UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

August 18, 2004

Docket No. 03012894 License No. 37-02006-09
Control No. 135096

Clare V. LumKong
Environmental Health and Safety Manager
Lockheed Martin Commercial Space Systems
100 Campus Drive
Newtown, PA 18940

SUBJECT: LOCKHEED MARTIN COMMERCIAL SPACE SYSTEMS, VOIDANCE OF APPLICATION FOR LICENSE AMENDMENT, CONTROL NO. 135096

Dear Ms. LumKong:

This concerns the subject application for an Amendment to your material license. Because we do not expect that you will not be able to supply the additional information required to complete the requested action for some time, we have voided your application. This action is taken without prejudice to the resubmission of your request.

The June 1, 2004, letter included the document "Proposed MARSSIM Closeout Survey for Rooms 179G and 158A at the Lockheed Martin Commercial Space Systems Newtown, PA Facility, Magnesium Thorium Alloy Operations" (Closeout Survey). In order to continue our review, we need the following additional information:

1. Confirm that the Closeout Survey will meet the data quality objectives by demonstrating that the survey units are acceptable for release for unrestricted use, using the Wilcoxon Rank Sum (WRS) test. Please note that a Class 3 area is defined as an "impacted area" that may be potentially contaminated from site activities, but is not expected to contain radioactivity. The WRS test, used when the contaminant is also present in the normal background, compares a survey unit to a background reference area, which is an area that is non-impacted (not potentially contaminated by site activities) and has similar physical, chemical, radiological, etcetera characteristics to the survey unit. Confirm that you will revise the Closeout Survey to use a background reference area for comparison in the WRS test, not a Class 3 area.

2. We disagree with the discussion of the statistics in Section 4 of the Closeout Survey in determining the relative shift (delta over sigma) and the lower bound of the grey region (LBGR). The MARSSIM considers only the standard deviation (sigma) of the survey results. In this case, the standard deviation of the net results for removable contamination surveys provided in the Closeout Survey is 0.3 disintegrations per minute (dpm) per wipe, which was collected over an area of 100 square-centimers (100 cm^2). In accordance with Section 2.5.4 of the MARSSIM, an initial estimated value for the LBGR would be one-half of the derived concentration guideline level (DCGL). In the case of thorium-232 (Th-232), the NRC's screening criteria is 6 disintegrations per minute per 100 square-centimeters (dpm/100 cm^2) for total (fixed plus removable)

contamination. However, because you believe you meet the NRC's condition of use for the screening criteria that not more than 10% of the total contamination is removable, you plan to demonstrate that your facility will not exceed a DCGL for removable contamination of 0.6 dpm/100 cm^2 . Therefore, your LBGR would be 0.3 dpm/100 cm^2 and the relative shift is (0.6 - 0.3) dpm/100 cm^2 divided by 0.3 dpm/100 cm^2, which is 1. Using Table 5.3 from the MARSSIM, if the relative shift is 1 and the Type 1 and Type 2 errors are 0.05, then 32 samples need to be collected from each survey unit and reference area. If you consider the LBGR to be zero, then the relative shift is 2, and 13 samples are required to be collected in each survey unit and reference area. Confirm that the minimum number of samples to be collected will be at least 13. Please note that the number of samples to be collected is determined both by the LBGR and sigma, and if the number of data points is too few obtain the desired power level for the WRS test, a resurvey will be required.

3. Provide the investigation level that will be used during scanning surveys to indicate when additional investigations of contamination are necessary. Provide a minimum detectable count rate (MDCR) and the scan minimum detectable concentration (MDC) for the microR meter, or other suitable survey instrument, to be used for performing scanning surveys. If you choose to perform the scanning survey for alpha emitters, you should use the criteria in Section 6.7.2.2 of the MARSSIM. In accordance with the MARSSIM, Section 5.5.3, scanning surveys in Class 1 areas should be designed to detect small areas of elevated activity that are not detected by the systematic measurements; the areas between systematic measurement locations may need to be adjusted if the scanning sensitivity is not sufficient.

In accordance with 10 CFR 2.390, a copy of this letter will be placed in the NRC Public Document Room and will be accessible from the NRC Web site at http://www.nrc.gov/reading-rm.html.

We will continue our review upon receipt of this information. Please reply to my attention at the Region I Office. Although a new Control Number will be issued when you submit the additional information request, please refer to Control No. 135096, this letter, and your letter dated June 1, 2004, containing the original request to amend Nuclear Regulatory Commission License No. 37-02006-09. If you have any technical questions regarding this deficiency letter, please call me at (610) 337-5040.

Sincerely,

Original signed by Elizabeth Ullrich

Betsy Ullrich
Senior Health Physicist
Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety

cc:
Charlene McIntyre, Radiation Safety Officer

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