

mb-microtec

self activated illumination

October 3, 2019

Mr. Tomas Herrera,
Materials Safety Licensing Branch
Division of Material Safety, State, Tribal, and
Rulemaking Programs
Office of Nuclear Materials Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

RE: NRC RAI Dated September 17, 2019

Dear Mr. Herrera,
Please find mb microtec's response to the questions in your recent RAI below.

Question A.1:

In your amendment request, you indicated that new watch models may contain up to 4 gaseous tritium light sources (GTLS) per hand. Please provide drawings of the watch hands for those watch models that use up to 4 GTLS.

Response:

Drawings of the hands with 4 GTLS's are included with this response.

Question A.2:

Please confirm that only the new Models 101A, 101B, 101C, 101D and 101E will use up to 4 GTLS on the minute and hour hands.

Response:

mbm microtec confirms that only new Models 101A, 101B, 101C, 101D, and 101E will use up to 4 GTLS's per hand.

Question A.3:

In your amendment request, you stated that "In the past several years, mb-microtec has procured new equipment that allows the company to manufacture GTLS's that are smaller in diameter and shorter in length." Please discuss whether these dimensions are in conformance with the dimensions of the registered source models in NY-1271-S-101-S and indicate which source models may be used in the new watch models.

Response:

In 2015, mb microtec amended its NY SSD, NY-1271-S-101-S, to reflect the new capabilities from the aforementioned equipment. The dimensions of GTLS's used in watches do conform to those listed in the GTLS SSD with the minimum diameter of 0.3 mm being used.

Because watch styles vary within each series, any combination of the following GTLS's may be used in each series: 400/1, 400/2, and 400/3. The GTLS's are obviously sized according to the physical limitations of the watch design.

Question A.4:

Please discuss any potential for corrosion when using bronze as a new material for the bottom plate.

Response:

First, to clarify, bronze is used only for the watch case and not the watch back. Watch backs are steel or stainless steel. mb microtec does not expect corrosion to occur and as a preventative measure, provides instructions to the end user for proper cleaning of bronze. Additionally, there is a gasket between the watch back and the watch case to prevent liquids from entering the watch at the threads.

Question A.5:

In your amendment request, you stated that "mb-microtec claims that the increase in the number of GTLS's per minute and hour hand is an engineering equivalent to the previous 2 GL TS's." Please discuss the specifics of this determination.

Response:

mb microtec has determined that the increase in the number of GTLS's per hand is at least equivalent to 2 GTLS's per hand in the following manner. The smaller GTLS's will be adhered with the same adhesive materials as the larger GTLS's. Since the smaller GTLS's have less mass, and the retention force of the adhesive is more than 50 oz/in², the adhesive will retain the smaller GTLS's in place at least as well as the larger ones. In addition, the surface area in contact with the adhesive is proportionately about the same; about 10% of the circumference.

Question B.1:

Please provide us with the total quantity of byproduct material expected to be distributed in the devices annually as required by 10 CFR Paragraph 32.30(b)(8).

Response:

mb microtec expects to distribute devices that contain a total of between 600 and 800 Ci of H-3 annually.

Should you have any questions regarding this request, please contact me at tbrandon@diligistics.com or at (207) 370-6485.

Sincerely,

A handwritten signature in blue ink, appearing to read "Timothy Brandon".

Timothy Brandon
RSO mb microtec

Enc.: Drawings of hands with 4 GTLS's

M-hands with 4 trigalights

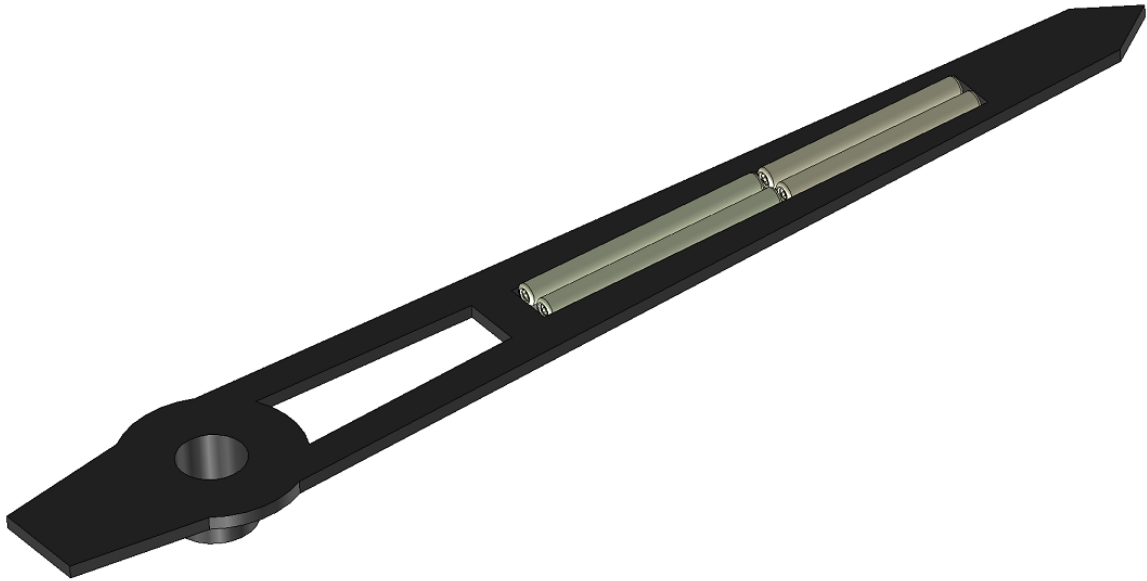


Abbildung 1 M-hand with 2x2 trigalights (hairlight)

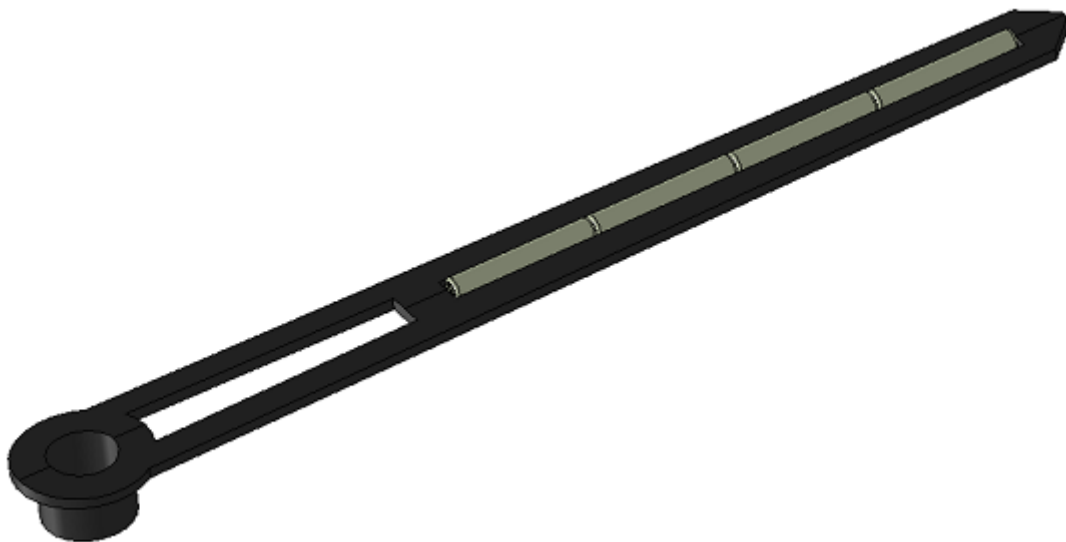


Abbildung 2 M-hand with 4x1 trigalight (hairlight)