

TO : File, 19-1398-29
FROM : ^{W.H. Ray} W. H. Ray, Health Physicist
Irradiated Fuels Branch, DML
SUBJECT: SUPPLEMENTAL INFO. RE. CELLS 1 AND 2 CLEANOUT

DATE: May 21, 1964

On May 20, 1964 Charles W. Keller and Joe S. Cochran, Quehanna Plant Manager, visited with the writer in the headquarters offices at Bethesda. The opportunity was taken during this visit to obtain additional information relevant to the proposed work for rehabilitating Cells 1 and 2.

In reply to my query regarding how much Sr-90 might remain in Cells 1 and 2, it was confirmed that there was no practical means of accurately evaluating the residue. However, the cleanout measures that have been executed should have washed the easily removable material from the tanks and piping.

Mr. Cochran stated that the feed storage tank had been washed and sparged with 0.3N nitric acid. The first wash recovered the material which had been deposited when two liters evaporation loss were incurred during processing suspension while the process box ventilation system was being renovated last Fall. Following this wash and recovery of product, a second wash of 0.5N nitric acid was undertaken, and this was sparged in the feed storage tank for two days. The flow of these solutions to waste rinsed out the lines, the precipitator, and the filter, as well as the waste hold tank. This last was also washed out with 300 or 400 liters that were used to rinse the process box after the major equipment was taken out, prior to removal of the SOTS.

Cochran reported that after cleaning out the process box in Cell 2, the dose rate at the cell door dropped from 70 r/hr to 500 mr/hr.

Walter S. Cool, who is reviewing the respiratory protection equipment portion of MND-3137 for the Radiation Standards Branch of DSS, also talked with Messrs. Keller and Cochran. He pointed out the items regarding which the Radiation Standards Branch of DSS would like to see additional information in the application. Cochran was able to provide most of the requested information at this meeting, and he will prepare replacement and additional pages for MND-3137 to include the requested information.

In regard to full face piece respirators, Cochran will identify the models presently in stock and make some commitment about future acquisitions and means of appraising new types to determine that they are as good or better than those presently used. He stated that high efficiency filter canisters are exclusively used with these respirators, and that he

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disfavored having any other type of canister around, inasmuch as they do not use this type of respiratory protection against chemical agents. Quehanna personnel do not wear full face piece negative pressure type respirators when wearing glasses with temple bars. Cochran indicated that they had thought some of removing temple bars and using rubber bands to hold eye glasses in place. Mr. Cool reported that experience with such measures indicated that leaks developed. Cochran, a man who wears glasses himself, wears positive pressure air supplied respiratory protective equipment, and that is the present practice at Quehanna for personnel who have to wear glasses.

Mr. Cool suggested that more detail be supplied regarding training in the use of respiratory protection equipment. Mr. Cochran indicated that each person of the small staff at Quehanna receives about one hour indoctrination (on various radiological safety aspects) every week. There is about 30 hours of indoctrination provided to each employee, hence the subject matter is repeated about twice a year. He indicated that much of this instruction is provided by the health physicist, including the instruction about the use of respiratory protection equipment. When new personnel were transferred from Baltimore for short term work, they are put in anti-contamination suits and respirator and assigned to work in the shop (or some other cold area) for a period of at least three hours, to condition them against panicking in protective clothing before permitting them to engage in hot work.

More information will be sent in regarding the stocking and issuance of respirators, as requested by Mr. Cool. These matters are handled by the health physics personnel, and in the small organization at Quehanna, it is done on a rather personal basis. Mr. Cool requested the establishment of levels of contamination on respiratory equipment that would limit the use or return to use of respirators, or parts thereof. Mr. Cochran stated that the respiratory equipment was monitored with a thin-walled GM tube at an average distance of one inch from the suspect surfaces. More details and numbers will be included in the supplemental submittal regarding respiratory protection equipment.

The use of this respiratory equipment by the applicant was approved previously by the Radiation Standards Branch for work in Cell 2 when the ventilation system was being remodeled. The general preference for and use of airline supplied respiratory protective equipment reported by the applicant and by compliance inspectors indicates that no hazard should be expected from the use of respiratory protective equipment in accordance with the conditions set forth in Table 10.2 of MND-3137. In consideration of the information supplied by Mr. Cochran in response to the questions raised by Mr. Cool, in conjunction with the representations presented in MND-3137, it is recommended that the amendment to authorize rehabilitation of Cells 1 and 2 incorporate approval to employ respiratory protection equipment in accordance with the pertinent sections in Chapter 10 of MND-3137.

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