539

K-65 DECANT SUMP TANK REMOVAL ACTION WORK PLAN FMPC

9-1-90

WMCO/DOE-ORO
45
WORK PLAN

539 [redacted]

K-65 DECANT SUMP TANK

REMOVAL ACTION

WORK PLAN

FEED MATERIALS PRODUCTION CENTER

Prepared by:

Westinghouse Materials Company of Ohio
Cincinnati, Ohio

For:

The United States Department of Energy
Oak Ridge Operations Office

TABLE OF CONTENTS

I. INTRODUCTION

One of the Remedial Investigation/Feasibility Study (RI/FS) identified operable units, Operable Unit 4, at the Feed Materials Production Center (FMPC) includes the two K-65 silos, the metal oxide silo, Silo 4 and the potentially contaminated soils surrounding the waste storage silos. A Removal Site Evaluation (RSE) has been generated by the Department of Energy (DOE) consistent with by 40 CFR 300.410 and it has been determined that a time critical removal action is necessary to remove water from the K-65 Decant Sump Tank. This removal action will contribute to the efficient performance of the long term remedial action for Operable Unit 4. The removal action is being conducted pursuant to the Consent Agreement Under CERCLA 120 and 106(a) between the DOE and the United States Environmental Protection Agency (U. S. EPA).

The Consent Agreement requires that a work plan be submitted to the U. S. EPA for implementation of all removal actions. This work plan satisfies this commitment in the Consent Agreement and is consistent with the requirements of 29 CFR 1910.120. All activities performed under this work plan will be in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and consistent with the OSWER Directive 9360.0-03B, SUPERFUND REMOVAL PROCEDURES, Rev.3.

II. BACKGROUND

1.0 Summary of the Potential Threat

In monthly water sampling of the K-65 Decant Sump Tank, elevated levels of uranium have been encountered which would be of concern if it escaped from the K-65 Decant Sump Tank into the surrounding soil. Above background levels of radium have also been found in the water. Although there is no data to indicate any of the three components (underdrain system, decant sump tank, and corrugated pipe) of the decant sump tank drainage and collection system have been compromised, a break in any position could release water to the surrounding soil. This water, due to its radionuclide content, is a potential threat to the environment. There is also concern for the potential of puncturing the tank during the K-65 Silos embankment and subsoils sampling. This sampling is scheduled to be completed in the near future.

2.0 Related Actions

There are various ongoing activities and projects concerning the K-65 Silos area. Many of these activities are not in the field implementation stage at this time. These include the Silos Number 1 and 2 Removal Action as defined in the Consent Agreement as Removal #4 and sampling of the K-65 Silos residues, embankment and subsoils.

The Silos Number 1 and 2 Removal Action has been determined to be a non-time critical removal action. The scope of this removal action can be broadly defined as the control of contamination from the contents of Silos 1 and 2 and will contribute to the efficient performance of the long term

remedial action for Operable Unit 4. This removal action is being conducted pursuant to the Consent Agreement as Removal Number 4: Silos 1 and 2. An Engineering Evaluation/Cost Analysis (EE/CA) for the K-65 Silos Removal Action has been prepared to evaluate the removal action alternatives, using the preliminary RI/FS data, to support the selection of a preferred alternative.

Also, the K-65 Silos embankment and subsoils will be sampled utilizing five low-angle borings and analyzed to determine and verify the extent of contamination in the soils surrounding the K-65 Silos. The K-65 Silos embankment and below-silo soils, denoted subsoils, will be analyzed for geotechnical, chemical and radiological parameters. This sampling will be conducted as part of the RI/FS Facilities Testing Program in support of the final remedial action for Operable Unit 4. As part of the K-65 Decant Sump Tank Removal Action, removal of the water from the K-65 Decant Sump Tank Action should be completed prior to initiating the drilling and sampling of the five low-angle borings.

Other ongoing activities and projects concerning the K-65 Silos area include resampling the K-65 residues, treatability testing and upgrades to the radon treatment system to support resampling the K-65 residues.

3.0 Roles of the Participants

The DOE is the lead agency for this removal action and will coordinate and execute this removal action. The U.S.EPA and the Ohio Environmental Protection Agency (OEPA) roles have been one of providing guidance and participation in the preparation of the CERCLA 120 Consent Agreement and technical information exchanges.

ASI, as a contractor to DOE, is conducting the RI/FS program including activities such as sampling the soils around the K-65 Silos and the contents of the K-65 Silos.

Westinghouse Materials Company of Ohio (WMCO), as the FMPC Operating and Maintenance contractor, is responsible to implement this removal action in a manner consistent with DOE and regulatory guidance.

4.0 Removal Action

The K-65 Decant Sump Tank Removal Action will consist of removing the water from the K-65 decant sump tank and the disposition of the removed decant liquid after analytical results of the Hazardous Substance List (HSL) analysis form representative samples are known. Any HSL or hazardous waste treatment will occur prior to transferring the water to existing FMPC water treatment facilities for treatment of uranium and radium. The principle isotopes of Uranium, Radium 226, and Thorium 230 are behoved to be the primary contaminants of concern. Management and control of the decant liquid will be performed as if it is a potentially hazardous waste until the HSL analysis results are complete. Suspect contaminants, especially non-radiological contaminants, such as lead, will be addressed once the decant liquid is removed and stored for HSL analysis.

5.0 Integration with the Remedial Action

This removal action will be completed prior to initiating the final remedial action for Operable Unit 4. Also, completion of this removal action mitigates the potential contamination to the surrounding soil which supports the remedial objectives for Operable Unit 4.

III. SUPPORT ACTIVITIES

1.0 Planning Activities

Planning activities to be undertaken prior to the actual site work are planning, training, design, and management of the removal actions. These activities are required to render the area reasonably free of hazards to personnel and/or the environment until the RI/FS process has been completed.

2.0 Specific Design Activities

After approval of this work plan design efforts will be finalized for this removal action. Detailed design drawings will be completed for installation of a pump, associated piping, and a poly tank. The pump will be located within a diked area attached to the pipes protruding from the corrugated pipe which extends from the decant sump tank. The decant liquid will be transferred to a polypropylene tank where it will be sampled and analyzed for full HSLs and total radionuclide analysis. Handling of the decant liquid will be managed/controlled as a potentially hazardous waste. This polypropylene tank will be situated on a flat bed trailer. The flat bed trailer will be located on a temporary diked area which will contain the total volume of the polypropylene tank. The polypropylene tank will be transported to a storage area where the decant liquid will be pumped to temporary holding tanks prior to treatment.

After the detailed design has been completed, a functional test procedures will be generated to allow testing of the pump and piping system prior to removing the decant liquid from the decant sump tank to the polypropylene tank.

3.0 Training Requirements

All personnel involved will be trained in accordance with the Occupational Safety and Health Administration (OSHA) standards found in 29 CFR 1910.120. In addition to this training, all personnel involved will be trained on; 1) how to handle emergency situations in the K-65 Silos area according to the FMPC K-65 Silo Numbers 1 and 2 Area Emergency Standard Operating Procedure (SOP) 65-C-107 dated March 1, 1990, 2) the functional test procedure to be generated for testing the pump and piping system, and 3) the SOP for the operation of the pumping and collection system.

IV. FIELD ACTIONS

1.0 Implementation of the Removal Action

Implementation of this removal action will be performed by FMPC operations and maintenance personnel. The installation and construction type activities, in addition to the maintenance activities, will be performed by FMPC maintenance personnel. Operation and monitoring of the system will be performed by FMPC operations personnel.

A pump with an approximate capacity of 415 gallons per hour (gph) will be installed within a diked area. This diked area will be a temporary structure and have the capacity to contain approximately 100 gallons of the contaminated decant liquid. The placement of this temporary structure will be on level ground and placed near the corrugated piping extending from the decant sump tank. The 1 1/2" and 2" piping extending from the decant sump tank through the corrugated piping will be piped to the pump. The discharge from the pump will be connected to a 2,250 gallon polypropylene tank using flexible hose. The polypropylene tank will be situated on a flat bed trailer at the base of the berm surrounding the K-65 Silos. A diked area will be installed so the flat bed trailer can be located within the diked area. This diked area will be a temporary structure and have the capacity to contain the total volume of decant liquid in the polypropylene tank. The flexible hose from the pump near the corrugated pipe to the polypropylene tank on the flatbed trailer will utilize temporary trenching as a secondary containment system which will drain into the diked area on which the flatbed trailer is located. Suspect contaminants, especially non-radiological contaminants, such as lead, will be addressed once the decant liquid is removed and stored to await the HSL analysis. The samples for HSL and analysis will be taken from the filled polypropylene tanks. Management and control of the decant liquid will be performed as if it is a potentially hazardous waste until the HSL analysis results are known.

Once this tank is filled with decant liquid it will be transported to Plant 2/3, where there will be 5 additional 2,250 gallon polypropylene tanks. The additional polypropylene tanks in Plant 2/3 will be positioned within a temporary dike structure. The decant liquid will be transferred from the polypropylene tank on the flat bed trailer to these additional polypropylene tanks. The decant liquid will be temporarily stored in these additional polypropylene tanks until the HSL analysis results are available. These tanks will be stored in such a manner to facilitate management controls required for storage of hazardous waste. Any required pre-treatment to address hazardous waste/hazardous waste constituents will occur prior to transferring the water to existing FMPC water treatment facilities for treatment of radionuclides.

2.0 Treatment Process

The water treatment planned for use on the decant liquid will adjust the contaminated waters for pH and the water will be treated with chemicals to facilitate precipitation of metal compounds. Clarification, filtration, centrifugation, and flotation will all be applied, as required, in the final

remedial action. Effluent from these processes will possibly be treated using ion exchange to removal residual contaminants, especially radium.

3.0 Operations and Maintenance

After functional testing of the system is complete, operation of the system will begin. All valves on the system will be manual operated valves with the exception of an automatic shut-off valve placed at a strategic location on the polypropylene tank sitting on the flat bed trailer with a visual indicator at the remote location. Utilizing the As Low As Reasonably Achievable (ALARA) principle in regards to work performed in proximity to the silos, the pump and piping system will be visually monitored from a remote location once pumping of the decant liquid has started. In addition to visual monitors, the remote location will have an ON/OFF switch for the pump. Continuous visual monitoring, the automatic shut-off valve at the polypropylene tank with a visual indicator and the ON/OFF switch for the pump at the remote location will allow for safe and continuous operation of the pumping and collection system.

Transporting the flatbed trailer with the decant liquid in the polypropylene tank will be completed by FMPC transportation personnel. Once this liquid is transferred to the storage tanks in Plant 2/3, there will be weekly inspections of this potentially hazardous substance pending the sampling analysis results.

V. SAMPLING AND ANALYSIS PLAN

Since August 1989, the decant liquid in the corrugated pipe above the sump tank has been sampled and analyzed by FMPC personnel monthly for the following constituents(see Attachment II):

Uranium 234
Uranium 235
Uranium 236
Uranium 238
Total Uranium
Radium 226
Thorium 230

These samples may not represent the accurate concentration of the contaminants within the decant sump tank. This monthly sampling will still continue during and after implementation of this removal action. If there is not enough liquid in the corrugated pipe to perform an analysis, it will be recorded as such, but the monthly sampling will continue.

Two representative samples will be taken from the decant liquid in the polypropylene tanks and prior to transferring it to the temporary storage tanks in Plant 2/3. The collection of these samples will be performed by the FMPC Environmental Monitoring Group. The collected samples will be sent to a independent laboratory for analysis as established in the Quality Assurance Project Plan (QAPP) approved as part of the RI/FS Work Plan. The results from the

lab will become part of the Administrative Record File. These samples will be analyzed at the independent laboratory for the Full Hazardous Substance List (HSL) Parameters (see Attachment III) and total radionuclides (see Attachment IV).

VI. HEALTH AND SAFETY PLAN

The work to be performed will be consistent with the Health and Safety Plan prepared for this removal action. A copy of this plan is provided as Attachment V of this work plan. The plan identifies, evaluates, and controls all safety and health hazards. In addition, it provides for emergency response for hazardous operations. The plan is consistent with 29 CFR 1910.120 and the FMPC Site Health and Safety Plan. Safety documentation will be prepared according to FMPC-2116 Topical Manual "Implementating FMPC Policies and Procedures for System Safety Analysis and Review System" and DOE/OR-901 Guidance for Preparation of Safety Analysis Reports.

VII. QUALITY ASSURANCE

The K-65 Decant Sump Tank Removal Action will be conducted according to requirements of the overall quality assurance program at the FMPC which is described in the site Quality Assurance Plan, FMPC 2139. The Quality Assurance Plan is based on the criteria specified in ASME NQA-1, Federal EPA Guideline QAMS-005/80 and DOE Orders 5700.6 and 5400.1. Specific quality assurance requirements will be incorporated into written and approved procedures and into personnel training. The Quality Assurance Department will conduct periodic surveillances to verify compliance.

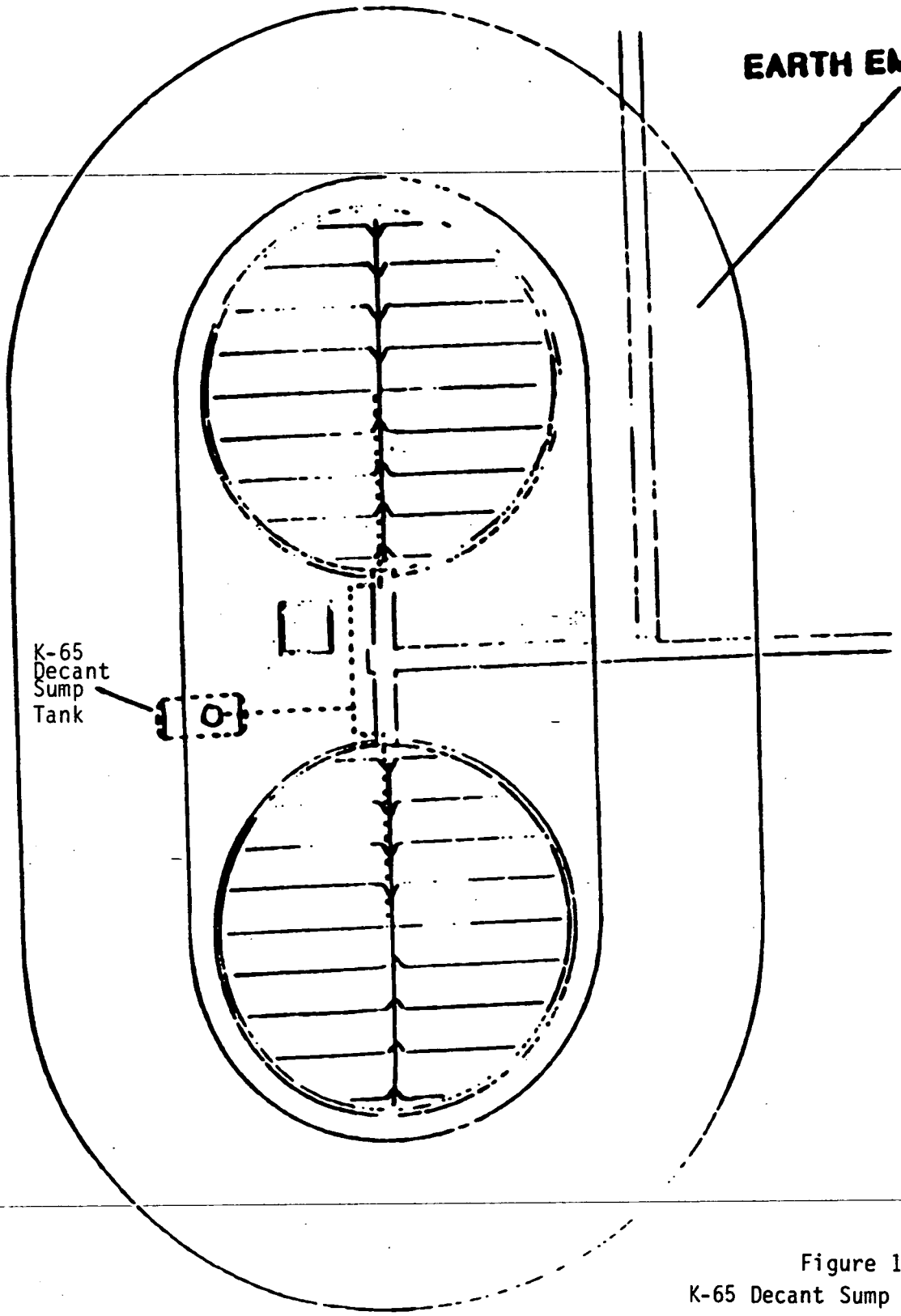
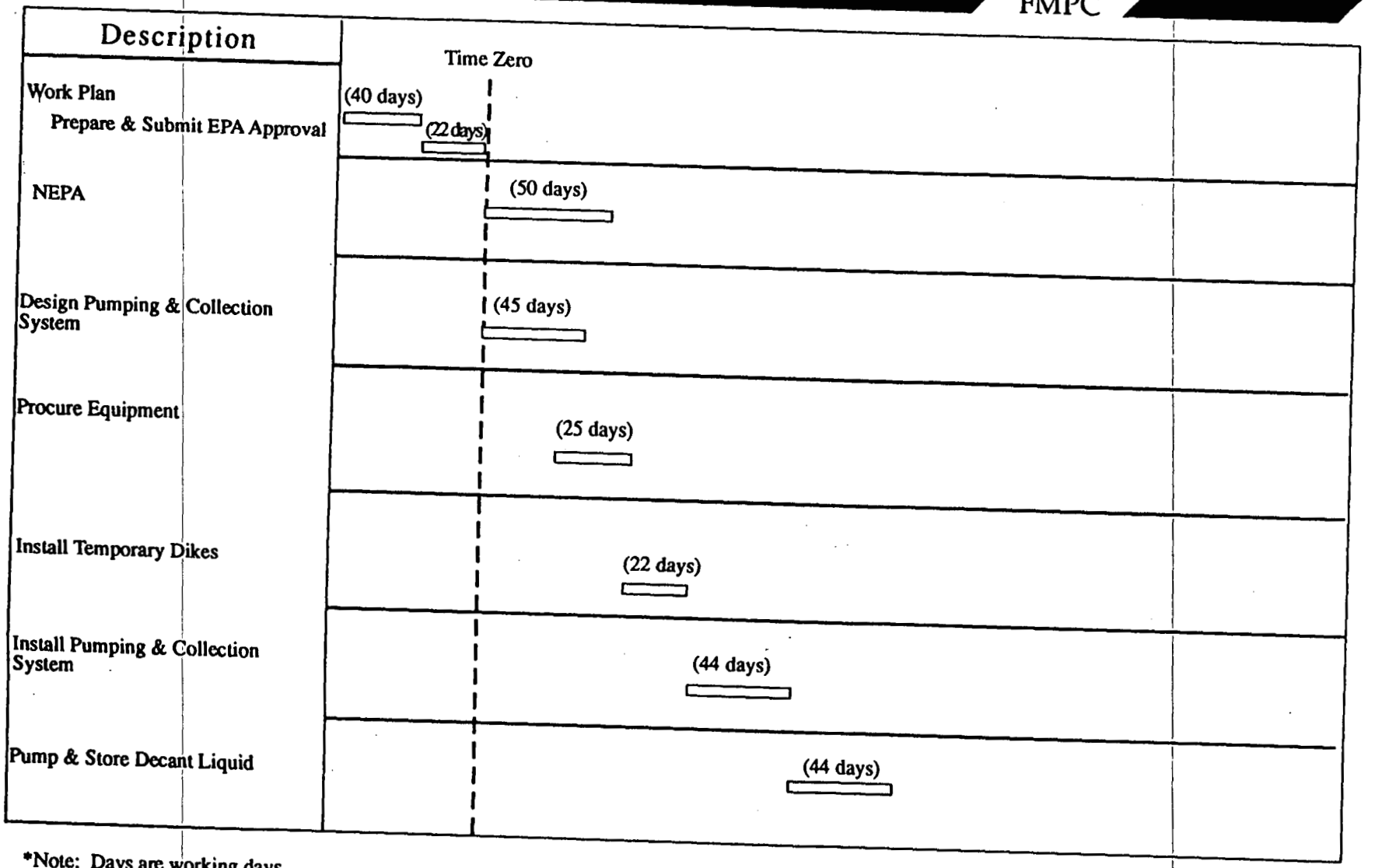


Figure 1
K-65 Decant Sump Tank Area

K-65 Decant Sump Tank Removal Action Schedule

FMPC



*Note: Days are working days

Attachment

K-65 DECANT SUMP TANK

Monthly Sampling Results
(Expressed in pCi/L, exept where otherwise specified)

MONTH	U-234	WT. % U BASIS	U-235	WT. % U BASIS	U-236	WT. % U BASIS	U-238	WT. % U BASIS	TOTAL U	(ppm)	Ra-226	Th-230	TOTAL ACTIVITY
August, 1989	17150	0.006	723	0.73	29	0.001	15278	99.27	33000	(46)	260	1.1	
September, 1989	21000	0.0064	790	0.72	55	0.0017	17000	99.27	39000	(51.2)	190	<0.40	
October, 1989	16000	0.0064	620	0.73	33	0.0013	13000	99.26	30000	(39.4)	120	<0.40	
November, 1989	13795	0.006	565	0.71	24	0.001	12290	99.28	27000	(37)	98	<0.40	
December, 1989	12583	0.005	628	0.72	26	0.001	13453	99.28	27000	(40.5)	67	<0.30	
January, 1990	20133	0.006	837	0.72	34	0.001	17937	99.28	39000	(54)	1600		540
February, 1990	13360	0.005	657	0.71	27	0.001	14283	99.28	28000	(43)	100		640
March, 1990	14913	0.005	734	0.71	<31	<0.001	15944	99.28	<32000	(48)	194		130
April, 1990	10191	0.004	627	0.71	<26	<0.001	13619	99.28	<24000	(41)			135

ATTACHMENT III

FULL HAZARDOUS SUBSTANCE LIST (HSL) PARAMETERS

HSL INORGANICS

Aluminum	Manganese
Antimony	Mercury
Arsenic	Nickel
Barium	Potassium
Beryllium	Selenium
Cadmium	Silver
Calcium	Sodium
Chromium	Thallium
Cobalt	Vanadium
Copper	Zinc
Iron	Cyanide
Lead	
Magnesium	

HSL VOLATILES

Chloromethane	Bromodichloromethane	Ethyl Benzene
Bromomethane	1,1,2,2-Tetrachloroethane	Styrene
Vinyl Chloride	1,2-Dichloropropane	Total Xylenes
Chloroethane	trans-1,3-Dichloropropene	
Methylene Chloride	Trichloroethene	
Acetone	Dibromochloromethane	
Carbon Disulfide	1,1,2-Trichloroethane	
1,1-Dichloroethene	Benzene	
1,1-Dichloroethane	cis-1,3-Dichloropropene	
trans-1,2-Dichloroethene	2-Chloroethyl Vinyl Ether	
Chloroform	Bromoform	
1,2-Dichloroethane	2-Hexanone	
2-Butanone	4-Methyl-2-pentanone	
1,1,1-Trichloroethane	Tetrachloroethene	
Carbon Tetrachloride	Toluene	
Vinyl Acetate	Chlorobenzene	

ATTACHMENT III (Cont.)

HSL SEMI-VOLATILES

Phenol
bis(2-Chloroethyl) ether
2-Chlorophenol
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Benzyl Alcohol
1,2-Dichlorobenzene
2-Methylphenol
bis(2-Chloroisopropyl) ether
4-Methylphenol
N-Nitroso-Dipropylamine
Hexachloroethane
Nitrobenzene
Isophorone
2-Nitrophenol
2,4-Dimethylphenol
Benzoic Acid
bis(2-Chloroethoxy) methane
2,4-Dichlorophenol
1,2,4-Trichlorobenzene
Naphthalene
4-Chloroaniline
Hexachlorobutadiene
4-Chloro-3-methylphenol (para-chloro-meta-cresol)
2-Methylnaphthalene
Hexachlorocyclopentadiene
2,4,6-Trichlorophenol
2,4,5-Trichlorophenol
2-Chloronaphthalene
2-Nitroaniline
Dimethyl Phthalatecenaphthylene
3-Nitroaniline
Acenaphthene
2,4-Dinitrophenol
4-Nitrophenol
Dibenzofuran
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Diethylphthalate
4-Chlorophenyl Phenyl ether
Fluorene
4-Nitroaniline
4,6-Dinitro-2-methylphenol
N-nitrosodiphenylamine
4-Bromophenyl Phenyl ether
Hexachlorobenzene
Pentachlorophenol
Phenanthrene
Anthracene
Di-n-butylphthalate
Fluoranthene
Pyrene
Butyl Benzyl Phthalate
3,3'-Dichlorobenzidine
Benzo(a)anthracene
bis(2-ethylhexyl)phthalate
Chrysene
Di-n-octyl Phthalate
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(a)pyrene
Indeno(1,2,3-cd)pyrene
Dibenz(a,h)anthracene
Benzo(g,h,i)perylene

ATTACHMENT III (Cont.)

HSL PESTICIDES

alpha-BHC	Endosulfan I	4,4'-DDT	AROCLOR-1232
beta-BHC	Dieldrin	Endrin Ketone	AROCLOR-1242
delta-BHC	4,4'-DDE	Methoxychlor	AROCLOR-1248
gamma-BHC (Lindane)	Endrin	Chlordane	AROCLOR-1254
Heptachlor	Endosulfan II	Toxaphene	AROCLOR-1260
Aldrin	4,4'-DDD		AROCLOR-1016
Heptachlor Epoxide	Endosulfan Sulfate		AROCLOR-1221

ATTACHMENT IV

Total Radionuclide
Paramenters

Total Uranium	Total Thorium
Isotopic Uranium	Isotopic Thorium
Isotopic Plutonium	Technetium-99
Radium-226	Cesium-137
Radium-228	Strontium-90
Neptunium-237	Ruthenium-106

ATTACHMENT V

HEALTH AND SAFETY PLAN

FOR THE

K-65 DECANT SUMP TANK

REMOVAL ACTION

FEED MATERIALS PRODUCTION CENTER

September 1990

APPROVAL:

S.W. Coyle, Manager Environmental Management
Westinghouse Materials Company of Ohio

CONCURRENCE:

J. J. Volpe, Vice President
Industrial Radiological Safety and Training
Westinghouse Materials Company of Ohio

TABLE OF CONTENTS

1.0 TASKS TO BE PERFORMED

The K-65 Decant Sump Tank Removal Action will consist of removing the water from the K-65 decant sump tank and the disposition of the removed decant liquid after analytical results of the Hazardous Substance List (HSL) analysis form representative samples are known. Any HSL or hazardous waste treatment will occur prior to transferring the water to existing FMPC water treatment facilities for treatment of uranium and radium. The principle isotopes of Uranium, Radium 226, and Thorium 230 are behoved to be the primary contaminants of concern. Management and control of the decant liquid will be performed as if it is a potentially hazardous waste until the HSL analysis results are complete. Suspect contaminants, especially non-radiological contaminants, such as lead, will be addressed once the decant liquid is removed and stored for HSL analysis.

Any HSL or hazardous waste treatment will occur prior to transferring the water to existing FMPC water treatment facilities for treatment of uranium.

Installation of the temporary dike structure will:

yes	Disturb Surface Soil	no	Sample Surface Water
no	Disturb Subsurface Soil	no	Sample Lagoons
no	Use Heavy Equipment	no	Use Boat
no	Enter Confined Space	yes	Involve Radioactivity
no	Disturb Containerized Matter	no	Involve Trenches

Installation of the pump and the associated piping will:

yes	Disturb Surface Soil	no	Sample Surface Water
no	Disturb Subsurface Soil	no	Sample Lagoons
no	Use Heavy Equipment	no	Use Boat
no	Enter Confined Space	yes	Involve Radioactivity
no	Disturb Containerized Matter	yes	Involve Trenches

The functional testing of the pump and piping system will:

no	Disturb Surface Soil	no	Sample Surface Water
no	Disturb Subsurface Soil	no	Sample Lagoons
no	Use Heavy Equipment	no	Use Boat
no	Enter Confined Space	yes	Involve Radioactivity
no	Disturb Containerized Matter	no	Involve Trenches

Pumping the decant liquid from the sump tank to the polypropylene tank will:

no	Disturb Surface Soil	no	Sample Surface Water
no	Disturb Subsurface Soil	no	Sample Lagoons
no	Use Heavy Equipment	no	Use Boat
no	Enter Confined Space	yes	Involve Radioactivity
yes	Disturb Containerized Matter	no	Involve Trenches

The sampling of the decant liquid will:

no	Disturb Surface Soil	no	Sample Surface Water
no	Disturb Subsurface Soil	no	Sample Lagoons
no	Use Heavy Equipment	no	Use Boat
no	Enter Confined Space	yes	Involve Radioactivity
yes	Disturb Containerized Matter	no	Involve Trenches

Transporting the decant liquid from the K-65 Silos area to Plant 2/3 will:

no	Disturb Surface Soil	no	Sample Surface Water
no	Disturb Subsurface Soil	no	Sample Lagoons
no	Use Heavy Equipment	no	Use Boat
no	Enter Confined Space	yes	Involve Radioactivity
yes	Disturb Containerized Matter	no	Involve Trenches

Pumping the decant liquid from the polypropylene tank on the flat bed trailer to storage tanks in Plant 2/3 will:

no	Disturb Surface Soil	no	Sample Surface Water
no	Disturb Subsurface Soil	no	Sample Lagoons
no	Use Heavy Equipment	no	Use Boat
no	Enter Confined Space	yes	Involve Radioactivity
yes	Disturb Containerized Matter	no	Involve Trenches

2.0 SITE HISTORY

The K-65 Silos are large concrete structures, built in 1951 and 1952, which contain the residues of pitchblende processing at the FMPC and at St. Louis (Mallinckrodt Chemical Works). These residues contain radium, uranium, and thorium (230). Beneath each silo an underdrain system was constructed to collect any potential leakage through the floor of the silo. This underdrain system consisted of a series of pipes beneath the floor which was designed to discharge into a sump tank. The silos were designed to also have a decant system which discharged into this same tank. The decant system was designed to remove the liquid portion of the K-65 slurry after the solids had settled. Since this liquid was withdrawn in conjunction with the process of filling the silos, it was used on a daily basis during the years the silos were filled. As the primary purpose of this tank was to receive the decant liquid, it was called the decant sump tank. This tank has a 9,000 gallon capacity.

The earthen berms were placed around the silos in 1964 to provide structural support to the silos. At this time, the decant system was disconnected from this tank but the underdrain system remained intact. The purpose was to continue to have the capability of collecting any potential leakage from the underdrain system. Access was provided to this sump by attaching a 30" diameter corrugated galvanized steel pipe to the tank. This pipe extended upward 33 feet to the top of the berm. Although this pipe provided access to the decant sump tank, no information exists which indicates the tank was used to monitor for potential leakage into the underdrain system. The tank had not been cleaned of residue from handling decant liquid when the decant system was removed and the silo berms constructed.

3.0 TASK SPECIFIC HAZARD ASSESSMENT

Routine sampling of the decant sump tank is not known to have occurred until it began in August, 1989. Since that time, the decant sump tank has been sampled monthly. This sampling indicated the potential hazards identified below. Prior to the initiation of the removal field activities, a reassessment of the conditions will be conducted to ensure that conditions are such that a safe working environment can be provided. All newly identified hazards will be addressed with the Industrial, Radiological, Safety and Training (IRS&T) representative(s) to determine the degree of hazard and if any additional requirements to this safety plan are needed.

3.1 Physical Hazards

1) Noise
2) Overhead Hazards
3) Underground Utilities
4) Heat Stress

3.2 Chemical Hazards

Table 1 includes the suspect contaminants along with the exposure limits, the primary hazard, the applicable action limit, and the background level in ambient air.

Table 1

CHEMICAL HAZARD TABLE

Contaminant	Primary Hazard	Limit	Action Level	Background Level in Ambient Air
Lead	Inhalation/ Ingestion	0.05 mg/m^3	0.03 mg/m^3	ND

3.3 Radiological Hazards

3.3.1 The following radionuclides (in order of their expected significance) from K-65 residue are expected in the water: thorium-230, radium-226, natural uranium and natural thorium.

3.3.2 Penetrating radiation from the K-65 silos can be expected in the range of about 50 mrem/hr on the K-65 berm near the top of the corrugated pipe to about .6 mrem/hr at the inside of the fence to the west of the sump. The highest radiation readings in the area are about 150 mrem/hr on contact with the silo domes.

3.3.3 Radon from K-65 has the highest potential for personnel exposure.

4.0 MONITORING

4.1 Goals

Prior to any task performed in the K-65 area, air monitoring will be performed as determined to be necessary at the time of issuance of the work permit(s) to ensure that exposure levels do not exceed established exposure limits.

4.2 Monitoring Equipment and Frequency of Monitoring

4.2.1 Airborne Radioactivity

Radon levels will be checked at the installed instruments to the west of the K-65 silos. An action levels of 15 pCi/l radon will trigger analysis of working levels. An action level of .075 working levels will require donning respiratory protection. Half-face air-purifying respirators will be acceptable for up to 3 working levels. Full-face air-purifying respirators will be acceptable for up to 15 working levels.

Radon working levels will be checked on the berm with an action level of 15 working levels to improve respiratory requirement from the minimum requirement of a full-face air-purifying respirator. Alternative respirator choices will be full-face air-supplied and full-face powered air.

High volume air samples will be taken at location of personnel during pumping. The sample will be checked for gross radioactivity to verify the adequacy of respiratory protection. Air samples indicating that personnel may have been exposed to greater than 40 DAC-hours in one week will trigger dose assessment by Radiological Safety, Dosimetry Subsection.

4.2.2 Radioactive Surface Contamination

During the contaminant source detection and installation of the treatment system tasks, weekly surveys for removable radioactive surface contamination will be performed in the work areas. Contamination surveys will be performed on potentially contaminated fluid systems, as they are opened and following dust generating activities, to ensure that adequate protective clothing is being worn and to verify radiological postings. Direct frisks and/or field swipe surveys will be performed on potential leak sites during pressure testing.

4.2.3 Radiation Surveys

Radiation surveys will be conducted at the beginning of work, and intermittently on the piping and hoses during pumping. Personnel will be required to wear direct reading dosimeters in the K-65 area to monitor radiation exposure at least every half-hour.

4.2.4 Chemical Hazard

Exposure to significant chemical vapor concentrations are not expected with the tasks associated with the K-65 Decant Sump Tank Removal Action. Breathing zone samplers will be worn by the employees while performing the tasks to monitor for lead. Other air sampling for chemicals will be conducted as determined to be necessary by the Industrial Hygiene representative.

4.2.5 Thermoluminescent Dosimetry (TLD)

TLDs will be worn by all workers.

4.2.6 Monitoring for Physical Hazards

Industrial Hygiene shall be contacted for heat stress monitoring when the temperature reaches 85° and readings will be taken at that time to ensure that adequate control measures are taken. Control measures will include plenty of water, rest breaks and careful attention by the supervisor in charge. Also, cool vests will be utilized if necessary.

4.3 Action Limits

Measurement	Limit	Action
Chemical hazards airborne lead	< 0.3 mg/m^3	Note 2
Chemical hazards airborne lead	< 2.5 mg/m^3	Note 1

Notes

1 Full-face air purifying respirators with combination HEPA filter and organic vapor, acid gas, fume cartridges. Area will be posted per DOE Order 5480.11.

2. Area will be posted per DOE Order 5480.11. Half-face air purifying respirators with HEPA filter cartridges.

5.0 PERSONAL PROTECTIVE EQUIPMENT

All employees in the task areas will wear the following personal protective equipment while performing the required tasks.

5.1 Installation of the Temporary Dike Structure

ITEM	NEED	JUSTIFICATION
Full Face Air Purifying Respirator	Yes(No)	Required in K-65 Area or as specified by IRS&T representative
Cartridges: HEPA	Yes(No)	Required in K-65 Area or as specified by IRS&T representative
Hard Hat	Yes(No)	As needed for overhead work
Hearing Protection	No	
Inner Gloves	No(Yes)	Used beneath leather gloves
Rubber/Latex Boots	No	
Leather-Palm Gloves	No(Yes)	As needed for physical protection of hands
Rubber/Nitrile Gloves	No	
Cloth or Paper Anti-Contamination Coveralls	Yes	
Controlled Area Coveralls	Yes	
Paper or Cloth Hood	Yes(No)	
Supplied Air Respirator(SAR)	No	
Safety Glasses	Yes(No)	Minimum Requirement, may be satisfied by full-face respirator
Safety Goggles/ Face Shields	No	
Safety Shoes	Yes	Minimum Requirement
Shoe Covers	Yes	Required in K-65 Area or as specified by IRS&T representative

5.2 Installation of Pump and Piping System

ITEM	NEED	JUSTIFICATION
Full Face Air Purifying Respirator	Yes(No)	Required in K-65 Area or as specified by IRS&T representative
Cartridges: HEPA	Yes(No)	Required in K-65 Area or as specified by IRS&T representative
Hard Hat	Yes(No)	As needed for overhead work
Hearing Protection	No	
Inner Gloves	No(Yes)	Used beneath leather gloves
Rubber/Latex Boots	No	
Leather-Palm Gloves	No(Yes)	As needed for physical protection of hands
Rubber/Nitrile Gloves	No	
Cloth or Paper Anti-Contamination Coveralls	Yes	
Controlled Area Coveralls	Yes	
Paper or Cloth Hood	Yes(No)	
Supplied Air Respirator(SAR)	No	
Safety Glasses	Yes(No)	Minimum Requirement, may be satisfied by full-face respirator
Safety Goggles/ Face Shields	No	
Safety Shoes	Yes	Minimum Requirement
Shoe Covers	Yes	Required in K-65 Area or as specified by IRS&T representative

5.3 Functional Testing for Pump and Piping System

ITEM	NEED	JUSTIFICATION
Full Face Air Purifying Respirator	Yes	Required in K-65 Area and near potentially spraying pump/hoses
Cartridges: HEPA	Yes	Required in K-65 Area and near potentially spraying pump/hoses
Hard Hat	Yes	As needed for overhead work
Hearing Protection	No(Yes)	As specified by Industrial Hygiene based on pump
Inner Gloves	No(Yes)	Used beneath leather palm gloves
Rubber/Latex Boots	No(Yes)	May be used for additional protection against contact with liquid
Leather-Palm Gloves	No(Yes)	As needed for physical protection of hands
Rubber/Nitrile Gloves	Yes(No)	As needed to prevent contact with liquids
Cloth or Paper Anti-Contamination Coveralls	Yes(No)	Needed in K-65 area when plastic coveralls are not used
Controlled Area Coveralls	Yes	Minimum requirement for work in K-65 area
Paper or Cloth Hood	Yes(No)	Needed in K-65 area when plastic coveralls are not used
SAR	No	
Safety Glasses	Yes	Minimum Requirement, may be satisfied by full-face respirator
Safety Goggles/ Face Shield	Yes	To protect eyes from liquid splash where full-face respirator is not used

Safety Shoes	Yes	Minimum Requirement
Shoe Covers	Yes	
Plastic Coveralls	Yes(No)	Needed in lieu of cloth or paper coveralls and required near potentially spraying pump/hoses and and K-65 area
Plastic Hood	Yes(No)	Needed in lieu of cloth or paper coveralls required near potentially spraying pump/hoses and and K-65 area

5.4 Removing Decant Liquid From Sump Tank to Tank on Trailer

ITEM	NEED	JUSTIFICATION
Full Face Air Purifying Respirator	Yes	Required in K-65 Area and near potentially spraying pump/hoses
Cartridges: HEPA	Yes	Required in K-65 Area and near potentially spraying pump/hoses
Hard Hat	Yes	As needed for overhead work
Hearing Protection	No(Yes)	As specified by Industrial Hygiene based on pump
Inner Gloves	No(Yes)	Used beneath leather palm gloves
Rubber/Latex Boots	No(Yes)	May be used for additional protection against contact with liquid
Leather-Palm Gloves	No(Yes)	As needed for physical protection of hands
Rubber/Nitrile Gloves	Yes(No)	As needed to prevent contact with liquids
Cloth or Paper Anti-Contamination Coveralls	Yes(No)	Needed in K-65 area when plastic coveralls are not used
Controlled Area Coveralls	Yes	Minimum requirement for work in K-65 area
Paper or Cloth Hood	Yes(No)	Needed in K-65 area when plastic coveralls are not used
SAR	No	
Safety Glasses	Yes	Minimum Requirement, may be satisfied by full-face respirator
Safety Goggles/ Face Shield	Yes	To protect eyes from liquid splash where full-face respirator is not used

Safety Shoes	Yes	Minimum Requirement
Shoe Covers	Yes	
Plastic Coveralls	Yes(No)	Needed in lieu of cloth or paper coveralls and required near potentially spraying pump/hoses and and K-65 area
Plastic Hood	Yes(No)	Needed in lieu of cloth or paper coveralls required near potentially spraying pump/hoses and and K-65 area

5.5 Sampling of the Decant Liquid[1]

ITEM	NEED	JUSTIFICATION
Full Face Air Purifying Respirator	Yes(No)	Required in K-65 Area or as specified by IRS&T representative
Cartridges: HEPA	Yes(No)	Required in K-65 Area or as specified by IRS&T representative
Hard Hat	Yes(No)	As needed for overhead work
Hearing Protection	No	
Inner Gloves	No(Yes)	Used beneath leather gloves
Rubber/Latex Boots	No	
Leather-Palm Gloves	No(Yes)	As needed for physical protection of hands
Rubber/Nitrile Gloves	No	
Cloth or Paper Anti-Contamination Coveralls	Yes	
Controlled Area Coveralls	Yes	
Paper or Cloth Hood	Yes(No)	
Supplied Air Respirator(SAR)	No	
Safety Glasses	Yes(No)	Minimum Requirement, may be satisfied by full-face respirator
Safety Goggles/ Face Shields	No	
Safety Shoes	Yes	Minimum Requirement
Shoe Covers	Yes	Required in K-65 Area or as specified by IRS&T representative

[1]If the task involves potentially spraying liquid from pumps or hoses then the requirements will be the same as those specified in Section 5.3

5.6 Transporting Decant Liquid to Plant 2/3 for Storage

ITEM	NEED	JUSTIFICATION
Air Purifying Respirator	No	
Cartridges: HEPA	No	
Hard Hat	Yes	As needed for overhead work
Hearing Protection	No	
Inner Gloves	No(Yes)	Used beneath leather palm gloves
Rubber/Latex Boots	No	
Leather-Palm Gloves	Yes	As needed for physical protection of hands
Rubber/Nitrile Gloves	Yes	As needed to prevent contact with liquids
Cloth or Paper Anti-Contamination Coveralls	No	
Controlled Area Process Coveralls	No	
PVC Gloves	No(Yes)	Used beneath rubber gloves
SAR	No	
Safety Glasses	Yes	Minimum Requirement
Safety Goggles/ Face Shields	No	
Safety Shoes	Yes	Minimum Requirement
Shoe Covers	No	

5.7 Pumping Decant Liquid from Tank on Trailer to Plant 2/3 Storage Tanks[2]

ITEM	NEED	JUSTIFICATION
Full Face Air Purifying Respirator	Yes	Required in K-65 Area and near potentially spraying pump/hoses
Cartridges: HEPA	Yes	Required in K-65 Area and near potentially spraying pump/hoses
Hard Hat	Yes	As needed for overhead work
Hearing Protection	No(Yes)	As specified by Industrial Hygiene based on pump
Inner Gloves	No(Yes)	Used beneath leather palm gloves
Rubber/Latex Boots	No(Yes)	May be used for additional protection against contact with liquid
Leather-Palm Gloves	No(Yes)	As needed for physical protection of hands
Rubber/Nitrile Gloves	Yes(No)	As needed to prevent contact with liquids
Cloth or Paper Anti-Contamination Coveralls	Yes(No)	Needed in K-65 area when plastic coveralls are not used
Controlled Area Coveralls	Yes	Minimum requirement for work in K-65 area
Paper or Cloth Hood	Yes(No)	Needed in K-65 area when plastic coveralls are not used
SAR	No	
Safety Glasses	Yes	Minimum Requirement, may be satisfied by full-face respirator

[2]If the task involves potentially spraying liquid from pumps or hoses then the requirements will be the same as those specified in Section 5.3

Safety Goggles/ Face Shield	Yes	To protect eyes from liquid splash where full-face respirator is not used
Safety Shoes	Yes	Minimum Requirement
Shoe Covers	Yes	
Plastic Coveralls	Yes(No)	Needed in lieu of cloth or paper coveralls and required near potentially spraying pump/hoses and and K-65 area
Plastic Hood	Yes(No)	Needed in lieu of cloth or paper coveralls required near potentially spraying pump/hoses and and K-65 area

6.0 SITE CONTROL

6.1 Access

The work associated with this removal action will be within the FMPC controlled area. In addition, the work area related to this removal action will be posted as "RWP Required for Entry". This will establish the Exclusion Zone per 29 CFR 1910.120. A portion of these tasks will be performed outside the Contamination Controlled Area at the K-65 Silos area. A layout map of the K-65 Decant Sump Tank area is provided in Figure 1 delineating specific exclusion zones as determined by the FMPC radiological safety technicians. Contamination Areas will be set up within the Exclusion Areas. Once identified, a more specific map will be developed identifying the step-off pads and indicate that friskers, protective clothing and a waste container will be at each step-off pad. The step-off pad will only be used decontaminating material that is easily wiped clean. The Radiological Safety Technician will control stay-times in the K-65 Area to ensure that personnel do not exceed the site administrative exposure control level of 150 millirem per week.

The Exclusion Zone is the zone of high potential hazard due to physical or chemical dangers. Access to the Exclusion Zone will be restricted by Radiological Safety to trained and certified employees, as regulated by 29 CFR 1910.120, who are required to enter in order to perform their job functions. There will be different Exclusion Zones for the various tasks. The Exclusion Zone will be marked with barrier tape or other easily recognizable devices. The zone may be expanded if airborne hazards are detected. All areas requiring the use of respiratory protection are included in the exclusion zone. Entrance shall be limited to one area and controlled by the supervisor in charge.

A temporary Controlled Area will required west of the K-65 Area. This temporary Controlled Area will be within the Exclusion Area identified west of the K-65 Silos embankment on Figure 1.

If necessary, Radiological Safety will establish a Contamination Reduction Zone, consisting of step-off pads, at the exit to the Exclusion Zone. This zone will be used for removal of disposable PPE and for cleaning of contaminated equipment.

6.1.1 Radiological Postings

Radiological areas will be posted in accordance with DOE Order 5480.11. The following is a brief summary of posting requirements based on uranium:

TABLE 2

POSTING REQUIREMENTS

Regulated Area	> 1000 dpm/100 cm^2 removable > 5000 dpm/100 cm^2 fixed and removable
Contaminated Area	> 10,000 dpm/100 cm^2 removable > 50,000 dpm/100 cm^2 fixed and removable

TABLE 2

POSTING REQUIREMENTS(Cont'd)

Airborne Radioactivity Area > 2×10^{-12} uCi/ml
Respirator Area > 5×10^{-12} uCi/ml
Radiation Area > 5 mrem/hr

In addition, special postings may be added for access to areas: "RWP Required for Entry" or "Contact HP for Entry."

6.2 Bioassay Samples

Site personnel involved in this project are required to participate in a routine periodic urine assay program. Any suspected exposure to hazardous substances shall be reported and require additional sampling. Personnel are also required to wear a TLD at all times for radiological purposes. If sample analyses indicate that thorium levels in air or on surfaces were sufficient to deliver more than eight DAC-hours to an individual, in vivo monitoring and/or other bioassay measurements will be performed on that individual as deemed appropriate by FMPC Dosimetry.

6.3 Medical Monitoring

In accordance with 29 CFR 1910.120 and 29 CFR 1910.1025 OSHA requirements, all WMCO and WMCO subcontractor personnel are required to participate in a medical monitoring program which includes:

- A baseline medical examination
- Annual medical examination
- Medical examinations may be required after potential exposures.
- WMCO respirator clearance for users

Prior to the start of work, personnel involved in this project shall be identified by name and badge number. Each individual shall be subject to a medical surveillance approval by the Director, Medical Services. The approval statement shall certify that each individual is medically qualified to perform the work and is physically fit to wear PPE.

6.4 Training Requirements

All WMCO and WMCO subcontractor personnel assigned to the tasks will, as a minimum, meet the following training requirements including:

- Review of this health & safety plan for this work including site specified hazards and procedures. (The safety meeting(s) will be documented.)
- Site radiation safety training
- Site annual respiratory training and quantitative fit test or equivalent approved by site Industrial Hygiene
- Site nuclear criticality training
- 40-hour OSHA training

- 8-hour annual refresher training, as necessary
- 8-hour supervisory training (for supervisors)
- 24-hour supervised field experience
- FMPC site orientation video
- FMPC K-65 Silos Numbers 1 and 2 Area Emergency SOP 65-C-107
- K-65 Decant Sump Tank Removal Action Functional Test Procedure
- K-65 Decant Sump Tank Removal Action SOP

The completion of this training shall be documented by the site training organization.

6.5 Safety Meetings

A safety meeting, which must be documented, shall be conducted prior to the start of each day's work during; installation of temporary dike system, installation of pump and piping system, functional testing, transporting the decant liquid, and pumping the decant liquid. These safety meetings will cover the following applicable subjects:

[] work operations
[] personnel protective equipment
[] all monitoring data
[] hazard communications
[] monitoring tests and results
[] decontamination
[] task organization
[] physical stress
[] emergency procedures
[] communications
[] general safety
[] housekeeping

7.0 EXPOSURE SYMPTOMS

Exposure symptoms for chemical hazards are described in the following paragraphs:

Lead:

Health Risks: High level exposures to soluble lead compounds causes behavior disturbances and are toxic to the reproductive system.
Lower level chronic exposures increase the incidence of heme synthesis inhibition, neurological effects, gastrointestinal-colic constipation and renal toxicity.

Exposure Routes: Broken skin and respiratory tract

First Aid: Inhalation - Remove person to fresh air.

Broken Skin- Remove contaminated clothing. Flush with water for 15 minutes.

Uranium:

Health Risks: High level exposures to soluble uranium compounds causes respiratory irritation and are toxic to the kidneys. Lower level chronic exposures increase the incidence of cancers of the lungs, lymph system, hemopoietic system.

Exposure Routes: Broken skin and respiratory tract

First Aid: Inhalation - Remove person to fresh air. If trouble breathing because of exposure to soluble compounds, start bioassay procedures (urinalysis) to quantify dose.

Broken Skin- Remove contaminated clothing. Flush with water for 15 minutes. Check cleaned skin with frisker to ensure complete uranium removal.

8.0 SITE ENTRY PROCEDURES

During the subsequent activities the following procedures apply: Phase I activities, installation of temporary dike system, installation of pump and piping system, functional testing, transporting the decant liquid, and pumping the decant liquid.

- Perform daily safety meeting to familiarize team with site specific hazards.
- Discuss alternate communications signals (if applicable).
- Perform respirator check out and negative/positive pressure fit test prior to use.
- Use buddy system. Teams of at least two individuals will be used for all activities for this removal action.

Prior to the initiation of these work tasks, the following permits are required:

[] Radiation Work Permit
[] Chemical/Hazardous Material Permit
[] Work Permit

Entrance to the Exclusion Zone shall be controlled by approval of the supervisor-in-charge.

9.0 DECONTAMINATION

Personnel and equipment will enter and exit the Exclusion Zone through a step-off pad. Upon exit, personnel will remove any disposable protective clothing and monitor themselves and any outgoing equipment for contamination.

Any personnel contamination will be reported to Radiological Safety who will assist in personnel decontamination. Soap and water will be used per established site procedure. (This procedure allows for chemical decontamination with the Medical Services Section concurrence, but has very rarely been required. Uranyl nitrate is the only substance which has required chemical decontamination of personnel on site. It is not present the K-65 Silos area.

Any equipment found to be contaminated will be contained and transported to the Site Decontamination Facility. This facility uses both water, abrasive and chemical decontamination as appropriate and in accordance with its operating procedures which are beyond the scope of the plan.

Action limits on personnel of 300 dpm/100 cm^2 alpha or 1,000 dpm/100 cm^2 beta/gamma will trigger decontamination.

Action limits on material of: 20 dpm/100 cm^2 alpha removable, 100 dpm/100 cm^2 alpha fixed plus removable, 1,000 dpm/100 cm^2 beta/gamma removable and 5,000 dpm/100 cm^2 fixed plus removable will require decontamination or treatment as radioactive material.

10.0 WASTES

Wastes include, but are not limited to:

- Disposable PPE
- "Spent" activated carbon, if used in treatment
- Excess materials such as soil or concrete

All potentially contaminated waste materials resulting from site activities will be collected and placed in drums or other containers. Disposable protective clothing will be placed in plastic bags and disposed of as compactible, potentially contaminated waste.

Drums or containers shall meet DOE 49 CFR Parts 171-178, EPA, 40 CFR Parts 264-265 and 300, and OSHA requirements. Hazard warning label shall be immediately applied to all drums as specified by FMPC management/supervisors and Solid Waste Compliance.

11.0 CONTINGENCY PLANS

The plans shall be consistent with FMPC-2046, "FMPC Emergency Plan".

11.1 Incidents or Injuries Involving Possible Intake of Radiological or Chemical Substances by Employees

Incidents or injuries involving potential intake of uranium or other hazardous substances shall be reported to supervisor and the site Medical Section by the involved employee and an Incident Investigation Report completed by the involved employee. Incident urine samples shall be submitted at the end of the shift and at the start of the next shift if exposure involved uranium.

11.2 Pre-Emergency Planning

During the training and pre-work safety meetings all employees involved in this task shall be trained and reminded of the provisions of the plant emergency procedure, alarm signals and communications, evacuation routes and emergency reporting.

11.3 Lines of Authority

The supervisor in charge, the K-65 silos area supervisor, has the primary responsibility for the prevention of emergency conditions. In the event that an emergency does occur the individual involved or observing the condition shall immediately notify a supervisor, the communication center or the Assistant Emergency Duty Officer (AEDO). The AEDO is responsible for ensuring that corrective actions have been implemented, the appropriate personnel notified, and reports completed as required.

11.4 Evacuation

In the event of an emergency which necessitates an evacuation of the Exclusion Area, the 3-3, 3-3 shall be sounded over the plant alarm system; a voice message will follow over the Emergency Message System instructing employees to go to their designated Rally Point (see Figure 2). Personnel shall immediately proceed to the Rally Point and participate in the accountability process. Personnel will follow instructions given by the Rally Point Coordinator. When an all-clear condition has been achieved, personnel will be released from the Rally Point.

11.5 Emergency Equipment

The following safety equipment, locations to be identified at safety meetings, is available for employee usage:

[] fire extinguisher	[] manual fire alarm
[] eye wash	[] two-way radio
[] safety shower	[] emergency SCBA units
[] telephone	[] respirators
[] spill drums	[] clean-up materials
[] absorbent	[] local evacuation alarm

11.6 Emergency Notification

All emergencies, including spills and leaks, shall be reported immediately. Emergencies can be reported by telephone dialing 6511; by contacting the communications center via two-way radio; or by pulling a manual fire alarm.

11.7 Fire, Explosion, or Medical Emergency

In the event of a fire, explosion or medical emergency, the communication center shall be notified immediately by manual fire alarm, two-way radio, or by calling 6511. The communication center operator will activate the emergency response team and dispatch them to your location. If a fire is in the incipient stage and perceived controllable without endangering oneself, personnel may use available fire extinguishers. If not in the incipient stage personnel in the immediate area shall evacuate to a safe position and await instructions.

11.8 Additional Information

11.8.1 Hospitals

The FMPC Medical Facility (Building 53) is the primary choice for on-site injuries (see Figure 3 for travel routes from plant 6 to medical facility). The FMPC ambulance will transport the injured to the nearest hospital if necessary. FMPC maintains an emergency response capability which includes an ambulance and Emergency Medical Technicians.

11.8.2 Emergency Telephone Numbers

Ambulance:	6511
Hospital:	6511
Fire:	6511

Name	Work	Radio
EMERGENCY RESPONSE	6511	Control
Industrial Hygiene	6207	357
Radiation Safety	6889	355
Fire and Safety	6235	303
(Safety and Health Officer)	6231	
Assistant Emergency Duty Officer (AEDO)	6431 or 6295	202

12.0 CONFINED SPACE ENTRY

A Confined Space Entry Permit will not be required for the activities to implement this removal action.

13.0 APPROVAL AND COMPLIANCE STATEMENT

This site specific safety plan was produced for the use of WMCO employees and subcontractors. It was intended for the FMPC and specifically for personnel performing the following activities:

- Installation of Temporary Dike Structure
- Installation of Pump and Piping System
- Functional Testing Pump and Piping System
- Removing Decant Liquid from Sump Tank to Tank on Trailer
- Sampling of the Decant Liquid
- Transporting Decant Liquid to Plant 2/3 for Storage
- Pumping Decant Liquid from Tank on Trailer to Plant 2/3 Storage Tanks
- Transporting Decant Liquid from Plant 2/3 to Operable Unit 4 Process Area

The personnel performing these tasks must read and understood the attached site specific health and safety plan and agree to follow its provisions[1]. Written documentation with signatures of those personnel performing these tasks must be maintained.

[1]Compliance with the provisions of the Health and Safety Plan may be audited through announced or unannounced site visits. Be sure that the provisions of this safety plan are implemented and document the reasons for field actions/changes when they are necessary. Site visits may be performed by the DOE or WMCO personnel.

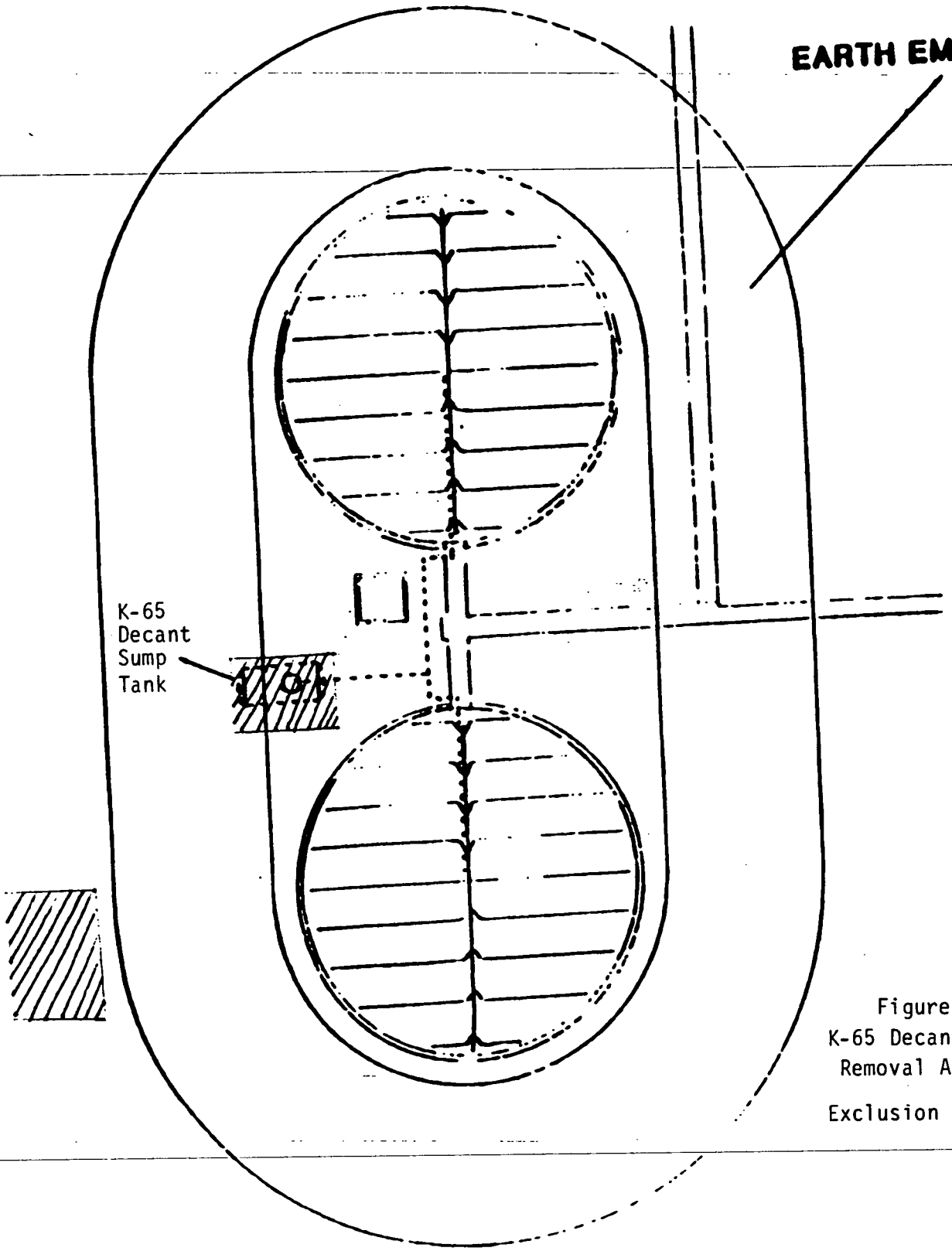
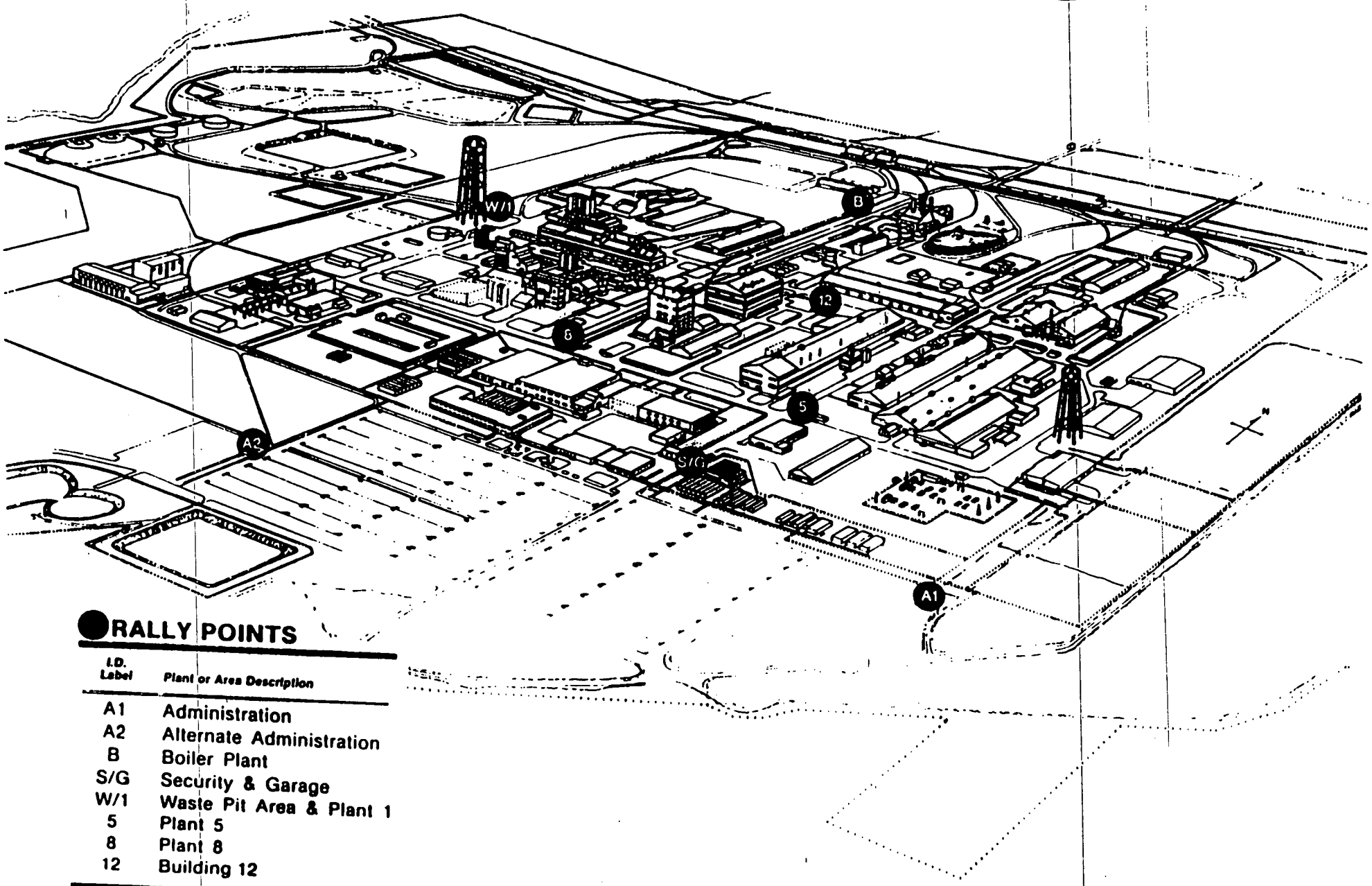


Figure 1
K-65 Decant Sump
Removal Action

Exclusion Areas VII

FMPC RALLY POINTS



RALLY POINTS

I.D. Label	Plant or Area Description
A1	Administration
A2	Alternate Administration
B	Boiler Plant
S/G	Security & Garage
W/1	Waste Pit Area & Plant 1
5	Plant 5
8	Plant 8
12	Building 12

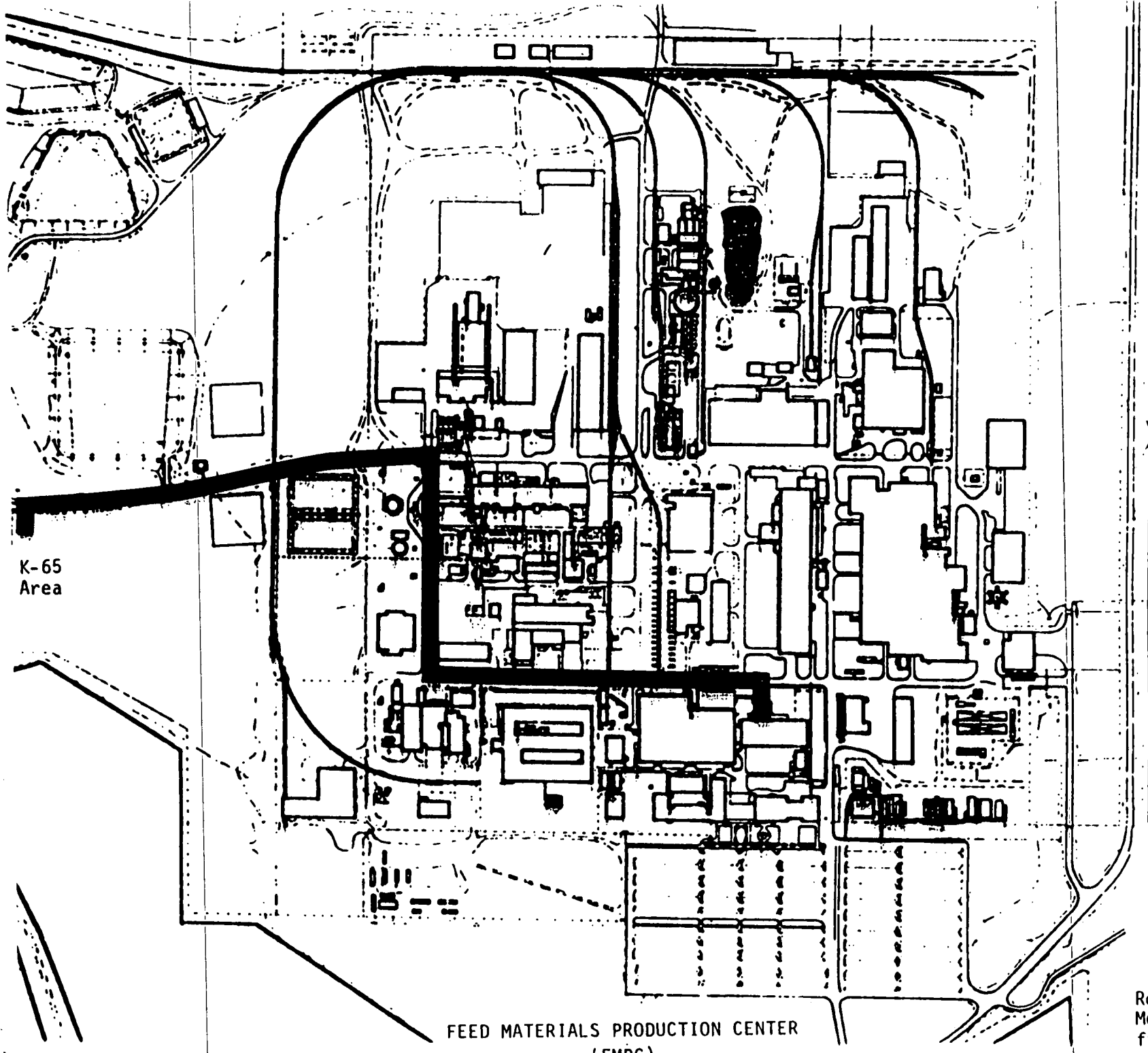


Figure 3
Route to Nearest
Medical Facility
from K-65 Area