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**RESPONSE TO USEPA COMMENTS ON  
MODIFIED PLANT 6 WORK PLAN**

**08/10/90**

**WMCO/DOE-FMPC**

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**REPORT** *Response*

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RESPONSE TO USEPA COMMENTS  
ON MODIFIED PLANT 6  
WORK PLAN

1. Comment:

~~A requirement of this and all other removal actions at the site is that sample collection and analysis and reporting are subject to the Quality Assurance Project Plan (QAPP) approved as part of the Remedial Investigation (RI) work plan. This requires that all samples be analyzed at one of the laboratories formerly identified under the work plan. Changes to the QAPP must be proposed and approved by U.S. EPA.~~

Response:

Will modify work plan to indicate that samples will be sent to one of the laboratories identified in the QAPP. The plan will also indicate that additional routine samples will be obtained and analyzed utilizing FMPC protocols and procedures as identified in the Analytical Laboratories Quality Assurance Plan L.C.N.-QAP, October 1987. These routine samples will be utilized for process control and operational requirements. The results from these samples will be integrated into the RI/FS database.

2. Comment:

As discussed with U.S. DOE during a May 3, 1990, meeting in Chicago, the current QAPP needs to be reviewed and updated. The revised QAPP was to be submitted by July 8, 1990. To date, the revised QAPP has not been submitted.

Response:

No modification to the work plan is needed, but the DOE would like to meet with the USEPA to discuss the specific changes that are required for the modification to the QAPP. Once an agreement is reached on the specific changes to the QAPP a revised QAPP will be submitted to the USEPA. This could be a proposed subject for the next Technical Information Exchange (TIE) meeting.

3. Comment:

All work plan modifications and addenda need to include a strategy for coordination between removal and remedial response actions. This strategy should include validation and data transfer procedures. There needs to be some assurance that individuals responsible for removal actions are coordinating with operable unit managers and environmental management personnel. Operable unit

managers and remedial response quality assurance personnel need to be reviewing removal activities and data collection for consistency of the action with final remedial actions, technical adequacy, and for quality of work performed.

Response:

Will modify. Removal Action Work Plans will be modified to include a separate section entitled "Integration with the Operable Unit". Management philosophy now formally integrates the removal action with the applicable Operable Unit.

4. Comment:

U.S. EPA's On-Scene Coordinator for the Fernald site should be notified immediately upon stoppage of work.

Response:

Will modify to add "as stated in the Consent Agreement under CERCLA 120 and 106(a), if the DOE determines that any activities or work being implemented under this Consent Agreement may create an imminent threat to human health or the environment from the release or threat of release of hazardous substance, pollutant, contaminant, or hazardous constituent, it may stop any work or activities for such period of time as needed to respond and take whatever action is necessary to abate the danger." Reporting to the USEPA will be in accordance with Section XXIII of the Consent Agreement.

5. Comment:

The work plan states in Section I that the scope of the work plan is to "locate the source of the influent water, and pumping and treatment of extracted water." Although this is consistent with the overall goal of "include a proposal and schedule for VOC treatment of the contaminated ground water . . ." as stated in the U.S. EPA May 8, 1990 letter; it does not present sufficient information to support any treatment system.

Response:

Will modify the Sampling and Analysis section to include "The perched groundwater under Plant 6 has been determined to have significant concentrations of uranium, warranting this removal action. However, the concentration levels of other contaminants (primarily VOCs, see Attachment 2) are not fully defined at this time. For this reason, additional sampling is scheduled, prior to the implementation of this removal action, to define these contaminants and to determine type and level of treatment required. A groundwater sample from boring 1149 (Field ID # 45695) within Plant 6 was collected in February 1990. The analytical results from this boring is included as Attachment 2 in the modified work plan."

6. Comment:

Prior to the selection of a treatment system, it would be appropriate to conduct a focused investigation to fulfill the data requirements necessary to evaluate and select an effective treatment system. It seems that a focused investigation has been addressed to some degree in Sections III (3.0) and V of the amended work plan. However, sufficient detail is not presented to evaluate if required data of sufficient quality will be collected.

Response:

Will modify. Additional details on the evaluation of the various options and the methods for evaluating these options will be added to section III, subsection 3.0 of the work plan. A flow chart showing perched groundwater treatment options will be included as Attachment 4. The data used to select and justify the treatment option for this removal action shall be submitted to U.S. EPA for review/approval in the Treatment Option Report prior to project implementation.

7. Comment:

Attachment: The modified work plan does not present specific details on concentrations of VOCs, volume of water to be treated, or rate of water accumulation. This information is necessary to evaluate the proposed sampling plan, treatment options, and health and safety plan.

Response:

The only VOC concentrations presently known are from an analysis on one water sample taken from boring 1149 (See Attachment 1 and 2, included in the modified work plan). In July 1990, water samples were taken from the Clarifier Pit and borings 1148, 1149, and 1161 for extended HSL and total radionuclide analyses. The determination of which pumping unit(s) may require treatment will be determined when the above additional HSL analyses are received (expected approximately October 1990).

The rate at which water was removed from the Clarifier Pit and the borings (1148, 1149, 1161) prior to shutdown on April 23, 1990, was approximately 40, 3.5, 30 and 1.5 gallons per day, respectively; or a total of approximately 75 gallons per day. These flow rates have remained relatively constant and will be considered as the design basis during the selection of an appropriate treatment option.

8. Comment:

The health and safety plan for Plant 6 is very similar to those previously submitted to U.S. EPA for Plants 2/3 and 9. Several comments from U.S. EPA's letter on the Plant 2/3 and Plant 9 health and safety plans also apply to the Plant 6 Health and Safety Plan. Specifically, EPA comments 59, 60, 62, 63, 66 through 72, and

74. In addition, specific information needs to be included to Section 3.3 of the health and safety plan for 1,2-dichloroethene, chloroform, 1,2-dichloroethane, and carbon tetrachloride. Also, Section 3.3 of the health and safety plan should provide the expected concentration ranges of contaminants that workers may be exposed to.

Response:

The modified work plan for Plant 6 was submitted to the U.S. EPA prior to receiving the EPA comment letter on the Plant 2/3 and 9 work plans. Every effort will be made to modify the Plant 6 work plan and future work plans to resolve the comments submitted on the Plant 2/3 and 9 work plans. The listed comments from the above referenced EPA letter are relisted below with responses. Additional information concerning 1,2-dichloroethylene, chloroform, 1,2-dichloroethane, and carbon tetrachloride will be included to the Chemical Hazard Table in Section 3.3 of the health and safety plan. Also, a column containing local background levels of suspected contaminants in ambient air has been incorporated into this table. Several paragraphs are added to Section 7.0 of the Health and Safety Plan pertaining to exposure symptoms and first aid for expected contaminants in water, soil, and air.

59. Comment:

Section 3.3, page 3: Local background levels for suspected contaminants should be specified along with the regulatory exposure limits. If contaminants are expected to be concentrated in water, soils, or both, this should be annotated in the list of suspected contaminants.

Response:

Will modify. The table will be amended to include local background levels of suspected contaminants in ambient air along with the regulatory exposure limits.

60. Comment:

Section 4.2, pages 3-4: The specific type of atmospheric monitoring instrumentation for volatile inorganic and organic detection with the projected probe assemblies should be specified. The sensitivities of the selected probes and/or detection assemblies should be specified, with relative response restrictions or non-detect limitations of each assemblies.

Response:

No modification required. There are specific FMPC Health and Safety Procedures which include this information. These procedures are applicable to all task specific health and safety plans. This information does not have

to be included in every task specific health and safety plan. The type of equipment that will be used for this purpose include Draeger tubes, MIE RAM-1 photometer, and an HNu-101 photoionization instrument.

62. Comment:

Section 4.2, pages 3-4: Surface tests and area surveys should be performed following those activities that will generate radionuclide dusts, in addition to the recommended weekly and monthly surveys.

Response:

Will modify. After "as they are opened", add "and following dust generating activities."

63. Comment:

Section 4.3, page 4: The regulated exposure limits for uranium should also be presented in detector scale equivalents (either counts per minute or mRem per hour).

Response:

Will modify. In the level column of 4.3 on removable surface contamination, with the insert "or 2,000 cpm with portable frisker" before "(average)".

66. Comment:

Sections 5.1-5.3, pages 5-7: Inner gloves should always be used unless their usage creates an additional risk greater than the potential for contact with skin irritants. Due to the potential presence for corrosive or caustic hazardous substances, this additional layer of protection is appropriate.

Response:

Will modify. Inner gloves will be used underneath leather palm gloves but not beneath rubber gloves. To prevent skin rashes from latex rubber, only PVC inner gloves shall be used.

67. Comment:

Sections 5.1-5.3, pages 5-7: Escape packs should be included on the list of the equipment list. Additionally, self-contained breathing apparatus (SCBAs) should be used during the initial phases of the investigation for better protection against radionuclides, asbestos, and chemical hazards until the working environment is fully characterized and is deemed to be stable.

Response:

No modification required. The working environment is already well enough characterized to be able to dispense with the SCBA/ELSA requirement for unknown atmospheres. The revised table on page 3 includes suspect contaminants and their local background levels.

68. Comment:

~~Sections 6.1, page 8: 8.0, page 10: A site map delineating specific zones of proposed activity, exclusion zones, site and radiological control zones, and the decontamination corridors should be included. The scale and clutter of information on the site overview map does not permit effective representation of the work area.~~

Response:

Will modify. A layout map of plant 6 will be provided delineating contamination area boundaries (if needed) otherwise just exclusion area boundaries and step off pad locations (as determined by FMPC radiological safety technicians).

69. Comment:

Section 6.1.1: The posting requirements for external radiation levels are not cited.

Response:

Will add: "Radiation Area > 5 mrem/hr."

70. Comment:

Section 6.2: Bioassay work is not effective for detection/dose quantification of thorium compounds. In vivo counting is more appropriate.

Response:

Will modify. Add to the end, "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."

71. Comment:

Section 6.2: Methods that will be used for internal dose estimation if bioassay action levels are exceeded should be specified.

Response:

No modification required. Internal dosimetry calculations are made by the Dosimetry group in accordance with DOE Order 5480.11 and appropriate models. It is not appropriate to include a procedure for internal dosimetry in a task specific safety plan.

72. Comment:

Section 9.0, page 11: Decontamination procedures and stations should be specified, as well as decontamination line monitoring procedures. This information should also be represented in a diagram. The use of chemical decontamination solutions, other than soap and water, is appropriate.

Response:

No modification required. Decontamination will be performed consistent with FMPC Standard Operating Procedures for similar operations. In addition, specific RI/FS decontamination Procedures for the Facilities Testing Program will be followed when appropriate.

74. Comment:

Section 12, page 13: The section regarding confined spaces should address the additional considerations for ambient monitoring and more protective respiratory safety requirements. The specific tasks to be performed in confined spaces should be outlined. Since the tasks involve disruption of process lines and containerized materials, there is a chance for greater potential hazards.

Response:

Will modify. The specific tasks to be performed in confined spaces will be outlined in the Health and Safety Plan. The FMPC procedures ESH-P-41-0046 and FMPC-516 will be followed.

9. Comment:

The modified work plan proposes to analyze samples for volatile organic compounds (VOC), uranium, total thorium, nitrates, and pH. Additional analyses are typically required when evaluating or designing water treatment systems. For carbon treatment and air stripping units, samples are usually collected for

biological organisms, total suspended solids, and oil and grease.

Response:

Will modify. See "Response" to "Comment" 6.

10. Comment:

All standard operating procedures used by FMPC personnel should be attached to the work plan for review and approval or incorporated into the work plan itself.

Response:

No modification required. Standard Operating Procedures are beyond the scope of this work plan. Standard Operating Procedures are available at the request of the USEPA for informational purposes only.

11. Comment:

Attachment: The work plan does not specify how water that is accumulating in the sump is being managed. None of this water should be placed into the water treatment unit until the concentrations of all contaminants is known. The facility's NPDES permit does not provide for the discharge of VOCs. Accumulated water should be stored in clean tanks until treatment if available.

Response:

Water from the Clarifier Pit and borings 1148, 1149, and 1161 has not been sent to water treatment since the VOCs were discovered in water from boring 1149 on April 23, 1990. The pumps at the three borings have been shut down. Water continues to enter the Clarifier Pit, but at a constantly reducing flow rate due to submergence of the inlet hole. The water which has continued to flow has been allowed to accumulate and remain in the Clarifier Pit. OEPA and USEPA will be informed prior to any future discharge of accumulated water.

12. A. Comment:

Attachment: Section II, 2.0, Page 2: This section should discuss the specific volatile organic compounds (VOCs) and their concentration. The results for the following measurements, which are made weekly by the facility, should be presented: quantity of accumulated water, accumulation rate, and analytical results.

Response:

Same "Response" as "Comment" 7.

**B. Comment:**

**Attachment:** It is not clear where the accumulated water is discharged after it exits the wastewater treatment facility.

**Response:**

Flow diagrams have been prepared to show the options for VOC Treatment and where the water will go after treatment for VOCs (See Attachment 4).

**13. Comment:**

**Section III, 3.0, Page 3:** It is necessary to state the desired level of cleanup for each contaminant so that the effectiveness of each treatment option can be assessed. Each of the three proposed treatment options may result in the transfer of contaminants (both VOCs and radiological) to the air. Appropriate options to address this possibility should be presented.

**Response:**

It is inappropriate at this time to establish the desired level of cleanup until the investigation of the HSL/VOC contamination is complete. Because all treatment options include extraction of contaminated groundwater, the selected treatment option will have to produce water suitable for discharge. After the results from the latest round of groundwater sampling are available, treatment efficiencies can be determined. Also, because all treatment options involve removal of contaminated groundwater, all options must be equally effective in reducing contaminant concentrations in subsurface water.

A Treatment Option Report detailing the selected treatment option shall be submitted to the U.S. EPA for approval when there is sufficient data to select and justify a treatment option. The desired level of cleanup will be addressed in this Treatment Option Report. Additional information pertaining to the proposed treatment options (including air emission data) is included in Section III, 3.0 in the Work Plan.

**14. Comment:**

**Attachment:** Section IV, 1.0, Page 4: While it is important to identify the source of the perched water, it is also important to identify the source of the VOCs. The modified work plan should address this issue.

**Response:**

Will modify Section IV of the work plan under 1.0, Perched Water Investigation. A paragraph will be added as follows:

Nine additional borings have been scheduled around boring 1149 where VOCs were found in a water sample. The borings are scheduled under the RI/FS to determine the extent of contamination. This investigation will help determine the source of the VOC contamination. Also, process records will be checked for leads to the source of the contamination.

15. Comment:

Section V, Page 4: The specific location and number of samples should be stated in this section. ~~Water and soil samples from the new borings (instead of just the three pumping stations and clarifier pit)~~ should be analyzed for radiological and VOC parameters. Sampling and analysis are required to be consistent with the approved RI/FS work plan, sampling and analysis plan, and QAPP. This section should incorporate sample collection requirements, sample handling, analytical procedures, and data reporting by reference or provide modifications specific to these activities as they relate to Plant 6 activities.

Response:

Will modify. The location and number of the borings to be sampled will be included in the work plan. The analysis and reporting will be in accordance with procedures and protocol specified in the QAPP approved as part of the Remedial Investigation (RI) Work Plan.

16. Comment:

Section V, Page 5: Samples must be analyzed at one of the laboratories specified in the approved QAPP.

Response:

Will modify. This section will be changed to include the requirement to have samples analyzed at one of the certified laboratories specified in the QAPP approved by U.S. EPA.