From: "Brad Fisher" <brad@barak-online.net>
To: <USB@nrc.gov>
Date: Wed, Dec 27, 2000 7:00 AM
Subject: Response to your email questions

Dear Mr. Bhachu,

The following was faxed to you this morning but, because of the urgency of getting quick turnaround, I thought it best to send the answer by email as well.

If you need any further information to conclude your review, please contact me immediately.

Brad Fisher
MEPROLIGHT

27 December 2000

Page 1 of 2

US Nuclear Regulatory Commission

Materials Safety Branch

ATTN: Mr. Ujagar S. Bhachu

SUBJECT: Additional Questions Regarding our Application

Dear Mr. Bhachu,

The following information is provided in response to your email that was forwarded to us on 26 December.

With regard to the two general comments made about possible need for additional licensing, we thank you for the information and will address the issues separately since they do not have any bearing on the issuance of the requested registrations and license. The two subjects requiring immediate response are addressed below:

1. Dimensions of Storage Area on Page S-2

The dimensions used in the license application were based on a room that we intended to build, and based on our previous experience at HESCO. In fact, a suitable room of slightly larger dimensions (30% larger than that described in the application) presently exists at our new

facility. The room, constructed of concrete block, is 16 ft x 13½ ft x 8½ ft. It is located on an external wall, within a larger work area of 30,000 sq ft. and is vented to the outside by a 200 cfm fan which will be operated to provide a minimum of two air changes per hour. The larger work area has a continuous air change of once every two minutes.

As you know, the 30% larger volume for the storage room would work to the advantage of any dose rate calculations. It would reduce the concentration limit in the controlled area from 7.8 E-7 mCi/m3 to 5.9 E-7 mCi/m3, and the annual committed dose under normal conditions from 0.022 mrem/year to 0.017 mrem/year.

Likewise, the dose commitment under accident conditions would be reduced by 30% for occupant and fireman to 2.77 E2 mrem and 5.44 E2 mrem respectively. (see explanation of assumptions for dose calculations, below)

2. Dose Calculations on Page S-13

The calculations and assumptions have been used by expert health physicists and the NRC for at least 15 years. They appear in various NRC studies and numerous license applications as well as in NUREG-SR1556 and NUREG 1562. The rationale used is more than likely available in the NRC history files for these two documents. The documents are discussed on the following page.

Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Exempt Distribution Licenses (NUREG-SR1556, Vol. 8). Attachment 1 to Appendix O of this document, entitled “Sample Calculation of Maximum Dose Commitment: Estimated radiation dose commitments” provides an example (accident conditions for storage) which has been the model for both calculations and assumptions. It clearly states the assumption of “50% of the sources ruptured”. Further in the same example, it is stated that “a more reasonable estimate of dose commitment would be obtained by using the maximum fraction of tritiated water in the source, 0.02…” The example also uses the 1 and 2 minute figures as assumptions for the exposure of an occupant and fireman.

Standard Review Plan for Applications for Licenses to Distribute Byproduct Material to Persons Exempt from the Requirements for an NRC License (NUREG-1562). Attachment 1 to Appendix

11 of this document, entitled “Sample Calculation of Maximum Dose Commitment: Estimated radiation dose commitments” provides the identical example and assumptions.

I hope that this information is sufficient for your needs and look forward to hearing that the license process has been completed.

Sincerely,

Brad Fisher

Operations Manager

CC: "Fritz Sturz" <FCS@nrc.gov>, "J. Bruce Carrico" <JBC@nrc.gov>, "William Ward" <WRW1@nrc.gov>

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Message-ID: <001901c06ffb$e8a0ca60$01c7c7c7@brad>
From: "Brad Fisher" <brad@barak-online.net>
To: <USB@nrc.gov>
Cc: "Fritz Sturz" <FCS@nrc.gov>, "J. Bruce Carrico" <JBC@nrc.gov>,
"William Ward" <WRW1@nrc.gov>
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JBC CC (J. Bruce Carrico)

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