



INTEROFFICE CORRESPONDENCE

DATE: October 6, 1994

TO: R. T. Ogg, Solar Ponds Projects (SPP), Bldg. 080, X8608

FROM: *MP* S. M. Paris, Group 1 Closures, Bldg. 080, X8543

SUBJECT: INCLUSION OF INFERRED FAULT LOCATED WITHIN OPERABLE UNIT (OU) 4 INTO PHASE II RCRA [RESOURCE CONSERVATION AND RECOVERY ACT] FACILITY INVESTIGATION/REMEDIAL INVESTIGATION (RFI/RI) CONCEPTUAL MODEL – SMP-005-94

DOE ORDER: 4700.1

ACTION: Concurrence to incorporate the inferred fault into the conceptual model for the OU 4 Phase II RFI/RI Program

Purpose

The purpose of this memorandum is to provide SPP information on the inferred fault system recently identified at the Rocky Flats Environmental Technology Site (RFETS).

Background

The Systemic Evaluation Program funded by the Nuclear Defense Facility Safety Board has been investigating the seismic risk associated with the storage of special nuclear materials in Building 371 at RFETS. This investigation has included the review of numerous borehole logs, completion of additional boreholes, and geophysical surveys. As a result of this investigation, three faults have been preliminarily identified. Currently these faults are a working hypothesis based on preliminary data. Additional field work including the trenching of one of the inferred faults is scheduled to begin this week. The purpose of the trenching is to attempt to determine the relative age of the fault. In particular, the purpose of the trench is to identify if any displacement has occurred at the bedrock-alluvium contact. Displacement would indicate the fault is younger than the age of the Rocky Flats Alluvium (900,000 years old). The inferred fault system data is scheduled to be published later this month in the Sitewide Geological Characterization Report.

Discussion

Based on available information, one fault is inferred to strike in a north-south direction directly beneath the B-series Solar Evaporation Ponds. A fault beneath the solar ponds may provide a preferential flow path based on a higher hydraulic conductivity associated with the fault gouge.

It is recommended, based on the preliminary results of the systemic evaluation program, to incorporate the inferred fault into the conceptual model for the OU 4 Phase II Program, Data Quality Objectives and adding additional scope to the field sampling plan to characterize the fault as a groundwater and contaminant flow mechanism.

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The Interim Measures/Interim Remedial Action (IM/IRA) will be impacted by the recognition of inferred faults. The Code of Colorado Regulations 6 CCR 1007-2 Section 3.1.3 states that "new landfills ...shall not be located within 200 feet (60 meters) of a fault that has had displacement in holocene time unless the owner or operator demonstrates to the Department that an alternate setback or distance of less than 200 feet (60 meters) will be effective or equally effective in the prevention of damage to the structural integrity of the facility and will be protective of human health and the environment."

The first stipulation of this section which states that landfills shall not be located within 200 feet of a fault that has had displacement in the holocene is identical to the RCRA Section 264.18. Section 264.18 references Section 270.14 for demonstrating compliance with this requirement. Section 270.14 (11) (i) states that if the location is listed in Appendix VI of Part 264, the owner is required to demonstrate compliance with the seismic standard. Jefferson County in Colorado is not listed in Appendix VI of Part 264. However, I assume that the regulators will require documentation that the fault has not had displacement in Holocene time.

Section 270.14 (b) (11) of RCRA states that if the facility is located in Appendix VI of Part 264, "data shall be obtained from a subsurface exploration (trenching) of the area within 200 feet of such portions of the facility where treatment, storage, or disposal of hazardous waste will occur."

Trenching activities performed under the Systemic Evaluation Program currently scheduled will be conducted in an area north of the present landfill and are investigating an inferred fault associated with Building 371. No further activities are proposed or funded for the evaluation of the inferred "Solar Pond" fault by the Systemic Evaluation Program. It is possible that the Department of Energy/Rocky Flats Field Office may convince the regulators that the inferred fault being investigated by the Systemic Evaluation Program is representative of the inferred fault system identified at RFETS, including the "Solar Pond" fault. If no displacement is observed in the Rocky Flats Alluvium from their trenching activities, it is conceivable displacement did not occur with the inferred "Solar Ponds" fault.

Conclusion

Recognition of the inferred fault systems will have a impact on the Phase I IM/IRA and Phase II RFI/RI Programs. I recommend inclusion of the inferred fault into the Phase I RFI/RI conceptual model.

Response

Please provide me your concurrence to incorporate the inferred fault into the conceptual model for the OU 4 Phase II RFI/RI Program. If you have any questions concerning this issue, please contact me at extension 8543.

jlm

cc:

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