



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

October 18, 2005

Docket No. 04007455  
Control No. 137796

License No. SMA-1018

Kevin Taylor, P.E.  
Radiation Safety Officer  
SCIENTECH, Inc.  
17 College Street  
Suite D  
Greenville, SC 29601

SUBJECT: SCIENTECH, INC., REQUEST FOR ADDITIONAL INFORMATION  
CONCERNING APPLICATION FOR AMENDMENT TO LICENSE, CONTROL  
NO. 137796

Dear Mr. Taylor:

This is in reference to your letter dated October 5, 2005 requesting to amend Nuclear Regulatory Commission License No. SMA-1018 to incorporate the Final Status Survey Plan (FSSP) for Section 2 of the Whittaker site. This is also in reference to our phone conversation on October 5, 2005. In order to continue our review, we need additional information on the following items that were discussed during our phone call:

1. In the FSSP Section 2.1 "Surveys and Sampling", you state that each survey unit will have nine (9) sample points. Appendix A of the FSSP provides the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) calculation performed to determine the number of required sample points. In the calculation, you use a Lower Bound of the Gray Region (LBGR) value of 3.5. You chose an LBGR of one-half the Derived Concentration Guideline Limit (DCGL), and listed the approved DCGL for thorium-232 for the Whittaker site of 7 pCi/g. The Whittaker site is contaminated with thorium-232, uranium-238, and uranium-238+ D (uranium-238 in equilibrium with its daughter products). Individual DCGLs were approved for each radionuclide. Following the MARSSIM protocols, a site contaminated with multiple radionuclides requires adjusting the individual DCGLs to account for the presence of each. This may be accomplished by determining a surrogate DCGL, or by using the unity rule. Determining the number of sample points by only considering the DCGL for thorium-232 fails to account for the impact of the other radionuclides present at the site. Please revise your calculation of the number of sample points for each survey unit to account for the impact of uranium-238 and uranium-238+D.

2. In the FSSP Section 2.2 "Instruments and Detection Limits", you determine a Minimum Detectable Count Rate (MDCR) and a Scan Minimum Detectable Concentration (Scan MDC). You indicate that the Scan MDC is 2.7 pCi/g thorium-232+D, "based on the conversion factors of 830 cpm per  $\mu$ R/h and 1.0  $\mu$ R/hr per pCi/g from NUREG-1507." The stated conversion factor of 830 cpm per  $\mu$ R/h was identified as the relationship between a 2"x2" NaI detector count rate and exposure rate for Th-232, as listed in NUREG-1507 Table 6.4. However, the stated conversion factor of 1.0  $\mu$ R/h was not identified in NUREG-1507. Please provide the basis for the 1.0  $\mu$ R/h conversion factor used in determining the Scan MDC.
3. In the FSSP Section 2.2 "Instruments and Detection Limits", you state that all instruments will be calibrated according to the Sciencetech document "Calibration and Maintenance of Survey Instruments Procedure", identified in the References section as Document No. 82A8034, Revision 5. Please provide a copy of this procedure for our review only, so that we may better understand the calibration process for this Final Status Survey.
4. In the FSSP Section 2.3 "Daily Instrument and Background Measurements", you state that daily instrument checks will be made according to the Sciencetech document "General Radiological Survey and Air Sampling Procedure", identified in the References section as Document No. 82A8008, Revision 6. Please provide a copy of this procedure for our review only, so that we may better understand how instrument checks will be performed for this Final Status Survey.
5. In the FSSP Section 3.0 "Data Quality Objectives", you state that "the minimum detectable concentrations for walkover surveys (Scan MDC) using a (2x2 NaI) detector will be less than or not greater than 150% of the DCGL". In accordance with MARSSIM protocols, the detection sensitivity of the instruments used during final status surveys must ensure that levels below the DCGLs can be detected. Please revise the FSS data Quality Objectives to reflect this protocol.

Current NRC regulations and guidance are included on the NRC's website at [www.nrc.gov](http://www.nrc.gov); select **Nuclear Materials; Medical, industrial, and academic uses of nuclear material**; then **toolkit index page**. Or you may obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-888-293-6498. The GPO is open from 7:00 a.m. to 9:00 p.m. EST, Monday through Friday (except Federal holidays).

We will continue our review upon receipt of this information. Please reply to my attention at the Region I Office and refer to Mail Control No. 137796. If you have any technical questions regarding this deficiency letter, please call Marjorie McLaughlin at (610) 337-5240.

K. Taylor  
SCIENTECH, Inc.

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If we do not receive a reply from you within 30 calendar days from the date of this letter, we will assume that you do not wish to pursue your application.

Sincerely,

***Original signed by Marie Miller***

Marie Miller, Chief  
Decommissioning Branch  
Division of Nuclear Materials Safety

cc:

Eric G. Lardiere, Vice President, General Counsel and Secretary  
Rich Moss, Project Manager  
Bryan Werner, Project Manager

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