

August 11, 1972

U.S. Atomic Energy Commission  
Materials Branch  
Directorate of Licensing  
Washington, D.C. 20545

Attn: Ms. Joan M. Giannelli

Dear Ms. Giannelli,

This is in response to your letter of August 8, 1972 with respect to approval of the gage designs covered by our application and letters of 5/24/72 and 7/12/72.

To answer questions posed in sequence:

We have requested approval of the Models SR1 and SR2 source holders for all models to allow flexibility in use. These gages will also be distributed to specific licensees and some have their own radiation regulations. These occasionally require levels on the surface of the gage or source holder lower than those which are acceptable in meeting the 5 mr/hr at 12" limit for distribution to general licensees. It is unlikely that we will have any need for use of the SR2 at or below 1000 mCi but it seems reasonable to obtain the option now rather than come back at some later date. The SR2 merely provides a greater amount of shielding.

The retaining ring is visually inspected, when compressed for insertion, for cracks. Normally a Walde Truarc ring will break rather than just crack. The incidence of breakage of these rings is virtually nil in the internal series of rings. The assembler can tell by feel that the ring is properly seated in its groove. Further inspection by use of a mirror verifies proper seating.

The lead and steel source tube spacers must be correct and in place. If the total length is too great the Truarc ring cannot be inserted. If too short, the ring will not hold the assembly firmly in place. Any condition that allows the source capsule to move around is untenable since the radiation reaching the detector would be erratic in level. Therefore, the assembler must assure that all components are in place. The prime consideration from a radiological safety stand point is, in our opinion, that the distance from the surface of the holder to the face of the source capsule be correct. This is verified by inspection using a depth gage.

The source is withdrawn from the source stock room and placed in the holder. A cardboard tag bearing the magenta on yellow "Propellor" sign together with the size and serial number of the source is wired to the

AUG 23 1972

holder. Then, after assembly is complete, the standard stainless steel "Caution Radioactive Material" label is stamped with the required information and fastened to the holder with drive pins. No labels are prepared in advance as stock. Each label is stamped for the particular source-holder and source.

Radiation surveys are made for each individual gage as built. As shown on the radiation survey of the ED 8 gage, thirteen measurements on accessible surfaces and thirteen measurements at 12" from the gage are made routinely. These points of measurement are chosen from experience and when highest radiation level may be expected. The gage is scanned also, looking for unacceptable levels. Especially on the surface of the gage, generally, and the source holder in particular, a careful inspection for stray points of unacceptable level, is made.

We do not do "statistical sampling" in inspection and testing. 100% inspection and testing of each gage has always been our practice. This includes, but is not restricted to, proper labelling, source size, shutter operation, presence of lock and proper operation, thorough radiation survey, stability of measurement which verifies geometric stability. These final checks are in addition to those of welds and conformity with design specifications which are carried out as the device is constructed.

The writer is not sure of the full intent of the question regarding the difference between models. The gage may be considered as in three parts, the source holder assembly, the pair of mounting brackets, and the detector assembly. The source holder assemblies SR1 and SR2 and the detector assemblies remain the same for all models. The mounting brackets are the only variable in the physical construction other than those previously described for the source holders (placing of source, etc.). A multitude of pipe size standards exist which make flexibility in the design of the brackets mandatory. Therefore, each different bracket set has different component dimensions but construction will conform to the general conditions shown on the three drawings mentioned.

Additional radiation surveys will be provided as new gages are built. These will be as ordered by customers. As stipulated previously we will use only the SR2 source holder on sources larger than 1000 mCi. Since larger pipe gages and use of large sources such as 5000 mCi constitute a very small percent of our business, some time may elapse before we can supply such surveys. The only survey of an actual gage presently available is the one previously submitted.

With regard to labelling, our labels will be altered to conform to enclosure number 2 with the exception of Item A(4) which from previous agreement, on other general license devices, allows electrical maintenance on the detector after closing the source shutter. Please note that our license 34-00639-03G item 11(4) is worded differently than the suggested standard. This item may be construed as allowing electrical maintenance involving removal of the cap on the detector. Two copies of Dwg. C-20190 are included which show that there is no hazard in servicing the detector with the shutter closed.

Although you will note, from the page from our license, enclosed, there

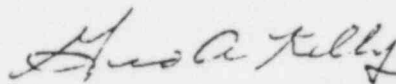
is no reporting requirement for loss, theft, etc., we will include this on a new label.

When a new label has been prepared, we will send a copy to you for approval.

Section 8, page one, will be modified to include, with reasons, the statement in capitals "THIS DOES NOT APPLY TO A GENERAL LICENSEE".

The writer believes all questions posed have been answered, however, please telephone the writer, collect, should more information be desired. Two photographs of the prototype ED 8 with SRL source holder are included.

Very truly yours,



George A. Kelly  
Staff Engineer  
Licensing

GAK/mo

Enclosures  
C-20190 (2)  
Page 6 of License  
ED 8 photographs