _____

4. REPRESENTATIVE _____

5. PLANNING DATA:

A. 1. CONTRACTOR _____

2. SUPERINTENDENT _____

3. SUPERVISOR RESPONSIBLE FOR LIFT _____

B. DESCRIPTION OF ITEM TO BE RAISED _____

C. MAJOR HOISTING EQUIPMENT TO BE USED (MUST INCLUDE INSPECTION TAG NO. AND DATE. TAGS ARE VALID FOR FOUR MONTHS.)

1. _____

2. _____

3. _____

4. _____

D. EQUIPMENT AND LIFT RELATIONSHIP

1. OPERATING RADIUS _____

2. BOOM LENGTH _____

3. ALLOWABLE LOAD (FROM LOAD CHART) _____

4. RATIO OF LIFT TO ALLOWABLE LOAD _____

5. CLEARANCE BETWEEN BOOM AND LIFT _____

6. CLEARANCE TO SURROUNDING FACILITIES _____

E. SCHEDULE OF OPERATIONS (INCLUDE TIME FOR RIGGING AND EQUIPMENT INSPECTION).

6. BASIS FOR CRITICAL LIFT:

A. LOAD EXCEEDS 80% OF LOAD CHART FOR CRANE OR DERRICK _____

B. LOAD EXCEEDS 50% OF LOAD CHART, AND FAILURE WOULD ENDANGER EXISTING FACILITIES _____

C. TWO BOOMS ARE REQUIRED _____

D. POLES OR DERRICKS HAVE BEEN ERECTED FOR THIS SPECIFIC LIFT _____

7. HOW WEIGHT OF CRITICAL LIFT WAS OBTAINED:

- A. CERTIFIED SCALE WEIGHT _____
- B. CALCULATED INDEPENDENTLY BY MORE THAN ONE SOURCE.
 - 1. SOURCE _____ WEIGHT _____
 - 2. SOURCE _____ WEIGHT _____
- C. IF LIFT IS AN EXISTING ITEM (BEING REMOVED OR DEMOLISHED), THE WEIGHT IS TO BE RECALCULATED, TAKING INTO ACCOUNT ALL MODIFICATIONS INCLUDING INTERNAL AS WELL AS AN ALLOWANCE FOR SCALE, SEDIMENT, SLUDGE, INSULATION, LIQUID, ETC.
 - 1. SOURCE _____ WEIGHT _____
 - 2. SOURCE _____ WEIGHT _____

8. CONDITION OF HOISTING EQUIPMENT AND RIGGING:

- A. HAS EQUIPMENT BEEN REINSPECTED FOR THIS LIFT?
- B. HAS ALL EQUIPMENT AND RIGGING BEEN INSPECTED AND FOUND IN ACCEPTABLE CONDITION FOR THIS LIFT? _____

9. GUY ANCHORS AND GUYS:

- A. ADEQUACY OF FOUNDATION FOR FOOT BLOCKS _____
- B. ADEQUACY, NUMBER, AND LOCATION OF GUYS AND ANCHORS _____
- C. FOOT BLOCKS ARE TO BE ANCHORED _____
- D. CONDITION OF ALL CABLE, INCLUDING SPLICES, CLAMPS, THIMBLES, AND OTHER HARDWARE _____

10. STABILITY OF GROUND AREA:

- A. CHECK SOIL BEARING ALLOWABLE LOAD _____
- B. WILL MATS BE REQUIRED? _____
- C. ANY UNDERGROUND INSTALLATIONS NEEDING SPECIAL TREATMENT _____

11. OPERATIONS:

WHAT IS OPERATOR'S EXPERIENCE ON THIS EQUIPMENT AND THIS TYPE OF LIFT? _____

12. REMARKS:

Nothing in this submission and/or acceptance of this CHECK LIST is to be considered as relieving the Contractors of any responsibility for a safe operation.

Contractor

By: _____

Title: _____

000011

POSSIBLE FAILURE/CONCERN	SERIOUSNESS CODE	SERIOUSNESS RATIONAL.	POSSIBLE CAUSE OF FAILURE/CONCERN	EFFECT OF FAILURE/CONCERN	NORMAL STANDARDS OR PROCEDURES TO ELIMINATE OR MINIMIZE A FAILURE/CONCERN	PROBABILITY CODE	QA LEVEL
ITEM 1	5					4	2
NOTE: All Abbreviations are defined under "NOTES" of the last page.							
Electrical equipment presents electrical shock hazard.		Possibility of electrical shock could result in causing injury or death.	Insufficient design details or inadequate inspection or testing during installation. Inadequate periodic maintenance.	Radionuclide Release: Yes () No (X) Estimated \$ Loss: <500,000 Notoriety: Local Potential fatal personnel injury. Unavailability of equipment due to electrical outage.	Project team and site electrical engineer review assures all installations are grounded per NFPA to article 250. Title III inspection verifies testing of ground fault circuit interrupter performed.		
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ITEM 2	4					2	4
Training/certification of involved personnel not performed or inadequate for the job to be performed.		Safety of personnel jeopardized. Equipment damage more likely to occur. Loss of production.	Program for training/certifying personnel, including new personnel not implemented by responsible management.	Radionuclide Release: Yes () No (X) Estimated \$ Loss: <500,000 Notoriety: WEMCO Incorrect sampling procedures used. Personnel injury. Equipment damage. Impact on schedule.	Training requirements are developed and stated in the risk management plan and implemented prior to start. Management verifies training/certification per FMPC-102 and 29 CFR A10.120. All WEMCO heavy equipment operators have successfully completed basic operators school with operator certification.		

Seriousness/Probability

Quality Level-Action

Preparer

1 - Risk Management Plan
2 - Risk Management Plan
3 - QA Inspection/Test Verification
4 - None Required

J. A. Caldwell
Project Engineer

Operable Unit

Nuclear, Fire & System Safety

Site Wide Quality Assurance

Project Management Manager

Rollie Scarpino
Project Engineer

John Blisk
Project Engineer

AMR
Project Management Manager

Negligible = 1
Low = 2
Moderate = 3
High = 4
Very High = 5

ITEM	POSSIBLE FAILURE/CONCERN	SERIOUSNESS CODE	SERIOUSNESS RATIONAL	POSSIBLE CAUSE OF FAILURE/CONCERN	EFFECT OF FAILURE/CONCERN	NORMAL STANDARDS OR PROCEDURES TO ELIMINATE OR MINIMIZE A FAILURE/CONCERN	PROBABILITY CODE	QA LEVEL
ITEM 3	No sway control for crane boom during periods of high winds.	5	Equipment damage and personnel injury or death could result from crane boom sway.	Crane operator does not inspect boom sway prevention; potential equipment failure.	Radionuclide Release: Yes (X) No () Estimated \$ Loss: 100,000 Notoriety: WEMCO Personnel injury or death. Equipment damage.	Crane operator review verifies boom sway control. Title III inspection verifies installation and testing per health and safety plan. Inspection checklist for critical lifts will be included in the RMP.	3	3
ITEM 4	Fuel or lubricant spilled while refueling equipment or during storage.	3	Fluids spills have an adverse environmental impact contaminating the soil requiring decontamination.	Mishandling of fuel/lubricant during storage or refueling. Leaking containers. Loose hose or connectors.	Radionuclide \$ Loss: Yes () No (X) Estimated \$ Loss: 50,000 Notoriety: DOE Damage to the berm requiring replacement of the soil. Adverse environmental impact requires soil decontamination.	Project team inspection and maintenance of the area helps prevent spillage. Ground contamination if detected shall be controlled per FMPC-503 and SOP 20-C-606.	5	2
ITEM 5	Lightning protection not attached or is unavailable.	5	Potential for electrical equipment damage and loss of power during electrical storm from lightning. Personnel in vicinity of lightning discharge could be fatally injured.	The requirements for lightning protection and grounding were not included in the sampling plan studies. Crane structure could act as lightning rod.	Radionuclide Release: Yes () No (X) Estimated \$ Loss: <500,000 Notoriety: WEMCO Intermittent equipment operations, fire hazards and personnel fatality.	Project team review verifies lightning protection and structure grounding are designed to the requirements of NFPA-78 and 70, respectively. Title III inspection verifies installation. Per the health and safety plan the sampling operation will be shut down during adverse weather conditions.	2	3

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POSSIBLE FAILURE/CONCERN	SERIOUSNESS CODE	SERIOUSNESS RATIONAL	POSSIBLE CAUSE OF FAILURE/CONCERN	EFFECT OF FAILURE/CONCERN	NORMAL STANDARDS OR PROCEDURES TO ELIMINATE OR MINIMIZE A FAILURE/CONCERN	PROBABILITY		
						CODE	LEVEL	
ITEM 6	5	Possible fatal personnel injury. Damage to equipment and structures. Release of radioactive material.	Inspection and testing provisions not established. Devices not inspected and tested prior to use. Improper use of devices.	Radionuclide Release: Yes (X) No () Estimated \$ Loss: <500,000 Notoriety: Local Fatal personnel injury. Equipment damage. Schedule delay due to damage.	Crane rigging devices shall be inspected per IHS-S-10 and the DOE hoisting and rigging manual. Sub-contractor performs inspection and tests. Title III inspection verifies inspection, tests, and proper use. Inspection checklist for critical lifts will be included in the RMP.	4	2	
ITEM 7	5	Contractor crane safety features are not operational or are incorrectly set, i.e., brakes, horn, stops, and load limiter devices.	Faulty operation of safety features could result in personnel injury, death, equipment breakage, or spilled materials.	Radionuclide Release: Yes (X) No () Estimated \$ Loss: <500,000 Notoriety: DOE Personnel injury or death. Equipment damaged. Dropped or spilled material.	The Project Team shall establish settings and test requirements for crane safety features based on manufacturer's instructions or industrial standards and WEMCO OSH requirements. The certified crane operator makes settings and performs tests. Title III inspection verifies tests performed. ANSI sheet in RMP.	3	2	
ITEM 8	4	Emergency eye wash and shower not available.	Untreated contamination to eyes and skin of personnel may result in blindness and severe damage to skin.	Radionuclide Release: Yes () No (X) Estimated \$ Loss: <100,000 Notoriety: DOE Delayed or inadequate treatment may result in permanent personnel injury.	Project Team review specifies an eye wash and shower within 100' of work on the same level with unobstructed access at each work location per ANSI Z358.1. IH&S inspection verifies installation and operation. The wash stations are maintained per SOP 43-C-301.	4	2	

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ITEM	POSSIBLE FAILURE/CONCERN	SERIOUSNESS CODE	SERIOUSNESS RATIONAL	POSSIBLE CAUSE OF FAILURE/CONCERN	EFFECT OF FAILURE/CONCERN	NORMAL STANDARDS OR PROCEDURES TO ELIMINATE OR MINIMIZE A FAILURE/CONCERN	RISK MGMT. PLAN NO.		
							PROBABILITY CODE	QA LEVEL	SEQ
5475	Personnel other than those designated are permitted to operate crane. Crane operated by unqualified personnel.	5	Safe operations of crane would be left to chance if undesignated personnel were permitted to operate crane. Possible personnel injury or death. Equipment/structure safety jeopardized. Potential adverse environmental impact.	Lack of adequate supervision. Lack of crane operator certification.	Radionuclide Release: Yes (X) No () Estimated \$ Loss: <500,000 Notortety: WEMCO Personnel and equipment/structure safety may be jeopardized by uncertified crane operator. Potential environmental impact.	Project Team establishes requirements for crane safety based on the requirements of OSHA 1910.180 and WEMCO ISH-S-10 which specifies that only trained and authorized personnel shall operate cranes. All WEMCO heavy equipment operators have successfully completed basic operators school with operator certification. Title III inspection verifies crane operators certification.	2	3	
ITEM 10	4	Fire or explosion results from improper handling/storage of flammable and combustible liquids.	Injury including severe burns to personnel. Damage to structures and equipment. Potential release of toxic radioactive particles to the atmosphere.	Improperly stored flammables and combustibles. Leaking or spills from fuel containers. Flame, spark producing devices, or lighted smoking materials in storage area. Lack of good house keeping practices.	Radionuclide Release: Yes (X) No () Estimated \$ Loss: <500,000 Notortety: DOE Potentially for severe injury to personnel. Damage to equipment. Delay in scheduled completion of project. Potential for contaminated, toxic release to atmosphere.	Project Team review verifies NFPA-30 code for handling and storage of flammable and combustible liquids. Industrial health and safety verifies compliance with requirements. Supervisor will verify that all work performed by qualified personnel.	3	3	

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POSSIBLE FAILURE/CONCERN	SERIOUSNESS CODE	SERIOUSNESS RATIONAL	POSSIBLE CAUSE OF FAILURE/CONCERN	EFFECT OF FAILURE/CONCERN	NORMAL STANDARDS OR PROCEDURES TO ELIMINATE OR MINIMIZE A FAILURE/CONCERN	PROBABILITY CODE	QA LEVEL
ITEM 11 Toxic chemical or radiological contamination of personnel and equipment	3	With each waste extraction from the pit the level of toxic chemical and/or radiological contamination may vary exposing personnel/equipment to possible varying levels of toxic, and radioactive substances.	Toxic chemical and radiological surveys not performed during work.	Radionuclide Release: Yes (X) No () Estimated \$ Loss: 100,000 Notoriety: WEMCO Adverse environmental impact requires decontamination of equipment and/or personnel.	Prior to the start of the sampling plan the CESHWS per PMP-420 and CWID per FMPC-720 shall be initiated. All procedures per FMPC-720 and FMPC-515 shall be followed through out the sampling project implementation. Title III inspection verifies monitoring of each waste extraction during the sampling process. Radiological IH monitoring performed at the beginning and the end of each work period.	4	3
ITEM 12 Open water hazards.	5	Personnel in water would require rescue operation due to depth of water in some locations. Potential for drowning or contamination.	Trip hazard for personnel or human error.	Radionuclide Release: Yes () No (X) Estimated \$ Loss: 1,000,000 Notoriety: National Personnel falling into pit. Potential for drowning or contamination.	Project Team review, the health and safety plan and CFR 29 Part 1926.106 require personnel to wear life vest when within five (5) feet or closer to edge of pit. A life line with harness and restricted access to the area is required per the health and safety plan and FMPC-511. IH&S verifies all procedures are followed.	4	2
ITEM 13 Airborne release of asbestos fibers from pit	4	Personnel could be exposed to airborne asbestos with potential for permanent illness.	Asbestos is released into atmosphere as it becomes dry.	Radionuclide Release: Yes () No (X) Estimated \$ Loss: 50,000 Notoriety: WEMCO Adverse environmental impact due to the release of asbestos fibers to this atmosphere. Potential permanent injury to personnel in the area.	Project team review per FMPC-516, IH&S - IH-03, and the health and safety plan requires continuous wet down of asbestos while exposed to the atmosphere and the use of PPE by all personnel involved in the sampling. IH&S verifies the implementation of all requirements.	5	2

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WEMCO, INC.
RISK ASSESSMENT REPORT
FMPC - 712, RO
W/00001D00

TITLE: Sampling Plan - Obtaining Pits 5, 6 & Clearwell
Samples - Operable Unit I Treatability
WBS NUMBER: RME 02
LOCATION: Waste Storage Area

DATE: October 21, 1991
REVISION NUMBER: 0
DRAFT NUMBER: 2
Document Number: RAR-91-0001-B-0

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RISK MGMT. PLAN NO.
DIV DEPT SEQ

ITEM 14	POSSIBLE FAILURE/CONCERN	SERIOUSNESS CODE	SERIOUSNESS RATIONAL	POSSIBLE CAUSE OF FAILURE/CONCERN	EFFECT OF FAILURE/CONCERN	NORMAL STANDARDS TO ELIMINATE OR MINIMIZE A FAILURE/CONCERN	RISK MGMT. PLAN NO.		
							PROBABILITY CODE	QA LEVEL	SEQ
	Breach of liner by the sample collection device.	5	With the liner breached the contaminants in the pit will be released into the ground. Potential groundwater pollution with national notoriety and possible violations.	Removal Action penetrates to far into pit puncturing the liner.	Radionuclide Release: Yes (X) No () Estimated \$ Loss: 1,000,000 Notoriety: National Environmental impact due to leaching of contaminants into the soil.	Project Team review and the sampling plan specifications require continuous monitoring of the operation with each piece of equipment marked so that there will be a minimum of 10' between the maximum depth of the equipment and the liner. This will assure that breach of the liner will not occur. Title III inspection verifies correct marking.	4	2	

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WEMCO, INC.
 RISK ASSESSMENT REPORT
 FMPC - 712, R0

TITLE: Sampling Plan - Obtaining Pit 5, 6 & Clearwell
 Samples - Operable Unit 1 Treatability
 WBS NUMBER: RME 02
 LOCATION: Waste Storage Area

DATE: October 21, 1991
 REVISION NUMBER: 0
 DRAFT NUMBER: 2
 Document Number: RAR-91-0001-B-0

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POSSIBLE FAILURE/CONCERN	SERIOUSNESS CODE	SERIOUSNESS RATIONAL	POSSIBLE CAUSE OF FAILURE/CONCERN	EFFECT OF FAILURE/CONCERN	NORMAL STANDARDS OR PROCEDURES TO ELIMINATE OR MINIMIZE A FAILURE/CONCERN	RISK MGMT. PLAN NO.		
						DIV	DEPT	SEQ

NOTES:

A-E: Architect Engineer
 ANSI: American National Standards Institute
 ANSI A10.5: American National Standard Safety Requirements for Material Hoists
 ANSI 2338.1: American National Standard for Emergency Eyewash and Shower Equipment
 AS/IT: Advanced Sciences, Inc./International Technology Corporation
 CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
 CESHWS: Construction Environmental Safety and Health Work Survey (PMP-420)
 CFC: Certified for Construction Drawings
 CFR: Code of Federal Regulations
 CFR 29 Part 1926.106: Working over or near water
 CWID: Construction Waste Identification/Disposal (FMPC-720)
 DC: Design Criteria
 DOE: Department of Energy
 DOE 6430.1A: General Design Criteria
 DOE Hoist and Rigging Manual
 FEMP: Fernald Environmental Management Project
 FMPC: Feed Materials Production Center
 FMPC-102: Training
 FMPC-503: FMPC Spill Incident Reporting and Cleanup.
 FMPC-511: Control of Entry to the Waste Storage Area.
 FMPC-515: Radiation Work Permit
 FMPC-516: Control of Permits for Accomplishing Hazardous Work
 FMPC-712: Vulnerability and Risk Assessment and Management
 FMPC-715: FMPC Work Request System
 FMPC-720: Control of Construction Waste
 IH&S: Industrial Hygiene and Safety (Part of IRS&T)
 IH&S-IH-03: Control of Work Involving Asbestos
 IRS&T: Industrial Radiological Safety & Training
 NFPA: National Fire Protection Association
 NFPA-30: Flammable and Combustible Liquids Code
 NFPA-70: National Electric Code
 NFPA-78: Lightning Protection Code
 NPSH: Net Positive Suction Head

NOTES:
 PMP-420: Preparation of ES&H Survey Form
 PPE: Personal Protective Equipment
 RCRA: Resource Conservation and Recovery Act of 1976
 RI/FS: Remedial Investigation and Feasibility Study
 SOP 20-C-606: Hazardous Material Spill Cleanup.
 SOP 43-C-301: Water Treatment Plant Operation
 WEMCO: Westinghouse Environmental Management Company of Ohio

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