From:	Lawyer, Dennis
To:	Kouretas, Malgorzata E CIV USARMY ARDEC (US)
Cc:	Warner, Katherine
Subject:	Department of the Army, Request for Additional Information Concerning Application for a License Amendment, Control 602220, License No. SUB-348, and Docket No. 04006377
Date:	Tuesday, February 06, 2018 11:11:00 AM

Dear Ms. Kouretas,

This is in reference to your letter dated January 18, 2018, requesting for amendment to Nuclear Regulatory Commission License No. SUB-348, Docket No. 04006377. In order to continue our review, we need the following additional information:

Question 1-11 are referring to the Former Dog Pound Area

1. On page 10 and several other sections, you state the criteria for release is 15 millirem per year. However, you are using NRC screening values listed in Table B.2 in Appendix B of NUREG -1757 Volume 1, Revision 2, "Consolidated Decommissioning Guidance: Decommissioning Process for Materials Licensees," which correlates to 25 millirem per year. Please state the reason why you believe this meets a 15 millirem per year criteria.

2. It appears that your survey plan is only based upon radium 226 and thorium 232 as contaminates of concern. Although scoping samples would appear that these radionuclides are the most prevalent, it is not clear what the sampling minimum detectable concentration (MDC) would be for the other contaminates of concern that is listed on page 20 of your plan. Please present the individual MDC for contaminates of concern for the samples taken within the area being considered for release. Please state that the results of the samples from the plan will review all contaminates of concern for their potential impact on the contribution to dose in the area.

3. It appears in the characterization survey and sampling done in 2006, the samples mainly appear outside the area being considered for release. Please show a full page diagram of the area being considered for release, along with dimensions and where samples were taken within this area and the data obtained from the gamma scans for this area.

4. Page 20 lists contaminates of concern. Some contaminates are removed due to shorter half-life. Some of these contaminate that are removed have a longer than 120 day half-life. The NRC only allows decay and release of contaminates that have a shorter than 120 day half-life, so promethium 147 and antimony 125 need to be considered as a contaminate. Please state that these additional contaminates of concern will be reviewed for potential impact.

5. On page 33, you list Richard Lamoreaux as the ARDEC Radiation Safety Officer. Mr. Lamoreaux is no longer the ARDEC Radiation Safety Officer so please provide revise the contact information.

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6. The survey plan does not appear to discuss the remaining condition of the asphalt pad and how the surface of the asphalt pad will be surveyed or how it will be determined if the asphalt will be left in place or removed. Please detail the current condition of the asphalt pad, the method that the pad will be released, and the criteria for removal of the asphalt. Please provide a photograph of the area so that we may access the current condition of the asphalt pad.

7. In section 6.3, you state the screening Derived Concentration Guideline Limit (DCGL) for Ra-226 is 0.7 pCi/gm. However, for radionuclide's prodigy in equilibrium the value is 0.6 pCi/gm. Please inform us why the higher value is justified instead of using the 0.6 pCi/gm.

8. Figure 6 on page 66 of your Former Dog Pound survey plan shows the triangle sample pattern, but some of the samples points on row 5 don't appear to be spaced 14 feet apart. Additionally, the square footage of the example is 2600 square feet instead of the 2875 square feet as stated in section 7.6. Please provide a new example or state why the change in sample spacing and area size.

9. Section 7.9.5 uses Table 6.7 from Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) for determining the scan MDC. This table is given as guidance of what values are possible and should be calculated for the given conditions of the survey plan. It is noted that most items are approximately the same as in Table 6.7, however, the sample collection time is 2 seconds vs 1 second as stated in Table 6.7. Please calculate the scan MDC and show all calculations and conditions associated with the calculation.

10. It appears very little information is given on the reference area. Please provide where the background location is located and how it compares to the current site.

11. The RESRAD run as stated in Attachment 1 was not included. Please provide the RESRAD report for the area factors.

Questions 12-20 is concerning the Building 22 work plan and final status survey.

12. On page 1 and several other sections, you state the criteria for release is 15 millirem per year. However, you are using NRC screening values listed in Table B.2 in Appendix B of NUREG -1757 Volume 1, Revision 2, "Consolidated Decommissioning Guidance: Decommissioning Process for Materials Licensees," which correlates to 25 millirem per year. Please state the reason why you believe this meets a 15 millirem per year criteria.

13. In section 3.3, you state that there are partially buried pipes which appear to have come from Building 22. Please discuss the pipes potential to not be contaminated or provide previous surveys of the floor drains in Building 22 to demonstrate that the pipes were not impacted.

14. Section 6.12 uses the area factors from MARSSIM. However the RESRAD area factor you calculated was 3.6. Using this for the scan MDC correlates to a required scan rate of 2.5 pCi/gm. You state the scan MDC for the detectors is 2.8 pCi/gm which is above this value. Please discuss why this is satisfactory, change survey plan, or change calculations to demonstrate meeting the minimum detectable concentration on the scan.

15. Section 8.3 gives the problem statement with a DCGL of 14 pCi/gm. This is above each of the screening values for U-234, 235, and 238. Please revise statement.

16. Section 8.7.2 gives a calculation for DCGL associated with the expected amounts of U-234, U-235, and U-238. The DCGLs for these isotopes are given individually, but the DCGL values given are for material with prodigy not in equilibrium. Please state why the lower values for U-235 and U-238 are not used due to the decay chain associated with these isotopes.

17. Section 9.9.5 uses Table 6.7 from MARSSIM for determining the scan MDC. This table is given as guidance of what values are possible and should be calculated for the given conditions of the survey plan. The value in Table 6.7 is for DU with 0.34% U-235 which is different that the amount you state in section 8.7.2. Also different is the 2 seconds count interval and background levels. Please calculate the scan MDC and show all calculations and conditions associated with the calculation.

18. Based upon the current scan minimum detectable concentration (MDC) and the calculated Area Factors of 1.9 and 2, it does not appear that your scans meet the required $DCGL_{emc}$ (elevated measurement comparison). Please provide information on how the plan will change or other calculations to support area factors to meet the criteria for finding small area of elevated activity.

19. It appears very little information is given on the reference area. Please provide where the background location is located and how it compares to the current site.

20. The RESRAD run as stated in Attachment 1 was not included. Please provide the RESRAD report for the area factors.

21. Neither section discusses actions that will be taken if the area is not determined to be releasable. Please state action if the area is determined not to meet the 15 mrem per year value.

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. 602220. 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. If we do not receive a reply from you

within 30 calendar days from the date of this e-mail, we will assume that you do not wish to pursue your application OR amendment request.

Please respond by e-mail to acknowledge that you have received the e-mail request for additional information.

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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