SOUTHWEST RESEARCH INSTITUTE®

6220 CULEBRA RD. 78238-5166 • P.O. DRAWER 28510 78228-0510 • SAN ANTONIO, TEXAS, USA • (210) 684-5111 • WWW.SWRI.ORG

January 24, 2012

Mark A. Satorius, Director
Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
Two White Flint North, MS 8 D22
11545 Rockville Pike
Rockville, MD 20852

Subject: Exemption Request for a Specific NRC License for the Release of Slightly Contaminated Test Fluids Such As Used Engine Oil with Levels Well Below Exempt Concentrations

Southwest Research Institute® (SwRI®) is requesting an exemption for a specific NRC license to release slightly contaminated test fluids. These test fluids include engine coolant and used engine oil that was generated from wear and corrosion research studies using radiotracers. The concentration of radionuclides (by-product materials) in these test fluids are detectable but are well below "exempt concentrations" (10CFR Part 30.70), for transfer to non-licensed persons for recycling or disposal by conventional methods used for such fluids. SwRI is requesting this exemption because the transfer of the test fluids will be for proper recycling or disposal, using approved EPA practices, and will not be for unrestricted "distribution" to members of the public.

The requirement for a Specific NRC License is in 10CFR Part 30.14(d), "No person may introduce byproduct material into a product or material knowing or having reason to believe that it will be transferred to persons exempt under this section or equivalent regulations of an Agreement State, except in accordance with a license issued under §32.11 of this chapter."

The liquids that SwRI is referencing are the result of radiotracer research related to engine wear and/or corrosion studies, which are used to make gas and diesel engines more efficient. The results of this research results in fluids with radioactive material concentrations that are detectable, but are also below the releasable liquid (water) concentration limits, referenced in 10CFR Part 20, Appendix B, Table 2, Column 2, Effluent Concentrations in Water (in microCi/ml). The Column 2 release limits are one-tenth (10 percent) of the release limits for water to the sanitary sewer system and less than 10 percent of the exempt concentration limits in 10CFR 30.70, Schedule A. Also, the sum of the ratios for any mixture of identified radionuclide concentrations (as compared to the releasable water concentration limits) will be below 1 (i.e., unity), before being transferred as an exempted concentration of radioactive material. It is estimated that SwRI will generate a maximum of 2,000 liters of these fluids each year. Currently we have several years of fluids stored, totaling about 20,000 liters, which are ready for transfer for recycling or disposal.

SwRI measures and documents the concentration of each radionuclide and their sum of the ratio of radionuclides, which will not exceed and limits of 10CFR Part 20, Appendix B, Table 2, Column 2, in μCi/ml. Each container of test fluid is stirred, sampled and analyzed to determine the concentration of each radionuclide present in the contaminated liquid. Concentration determination is done without consideration of subsequent dilution of the radionuclides with the much larger volumes of other non-contaminated test fluids generated at SwRI and other facilities, like garages and auto repair shops.

SwRI will send the slightly contaminated test fluids for recycling or disposal to companies authorized to properly possess, handle, treat, recycle or dispose of these liquids, such as the companies that are licensed to collect and process coolant or used engine oil from garages and auto repair shops.

In summary, SwRI requests approval for exemption based upon the following:

- The liquids and their trace amount of radioactive contamination will be properly recycled or disposed in accordance with EPA and State regulations;

- The liquids will be below the limits of 10CFR Part 20, Table 2, Column 2, for release of water going directly into the environment, which if consumed as the sole source of a person's drinking water would only result in a dose of 50 millirems-per-year to the consuming individual.

If you have any questions or require any additional information, please contact me at (210) 522-2633 or e-mail jph@swri.org.

Sincerely,

John P. Hageman

John P. Hageman
Radiation Safety Officer

JPH/dh