

## Lawyer, Dennis

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**From:** Lawyer, Dennis  
**Sent:** Thursday, March 10, 2016 9:41 AM  
**To:** 'gfenton'  
**Cc:** Ullrich, Elizabeth  
**Subject:** Fenton Art Glass Co., Request for Additional Information Concerning Application for a License Amendment, Control 589275

Dear Mr. Fenton,

This is in reference to your letter dated March 8, 2016, submitting your Final Status Survey Plan for Termination for Nuclear Regulatory Commission License No. SUB-491, Docket No. 04003149 and in response to our electronic mail dated February 17, 2016. In order to continue our review, we need the following additional information:

1. In section 6, you state, "... where refractory material were used, is not anticipated to be caused by alpha emitting materials." It may be helpful to establish if alpha is detected from refractory material where licensed operations did not occur before writing the survey plan. In section 7.4, you describe using the reading of the refractory material for background. Depending upon the variability of the measurements of the refractory material, it may not be appropriate to use the sign test. Please ensure all background reading of refractory material is submitted with the final status survey results.
2. Please clarify your grid pattern in section 7.1. You established that you need 14 points and then discussed using a 81 grid intersections. However, you then calculated the grid length as 8.46 feet which would be based on the 14 points in the 93 square meter area. MARSSIM (NUREG-1575, Rev 1) section 5.5.2.5 discusses selecting survey points. The established starting point must be random and the fixed points are systematically established from this spot. The basis of MARSSIM is on statistical review of the area and needs to be followed accordingly. Due to the area configuration, you might consider smaller grids and more point to ensure you obtain 14 points within the established survey zone. Please determine the starting location of the survey grid by random methodology, produce a grid pattern that will establish at least 14 points in a systematic pattern within your survey zone. Please provide graphic detail of the grid and the survey locations within the zone.
3. In section 7.1's last paragraph, you state that direct measurements of other areas surrounding the identified class 1 areas will be conducted. This survey is not specific enough to ensure the area is not above DCGL values. Please establish a survey zone outside of the class one area and use MARSSIM protocol to establish survey methods and locations. This would include the walls and ceiling which you discussed later in the last paragraph in section 7.1.1.
4. The description in 7.1.1 of area factors appears to be incorrect. First, you may not use the area factors as established in Table 5.6 of MARRSIM for an indoor area. These are area factors for outdoor areas only. Second, you appear to be confused of the size of area that should be used in the table. It appears that one grid (based on 14 points) would be 6.6 (93/14) square meters. Utilizing Table 5.7, you could conservatively establish an area factor of 4.0 or you can run dose software such as RESRAD-BUILD or D&D to establish the specific area factor established by 6.6 square meters, if that is what you plan to use. After establishing the grid size above, please provide updated area factors.
5. In section 7.7.1, we concur with the calculation method for the alpha probability of detection. However, the probability of detection needs to be at least 90% probability using the lower efficiency 4pi efficiency of 13.15% which was established in Table 2 of your submittal. One error appeared that you used G equal to a DCGL of 100 dpm/100 square centimeters. The G for scanning is the established  $DCGL_{emc}$  and not the  $DCGL_w$ . This is the purpose of establishing the area factor where  $DCGL_{emc} = \text{area factor} \times$

DCGL<sub>w</sub>. It appears that your instrument efficiency and method would meet the scan MDC requirements but please present the proper calculated values after correcting the above in a revised survey plan.

6. You have not established your procedures of alpha scan surveys. Please outline the procedure and state what the surveyor will do upon obtaining an alpha count. In particular state how long with the surveyor wait before proceeding and what criteria will require a fixed survey.
7. In section 7.7.1, you state that you would only do a four foot square area at each point. You have established this area as a class one zone. Class one requires 100% scan surveys as stated in Table 5.9 in MARSSIM. Please state that you will perform 100% scan surveys of the class 1 areas.
8. In section 7.1.1 it states that surveys would be taken with a Ludlum Model 3 scaler meter. However, no calibration of a Ludlum Model 3 scaler was submitted. Please inform me if this was incorrect and you are using the Ludlum 2350 or submit the calibration information for the Model 3 with the probe you are using.
9. Calibration certificate for detector 43-92 shows an alpha efficiency of 26.3%. Based on the average of the three counts given, the efficiency should have been 25.3%. Please make this correction. Also, please submit the NIST source certificate for the Pu-239 source used.
10. Please inform me of how you will determine that the instruments are working properly during usage.

We will continue our review upon receipt of this information. Please reply to my attention at the Region 1 Office (Address below) and refer to Mail Control No. 589275. If you have technical questions regarding this letter, please call me at (610) 337-5366.

Your reply must be an originally signed and dated letter. The letter may be scanned and submitted as a pdf document attached to an email; or it may be transmitted by facsimile to (610) 337-5269; or it may be sent by regular mail. Please respond within 30 calendar days from the date of this e-mail.

Region 1 Office Mailing Address: Licensing Assistance Team, US Nuclear Regulatory Commission Region I, 2100 Renaissance Boulevard, Suite 100, King of Prussia, PA 19406-2713.

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