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From: F. A. Snyder

REMOVAL OF RUPTURED SLUG FROM TUBE 1961-D

SUMMARY

The 105-D pile was shut down on July 21, 1951, at 6:15 P.M. when the sample room monitoring instruments indicated a ruptured slug on crossheader #195.

Metal removal was effected by back seating the charge, hydraulically ejecting the pieces downstream from the ruptured slug, and cutting the tube ribs. Forces up to 2,000 psi were applied from the front face. The tube was replaced and charged with regular metal.

Loss of down time attributable to the ruptured slug amounted to 27 hours. Shut down work planned for July 25, 1951 was performed and operation was resumed on July 23, 1951 at 11:46 P.M.

DETECTION

The rupture was initially indicated by the effluent water monitoring system. Header sample analysis gave additional evidence of a rupture and the pile was shut down. A reading of 1.5 R/hr. was obtained on the pigtail of tube 1961-D.

REMOVAL

Discharge of the metal from the tube was attempted with the pneumatic charge machine but was unsuccessful. The metal column was back seated with a force of 2,000 psi, the metal pieces downstream from the ruptured piece were hydraulically flushed out of the tube, and the metal ribs were cut from the tube as far forward as the stuck piece. Forces up to 2,000 psi were then applied to discharge the metal. The tube was replaced and loaded with regular metal.

PERTINENT DATA ON THE CHARGE

The ruptured piece was canned August 31, 1950 of MR metal of H Line. It was processed on truck #2 and was autoclaved. Metal in this tube had reached a concentration of 488 M.W.D./T.

The rupture is a sidewall failure of the can mid-distant from the slug ends. The slugs occupied the fifty-fifth position in the metal string counting from the front face.

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LENGTH OF OUTAGE

Lost production time attributed to the ruptured piece amounted to 27 hours. Work planned for a regular shut down on July 25, 1951 was performed and pile operation was resumed at 11:46 P.M. on July 23, 1951 after downtime of 53.5 hours.

HAZARD ASPECTS

No unusual hazards were encountered. Radiation exposures to personnel were within allowable limits and contamination was held within established danger zones.

SLUG DISPOSAL

The ruptured slug has been canned in preparation for shipment to LLL-P for further study.

PRODUCTION UNIT
REACTOR SECTION



PA Snyder:mb

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