

SUBJECT: Overexposure to Ionizing Radiation

TO: SWERI-SF-2500 FROM: SWERI-RDL-9320 DATE: 6 January 1965 CMT 2  
Mr Eisler/mkb/5179

The following information is furnished in reply to paragraph 2 of the basic communication:

1. The Norelco X-ray Diffraction Unit was the only instrument used extensively by Mr. Moorhead during the month of November 1964. Therefore, all further comments will apply to this instrument only.
2. No modifications were made on the instrument during the period.
3. The instrument was in operation an average of four hours per day during the period.
4. A radiation survey was made by Mr. S. L. Eisler, Radiological Safety Officer, after notification of the badge overexposure. Readings were less than 5 mr./hr. at all operator positions with the machine set up for normal operations. These readings were made using the thin mica window Geiger-Muller tube of the IM-141/PDR-27J Radiacmeter. The survey instrument had previously been calibrated using an M-3 Cobalt-60 Source Set.
5. The film badges are worn by the operators in the upper left chest region during working hours and stored in the desk drawer during off-duty hours.
6. Based upon the fact that Mr. Moorhead's total accumulated dose for the preceeding 12 month period was only 0.085 rems, it is believed that the 25 rem dose reported for November 1964 must have resulted from an accidental exposure. After considerable study, it was decided that a single shot dose (as reported by Lexington Signal Depot) of such magnitude could only have occurred by an inadvertant movement of the camera assembly from its usual position. Consideration is now being given to the possibility of installing a limit switch which would automatically turn off the entire unit if the camera was moved from its usual position.
7. A Standing Operating Procedure has also been written for the operation of the Norelco X-ray Diffraction Unit for the guidance of all operators. Similar S.O.P.'s are also planned for other instruments which may present radiation hazards.

*R F Shaw*

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Acting Laboratory Director

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