Westinghouse Electric Corporation

3 Gateway Center
Box 2278, Pittsburgh 30, Pa

August 26, 1969

U. S. Atomic Energy Commission
Division of Compliance
Washington, D. C. 20545

Attention: Mr. L. D. Low, Director

References: (a) Westinghouse Astronuclear Laboratory telephone report to Mr. R. Cleveland, U.S. A.E.C. Division of Compliance, Region 1, Newark, New Jersey, August 8, 1969.

(b) Telegram from Westinghouse Astronuclear Laboratory to U.S. A.E.C. Division of Compliance, Region 1, Newark, New Jersey, dated August 8, 1969.

Dear Mr. Low:

In accordance with the requirements of 10CFR20.405(a) the Westinghouse Electric Corporation transmits the attached report concerning the radiation exposure of an employe. This exposure occurred while the employe was working at the Westinghouse Astronuclear Laboratory Experimental Facility at Waltz Mill, Pennsylvania, operating under License 37-09442-01. Employe "C" was engaged in calibrating "Bragg Gray" chambers using a 30 Ci cobalt-60 gamma source. Information concerning the employe is presented on a supplementary sheet. The employe has been notified per 10CFR20.405(b).

Very truly yours,

Karl R. Schendel

Karl R. Schendel
License Administrator

Attachments: Report of Exposure and Supplementary Sheet
(2 copies each)

cc: Mr. R. W. Kirkman
Region 1, Division of Compliance, USAEC
970 Broad Street
Newark, New Jersey 07102

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Westinghouse Electric Corporation
Box 2278
Pittsburgh, Pennsylvania 15230

REPORT OF EXPOSURE

EMPLOYE "C"

8/26/69

Extent of Exposure

In the report from R. S. Landauer, Jr. & Company to the Westinghouse Astronuclear Laboratory, dated August 1, 1969, it was indicated that the film badge for Employe "C" showed an exposure to the whole body of 17.4 R gamma and 350 mrem thermal neutrons (Landauer subsequently discounted the thermal neutron exposure) during the period from June 23 through July 7, which was in excess of the quarterly limit specified in 10CFR20.101(b). The accumulated dose for Employe "C", with this addition, is well below the 5 (N-18) value. A medical examination revealed no clinical abnormalities.

Description of Operation

The employe was engaged in the calibration of "Bragg-Gray" chambers, using a 30 Ci cobalt-60 gamma source in the Radiation Calibration Facility (RCF) which is a trailer especially modified for the purpose. The gamma source in question is moved into position in the trailer from its shield located beneath the trailer and returned to the shield by a manually operated "Teleflex" cable. The Teleflex cable is operated by a crank positioned outside the trailer behind an earthen shield.

Levels of Radiation

The radiation levels to which Employe "C" could have been exposed vary from essentially background to a maximum of 450 R/hr gamma as determined by radiation survey.

Determination and Cause of Exposure

Investigation of the reported exposure at first indicated the film badge had been misplaced at the end of the normal badge period and it was probable that the badge had been exposed while it was not being worn, particularly since no exposure had been recorded on pocket dosimeters normally worn while performing this work. Further investigation subsequently revealed, however, that an employe exposure of approximately the reported value could have occurred on July 7, 1969 and this was reported to you by telephone and telegram.

A process of elimination using log book entries established the probable exposure date as July 7, 1969. Employe "C" feels the incident might have occurred June 30, 1969 but the log book does not substantiate this.

Reconstruction of the probable actions of Employe "C" on the incident date together with radiation surveys indicate that 17.4 R gamma is a reasonable estimate of the whole body exposure which could have occurred. Therefore the exposure of 17.4 R gamma is recorded as having occurred.

Employe "C" had worked in the trailer making electrical connections to a "Bragg-Gray" chamber and had moved to the position outside the trailer behind the earthen shield to crank the

source into position. He returned to the trailer for approximately two minutes to double check electrical connections to the experiment. He recalls that when he returned to the crank to insert the source into the trailer, he realized that the source may not have been completely returned to the shield during the time he had been in the trailer since he was "cranking the wrong way." A fellow employe recalls that Employe "C" had casually mentioned this apparent abnormality. Subsequent investigation revealed no mechanical failure of the source transfer device.

The investigation reveals that Employe "C":

1. Had been working alone in the trailer contrary to the written procedures established for the operation.
2. Had disconnected an automatic warning device because of insufficient range of the instrument. This was also contrary to the written operating procedures. The warning light outside the trailer was turned on, however.
3. Had failed to use an available survey meter upon reentry to the trailer, contrary to the written operating procedures.
4. Probably did not wear a pocket dosimeter when this particular operation was performed on the incident date.

Corrective Action

Remedial steps being taken to prevent a recurrence of the above exposure or similar ones are:

1. Employe "C" has been removed from radiation work.

2. All personnel will be retrained in the rules, procedures, and use of equipment associated with the operation of the RCF. Personnel responsibilities and authorities will be clearly identified to all concerned. A periodic schedule for reindoctrination to maintain proficiency will be set up and implemented.

3. Install and check out an improved control device for the alarm signal at the RCF trailer.

4. Insure that all personnel clearly understand that violations of rules and procedures will not be tolerated.

5. The facility will remain shut down until the above remedial steps have been implemented.

Westinghouse Electric Corporation
Box 2278
Pittsburgh, Pennsylvania 15230

SUPPLEMENTARY SHEET

REPORT OF EXPOSURE

EMPLOYE "C"

8/26/69

The individual identified as Employe "C" in the attached "Report of Exposure, Employe "C", 8/26/69" is [redacted] a Westinghouse Electric Corporation employe, Social Security Number [redacted] At the time of the exposure, [redacted] a technician, was working at the Westinghouse Astronuclear Laboratory Experimental Facility at Waltz Mill, Pennsylvania under License 37-09442-01.

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