From: William Ward

To: internet:brad@barak-online.net, internet:mepro en...

Date: Tue, Dec 26, 2000 10:41 AM

Subject: Additional questions for the MEPROLIGHT, Inc. sights & watches

Mr. Fisher,

Below is email letter Mr. Ujagar Bhachu sent you last week after his review of your application. Mr. Bhachu had some problems sending the letter and since we had not heard back from you, I decided to resend it to the email addresses I have for you to ensure that you received it and could respond. If you have already received this, please disregard this email, there is nothing new here. Thank you.

Bill Ward

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Dear Mr. Fisher:

We have reviewed your application for a sealed source or device registration and your application for an exempt materials license, both dated June 27, 2000 and concerning the distribution of gun and archery sights, watches and altimeters and personal markers containing tritium.

As discussed previously in a telephone conversation, at this time we are not processing the registration certificate associated with personal markers.

On page S-6 of your application, you indicated that you would enclose a notification with your devices that they should be returned to an authorized dealer or distributor for corrective action or disposal. We anticipate that your returned self-luminous devices issued to persons exempt from the requirements for license pursuant to 10 CFR 30.19 may be subjected to two general type of repairs: (1) routine repairs, such as of a battery in a watch or time adjustments: (2) and repairs requiring replacement of tritium sources, handling the radioactive source or sources and /or the modules containing the tritium sources and involve such processes as removal, disassembly, retraction, reconstruction, reinsertion or replacement of the source modules. These processes are similar in many respects (they may, in fact in many respects, be identical) to processes used in the initial manufacture of these devices. Corrective actions of this type do represent issues of radiological health and safety, issues which are essentially indistinguishable from the radiological health and safety issues addressed at the initial manufacture under a specific license issued pursuant to 10 CFR 30.22. Therefore, repairer of type (2) repairs must obtain a specific NRC or Agreement State byproduct material license to authorize the return of the repaired devices to exempt persons.

Please note that there is no regulatory requirement for the products to be returned to a dealer or the distributor, nor a prohibition against the end user discarding exempt products in normal trash.

Finally, although your possession license issued by the Agreement State stated that damaged and leaking sources shall be shipped back to the manufacturer, 10 CFR 110.23 does not authorize the export of products containing tritium as radioactive waste or for tritium recovery or

recycle purposes. In this connection, you may wish to contact NRC- Office of International Programs for further information.

In reviewing the application, we found that some clarification and more information is needed to process your application to completion. Therefore, it is requested that you fully address the issues outlined below at your earliest convenience.

- 1. On, page S-2 of your registration application, you stated that the dimensions of the storage area were 10 ft. x 10 ft. x 14 ft., located within a larger area of 30,000 square feet. These dimensions and the air exchange rates in the storage areas and the warehouse appear to be identical to the information supplied in HESCO's application. Is this space intended to be a generic bounding model for analysis purposes, or does this representative an actual storage area? Please clarify the basis of the physical dimensions and air exchange rates you used in your calculations.
- 2. In your dose calculation on page S-13, concerning the maximum credible accident, you assumed that there would be a 50% release of the maximum quantity authorized, 750 Curies of tritium. A persuasive argument can be made that any condition which may cause a 50% release, such as a severe fire, would likely cause a 100% release, (i.e. gross failure of glass containment of sources at an elevated temperature). Subsequently in your calculations, you mitigate the total dose received with an assumption that only 2% of the tritium would be in a tritiated water form which would be available for ingestion and that the 98% of the tritium remaining in gaseous form would not be ingested. This assumption appears to be reasonable for a single device failure, but does not appear to be reasonable for the gross failure in a enclosed room situation postulated in your application.

The dose received is also dependent on the time spent in the airborne radiation space and particularly the storage space. A higher dose than you calculated could be achieved by the release of 10% of the tritium into the volume of the storage room, and personnel remaining in the room more than five times as long (more than five minutes). The occurrence of a smaller quantity, longer exposure time, scenario is more likely to occur since other factors (such as noxious gases or extreme heat) would not discourage personnel from remaining in the vicinity. Therefore, please demonstrate how the probability is negligible that a person would not receive an external radiation dose or dose commitment in excess of the dose to the appropriate organ as specified in Column IV of the Table 10 CFR 32.24.

If you have any questions, please contact me at (301) 415-7894 or by email at <u>USB@NRC.GOV.</u>, or William Ward at (301) 415-7038, or by email at<u>WRW1@NRC.GOV.</u>

Sincerely,

Ujagar S. Bhachu, P. Eng., C. Eng., F. I. Mech. E.

CC: Ujagar Bhachu

Mail Envelope Properties

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Subject: Additional questions for the MEPROLIGHT, Inc. sights & watches

Creation Date: Tue, Dec 26, 2000 10:41 AM

From: William Ward

Created By: OWFN_DO.OWF1_PO:WRW1

Recipients Post Office internet brad (internet:brad@barak-online.net)	Action Transferred	Date & Time 12/26 10:42 AM
Post Office internet mepro_eng (internet:mepro_eng@mayan.org.i	Transferred	12/26 10:42 AM
Post Office TWFN_DO.twf4_po USB CC (Ujagar Bhachu)	Delivered Opened	12/26 10:41 AM 12/26 10:56 AM

	Domain.Post Office	Delivered	Route
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internet internet:barak-online.net internet:barak-online.net internet:mayan.org.il TWFN_DO.twf4_po 12/26 10:41 AM TWFN_DO.twf4_po

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MESSAGE 8017 Tuesday, December 26, 2000 10:41 AM

Options

Auto Delete: No

Expiration Date: Thu, Jan 25, 2001

Notify Recipients:YesPriority:StandardReply Requested:NoReturn Notification:None

Concealed Subject: No

Security: Standard

To Be Delivered: Immediate
Status Tracking: All Information