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HW--22567

DE91 001390

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RLO-CG-4

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- #14 - EC Wood
- #15 - Pink
- #16 - Yellow

Richland, Washington
October 30, 1951

REMOVAL OF RUPTURED URANIUM SLUG FROM TUBE #3491-H

Summary

An emergency shutdown of H reactor was initiated at 12:52 pm on October 19, 1951, to investigate indications of the presence of a ruptured uranium slug in one of the tubes on crossheader No. 33. The presence of a ruptured slug in tube #3491-H was confirmed when a radiation level greater than 5R/hour was observed at the rear pigtail.

The tube was discharged using the pneumatic charging machine and recharged with solid aluminum dummies.

Operation was resumed at 1:30 pm, after an outage of 0.6 hours.

There was no overexposure of personnel or spread of contamination outside of established danger zones.

Detection

The initial indication of the slug rupture was observed on the effluent water beta monitoring system, with increased activity noted in the effluent from rear crossheader No. 33. Samples from this header, when measured by a VGM survey meter, showed approximately twice the activity of adjacent headers. Comparative 1 cc evaporated samples sustained this activity difference. The 107 inlet activity also showed a marked increase followed by a return to normal. This is the first time a 107 inlet indication has been received at 100-H.

The reactor was shut down on the basis of the above indications. On entry into the rear face, dosage rates greater than 5 R/hour were observed at the pigtail of tube #3491-H.

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MASTER

October 30, 1951

Removal

Process water pressure was lowered to 225 psi and pressure on crossheader No. 33 lowered further to approximately 40" of water. The charge moved easily using the pneumatic charging machine so the tube was recharged with solid aluminum dummies, the water pressure returned to normal, and operation resumed.

Pertinent Data on the Charge

Tube #3491-H contained the regular production loading charged on May 2, 1951. It was in the .240 orifice zone. The metal had reached a concentration of 292 MWD/ton. The ruptured slug was an MR type slug, canned on January 30 or 31, 1950, (slug was double stamped -- 38) on G line, truck 11, and had been autoclaved at 300 Area.

Examination of the slug revealed a "U" shaped split about 2/3 of the slug length with the closed end of the "U" about 1 inch from the can end. The open end of the "U" terminated at the inner face of the cap where it joined a split which coincided with the cap inner face and continued approximately 2/3 of the way around the periphery.

ET O'S:jwb

- END -

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