



# JONES & LAUGHLIN STEEL CORPORATION

ALIQUIPPA WORKS DIVISION

ALIQUIPPA, PA.

GENERAL OFFICES  
3 GATEWAY CENTER  
PITTSBURGH 30, PA.

April 23, 1970

U. S. Atomic Energy Commission  
Washington, D. C. 20545

Attention: Mr. Lawrence D. Low, Director  
Division of Compliance

Dear Mr. Low:

In reference to your letter dated March 24, 1970 concerning items of non-compliance which were noted during the inspection conducted on January 29, 1970, of our activities authorized under AEC By Product Material License No. 37-02567-03, the following is submitted in reply.

1. Items 1, 2(a), 3(a), and 4 (posting Electrical Equipment Room)

Effective January 30, 1970, no personnel have performed, nor will perform, maintenance and repair on any source holder unit. Arrangements have been made for return of source holder units to the supplier, Brun Sensor Systems, Inc. when there is any need for their repair. This need for repair is determined by qualified supervisory maintenance personnel under the supervision of the Radiation Safety Office, J. W. Hock.

Written instructions for the installation and/or removal procedures of the source holder units from the Continuous Casting Machine have been issued by the Radiation Safety Officer, prohibiting the disassembly (opening) of any source holder unit.

2. Item 2(b) "Surveys"

Radiation surveys have been conducted at the Continuous Casting Machine in order to evaluate all personnel radiation exposures for routine operations and maintenance activities. Supervisory personnel have compiled data to describe personnel occupancy time in the vicinity of the casting machine, distances from the source devices, and descriptions for each job.

All data are being correlated to derive average radiation levels and occupancy times for all personnel. Evaluations are being made in order to determine individual radiation doses to the whole body in any period of one calendar year.

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Monitoring techniques are being investigated in order to obtain practical, meaningful monitoring. It has been determined to date, due to the peculiarities of the installation, such things as geometry factors (personnel occupancy at different angles from the source units) (location of dosimeter on personnel), radiant heat, and necessary replacement of damaged source holder units onto the casting machine, affect the reliability of normal personnel monitoring techniques.

3. Item 3(b) (permissible levels - unrestricted area)

Due to the nature of work required for operation and maintenance of the Continuous Casting Machine, only qualified trained personnel work in the vicinity of the casting machine and the associated Mold Level Gauges. Therefore, the area of the casting machine is functionally a "restricted area" for purposes other than radiation protection.

However, for purposes of radiation protection, written procedures have been issued by the Radiation Safety Officer, J. W. Hock, that provides supervisory control of all personnel working in the vicinity of the source holder units at a distance of 3 feet from the mold table (casting machine), and thereby establishes a "restricted area".

Investigations are being conducted to redesign the internal shielding of the source holder units as well as to design radiation shields to be placed over the source holder units, thereby reducing the radiation levels to the limits of an unrestricted area.

4. Item 4 (posting Continuous Casting Line area)

Conversations with representatives of the supplier, Brun Sensor Systems, Inc., currently and prior to installation, said, "that the painting of a complete source holder unit in yellow and having the standard radiation symbol and the words: "Caution - Radioactive Materials" in magenta in one-inch letters, satisfies the requirements of 10 CFR 20.203(b)." This interpretation was based on the practicality of posting such an area as at the Continuous Casting Machine with six different source holder unit locations and still provide adequate warning to personnel.

Arrangements have been made for J & L Steel personnel to maintain this posting on the source holder devices in a legible condition at all times.

Training sessions are also being arranged for all personnel to review all radiation survey data, the meaning of warning labels and signs currently in use, and the radiation safety procedures issued by the Radiation Safety Officer.

A review of radiation survey results and the estimated occupancy times indicates that areas in which levels exceed 5 milliroentgens per hour are not normally accessible to personnel. However, for such times as the various maintenance activities require personnel to temporarily work in a "radiation area," the area will be posted with the required radiation warning signs. It is anticipated that occupancy times in the future will be significantly reduced for these areas as experience is gained with this new process.