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**THE RESPONSE TO OHIO EPA GENERAL
COMMENTS ON THE K-65 DECANT SUMP TANK
REMOVAL ACTION WORK PLAN**

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LETTER

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GENERAL COMMENTS ON THE
K-65 DECANT SUMP TANK
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1. Ohio General Comment:

Future analyses of the K-65 decant sump liquid should include a quantification of the concentrations of actinium-227 and protactinium-231 in the liquid. These radioisotopes are daughter products of uranium-235, which has been measured at concentrations exceeding its DOE DCG (as defined in the FMPC Annual Environmental Report) in all but one of the monthly decant sump liquid samples. The presence of U-235 in the decant sump liquid makes it likely that these two contaminants would also be present in the liquid. The DOE DCG for Ac-227 and Pa-231 may be exceeded since U-235, consistently exceeds its DCG in the decant sump. In order to prevent discharges of Ac-227 and Pa-231 exceeding the DOE DCGs for these contaminants they must be included in the future sampling of the decant sump liquid.

U.S. DOE Response:

Future samples collected from the decant liquid once it is transferred to the tanker trailer will be analyzed for total radionuclides as defined in the U.S. EPA approved Quality Assurance Project Plan (QAPP) prepared as part of the Remedial Investigation/Feasibility Study (RI/FS) Work Plan. The specific parameters included in the analysis are listed in Table 4-3 of the QAPP and include the following:

- Gross Alpha
- Gross Beta
- Radium 226
- Radium 228
- Strontium-90
- Technetium-99
- Isotopic Thorium
- Isotopic Uranium
- Total Uranium
- Isotopic Plutonium
- Neptunium-237
- Cesium-137
- Gamma Spectral Analysis

Also in addition to the radionuclides listed in the QAPP, actinium-227, protactinium-231, polonium-210 and lead-210 will be included in the analysis.

2. Ohio General Comment:

Page 6, Section 2.0, Treatment Process, third paragraph: This section fails to detail what will happen to the wastewater if it is found to exceed discharge limits for contaminant(s) following treatment at Plant 8. DOE should discuss additional treatment options. Thorium is the only contaminant discussed in the treatment section. Will this treatment also work on the other radio-isotopes present and potentially present (i.e. Ac-227 and Pa-231) in the wastewater? Treatment will be required to reduce the concentrations of various other radio-isotopes, since the concentrations of U-234, U-235, U-238, and R-226 in the decant sump liquid exceed their respective DCG's (as defined in the FMPC Annual Environmental Report).

U.S. DOE Response:

Thorium was the only radionuclide that was included in the original Work Plan for analysis to determine if pre-treatment was required prior to the treatment at the Plant 8 facility. It is anticipated that the analysis results will not indicate significant concentrations of Ac-227, Pa-231, and Po-210 present in the decant liquid. If appreciable amounts of Ac-227, Pa-231, and Po-210 are found in the decant liquid, a risk based assessment will be performed to determine if additional treatment will be required prior to discharge to the Great Miami River. The risk based assessment will determine if prior treatment is required based on guidance provided by DOE Order 5400.5. If this risk based assessment determines the need for pre-treatment, an evaluation of the available FMPC treatment capability and/or bench top tests will be performed to determine if the existing FMPC facilities can adequately treat for the identified constituent.

Effluent from the treatment of the decant liquid will be monitored according to the requirements in the FMPC NPDES permit. NPDES requirements do not regulate radionuclides. DOE Order 5400.5, Chapter II, Section 1.a include the requirements to regulate the discharge of radionuclides. Based on the risk based assessment and the treatment evaluation, FMPC will optimize the available treatment capabilities to minimize radionuclide discharges associated with the K-65 Decant Sump Tank Removal Action in an attempt to meet the DCGs. The U.S. DOE acknowledges that the current discharge to the Great Miami River does not completely attain the DCGs (which are based on a dose equivalent of no greater than 100 mrem in a year) with the current FMPC available waste water treatment facilities. The established DCGs will be attained when the Advanced Waste Water Treatment (AWWT) Facility is operational in 1993.