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HANFORD ATOMIC PRODUCTS OPERATION - RICHLAND, WASHINGTON

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3-6-92

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HV-69233 - DEL

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April 12, 1961

IRRADIATION PROCESSING DEPARTMENT
INVESTIGATION REPORT

LOCALIZED EXPOSURE EXCEEDING OPERATIONAL CONTROL

No: 170-B

Location: 105-KE Discharge Area

Date: March 23, 1961

Operation: KE-KW Maintenance

Nature of the Occurrence

Maintenance Craftsman was found to have a particle on his face which could have contributed a dose as high as 4.6 rads.

Investigation

Date: April 4, 1961

Committee

G. Fiorelli • KE Processing, Chairman
EE Weyerts • KE-KW Maintenance
EH Kolts • KE-KW Maintenance
RE Slater • KE Processing
JE Rice • KW Processing
BV Andersen • Radiation Protection Operation, HLO
PC Jerman • Radiological Engineering, Secretary

Present

WP Howell • Radiological Engineering
CF Thomas • KE-KW Maintenance
CB Skaar • KE-KW Maintenance

Description of the Occurrence

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A personnel survey made at the time the employee left the discharge area showed a CP open window recording of 6 on the X10 range on the left side of the face. This was ascertained to be due to a particle which had been picked up during the course

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of the work performed in the discharge area.

HW-69233-DEL

Action Taken

The particle was immediately removed onto a piece of packing tape. It was sent to the Radiation Protection Operation, RLO, for dosimetry studies.

Observations

1. entered the discharge area along with C. B. Jamar, Maintenance Craftsman, at 8:20 a.m. They removed the pigtail, nozzle and true-arc ring from the rear of a process tube. left the discharge area about 10:00 a.m.
2. The time and cause of deposition of the particle on the face are unknown.
3. Reduced water flow was maintained in the tube during the entire period.
4. The particle was located on the left side of the face near the nose and about one inch below the eye.
5. The employee wore full protective clothing, including a cloth hood, but wore no facial protection. According to the RWP, the necessity for facial and respiratory protection was at the discretion of Radiation Monitoring. According to past practice there appeared to be no need for such protection.

Dosimetry

Examination of the particle using autoradiographic techniques showed an average dose rate of 2.75 rad/hr including 0.03 r/hr to one square centimeter of film area. The particle showed minor decay indicating it had been out of the reactor flux for some time. The maximum time the particle could have resided on Mr. Rose's face was one hour and forty minutes. Therefore, the localized skin dose received by was estimated to be 4.58 rads including 0.05 r gamma.

Cause

Unknown. It is not known how the particle was deposited on the face.

Responsibility

AE Area unassigned.

Recommendations

Facial protection should always be worn for maintenance activity in the discharge areas in the form of a full face mask or a face shield.

P. German
Secretary,
Radiological Engineering Unit

PC German:nmd

END

**DATE
FILMED
5/18/92**