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# JONES & LAUGHLIN STEEL CORPORATION

ALIQUIPPA WORKS DIVISION

**ALIQUIPPA, PA.**

GENERAL OFFICES  
3 GATEWAY CENTER  
PITTSBURGH 30, PA.

May 21, 1965

U. S. Atomic Energy Commission  
Division of Licensing and Regulations  
Isotope Branch  
Washington, D. C. 20025

Attention: Mr. Robert Brinkman

Gentlemen:

Enclosed is our application for license of a Model 506 Nuclear-Chicago Density Gauge containing up to a 2 curie Cesium 137 radioactive source. This Gauge is to be used to measure bulk density as an integral part of the Qualicon 5072 Nuclear-Chicago Corporation Bulk Moisture Gauge. The Model 5072 system also contains a 2 curie plutonium-beryllium source for hydrogen analysis. Licensing information is being filed separately with the Source and Special Nuclear Materials Branch of the Division of Material License for the special nuclear material.

The Qualicon 5072 Bulk Moisture Gauge is to be obtained from Nuclear-Chicago Corporation initially on a rental-purchase agreement for approximately four (4) months. It is tentatively felt that it will then be purchased by Jones & Laughlin Steel Corporation.

If any additional information is required, we shall be pleased to provide it.

Very truly yours,

T. B. Duckworth, Superintendent  
Blast Furnace Dept. - Aliquippa Works

U.S. ATOMIC ENERGY COM.  
REGULATORY DIVISION  
MAIL & RECORDS SECTION

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### C. Maintenance or Repair

Maintenance and repair of the device containing the sealed cesium 137 source will be performed only by Nuclear-Chicago Corporation or by other persons specifically authorized by the A.E.C. to perform such services.

Maintenance and repair of the attendant gauge circuitry, the coke weigh hopper and the gauge mountings will be performed by experienced Jones and Laughlin Steel Corporation maintenance personnel as required. In the event maintenance work is required in the immediate vicinity of the device containing the sealed source, the shutter will be locked in the "closed" position.

The source head assembly containing the cesium 137 source will be removed from its mountings whenever deemed necessary by the Radiation Protection Officer. The shutter will be locked in the "closed" position, and the device stored in accordance with 10 CFR 20 until returned to its mountings.

### D. Leak Test Procedures

Initial leak testing of the source and mechanical inspection for proper operation of the on-off mechanism (shutter) will be carried out by Nuclear-Chicago Corporation personnel. Leak testing and shutter inspection will be performed at six month intervals by Nuclear-Chicago Corporation personnel or by such persons specifically authorized by the A.E.C. to perform such services.

Records of leak test results will be kept in units of microcuries and maintained for inspection by the Commission.

### E. Emergency and Notification

In the event of an emergency involving the source holder, the Director of the appropriate A.E.C. Regional Compliance Office, and the Nuclear-Chicago Corporation, will be contacted immediately.

The area in the vicinity of the source holder will be barricaded and restricted to personnel until an inspection is made by qualified person(s).

### F. Operating Procedure

The gauge will be operated by Jones & Laughlin Steel Corporation personnel in accordance with the instructions described by the manufacturer and Jones and Laughlin Steel Corporation Industrial Hygiene personnel.

### ITEM 15 - Waste Disposal

No waste disposal is involved. In the event the gauge is damaged or its use discontinued, we shall return the gauge, with the shutter locked in the "closed" position, to Nuclear-Chicago Corporation or other persons specifically authorized by the Commission to receive such material. Nuclear-Chicago Corporation, or the aforementioned specifically authorized persons, will be contacted for detailed shipping instructions.

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Attachment - Form AEC-313 (5-58)  
JONES & LAUGHLIN STEEL CORPORATION  
Aliquippa Works Division  
Aliquippa, Pa.

May 21, 1965

ITEM 13 - Facilities and Equipment

It is our understanding that full drawings and description of this Gauge have been supplied to you by the Nuclear-Chicago Corporation which indicate that adequate shielding is provided by the shielding incorporated in the device. Enclosed are drawing Nos. AA-3611, AA-3612, AA-3613 and AA-3614 which describe our specific use of the Gauge.

ITEM 14 - Radiation Protection Program

A. Control Measures

The Model 506 gauge, containing the sealed cesium 137 source will be shipped with the shutter locked in the "closed" position and will be locked in this position at all times other than when the gauge is physically mounted on our coke weigh hopper. When mounted and coke bulk density-moisture measurements are being made, the shutter will be locked in the "open" position. Keys to the shutter mechanism will be retained by the Radiation Protection Officer or his authorized representative.

Access to the interior of the coke weigh hopper on which the gauge is mounted will be restricted by locked gates. Keys to these gates will also be retained by the Radiation Protection Officer or his authorized representative.

If access to the interior of the weigh hopper is required, the shutter will be locked in the "closed" position prior to unlocking the access gate. If the gauge is removed from the coke weigh hopper, the shutter will be locked in the "closed" position prior to its removal.

The gauge and the surrounding area will be posted in accord with the requirements of 10CFR20, if required.

B. Initial Survey

The gauge will be installed by Jones & Laughlin Steel Corporation personnel under the direction of Nuclear-Chicago personnel. After installation, the gauge will be surveyed for gamma radiation to insure that radiation levels do not exist in excess of the current levels specified in 10CFR20 and 10CFR30. A copy of the radiation protection survey will be kept on file for future reference. Initial calibration and check out of the gauge and equipment will be carried out by engineering personnel of Nuclear-Chicago Corporation.