Reactor Watch LP
5312 Derry Ave., Suite B
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May 6, 2014

Hector Rodriguez-Luccioni, Ph.D.
Licensing Branch
Division of Materials Safety and State Agreements
Office of Federal and State Materials and
Environmental Management Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: Docket No. 030-38703, Mail Control No. 582782, Request for Additional Information

Reference 1: Letter dated April 15, 2014, from Hector Rodriguez-Luccioni, Ph.D, to Jimmy Olmes, Subject: Request for Additional Information.

Reactor Watch LP has received and reviewed your request for additional information regarding our Exempt Distribution License application (Reference 1). In response to your request we are providing the following information.

Item 1: In item 6 of your application package, under “Purpose(s) for Which Licensed Material will be Used,” you stated that Reactor Watch will not be manufacturing the sealed sources or the watches containing the sealed sources. Reactor Watch will be importing, possessing, storing, repairing, using and distributing the watches for initial sale. The watches and components will be manufactured by a company in accordance with the requirements in their NRC Exempt Distribution license (31-23712-01E) and Sealed Source and Device Registry (NY-127-S-101-S). Please clarify the address of mb-microtec where you will be receiving the watches.

> ***Response: Reactor watch will be obtaining the watches from Keytime Enterprises Limited, located at Sunray Industrial Centre, 610 Cha Kwo Ling Road, Hong Kong. This is the same facility that is contracted and used by mb-microtec to assemble the watches imported into the U.S. and distributed under the mb-microtec Exempt Distribution License.***

2. In item 5 of your application package, under “Radioactive Material,” you stated that the watches will be limited to 25 millicurries per watch, 5 millicuries per hand, and 15 millicuries per dial. Please

provide details of construction and design of final product that support your statement as required by 10 CFR 32.14(b)(2).

Response: As with all distributors, Reactor Watch will order watches based on existing design specifications in the same manner as when the watches were ordered and received directly from mb-microtec. We order and receive watches with and without H-3. The watches with H-3 which we plan to receive and distribute under our Exempt Distribution license include at least one source per hand, with a maximum of three sources on hands, and 4 to 12 sources on the dial face. The nominal activity per source tube is less than 4 mCi and is based on the illumination requirements of the watch. The source tubes are ordered and received by Keytime directly from mb-microtec in the same manner as they are for the watches distributed by mb-microtec under their exempt distribution license. The mb-microtec source tube models and nominal activity per tube used in the Reactor Watch watches are provided below.

Tube Model	*Nominal Activity per Source mCi*
T-6040-1	*1*
T-6041-1	*2*
T-6042-1	*2*
T-6043-1	*4*
T-6045-1	*2*
T-6261-1	*2*
T-6082-1	*3*
T-6080-1	*1*

The general watch model configurations received and which will be distributed by Reactor Watch under our Exempt Distribution license are provided below.

Watch Model	*Number and tube model of sources for hands*	*Max Activity per hand mCi*	*Number and tube models of sources per dial*	*Max Activity per dial mCi*	*Total Watch Activity mci*
1	*2 (Total Hands) T-6043-1 X1 T-6042-1X1*	*4*	*4 (Total) T-6040-1 X 3 T-6041-1 X1*	*5*	*11*
2	*3 (Total Hands) T-6043-1 X1 T-6042-1X1 T-6080-1 X1*	*4*	*8 (Total) T-6040-1 X 6 T-6041-1 X2*	*11*	*18*
3	*3(Total Hands) T-6043-1 X1 T-6042-1X1 T-6080-1 X1*	*4*	*12(Total) T-6040-1 X 11 T-6041-1 X1*	*13*	*23*

3. As required by 10 CFR 32.14(b)(3), please provide the method of containment or binding of byproduct material in the final product.

Response: As specified by mb-microtec assembly procedures the sources are attached to the hands and dial face by means of a 3M epoxy or double sided tape or secured via a mechanical ring strap. All watches are physically examined following the attachment process to observe the source adherence.

One percent of watches are drop tested from a 1 meter height to a hard surface following the source attachment procedure. Dropped watches are physically examined to verify the sources are still firmly attached.

One hundred percent of watches are glow tested by examining the watch in a dark container or room to verify the illumination output and ensure the sources are intact and firmly attached to the watch surfaces.

4. As required by 10 CFR 32.14(b)(7), please provide the radiation level and the method of measurement.

Response: 10CFR 32.14(b)(7) applies to products for which limits on levels of radiation (i.e absorbed dose rate) are specified in 30.15 of this chapter. If such limits are specified in 30.15, then the applicant must provide information on the radiation level and method of measurement. Section 30.15 does not specify levels of radiation for tritium watches, only for promethium 147 timepieces (30.15(a)(1)(vii)). Therefore this requirement does not apply to tritium watches.

Reactor Watch notes that the sources used in the watches are sealed sources of H-3, not promethium 147. The H-3 sources are received from mb-microtec and are already approved for distribution under their Exempt Distribution license. The beta radiation from the sources is completed attenuated by the tube housing, and the level of bremsstrahlung is negligible at the activity levels used. The surface dose rates on the sources as noted and already approved in the SSDR (NY-1271-S-101-S) are negligible. These sources are certified by the original manufacture to meet the nominal activity limits requested and the dose rate limits in their SSDR. The sources are not modified during the watch manufacturing process. No wipe test is required and no additional surveys are required.

As noted above 100 percent of watches are glow tested by examining the watch in a dark container or room to verify the illumination output and ensure the sources are intact and firmly attached to the watch surfaces following assembly.

If you have any additional questions please feel free to contact me.

Sincerely

Jimmy Olmes