From: Miller, John
To: rstevens@aps-tech.com
Subject: License application - Mail control # 584294
Date: Monday, July 28, 2014 3:10:00 PM

APS Technology
License No. 06-35157-01
Docket No. 030-38752
Control No. 584294

Mr. Stevens

In order to continue the review of your application for an NRC license to use radioactive materials, we need additional information. If you have any questions, please contact me (610-337-5089).

1. 10 CFR 30.32(g) requires that an application for a specific license to use byproduct material in the form of a sealed source or in a device that contains a sealed source must either identify the source or device by manufacturer and model number as registered with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State; or contain the information identified in 10 CFR 32.210(c). You have described the manufacturer and model number of your sealed sources, however I am having difficulty verifying some of the sources in the NRC Sealed Source and Device Registry. Specifically, the sources listed as 5.4- 5.7 & 5.11 could not be found in the registry. Please verify that you have provided the correct manufacturer and model #. The capsule # or serial number is not needed and if the source is a generally licensed or exempt source it does not need to be included on your specific license.

2. In item 6. of your application you describe the purposes for which the licensed material will be used as “in connection with the development, engineering and testing of devices that provide information about formation properties during the drilling of oil and gas wells.” Please provide a description of the proposed use of these sealed sources that is sufficiently detailed to allow the NRC to determine the potential for exposure to occupationally exposed individuals and/or members of the public.

3. Describe the facilities and equipment (e.g., remote handling equipment, storage containers, shielding) to be made available at each location where licensed material will be used. Submit a description of the areas assigned for the receipt, storage, preparation, and measurement of licensed materials. Submit a diagram showing the locations of shielding, the proximity of radiation sources to unrestricted areas, and other items related to radiation safety. Diagrams should be drawn to a specified scale, or dimensions should be indicated.

4. In your application, you did not describe a training program for radiation workers and ancillary personnel (maintenance, security, etc.). The training given to each group should be commensurate with the duties and responsibilities of the group. The training program must assure that personnel are instructed before assuming

duties with, or in the vicinity of, licensed materials and specify a frequency for periodic refresher training. Appendix J of NUREG-1556, Volume 7 addresses radiation safety training topics and may be helpful in developing your response. Please provide an outline of the training that will be provided and the instructors' qualifications.

5. Please provide a brief description of the training and experience of James Baker and Steven Roundtree, who will directly supervise the use of material, who will use material without supervision, or who will have responsibility for radiological safety. The description should include the type (on-the-job or formal course work), location, and duration of the training. Training should cover (a) principles and practices of radiation protection, (b) radioactivity measurements, standardization, and monitoring techniques and instruments, (c) mathematics and calculations basic to the use and measurement of radioactivity, and (d) biological effects of radiation. The description of the use of licensed materials should include the specific isotopes handled, the maximum quantities of materials handled, where the experience was gained, the duration of experience, and the type of use.

6. Submit a description of the duties and responsibilities of your Radiation Safety Officer. The typical duties of a Radiation Safety Officer would be:

a. To assess radiological hazards and prescribe, and ensure the implementation of, appropriate radiation safety precautions.

b. To ensure that the use of licensed material is by or under the direct supervision of individuals specifically listed on your license.

c. To ensure that all users (where appropriate) wear personnel monitoring equipment when using licensed materials.

d. To ensure that licensed materials are properly secured against unauthorized removal at all times when not in use.

e. To perform routine inspections of all areas using or storing licensed materials.

f. To ensure that the terms and conditions of your license are met, and that all required records are maintained.

7. Please describe your instrument calibration procedures and the frequency of instrument calibration. If your instruments will be calibrated by the instrument manufacturer or a person specifically authorized by the U.S. Nuclear Regulatory Commission or an Agreement State for instrument calibration, you only need to specify the name of the firm and the license number that authorizes the firm to perform calibration services, and the calibration frequency. If you intend to calibrate your own instruments, please submit your calibration procedures including calibration frequency. Appendix M of NUREG-1556, Volume 7 contains calibration procedures acceptable to the Commission and may be helpful to you in developing your response.

8. Please specify the type of personnel dosimetry you provide, and the frequency for

changing the dosimeters, and confirm that dosimetry will be processed and evaluated by a NVLAP-accredited processor as required by 10 CFR 20.1501(c).

9. In Section VI.C. of your application, you indicate that you will conduct leak tests in accordance with Appendix R of NUREG-1556, Volume 14. However in the instrument section of your application you indicate that you will use the Ludlum Model 15 meter and Model 44-9 probe to assay your leak test samples. Please submit the calculations that demonstrate that this instrumentation has the appropriate MDA to detect 0.005 uCi for all the radionuclides that you will possess as a sealed source that requires leak testing.

   If you select to have another person perform the leak test, please submit the name of the person and the applicable U.S. Nuclear Regulatory Commission or Agreement State license number.

10. In section B.2. you indicate that area where sources are stored are posted with "Caution – Radiation Area signs and section X.B. states that any area where the radiation level at twelve inches from an accessible surface or barrier is 2 mrem/hr or greater will be posted with "Caution – Radiation Area signs. Please be aware that a radiation area is defined as 5 mrem/hr.

11. In Section XII. of your application, you have submitted your NRC reporting requirements. These requirements are based on the 10 CFR 30.50. However, there are additional reporting requirements found in 10 CFR 20.2201, .2202, and .2203. Please confirm that you are also aware of these reporting requirements.

12. Please describe your plans for disposing of unwanted sealed sources

13. Please submit detailed operating and emergency procedures.

Please respond in writing with a signed letter. You may submit the signed response document by hard copy, or as a pdf copy attached to an email, or by facsimile to 610-337-5269. Please be sure to include the Control No. 583577 on your response. We would appreciate a response within 30 days in order to expedite review of the license.

Thank you for your cooperation.

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