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

October 21, 2005

Docket No. 04008940 License No. STB-1504
Control No. 136636

Ronald J. Bonito
Vice President/General Manager
Alpha Q, Inc.
P.O. Box 536
Colchester, CT 06415

SUBJECT: ALPHA Q, INC., REQUEST FOR ADDITIONAL INFORMATION CONCERNING APPLICATION FOR AMENDMENT TO LICENSE, CONTROL NO. 136636

Dear Mr. Bonito:

This is in reference to your letter dated August 19, 2005 providing additional information related to your request to amend Nuclear Regulatory Commission License No. STB-1504. In order to continue our review, we need the following additional information:

1. You proposed an alternative radiological screening criterion to the default value published by the NRC for ^{232}Th in equilibrium with its daughters. You stated that the screening value you proposed would still ensure the requirements of Subpart E to 10 CFR 20 would be met.

   The screening value published by NRC in the Federal Register on June 13, 2000 (65 FR 37186) was derived using the computer code DandD with input data variables at their default values, as discussed in Section 6 of NUREG-1757, Vol. 1, Rev. 1. While this approach may produce a conservative screening value, it enables a simplified approach to decommissioning. Alternative screening values may be proposed based upon results of calculations using the latest version of the DandD computer code or another acceptable code, provided the technical basis is also presented to support the request and demonstrate how Subpart E to 10 CFR 20 will be met.

   Please provide the detailed technical basis for your proposal, including the results of calculations performed to support the screening value, as well as the DandD or other computer code output showing the input data used and justifying the use of the non-default parameter values. Guidance for performing such an analysis is presented and discussed in detail in Section 5 of NUREG-1757, Vol. 2. When you provide the additional information, the proposed criteria and detailed technical justification must be approved by the appropriate program office in NRC Headquarters before it can be applied to the Alpha Q facility.

2. You proposed some additional measurements to be made to supplement the survey you performed. Following approval of alternative screening criteria, or the decision to use the default value, a final status survey (FSS) will be reviewed by the NRC using the guidance described in NUREG-1757. Specific details regarding design of the FSS and

the information to be submitted by the licensee to enable NRC to determine the FSS is adequate to demonstrate compliance with the radiological criteria for decommission are discussed in Section 4 of NUREG-1757, Vol. 2 (including Section 4.4, "FSS Design", and Section 4.5, "FSS Report"). Appendix B of NUREG-1757 discusses simplified approaches for conducting acceptable FSSs, however it requires use of the default screening criteria. Appendix A of NUREG-1757 provides the appropriate guidance for conducting the FSS using alternate screening criteria.

If the alternate screening criteria you propose are approved for Alpha Q, then it will be necessary to design an acceptable FSS for approval by NRC. It will enable the most efficient use of resources if the design of the FSS is approved prior to performing additional measurements. As discussed in your letter, some of the measurements already completed may be useful in accomplishing the objectives of the FSS.

You may find some of the Questions and Answers, as well as the lessons-learned discussion, contained in Appendix O to NUREG-1757, Vol. 2 useful. Regulatory Issue Summary 2002-02, "Lessons Learned Related to Recently Submitted Decommissioning Plans and License Termination Plans", may also be helpful, and can be found on the NRC website at http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2002/ri02002.html The computer code DandD is available at http://www.orau.gov/ddsc/.

Current NRC regulations and guidance are included on the NRC's website at 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. 136636. If you have any technical questions regarding this deficiency letter, please call me at (610) 337-5308.

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 Todd J. Jackson, CHP

Todd J. Jackson, CHP
Senior Health Physicist
Commercial and R&D Branch
Division of Nuclear Materials Safety

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