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COMMENTS ON CONDUCTING ECOLOGICAL ASSESSMENT

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USEPA/DOE-FSO

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LETTER

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

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SEP 03 1991

Mr. Jack R. Craig
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

REPLY TO ATTENTION OF:

RE: Comments on Conducting
Ecological Assessment

Dear Mr. Craig:

Enclosed are the United States Environmental Protection Agency (U.S. EPA) comments regarding ecological assessment at the Feed Materials Prodcution Center. These comments were requested by the United states Department of Energy (U.S. DOE) at the July 17, 1991 risk asssessment meeting in Dayton, Ohio, but were originally developed based upon a meeting held on August 8, 1990.

Please contact me at (312/FTS) 886-0992 if you have any questions.

Sincerely,

James A. Saric
Remedial Project Manager

Enclosure

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cc: Graham Mitchell, OEPA-SWDO
Pat Whitfield, U.S. DOE-HDQ

bcc: David Ullrich->William Muno->Kevin Pierard, WMD
Mary Butler, ORC
Sandra Lee, ORC
David Kee, ARD
Jim Benetti, ARD
Dan O'Riordan, OPA
Ed Schuessler, PRC

The following are comments and recommendations of the Region V Biological Technical Assistance Group (BTAG), regarding [redacted] ecological assessment of the above mentioned site. These comments were developed from discussions during a BTAG meeting held on August 8, 1990.

General recommendations - During the meeting, BTAG was able to learn of several ecological investigations at FMPC through teleconference with one of the investigators involved. Because these investigations were not specifically proposed in a formal workplan, the BTAG could not discern whether rationale for all of the investigations is appropriate (apparently some of the ongoing investigations may be inappropriate). The BTAG therefore recommends the ecological assessment (EA) develop a workplan or outline of ecological studies to be performed or being performed. This workplan should explain in detail specific EA objectives, provide rationale for selecting these objectives, and explain how past and future studies meet these objectives.

The EA should describe contamination of particular media (such as runoff from waste pits; fugitive dust; contaminated soils; etc.), and develop investigations focusing on contaminant effects. Information on media contamination should be available from the Remedial Investigation (RI), and much biological/ecological data may already be available.

Specific recommendations

Wetland delineation - Maps of jurisdictional wetlands should be included in the RI and the wetlands should be described using the system of Cowardin et al. 1979 ("Classification of Wetlands and Deepwater Habitats of the United States"). To classify the wetlands and ground-truth delineations, the delineations should include field examination of wetland areas. BTAG can preview the delineation reports.

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Contaminant toxicology - The RI/FS or EA should contain a section which describes in detail the behavior of site derived radionuclides and other contaminants in living organisms (including both aquatic and terrestrial systems). Accumulation and depuration rates, bioconcentration factors, toxicity (LD50 and LC50 data), and tissues which store the contaminant at issue are topics which should be addressed. Descriptions of contaminant toxicity should address the type of radiation emitted by each radionuclide. Further discussion should establish exposure routes (including through the food chain) to those organisms potentially receiving highest exposure or of greatest concern.

Contaminant fate - As discussed above, a description of site contamination and potential contamination should accompany the EA. Contaminant environmental chemistry and routes of migration should be described. One specific suggestion is that the fate of uranium released to the atmosphere be discussed. Wind rose, topography and weather patterns should be used to determine potential contaminated areas offsite. For example, any contaminants leached from the flyash piles should be discussed as regards their type, concentration, toxicology, toxicity and environmental fate. The contaminants should include both transuranics and other toxic metals of significance (such as lead, cadmium, selenium, etc, as applicable).

Tissue analyses - Fish, wildlife and plant tissues known to store specific contaminants should be monitored for those contaminants in target organisms. For example, plutonium should be measured primarily in bone tissues, where it is known to accumulate. Uranium tends to be excreted, and measurement of its accumulation in catfish tissue is a poor measure of exposure. In addition, tissue analyses should include measurements of thorium and plutonium. Data recently received does not indicate either is being monitored. However, according to a "Project Update: FMPC Consent Agreement," FMPC is a thorium repository, and other sources indicate plutonium may be of significant concern at FMPC.

Toxicity testing - Toxicity testing of FMPC effluent using acute methods standardized for National Pollution Discharge Elimination System (NPDES) permitting is inappropriate for the EA. These tests were developed for acute toxicants; however, major contaminants of concern for the RI do not exhibit acute toxicity.

Migratory waterfowl - The EA should address whether migratory waterfowl use any contaminated water bodies on site, such as ponds and lagoons. If use is noted, the extent of bird exposure should be established by studying the usage patterns by waterfowl; quantifying their exposure; and noting tissues potentially affected.

Benthic macroinvertebrate (BMI) surveys - BMI community assessments should utilize the Ohio Environmental Protection Agency's Invertebrate Community Index for data analyses, and should include a voucher collection.