12/26/88

MEMORANDUM

TO: Kirkland Jones, Deputy Director,EID
FROM: A.F. Gallegos, Planner, EID
SUBJECT: Concerns On WIPP Occupational Safety

A major concern with respect to occupational health and safety at WIPP is the reliability of the air particulate monitors to detect TRU at the required detection level by use of existing CaF2 detectors at the site. The latter detectors were replaced with alpha-energy discriminators in both normal and emergency air exhaust monitors as mentioned to you earlier because of the significant interference of radon daugthers in making adequate TRU detection at the required level. To my knowledge, the former detectors(CaF2) are still being utilized in the repository and in the waste handling building, and I am concerned that early warning detection of TRU in both environments may be compromised, and present a potential risk to the worker.

The particulate air monitoring reporting system excludes radon daughter measurements(except Pb-210) which makes it difficult to determine whether there is any potential radon daughter risk to workers in that environment from radon gas emmanation of the bedded salt. It is my opinion that WIPP officials should demonstrate that the risk to workers is acceptable under current WLM exposure regulations. A reporting on the airborne particle size distribution within the repository and in the intake and exhaust shafts would also be helpful in making risk assessments. The fact that WIPP support personnal are housed in the direction of the prevailing winds would make an assessment of near-in or gravitational fallout of some importance or at least worthy of study. The gross-alpha measurements in the NW air particulate monitor near these facilities does show elevated levels when compared to other monitoring sites during the latter part of the year. This observation has been attributed to possible contamination from "road-dust", but other causes such as exhaust effluent have not been excluded.

Finally, the nature of the particulate is of some concern from an inhalation point of view. A predominance of salt particles in the repository and exhaust effluent for attachment of radon daughters and other substances impacts on the lung clearance and exposure processes of the workers. The high solubility of salt in the mucous of the respiratory tract together with an attached particle such as RaA might present a unique exposure risk to this organ. Some documentation of this exposure pathway would be helpful in determining whether any precautions are necessary in this type of environment.