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June 27, 1951

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REMOVAL OF RUPTURED P-10 TARGET SLUG FROM TUBE #1584-H

SUMMARY

During the scheduled outage of June 26, 1951 at H File, an attempt to discharge tube #1584-H in the normal sequence was unsuccessful, indicating the possibility that the tube contained a ruptured slug, as later proved to be the case. The tube contained the H-10 loading pattern, charged on June 28, 1950. The ruptured slug was at the downstream end of the central portion of the charge. Data from the charge card indicates that the slug was No 8 of Lot 301. Removal was effected by backseating the charge with a hydraulic ram, flushing out the slugs downstream from the ruptured slug, removing the tube ribs downstream of the ruptured slug with the spiral reamer, and discharging the ruptured slug and remainder of the charge with the hydraulic ram and pneumatic charging machine.

The removal operation, including tube replacement and recharging, required six hours.

DETECTION

The presence of a ruptured target slug in the tube was suspected prior to the outage, because of evidence furnished by I.B.M. analysis of inlet water pressure data from all H-10 tubes, taken during the period preceding the outage. Such evidence is not considered positive, since investigation of

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DEFLECTION (Continued)

previous suspect tubes has indicated that only rarely do they actually contain ruptured target slugs. ©

A special check of tube #1584-B was not scheduled for this outage since the tube was scheduled for discharge. This charge was found to be stuck when an attempt was made to discharge it in the normal sequence. ●

REMOVAL

The charge was backseated about 6" with the hydraulic ram, using forces up to 4000 lbs. After hydraulic ejection of the slugs downstream from the ruptured slug, the downstream tube ribs were removed, using the spiral reamer. Employing the hydraulic jack with forces up to 2500 lbs., the ruptured slug was moved into the section of tube from which the ribs had been removed. The remainder of the charge in the tube, including the ruptured slug, was then discharged with the pneumatic charging machine.

The tube was replaced and charged with the regular production loading.

PERTINENT DATA ON THE CHARGE

- ④ The tube contained the H-10 loading pattern, charged on June 28, 1950. The regular metal had reached a concentration of 67 $\frac{1}{2}$ MWD/ton. The ruptured slug was the downstream P-10 target slug in the central portion of the charge, which portion contained nine enriched fuel slugs and nine target slugs in alternating sequence. Data taken from the charge card indicates that the slug was No. 8 of Lot 301. Examination of the slug revealed a hole in the side of the can about 1" from the cap end, the slug badly swollen at the cap end, and the cap loose. The slug was also badly scarred from the removal operation.

SLUG DISPOSAL

File Technology Division personnel will transfer the slug from the storage basin to 108-B for analysis. ●

HQ I. ASPECTS

There were no unusual special hazards problems. There was no overexposure of personnel, and no spread of contamination outside established danger zone. ©

C. G. Lewis by J
P DIVISION

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END

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