Mallett

CONFIRMATORY ACTION LETTER

JAN 04 1985

Crane Company
Midwest Fittings Division
ATTN: Mr. James F. Bringer
General Manager
1450 South Second Street
St. Louis, MO 63166

License No. 24-00563-02

Gentlemen:

This letter is to confirm an agreement reached between Crane Company and members of my staff during an enforcement conference on January 3, 1985, pertaining to modifications of your radiography operations.

It is our understanding that (1) an individual shall be posted to maintain surveillance of unrestricted areas outside of the Crane Company facilities to ensure the radiography source is retracted whenever an individual enters the area adjacent to the Crane Company facilities; and (2) this surveillance shall continue until Crane Company modifies the fixed radiography facility to meet regulatory requirements.

If our understanding of your planned actions described above is not correct, please contact Mr. R. E. Burgin of this office at (312) 790-5622.

Sincerely,

James G. Keppler
Regional Administrator

cc: DMB/Document Control Desk (PIDS)

RIII	RIII	RIII	RIII	RIII	RIII	RIII	RIII
Burgin/jl	Wiedeman	Mallett	Axelson	Schultz		Davis	Keppler
1/3/85	1/4/85	1/4/85	1/4/85	1-4-85		1/4	1/4/85

ENFORCEMENT BOARD MEETING NOTES:

CRANE COMPANY
MIDWEST FITTING DIVISION
ST. LOUIS, MO
NRC LICENSE NO. 24-00563-02

INCIDENT: EXPOSURES TO MEMBERS OF THE GENERAL PUBLIC FROM RADIOGRAPHY

9/18/84 - 3 Union Electric Co. employees working on utility poles and transformer platform were exposed to cobalt-60 radiography source for approximately one half hour.

10/10/84 - Crane Co. sent notification to NRC
- estimate maximum exposures of 340 millirem to individuals

10/26/84 - NRC inspector on-site at Crane Co.

ITEMS OF NONCOMPLIANCE IDENTIFIED: SL

1. 10CFR20.105(b) - Excessive radiation levels in unrestricted area (on the order of 700 mr/hr)* III

2. 10CFR34.41 - Failure to maintain surveillance of high radiation area to prevent unauthorized or accidental entry III

3. 10CFR20.203 - Inadequate posting of HIGH RADIATION AREA IV/V

et al

RECOMMENDATION : Enforcement meeting with subsequent civil penalty

* Arrangements have been made with Union Electric Co. to provide a cherry picker and at least one of the exposed individuals or Monday, Nov. 19, 1984, for the purpose of obtaining accurate radiation level readings. The licensee will be requested to make the involved source available on this day for the reinactment.

CONVERSATION RECORD

TIME: 9:15 | DATE: 10/15/84

TYPE: ☐ VISIT ☐ CONFERENCE ☒ TELEPHONE ☐ INCOMING ☒ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO.
	Crane Midwest Fittings.	314/621-8300

ROUTING

NAME/SYMBOL	INT

SUBJECT: Difficiencies in Renewal application.
Mail Control No. 15450

SUMMARY

A.) Material:

① Source Changer CMF Model #1 - omit from License Application - will approve + amend @ a later date.

omit. ② Item 6B Ir-192 (10 Curies) A-424-1 - returned to manufact.
③ Item 6D Co-60 (20 Curies) A-424-18 never rec'd the source

④ Change retraining period from 6 months to 1 yr.

⑤ Joe Mueller replaced T. Voss as NDT supervisor - Need Mr. Mueller's training etc + D. Betz. ~~⑧~~? What are D. Betzs duties - Not a Radiographer.

⑥ Radiographer must have 3 months O.J.T.

⑦ Audible alarm is in place @ Fixed facility - operates with a buzzer when entrance to cell is breached.

ACTION REQUIRED

(over)

NAME OF PERSON DOCUMENTING CONVERSATION: J.R. Madera | SIGNATURE: J.R. Madera | DATE: 10/15/84

ACTION TAKEN

SIGNATURE | TITLE | DATE

(3.) Submit Facility surveys in & around cells when sources are exposed and when they are in the stored or shielded position.

(a) only on rare occasion will you perform radiography outside the cells in and around your facility.

(9) Reference point in sect III (2.12) of manual for surface readings off device should be specified. Not 5 to 200 mR/hr - for surveys taken after each shot when source is returned to device.

(10) Eckert - has received no formal training in retrieval. - Tech/Ops. would be called.

(11) Surveys prior to shipments of sources back to manufacturer are being performed: 3', surface + wipe.

CUSTOM MADE SEALED SOURCES AND DEVICES

GUIDE FOR STANDARD FORMAT AND CONTENT OF APPLICATIONS FOR HEALTH AND SAFETY REVIEWS OF CUSTOM MADE SEALED SOURCES AND DEVICES CONTAINING LICENSED RADIOACTIVE MATERIAL

I PURPOSE AND SCOPE

This guide provides a description of the content and format of an application for the possession and use of custom made sealed sources and/or devices by an applicant specifically licensed pursuant to §30.32, Title 10 Code of Federal Regulations, Part 30. Use of this format will ensure the completeness of the information needed for the custom review and will aid in shortening the time required for the review process.

II CONTENT OF APPLICATION FOR CUSTOM REVIEW AND LICENSING OF SEALED SOURCES AND DEVICES

The applicant shall submit sufficient information regarding each model of sealed source and/or device to enable the NRC to make a safety analysis of the sealed source and/or device including safety and efficacy of the proposed use. Such information shall include:

1. Identification

A. Sealed, plated or foil radioactive source(s).

(1) If the radioactive source design is registered with the NRC or an Agreement State, specify the manufacturer, model number, isotope and maximum activity for each source to be incorporated into the device.

(2) If the sealed source design has not been registered with the NRC or an Agreement State, provide the information as outlined in Appendix A for the custom source(s).

B. Device

(1) Specify the name and address of the manufacturer.

(2) Identify the device by type or descriptive name and model number or other specific model designation.

2. Proposed Use

A. Describe the proposed use of the device and identify the environments and operating conditions expected during normal conditions of use. Include descriptions of the types of users, locations of use and the circumstances of normal use.

B. Describe the probable effects of severe conditions on the device, including accidents and fires, and possible diversion from intended use.

3. Construction

A. Submit engineering drawings of the source housing, identifying all materials of construction, dimensions, methods of fabrication and means of incorporating the radioactive material into the source housing and device.

B. Include a detailed description of all special design features (for example, shutters, fail safe on-off mechanism, interlocks, etc.) which protect the radioactive material from abuse and minimize the radiation hazards. Describe in sufficient detail so that the nature, function and method of operation are clearly defined.

NOTE: If device is foreign made, all drawings, notes, descriptions etc. shall be in English.

4. Human Access

Describe the degree of access of human beings to the radioactive material contained in the device and to the radiation emitted from the device during normal conditions of use.

5. Radiation Profiles

Provide calculations, estimates or measurements where available of the radiation profiles, e.g., expected dose rates at 5 cm, 30 cm and 100 cm, from the most and least accessable surface of the custom device with the shutter(s), on-off mechanism(s), etc. in (1) the open or "on" and (2) closed or "off" positions. These radiation profiles should be provided for each kind of radioactive material and maximum activity expected to be used in the device.

6. Labeling and Instructions for Use

Submit facsimilies of the labeling or marking to be placed on the device. Include a description of where the device will be labeled. The label or marking shall consist of the name, trademark, or symbol of the manufacturer, assembler, or the licensee who will possess the custom device, the type and amount of radioactive material, the date of measurment, the standard radiation symbol and the words, "CAUTION RADIOACTIVE MATERIAL." The label or marking must be of the standard radiation caution colors as specified in §20.203, 10 CFR 20.

7. Availability of Services

Submit information stating who will perform the following services on the custom device. (If any of the listed services will be performed by someone other than the specifically licensed device manufacturer, provide a description of training and experience of the individual(s) who will perform the services and include a description of the procedures to be used in the performance of the services.)

A. Installation and relocation within the applicants' facilities, if applicable.

B. Initial radiation survey upon receipt, installation, etc. at the applicant's facility.

C. Leak Testing: (Required for all sealed sources other than gaseous, e.g., krypton-85, or sources with half-lives of less than 30 days.) A certificate showing that each radiation source contained in the device has been tested for leakage or contamination within six (6) months of the date of transfer to the recipient of the device must be provided to the recipient. Results of the leak testing shall be in units of microcuries and should be maintained by the licensed recipient for inspection by the Commission. State if the device manufacturer will furnish the leak test certificate on the finished device or, otherwise, fully explain the means of obtaining the initial leak test certificate.

D. Repair, periodic maintenance, shutter or beam control operations checks.

E. Source exchange.

F. Disposal in the event the custom device is no longer needed.

8. Test Results on the Finished Custom Device Prior to Use

The applicant shall specify that the tests listed below will be performed on the finished custom device to verify that the device meets specifications furnished to the NRC. If the test results are to be supplied to the recipient by the licensed device manufacturer, it should be so stated. If the specified tests are not to be conducted by the specifically licensed device manufacturer, the applicant shall specify the name(s), training and experience of the person(s) who will perform the tests; and a description of the procedures and equipment to be used for performing the tests shall be included. Copies of the test results on the custom device shall be maintained for inspection by the Commission.

A. Radiation profiles (isodose curves, for example, dose rates at 5 cm, 30 cm, and 100 cm.) of the custom device with shutter(s) and/or beam control mechanism(s) in both the (1) open ("on") and (2) closed ("off") positions. Radiation levels should be measured using the maximum activity of each kind of radioactive material to be used in the device.

B. Visual or other quality control inspections to determine if cracks, voids, or other manufacturing defects exist.

C. Shutter or other "ON"-"OFF" beam control operations.

D. Leak tests for radiation leakage or contamination prior to use.

E. Other Tests: Specify any additional tests to be done on the finished custom device to verify that the device can be operated safety with minimum radiation hazard.

9. Safety Analysis Summary

Submit a brief safety anlaysis summary on the evaluation of the ability of the custom design to withstand the normal conditions of handling, use, and storage; including corrosion, vibration, impact, and the probable effects on radiation containment and shielding of abnormally severe conditions, such as explosion and fire. Any additional information including results of experimental studies and tests which will facilitate the final determination of the safety of the custom device should also be included in the safety analysis summary.

APPENDIX A

CUSTOM MADE RADIATION SOURCE(S)

A. Custom Source Supplier

Identify by name and address the supplier of the custom made source to be used in the custom made device.

B. Identification

Identify the source by type or model number or other specific model or part number designation.

C. Radioactive Material

(1) Specify the radioisotope.

(2) Maximum activity per source in millicuries or microcuries.

(3) Chemical and physical form of the radioactive material.

(4) Descriptive details of the method of incorporating and binding the radioactive material in the source.

D. Construction

(1) Submit engineering drawings of the source capsule (both inner and outer capsule, if applicable) identifying all materials of construction, dimensions and methods of sealing the source.

(2) Submit drawings of the source holder, for example, the mechanical support for the source, if any, identifying materials of construction, dimensions and methods for mounting the source in the holder.

NOTE: If sealed source is foreign made all drawings, notes, descriptions, etc. shall be in English.

E. Labeling

Provide a description of the information to be engraved, etched or imprinted on the radiation source or a facsimile of the label containing this information to be attached to the source. Ideally the source labeling should include the words: "CAUTION - RADIOACTIVE MATERIAL," manufacturer's trademark or unique serial number, radionuclide activity, assay date, and the radiation symbol. Where labeling the

source is impractical, a tag containing the above information should be attached to the source, unless the attachment of such a tag is also impractical. NOTE: When a sealed source is permanently mounted in a device, source labeling is not required provided the device is labeled as specified above.

F. Source Assay

Describe the assay method used to determine the radioactive content of the finished source. The assay method shall be traceable to a National Standard.

G. Quality Control Inspections of Finished Source

Describe the tests to be performed on the finished source to ensure that the final product meets the design specifications. Where applicable provide information on the following minimal tests.

(1) Visual or other inspections to be performed on source seals or welds to ensure integrity of the finished product.

(2) Leak tests.

(3) Tests for determination of radiation levels at, for example, 5 and 30 centimeters from the external surface of the finished source averaged over an area not to exceed 100 square centimeters.

H. Additional Information

Submit any additional information, including experimental studies and tests that may have been performed on similar source designs, which will facilitate a determination of the safety of the source and efficacy of its use in the custom device.