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**RESPONSE TO OHIO EPA COMMENTS ON THE  
SILOS 1 AND 2 REMOVAL ACTION WORK PLAN**

**01/11/91**

**DOE-557-91  
DOE-FMPC/OEPA  
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RESPONSES  
OU4**



Department of Energy

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JAN 11 1991

DOE-557-91

Mr. Graham E. Mitchell, DOE Coordinator  
Ohio Environmental Protection Agency  
40 South Main Street  
Dayton, OH 45402

Dear Mr. Mitchell:

**RESPONSE TO OHIO EPA COMMENTS ON THE SILOS 1 AND 2 REMOVAL ACTION  
WORK PLAN**

Enclosed are responses to Ohio EPA comments on the K-65 Silos 1  
and 2 Removal Action Work Plan. The work plan was approved by  
U.S. EPA on November 30, 1990.

If you have any questions, please contact Jack Craig at (513)  
738-6159.

Sincerely,

*Jack N. Craig*  
Andrew P. Avel *for*  
FMPC Remedial Action  
Project Manager

DP-84:Craig

Enclosure: As stated

cc w/encl.:

D. A. Nixon, WMCO  
L. Dolan, IT  
R. Nixdorf, Parsons  
R. E. Owens, ODH-Columbus

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SILOS 1 AND 2 REMOVAL ACTION WORK PLAN

RESPONSES TO OHIO EPA COMMENTS

1. Ohio EPA Comment:

Page 2, last paragraph: Additional isotopes which should be included as primary contaminants are: Pb-210 and Po-210 in the berm soils of the K-65 Silos as a result of radon decay. Thus, until sampling can show these contaminants are not present, it should be assumed they are and appropriate actions taken. The Operable Unit 4 RI also discusses a sample location to the east of the K-65 Silos with Th-232 concentrations between 5 and 15 pCi/g. Measures should be taken to include these isotopes in the sampling as well as in health and safety plan associated with this removal action.

Response:

The last paragraph on page 2 was included just to give an overview of the K-65 Decant Sump Tank Removal Action. Detailed comments concerning the specifics of the K-65 Decant Sump Tank Removal Action should be made on that specific Work Plan.

The implementation of the Silos 1 and 2 Removal Action is not expected to disturb the berm surface soils. The equipment placement will be outside of the K-65 Area fence. It should be noted that radionuclide contaminants outside the K-65 Area are of negligible concern compared to the risks associated with the radon emissions from the head space of Silos 1 and 2. Precautions taken for work in and around the silos due to radon will provide adequate protection with respect to any potential concentration of Pb-210, Po-210, or other contaminants.

2. Ohio EPA Comment:

Page 5, second bullet: This statement is somewhat confusing and seems to be suggesting that a one-foot layer of bentonite will perform better from a radon attenuation standpoint than will 4 feet on bentonite. This statement does not appear to have much credibility. DOE should mention in the work plan that the need for tornado protectiveness was deleted and the goal of waste minimization coupled with radon attenuation was considered in this evaluation, resulting in the selection of one foot.

Response:

The decision in the EE/CA to install four (4) feet of bentonite was made based on the effects of a worst case tornado. The effects of a worst case tornado, as documented in the UC Baseline Risk Assessment, considered a maximum release of residue to be 1 meter in depth covering the entire surface area of the silo. Therefore, if four (4) feet of bentonite were placed in the silos and the effects of a worst case tornado removed approximately three (3) feet of bentonite there would remain sufficient coverage to attenuate the radon until corrective measures could be taken.

The need for tornado protectiveness was not completely deleted from the EE/CA. It has been recognized that the significant threat to the public would be the risk associated with routine emissions of radon from the K-65 Silos. Coupling of the probability of a dome failure caused by a tornado, the minimization of waste necessary to be dealt with during final remediation, and the level of radon attenuation provided for the determination that a minimum of one (1) foot of bentonite would be installed as opposed to the four (4) feet of bentonite as stated in the EE/CA.

3. Ohio EPA Comment:

Page 7, second to last paragraph: DOE's submittal of design documents to Ohio EPA on an informational and request-only basis is unacceptable. Ohio EPA must be given the opportunity to review the K-65 silo removal action design plans particularly for such key items as the Test and Inspection Plan, Operational Procedures, Performance Specifications, and Installation and Construction QA/QC. Ohio EPA's review of these documents will insure that the substantive requirements of state law are complied with. In addition, the consent decree between the state of Ohio and Westinghouse (Section 3.5 December, 1988) states that DOE and Westinghouse will comply with the terms and conditions of the PTO issued for the K-65 Silos. Any modification to these sources must be reviewed and approved by Ohio EPA.

Response:

It is the DOE's interpretation of the existing contractual documents between the DOE and the U. S. EPA and the Ohio EPA that submission of the design related documents to the U.S. EPA and Ohio EPA is not required. FMPC Environmental Compliance personnel review of these design related documents will provide the confidence that compliance with the substantive requirements of state law are achieved.

A permit information summary will be generated which will include information to confirm that the project meets the substantive requirements for a permit. The permit information summary will be submitted to the Southwestern Ohio Air Pollution Control Agency (SWOAPCA) and the Ohio EPA for their review and approval. It is the DOE's position that administrative permits are not required because the work is being conducted under CERCLA at an NPL site. DOE also realizes that the work is subject to Ohio's rules as stated in OAC Chapter 3745-31-02.

4. Ohio EPA Comment:

Page 10, Section 3.0, Item a: The work plan should state what levels of radon will be considered "acceptable" within the head space of the respective silos for operation of the radon treatment system. It may be appropriate to reference Table 3-2 in the Health and Safety Plan.

Response:

The manways of Silos 1 and 2 will not be opened until the radon treatment system lowers the radiation levels on the dome surface at each manway to 75 mrem/hour or lower, in accordance with the K-65 sampling procedures.

5. Ohio EPA Comment:

Page 11: Steps "j" and "k" appear to be reversed. It would seem more appropriate to remove the glove bag and sprayhead prior to reinstalling the manway cover.

Response:

The order is necessary to ensure that the glovebags remain in place during installation of the manways. Additionally the identified steps are to supplement the design and operational phases of the removal action and are not intended as the final procedure manual for the job.

6. Ohio EPA Comment:

Page 12, Section 4.0, Dismantling and Removal of Equipment: This section should include a discussion of what actions will be taken with respect to the handling of disturbed surface soil, which is potentially contaminated. The fact that contaminated surface soil may generate radioactively contaminated waste is brought up in the Waste section of the Health and Safety Plan but not sufficiently discussed.

Considerable surface soil contamination by U-234, U-238, Th-230, Th-232, and Ra-226 within Operable Unit 4 is reported in the OU-4 RI report.

Response:

There will be minimal disturbance of the surface soil. If the surface soil is disturbed, the potentially contaminated soil will be handled according to FMPC-720, Control of Construction Waste.

7. Ohio EPA Comment:

Page 12, Section V, item 3: The work plan should provide the compass direction and distance from the FMPC of the continuous radon concentration monitoring station at Westwood, Ohio.

Response:

The radon concentration monitor at Westwood, Ohio (AMS-BK1) is 24 kilometers south southeast of the FMPC.

8. Ohio EPA Comment:

Page 13, third paragraph: It is not clear upon what the radon performance goal of 0.015 pCi/l above background is based. Since this work plan will be a public document once finalized, the basis for this number should be given in the text.

Response:

The radon performance goal of 0.015 pCi/l above background was determined by the U.S. EPA to be the level which correlates to an acceptable lifetime risk of  $1 \times 10^{-6}$ . This corresponds to a 1 in a million chance of the exposed individual acquiring a fatal cancer in his lifetime.

Comments on Health and Safety Plan  
for the K-65 Removal Action

1. Ohio EPA Comment:

Page 7, Table 3-1: The table fails to include the inhalation of particulate bound radio-isotopes including Pb-210, Po-210, Th-232, Th-230 etc., as radiological hazards associated with the construction and installation of the bentonite system. Since sufficient surface soil sampling has not been completed in the K-65 silo area, particulate-bound hazardous substances such as lead and cadmium should be assumed present until sampling indicates otherwise. The construction activities for re-suspension of surface soil particles as well as any contaminants which may be bound to the soil.

Response:

As stated in the response to Comment #1 of the Work Plan the implementation of the Silos 1 and 2 Removal Action is not expected to disturb the berm surface soils.

With respect to the inhalation of particulate bound radio-isotopes including Pb-210, Po-210, Th-232, Th-230 etc., the radiological hazards delineated in Table 3-1 includes both penetrating radiation and inhalation hazards. Items in parenthesis are examples of those hazards. Table 3-1 was generated to include general anticipated hazards associated with the listed tasks and was not meant to be specific to each of the potential isotopes.

As stated in the response to Comment #1 of the Work Plan the equipment placement will be outside of the K-65 Area fence. It should be noted that radionuclide contaminants outside the K-65 Area are of negligible concern compared to the risks associated with the radon emissions from the head space of Silos 1 and 2.

Re-suspension of surface soil particles as well as any contaminants which may be bound to the soil is an ongoing concern with the surface soils. The risk associated with the re-suspension of surface soil particles is a negligible concern compared to the risks associated with the radon emissions from the head space of Silos 1 and 2.

2. Ohio EPA Comment:

Page 8, Section 3.2: A third chemical/radiological hazard should include the re-suspension of contaminated particles

during construction of the bentonite system. Potential contaminants include both radiological and hazardous constituents, since no surface soil sampling for hazardous substances has occurred in Operable Unit 4 according to the draft RI report for this operable unit.

Response:

It is recognized that the chemical/radiological hazards due to the re-suspension of contaminated particles are ongoing potential concerns. Re-suspension of soils, results in concentrations of contaminants in the air that are four orders of magnitude less than the potential radon gas released. Due to the significant difference in concentrations the precautions taken for radon will provide adequate protection against any re-suspended material.

3. Ohio EPA Comment:

Page 8, Table 3-2: Additional hazards which should be added to this table include isotopes Th-232, Pb-210 and Po-210. See comment #1, on the work plan.

Response:

The external hazards associated these radionuclides are insignificant when compared to inhalation of radon. As previously indicated the respirators required will be sufficient for any other contaminants.

See response to comment #1 for the Health and Safety Plan.

4. Ohio EPA Comment:

Page 10, Section 4.2.4: Sampling for non-radiological parameters in surface soils has not been completed in the area of the removal action, thus insufficient data is available for stating that chemical hazards are unexpected. Non-radiological sampling needs to be conducted in order to support such statements in the health and safety plan (HSP).

Response:

On the contrary there is sufficient and substantive information provided that the existence of any non-radiological contaminants will not pose the magnitude of concern or hazard currently addressed in the Health and Safety Plan due to radon.

5. Ohio EPA Comment:

Page 17, Section 10.0, Wastes: This section states that "Any disturbed uncontaminated soil will be regraded into the area of disturbance." The work plan should provide details as to what will be done with soil which is contaminated and disturbed. At what level of contamination will actions other than regrading occur? This section of the document should include a more in-depth discussion of these issues.

Response:

The procedures for addressing and dispositioning of contaminated materials are identified and referenced in FMPC-720, Control of Construction Waste.

6. Ohio EPA Comment:

Page 17, 11.0, Contingency Plans: DOE failed to include the existing FMPC Standard Operation Procedure (SOP) 65-C-201: "K-65 silo numbers 1 & 2 Area Emergencies" as an enclosure to either the work plan or the HSP. In an undated DOE response to comments letter from Andy Avel to Graham Mitchell and Catherine McCord of Ohio EPA and USEPA, respectively, DOE stated (see response to Ohio EPA Comment #7 on the EE/CA for the K-65 Silos) that it would include this SOP in the "...K-65 Removal Action Work Plan as an enclosure to the task specific Health and Safety Plan." DOE needs to detail the emergency response procedures that will be taken in the event of dome failure. (It is also noted that SOP-65-C-201 as listed on page 21 of the HSP no longer appears to pertain to Silo 1 & 2 area emergencies but instead pertains to the operation of the K-65 silos radon treatment system.)

Response:

The existing FMPC Standard Operating Procedure (SOP) 65-C-201, "K-65 Silo Numbers 1 and 2 Area Emergencies", is included as an attachment to these responses.

The Standard Operating Procedure for Operation of the Radon Treatment System is SOP 66-C-101.

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OPERATIONS PROCEDURE	K-65 SILO NUMBERS 1 AND 2 AREA EMERGENCIES	SOP 65-C-201 AREA: K-65
Authorization: R. L. Gardner, Operations Facilities	Supersedes: 65-C-107, 11-07-89	Issue Date: 09-10-90

### 1.0 PURPOSE

The purpose of this document is to provide the procedure for responding to emergency situations and abnormal occurrences that may occur at Silo Numbers 1 and 2. Any emergency situation that may occur due to specialized operations on the silos shall be documented in the operations work plan/procedure.

### 2.0 APPLICABILITY

This procedure is applicable to emergency situations at Silo Numbers 1 and 2 in the K-65 Area.

### 3.0 RESPONSIBILITIES

- 3.1 Any employee who sees an emergency has the responsibility to notify personnel to evacuate the danger area and to report the emergency by dialing 6511, pulling a fire alarm, or using a portable radio.
- 3.2 The Assistant Emergency Duty Officer (AEDO) shall be responsible for the following:
- 3.2.1 Directing the activities of personnel in emergency situations at the scene.
- 3.2.2 Informing the Emergency Duty Officer (EDO) of existing conditions and cooperating with the EDO to resolve the emergency situation.
- 3.3 The K-65 Facility Owner or designee shall be responsible for the following:
- 3.3.1 Training employees assigned to the silo area in the provisions of this SOP and the immediate actions to be taken for the most probable types of silo area emergencies.
- 3.3.2 Documenting training and submitting training records to the Training Department.
- 3.3.3 Training new employees, at their orientation, in the requirements of this procedure.
- 3.3.4 Training personnel in the location and use of the fire and evacuation alarm systems controls.
- 3.3.5 Coordinating with the AEDO to test the Evacuation Alarm System quarterly and for documenting the test.
- 3.3.6 Scheduling local drills with Emergency Preparedness.

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3.0 RESPONSIBILITIES (cont.)

- 3.3.7 Conducting a critique with employees following plant evacuations, local drills, and site drills to determine if improvements could be made to the procedure.
- 3.3.8 Recording results of tests, drills, and critiques on the Safety Meeting Report with a copy to Industrial, Radiological, Safety, & Training (IRS&T) and Emergency Preparedness.
- 3.3.9 Training employees in the location and use of fire extinguishers, self-contained breathing apparatus, and safety showers/eye bubblers.
- 3.3.10 Coordinating with Safety and Fire Engineering Services to train personnel in the use of fire extinguishers.
- 3.3.11 Coordinating accountability training with Emergency Preparedness and accounting for personnel following local evacuations and radiation detection alarm (RDA) soundings.
- 3.3.12 Responding to messages on the Emergency Message System or radio after an alarm signal by promptly informing those in the area the reason for the signal and any instructions.
- 3.3.13 Assigning personnel to turn off equipment and utilities in the event of an emergency shutdown.
- 3.3.14 Notifying personnel in the silo area of a procedure revision.
- 3.3.15 Contacting Industrial Hygiene or Radiological Safety to determine the appropriate respiratory protection for the process being performed.
- 3.3.16 Provide continuous oversight during any K-65 silo operations.
- 3.3.17 Revise this procedure annually or as needed.
- 3.3.18 Restricting access to the Radon Treatment System.
- 3.4 WMCO personnel or subcontractors shall be responsible for the following:
  - 3.4.1 Being familiar with the provisions of this Standard Operating Procedure (SOP) for reporting and combating emergencies only if trained to do so.
  - 3.4.2 Proceeding in accordance with this SOP in emergency situations.
  - 3.4.3 Being familiar with the location and use of emergency equipment items.

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### 3.0 RESPONSIBILITIES (cont.)

- 3.4.4 Being familiar with, and carrying out, the responses to the signals in use at the FMPC.
- 3.4.5 Taking messages on the Emergency Message System after an alarm signal and conveying the message to personnel in the area if supervision is not present.
- 3.4.6 Participating in emergency procedure drills conducted in accordance with the FMPC Emergency Plan.
- 3.4.7 Notifying the supervisor or the AEDO of emergency or non-routine events immediately.
- 3.5 The AEDO shall be responsible for assuming overall authority to direct and coordinate emergency response.
- 3.6 The on-duty utility engineer shall be responsible for acting as the AEDO.
- 3.7 Radiological Safety shall be responsible for the following:
  - 3.7.1 Determining the appropriate respiratory protection and anti-contamination clothing for radiological hazards.
  - 3.7.2 Determining the required radiation monitoring and measurements.
  - 3.7.3 Determining bioassay and dosimetry requirements for personnel potentially exposed during K-65 area emergencies.
  - 3.7.4 Performing all monitoring (airborne radiation and contamination) specified by procedure and/or as instructed.

### 4.0 DEFINITIONS

- 4.1 Fire Alarm Signal - A 2-2, 2-2 signal sounded on the Plant Alarm System by the communications officer.
 

**NOTE:** Pulling a lever on fire alarm boxes located throughout the site transmits a coded signal identifying the box location to the Communications Center.
- 4.2 Plant Alarm System - The site wide alarm system used by the Communication Center to transmit the Emergency Response (2-2), Supervisory Alert (3-3) and CO Alert (4-1) signals.

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4.0 DEFINITIONS (cont.)

- 4.3 Emergency Message System - A one-way speaker system used by Communications Center personnel to transmit instructions and/or information to personnel following the sounding of an alarm signal.
- 4.4 Area Radiation Monitor (ARM) - Flashing red lights that are activated when the radiation level exceeds 120 mr/hr.
- 4.5 Beta Cam Detection System - Individual units that monitor beta radiation in the air. If radiation level exceeds the preset level, the alarm sounds and personnel evacuate the area.
- 4.6 Facility Owner/Designee - The facility owner of the K-65 silos is the manager Operations Facilities and Waste Management. The designee will be a first line operations supervisor assigned to provide continuous oversight during any WMCO managed K-65 silo operation. The facility owner/designee shall not be present during DOE subcontractor work.

5.0 REFERENCES

- 5.1 SOP 20-C-606, "Hazardous Material Spill Cleanup"

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

- 6.1 A defined safety system is not involved.
- 6.2 When an alarm sounds, personnel shall follow instructions broadcast over the Emergency Message System, portable radio and/or the supervisors directions.
- 6.3 Safety glasses with side shields shall be worn in the K-65 Area unless other eye protection is specified by IRS&T.
- 6.4 Respiratory protection provided by the facility owner/designee shall be worn when required.
- 6.5 Personnel shall report an emergency or summon an ambulance by using the radio, pulling the Fire Alarm Box lever, or phoning extension 6511 as appropriate, and making a report to the Communications Center.
- 6.6 Leather-palm gloves shall be worn when handling drums/boxes/containers, operating equipment, and when handling rough, sharp-edged, or contaminated material.

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6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS (cont.)

- 6.7 HEPA type filter vacuums or a vacuum system approved by IRS&T with a current (test within last 6 months) intact DOP aerosol penetration test sticker shall be used for cleaning.
- 6.8 Emergency response and operating personnel (WMCO or subcontractor) assigned to the silo area shall be trained in the provisions of this SOP, special radiological requirements, and any other immediate actions to be taken for the most probable types of silo area emergencies.
- 6.9 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance of possible radioactive materials intake to Radiological Safety and the AEDO for evaluation. The involved employees shall report to Medical Services at the end of their shift or as directed to submit a urine sample and again report at the start of their next shift to submit another urine sample. The supervisor shall consider the circumstance to be a minor event and shall immediately complete a "Minor Event Report" per FMPC-704.
- 6.10 A two-way radio which can be monitored by WMCO Security shall be required during any operation on the silos.

7.0 PROCEDURE

7.1 Emergency Procedure Implementation

7.1.1 This procedure shall be implemented for the following reasons:

- 7.1.1.1 Fire
- 7.1.1.2 Personal injury or skin contamination to WMCO personnel or subcontractors
- 7.1.1.3 Damage to, or failure of, equipment or silo
- 7.1.1.4 Fumes entering the area
- 7.1.1.5 Spills
- 7.1.1.6 Criticality
- 7.1.1.7 National emergency
- 7.1.1.8 Severe weather conditions

FMFC WESTINGHOUSE MATERIALS COMPANY OF OHIO OPERATIONS DOCUMENT PROGRAM		Page 6 of 23 Revision No. 0	<b>- 5846</b>
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## 7.0 PROCEDURE (cont.)

### 7.1.1.9 Threats or acts of violence

7.1.1.10 An emergency situation that endangers life or property within the silo area or in the vicinity of the silo area

## 7.2 Evacuation Routes

7.2.1 In cases of local emergencies, routes may be established on the basis of the existing situation.

## 7.3 Responding to Local Area Emergencies

**NOTE:** In an emergency situation, the facility owner/designee shall assign personnel to perform the specific tasks described in Section 7.3 and 7.4. When an alarm sounds, personnel shall perform the assigned tasks.

**NOTE:** Before reacting to local emergencies, the facility owner/designee shall notify personnel with no assigned tasks to leave the hazardous area and report to rally point for accountability.

### 7.3.1 Fire

7.3.1.1 Pull lever on the nearest Fire Alarm Box. If an alarm box is not near, report directly to the Communications Center on telephone extension 6511 or call control on a two-way radio and notify the AEDO.

7.3.1.2 If trained to use fire fighting equipment and the fire does not create a radiation contamination problem, and is within capabilities of equipment, combat the fire cautiously until the Emergency Response Team arrives.

**WARNING:** USE ONLY DESIGNATED TYPE OF EXTINGUISHER FOR FIRE. DO NOT USE WATER TO EXTINGUISH ELECTRICAL, LIQUID, OR METAL FIRE.

**NOTE:** Use CO<sub>2</sub>, ABC, or dry chemical for electrical or flammable liquid fire.

**NOTE:** Use Class "A" (water) extinguisher, ABC fire extinguisher, or standpipe hoseline for trash, wood, and paper fires.

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7.0 PROCEDURE (cont.)

- 7.3.1.3 If possible, shut down operating equipment.
- 7.3.1.4 If possible, remove combustible or other hazardous materials to a safe location.
- 7.3.1.5 If possible, shut off electrical power to the affected areas.
- 7.3.1.6 After evacuation, remove injured personnel, if any, and convene at the rally point.

**WARNING:** RESCUE OF PERSONS FROM THE AREA SHALL NOT BE UNDERTAKEN UNTIL A TRAINED RESCUE TEAM UNDER THE DIRECTION OF THE OFFICER-IN-CHARGE OF THE EMERGENCY RESPONSE TEAM ARRIVES.

**NOTE:** Rescue operations preclude radiation safety controls as long as the expected dose is less than 10 Rem. Dose estimates shall be obtained from the RST.

**NOTE:** Facility owner/designee shall account for personnel at rally point.

**NOTE:** The rally point shall be designated by the facility owner/designee.

- 7.3.1.7 Instruct persons in transit to avoid areas involved.

**NOTE:** The facility owner/designee shall record the event in the Project Log and complete a "Minor Event Report."

7.3.2 Exposure to Fire or Smoke

**NOTE:** The following steps apply when fire is nearby and the area is not directly involved.

- 7.3.2.1 Identify wind direction and remain up wind from fire or smoke.
- 7.3.2.2 Assist Emergency Response Team if requested.
- 7.3.2.3 If K-65 Area becomes involved, proceed per Item 7.3.1.

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7.0 PROCEDURE (cont.)

7.3.3 Fumes Entering the K-65 Area

7.3.3.1 If downwind of the release, evacuate to a safe location as directed by the facility owner/designee.

**WARNING:** AVOID THE PATH OF FUME RELEASE.

**WARNING:** AVOID FUMES WHICH ARE VISIBLE OR HAVE AN ODOR.

**WARNING:** DO NOT ENTER THE FUME RELEASE AREA OR THE PATH OF FUME TRAVEL.

7.3.3.2 Report to rally point designated by facility owner/designee for accountability.

7.3.3.3 If exposed to fumes, report to Medical Services as soon as possible after exposure.

7.3.3.4 Await further instructions from supervisor or the All-Clear Announcement.

7.3.4 Injuries or Skin Contaminations

**NOTE:** The following steps are intended to provide guidance and state minimum requirements in the event of injury, illness, or skin contamination to personnel. All injuries shall be reported to Medical Services. All skin contaminations shall be reported to the radiation safety technician.

**NOTE:** If the injury/illness is not limited to a first aid case, the facility owner/designee shall notify Medical Services to coordinate internal resources to assist the treating physician in rendering appropriate care.

**NOTE:** The event must be recorded in the Project Log Book and reported to the AEDO and per Site Procedure FMPC 704 (Minor Event Reporting System).

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## 7.0 PROCEDURE (cont.)

7.3.4.1 In case of injury, personal contamination, or contamination to clothing report to the AEDO or facility owner/designee as soon as possible after occurrence. If reported to the facility owner/designee, they must notify the AEDO.

NOTE: The AEDO or facility owner/designee shall report injuries, accidents, and skin contaminations to Medical Services. Skin contaminations shall also be reported to the Radiological Safety Manager.

7.3.4.2 If necessary, use alarm, radio, or voice to make notifications.

NOTE: Phone numbers for emergency personnel are posted at site telephone locations.

7.3.4.3 If qualified, implement emergency medical action to the victim as appropriate.

NOTE: Any person rendering aid shall decide, based on severity of injury and potential or impending damages, whether or not to treat victims in place. Do not move the victim if the person cannot perform movement under their own control.

7.3.4.4 When trained emergency personnel arrive, transfer the victim to their care and provide as much information as possible.

7.3.4.5 If the injury/illness is the result of a chemical exposure, identify the chemical(s) being used.

### 7.3.5 Damage or Failure of the Silo or Silo Roof

7.3.5.1 Cease operations, and evacuate the immediate work area.

7.3.5.2 Notify the facility owner/designee of the event and its estimated magnitude.

NOTE: The facility owner/designee shall immediately notify the AEDO first, then the radiation safety technicians of the event.

7.3.5.3 If personnel are injured, proceed per Item 7.3.4.

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7.0 PROCEDURE (cont.)

7.3.5.4 Event Discovery

On the north and south side of the K-65 silos, cameras have been installed to provide 24-hour surveillance of the K-65 silos. Monitors are in the FMPC Communications Center where they are continuously observed. In the event of any loss of integrity of the dome, these emergency procedures will be implemented.

Immediate Notification

The plantwide alarm system will be activated by Security to alert the FMPC Emergency Response Team (ERT) and AEDO for immediate response. Information about the incident will be provided to the site population over the Emergency Message System. Event classification and required off-site notifications will be performed by the AEDO as per procedure.

Classification

When the AEDO receives notification of a dome collapse at the K-65 silos, he will assume residue particulates are being released (worst case scenario) and will immediately classify the event as a General Emergency, and the Off-site Warning System will be activated. This system directs all residents within a two-mile radius of the site to shelter. The on-site Emergency Operating Center (EOC) will be activated. Other protective actions for local residents including activation of both Hamilton and Butler County EOCs are directed by local officials.

7.3.5.5 In the event of a partial dome collapse, tarps shall be placed over the collapsed area and anchored from the edge of the silo using probe poles.

NOTE: Under no circumstances shall personnel walk on the dome after a partial or total dome collapse.

NOTE: The tarps and anchors are located in a white metal box marked "K-65 EMERGENCY EQUIPMENT" located within the fenced area of the K-65 silos on the east side.

7.3.5.6 Personnel responding to a partial dome collapse of the K-65 silos shall wait to place the tarps over the collapse as directed by the AEDO.

7.3.5.7 In the event of a total dome collapse immediately notify the AEDO. The AEDO will direct the Communication Center to immediately dispatch the pumper to the K-65 Silo Area. The collapsed dome and exposed silo contents will be sprayed down until damp to reduce airborne emissions from the silos. The collapsed area is to be rewetted to keep damp until directed otherwise by the AEDO.

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7.C PROCEDURE (cont.)

- 7.3.5.8 Remove equipment as soon as possible after safety and radiological clearances are given on the failed/damaged silo.

**NOTE:** If permission to enter the area has not been granted by the facility owner/designee, the equipment shall remain in place.

- 7.3.5.9 If the safety evaluation determines that operations can continue, proceed with caution.

**NOTE:** The facility owner/designee shall record the event in the project logbook and report per Site Procedure FMPC 704, Minor Event Reporting System.

7.3.6 Crane Failures

**NOTE:** If crane or cable failure occurs, the facility owner/designee shall notify AEDO and Safety & Fire Services.

- 7.3.6.1 If the crane tips, move the boom to change the cranes center of gravity or lower the load. After the crane stabilizes, inspect the outriggers and place pads or mats under the outriggers, or mechanically lock the outriggers into place if they are unlocked.

**WARNING:** DO NOT OPERATE THE CRANE DURING HIGH WINDS, THUNDERSTORMS, OR LIGHTNING CONDITIONS THAT MAY CAUSE TIPPING.

**NOTE:** If the crane tips over, another crane shall be used to upright the overturned crane.

- 7.3.6.2 Attempt to control the situation to prevent damage and report the incident to the facility owner/designee. Do not proceed with operation until authorization to proceed has been received from the facility owner/designee.

- 7.3.6.3 In case the crane fails during operation, stop operations, report incident to the facility owner/designee. If damage to the silo occurs, proceed per Item 7.3.5. If loss of equipment in the silo occurs, proceed per Item 7.3.7.

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7.0 PROCEDURE (cont.)

7.3.6.4 If cable failure results in loss of load, replace damaged cable and attempt to recover lost load after authorization from facility owner/designee is received. After the load is recovered and the equipment is inspected, resume operations.

**NOTE:** The facility owner/designee shall complete a "Minor Event Report".

7.3.6.5 If cable fails due to a cable jam in the boom head pulley, stop operations and report the incident to the facility owner/designee.

**NOTE:** If equipment is in a manhole and operations have begun, it may be necessary to use another crane to complete the operations if the cable cannot be removed while the equipment is still attached.

**NOTE:** If operations have not been started or have been completed, it may be possible to lower the load by lowering the boom. Set the load on plastic sheeting as designated by the facility owner/designee.

7.3.7 Equipment Drop into Silo

7.3.7.1 If equipment drops in the silo through the open manhole, stop operations and report incident to the facility owner/designee. Describe the item dropped and request the facility owner/designee to determine if the object shall remain in the silo or recovered.

**WARNING:** DO NOT PROCEED UNTIL DIRECTION FROM WMCO MANAGEMENT HAS BEEN GIVEN AND AN AUTHORIZATION TO PROCEED HAS BEEN RECEIVED.

**NOTE:** The facility owner/designee shall complete a "Minor Event Report" and record in the Project Logbook.

7.3.7.2 If approved by the facility owner/designee and the equipment can be safely and easily recovered without entering the silo, recover the object.

7.3.7.3 If the object cannot be easily recovered, stop and report recovery attempts to the facility owner/designee.

**NOTE:** The facility owner/designee shall determine recovery action with assistance from appropriate personnel.

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7.0 PROCEDURE (cont.)

7.3.7.4 After object has been recovered and/or authorization to proceed has been given, continue operations.

**NOTE:** The facility owner/designee shall complete a "Minor Event Report" and record in the Project Logbook.

7.3.8 Spills

**WARNING:** SPILLS SHALL BE CONTAINED.

7.3.8.1 Report and clean up hazardous material spills per SOP 20-C-606.

7.3.8.2 For radioactive material spills, complete the following:

7.3.8.2.1 Notify the facility owner/designee immediately.

**NOTE:** The facility owner/designee shall contact Radiological Safety (RS) to perform a survey and barricade/post the area.

7.3.8.2.2 Clean up the spill within the shift the spill occurred.

7.3.8.2.3 After clean up of the spill, notify the facility owner/designee.

**NOTE:** The facility owner/designee shall contact RS to perform a contamination survey.

**NOTE:** An RS representative shall survey, contain, and tag contaminated material or equipment requiring transfer from the barricaded area.

7.3.9 Breach of Containment Equipment or Radon Treatment System

**WARNING:** PERSONNEL SHALL NOT ENTER THE RADON TREATMENT FACILITY FOR A MINIMUM OF EIGHT DAYS AFTER A FAILURE OF THE RADON REMOVAL SYSTEM. ONLY TRAINED PERSONNEL AS DETERMINED BY THE FACILITY OWNER/DESIGNEE SHALL OPERATE THE RADON TREATMENT SYSTEM.

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7.0 PROCEDURE (cont.)

7.3.9.1 Cease operation. Notify facility owner/designee of the event immediately.

NOTE: The facility owner/designee shall notify the radiation safety supervisor and the AEDO immediately.

NOTE: In case of duct work failure, trained personnel shall shut down the Radon Removal System fan, and close Dampers D-01, D-11, D-13, D-14 and all carbon bed inlet dampers that are open.

7.3.9.2 Personnel performing operations shall stop the leak by repairing any breach in the containment or by shutting down the radon treatment system and isolating the silos with the in-line valves on the manways.

7.3.9.3 Do not continue with operations until approval is given by WMCO management.

NOTE: The facility owner/designee shall document the breach of containment or radon treatment system failure by completing a Minor Event Report.

7.3.10 Seismic Event

7.3.10.1 If a seismic event occurs, stop operations.

7.3.10.2 Move away from silos and cranes.

7.3.10.3 If any injuries occur, proceed per Item 7.3.4.

7.3.10.4 If there is no damage or impact, resume operations at the direction of facility owner/designee.

7.3.10.5 If there is damage, notify the facility owner/designee and proceed as directed.

CAUTION: DO NOT RESUME OPERATIONS UNTIL CLEARANCE IS GIVEN BY THE FACILITY OWNER/DESIGNEE.

7.3.10.6 Check the area for damage. If any equipment has been damaged, proceed per Item 7.3.8.

NOTE: The facility owner/designee shall record the event by completing a "Minor Event Report."

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7.0 PROCEDURE (cont.)

7.4 Responding to Supervisory Alert Alarm Signals (3-3 signal)

**CAUTION:** DO NOT TRANSMIT OVER RADIO WHILE SIGNAL IS SOUNDING.

**NOTE:** The signal shall be followed by an announcement on the Emergency Message System.

7.4.1 General

7.4.1.1 Follow instructions relayed over the Emergency Message System or the radio. Instructions may include carrying out an emergency shutdown (Refer to Item 7.8).

7.4.1.2 Carry out assigned emergency responsibilities.

**CAUTION:** STAY AT OR RETURN TO YOUR WORK STATION UNLESS IT IS NECESSARY TO VACATE THE AREA FOR PERSONAL SAFETY.

**CAUTION:** DO NOT USE THE TELEPHONE UNLESS ABSOLUTELY NECESSARY.

7.4.2 Tornado Announcement

**NOTE:** Tornado sighted in near vicinity.

7.4.2.1 If possible, secure the trailer.

7.4.2.2 Lie face down in the nearest depression, such as a ditch. Protect head using hands.

**WARNING:** AVOID GLASSED AREA, LARGE ROOF SPANS, CORRIDORS WITH OPENING TO SOUTH OR WEST, WINDWARD SIDE OF BUILDING, AND LOAD BEARING WALLS.

7.4.2.3 Await instructions from the facility owner/designee or the All-Clear Message.

7.4.3 Practice Drill

7.4.3.1 Stay at or return to your station.

**NOTE:** Do not use telephone unless absolutely necessary.

**NOTE:** Discontinue radio transmission while signal is sounding.

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7.0 PROCEDURE (cont.)

7.4.3.2 Await instructions from the facility owner/designee.

7.4.4 High Winds and Thunderstorms Announcement

**WARNING:** AVOID WORKING IN HAZARDOUS SITUATIONS SUCH AS HIGH, UNPROTECTED AREAS ON CRANES OR AREAS WHERE MATERIALS MAY BE BLOWN BY WIND.

7.4.4.1 Close and secure trailer windows, doors, and other openings through which wind or rain could enter.

7.4.4.2 Move away from windows.

**WARNING:** STAY AWAY FROM WINDOWS.

7.4.4.3 In external storage areas, secure loose materials such as empty drums and boxes, by tying, weighing down, reducing stack height, or sheltering.

7.4.4.4 Move valuable equipment and materials to a sheltered location.

7.4.4.5 Shut down equipment that is unsafe to operate during wind or rainstorm.

7.4.4.6 Cover equipment that cannot be moved but may be damaged.

7.4.5 All Clear Announcement (3-3)

**NOTE:** Emergency has passed.

7.4.5.1 Return to work if building was not evacuated.

**WARNING:** IF THE AREA WAS EVACUATED, DO NOT RE-ENTER UNTIL AUTHORIZED BY THE FACILITY OWNER/DESIGNEE.

7.5 Emergency Response Announcement (2-2)

**NOTE:** Ambulance, fire, security event.

7.5.1 Proceed as directed by the facility owner/designee.

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7.0 PROCEDURE (cont.)

7.6 Responding to Area Radiation Monitor (ARM)

<b>WARNING:</b> ROTATING RED LIGHTS ON THE HANDRAIL OF SILO INDICATE ACTIVATION OF A RADIATION ALARM. DO NOT ENTER OR APPROACH THE AREA.
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7.6.1 If ARM is activated, immediately leave the area.

7.6.2 Proceed to the rally point designated by the facility owner/designee.

7.6.3 Upon reaching the rally point, report to the facility owner/designee for accountability.

**NOTE:** Facility owner/designee shall accompany personnel to the rally point, account for personnel and report accountability by calling Extension 6295 or radio the Communications Center.

7.6.4 If "All Clear" signal sounds, return to work.

7.6.5 As directed by facility owner/designee or Radiological Safety, submit to clothing contamination survey and/or any other monitoring or bioassay request by the Radiation Safety Technician and complete questionnaires that may be required.

**NOTE:** Facility owner/designee shall maintain order in the group and assist employees in following instructions for contamination survey if necessary.

7.7 Response to Bomb Threats/Locating Bomb

**NOTE:** Action shall be taken by anyone.

7.7.1 Receiving a Threat, General

7.7.1.1 Anyone who receives a threat or finds a bomb shall immediately notify the Security Communications Center (extension 6511).

7.7.2 Receiving a Bomb Threat by Telephone

7.7.2.1 Signal someone to listen to the call.

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7.0 PROCEDURE (cont.)

7.7.2.2 If another line is available, have someone call the Communication Center (Extension 6511).

NOTE: Keep the line open.

7.7.2.3 Keep the caller on the line as long as possible. Ask that the message be repeated.

7.7.2.4 Write down every word spoken by the person.

7.7.2.5 If the caller does not indicate the location of the bomb or the time of possible detonation, ask for the information.

7.7.2.6 Inform the caller that the building is occupied and the detonation of a bomb could result in death or serious injury to many people.

7.7.2.7 Listen for background noises, such as motors operating, background music, and any other sounds which may give a clue to the location of the caller.

7.7.2.8 Listen closely to the voice characteristics of the caller.

NOTE: Listen for the following characteristics: sex, age, emotional state, accent, speech impediments, intoxication.

7.7.2.9 Immediately after the caller hangs up, take over the open line and report to the Communication Center (Extension 6511).

7.7.2.10 Remain available for questioning by the EDO.

7.7.3 Receiving a Bomb Threat in Writing

7.7.3.1 Save all materials, including any envelope or container.

CAUTION: HANDLE THE MATERIAL AS LITTLE AS POSSIBLE TO PRESERVE THE CONDITION AND ANY FINGERPRINTS.

7.7.3.2 If possible, place the message between sheets of clear plastic or on a clipboard.

7.7.3.3 Record where the message was found and/or how delivered, by whom, and at what time.

7.7.3.4 Notify the Communication Center via extension 6511.

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7.0 PROCEDURE (cont.)

7.7.3.5 Release the message only to a Security Officer.

7.7.4 Receiving a Bomb Threat by Personal Contact

7.7.4.1 Question the informant for the time of detonation, location of the device, size of the device, type of explosive and arming device, who planted the explosive, how the device was planted, and why the device was planted.

7.7.4.2 Determine where, when, under what circumstances, and from whom did the informer learn information concerning the explosive.

7.7.4.3 Ask the informer how he rates the reliability of the person alleged to have planted the bomb.

7.7.4.4 Attempt to detain informer. If possible, get the informer's license plate number and vehicle description.

7.7.4.5 If the informer can not be detained, obtain the informer's name, address, and a good physical description.

7.7.4.6 Immediately notify the Communication Center (extension 6511) of the contact. Supply the EDO with information collected.

7.7.5 Finding a Bomb or Suspicious Object

**NOTE:** Reasons for an object being noted are: foreign to the area; origin is questionable; labeled "bomb," "danger," or "dangerous;" or has unusual shape, size, or audibility.

7.7.5.1 Call the Communication Center (extension 6511) immediately and notify the EDO of the location of the bomb or suspicious object. State your name and extension number.

7.7.5.2 Follow instructions given by the EDO.

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7.0 PROCEDURE (cont.)

7.7.6 Searching the Area for a Bomb

NOTE: Action to be taken by the facility owner or designee.

7.7.6.1 If advised by the Communication Officer, ask local personnel to conduct a search of the area for suspicious objects.

NOTE: Reasons for an object to be suspect are: applies to  
• circumstances described in warning; foreign to area; origin is obscure; labeled "bomb," "danger," or similarly; or unusual size, shape, or audibility.

7.7.6.2 Inform the searchers not to move, jostle, jar, or touch the object or anything attached to it.

**WARNING: DO NOT USE RADIOS DURING THE SEARCH. RADIOS MAY CAUSE DETONATION.**

7.7.6.3 If a bomb or suspicious object is found, notify the Communication Officer of the location. Describe the object briefly and accurately.

7.7.6.4 Open windows and doors to minimize primary blast damage.

7.7.6.5 Move hazardous materials from the surrounding area if time permits.

7.7.6.6 Evacuate personnel to a position outside the perimeter of the danger area.

7.7.6.7 If personnel complete the search without finding anything, report this to the Communication Officer and withdraw searchers to the perimeter.

7.8 Emergency Shutdown 3-3 Announcement Following a 3-3 Signal

7.8.1 Shut off all operating equipment.

7.8.2 Proceed as directed by the facility owner/designee.

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7.0 PROCEDURE (cont.)

7.9 Post Disaster Procedure

**WARNING:** DO NOT ENTER AN AFFECTED AREA UNLESS FACILITY OWNER/DESIGNEE AND THE AEDO INDICATES THAT IT IS SAFE TO DO SO.

**NOTE:** The measures necessary and the procedures advisable for resumption of plant operations will depend on damage surveys as reported to management.

**NOTE:** A complete engineering survey of damage, necessary repairs, and replacements are required if the area was involved with fire and/or corrosive or damaging fumes.

7.9.1 Do not start equipment until the following checks have been performed.

7.9.1.1 Check equipment unit by unit.

7.9.1.2 Check materials for damage.

7.9.1.3 Check with Boiler Plant to ensure the availability of steam.

7.9.1.4 Check with Water Treatment to ensure that water is available.

7.9.1.5 Check with Utilities Engineer to ensure that electrical power is available.

7.9.1.6 Check supplies for damage.

**NOTE:** The facility owner/designee shall request Maintenance to check utilities.

7.9.1.7 Ensure that Safety and Fire Protection Engineering and Radiological Safety have checked the area.

**WARNING:** IF PROPANE OR NATURAL GAS WERE INVOLVED WHEN EQUIPMENT WAS DAMAGED, DO NOT START EQUIPMENT UNTIL FIRE AND SAFETY HAS CHECKED FOR EXPLOSIVE GAS.

**WARNING:** IF RADIOACTIVE MATERIALS WERE RELEASED, DO NOT ENTER THE AREA UNTIL A CHECK FOR RADIOACTIVITY HAS BEEN CONDUCTED BY IRS&T DEPARTMENT.

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8.0 APPLICABLE FORMS

None

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RECORD OF ISSUE/REVISIONS

<u>DATE</u>	<u>REV.NO.</u>	<u>DESCRIPTION AND AUTHORITY</u>
11-7-89	0	Procedure required per Request No. P89-414, initiated by D. A. Palmer.
9-10-90	0	Issued to replace 65-C-107 and include K-65 investigation requirements per Request P90-242, initiated by K. Dunbar.

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