UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

June 26, 2006

MEMORANDUM TO: Jack E. Whitten, Chief
Nuclear Materials Licensing Branch
Division of Nuclear Material Safety

FROM: D. Blair Spitzberg, Chief **/RA/**
Fuel Cycle & Decommissioning Branch
Division of Nuclear Material Safety

SUBJECT: SAFETY EVALUATION REPORT FOR U.S. ENVIRONMENTAL PROTECTION AGENCY - WESTERN ECOLOGY DIVISION, CORVALLIS AND NEWPORT FACILITIES, OREGON

Enclosed is the Safety Evaluation Report for U.S. Environmental Protection Agency (EPA) - Western Ecology Division, Corvallis and Newport Facilities, Oregon, Materials License No. 36-12343-02. By letter dated November 30, 2004, the EPA requested free release of the Corvallis and Newport Research Facilities and license termination. A final status survey report was attached to the licensee's letter. An addendum to the final status survey report was attached to a letter dated December 27, 2005 from EPA.

The enclosed Safety Evaluation Report is FCDB staff's evaluation of the radiological consequences of the proposed licensing action. This Safety Evaluation Report was prepared using the guidance provided in NUREG-1757, Volume 1, Revision 1, Appendix G, "Template for a Safety Evaluation Report."

The facility meets the criteria of a Group 2 decommissioning site. Group 2 refers to a site that is not required to submit a decommissioning plan and uses the NRC's screening criteria to demonstrate compliance with 10 CFR Part 20, Subpart E requirements. Table 1.2 of NUREG-1757, Volume 1, provides the principle regulatory features of the seven decommissioning groups. Provided below is a status of each of the principle regulatory features for a Group 2 project:

Principle Regulatory Feature	**Status**
NEPA Compliance - completion of an Environmental Assessment	EA & FONSI were published in the Federal Register on May 11, 2006 (71FR27521)
Restricted or Unrestricted Use	Licensee requested an unrestricted release
DP Required - Yes or No	No
DP Review Documentation	Not Applicable

Radioactive Material Disposition Documentation	All material was transferred to another authorized recipient or waste contractor
Method for Demonstrating Site is Suitable for Release - Survey or Demonstration	Final status survey report was submitted by EPA letter dated November 30, 2004, supplemented by letter dated December 27, 2005
Confirmatory or Side-by-Side Survey	A confirmatory survey was conducted in November 2005 (Report 030-05976/05-001)
Closeout Inspection	Final inspection of the Corvallis and Newport, Oregon facilities was conducted in conjunction with the November 2005 confirmatory survey
FRN Used to Inform the Public of Staff Actions	FONSI announcement, with no opportunity for hearing, is the only publicly required notification per NUREG-1757
Documentation Used to Support License Termination	NRC Form 314 dated December 27, 2005

The NRC staff has considered whether a consultation with EPA is required per the EPA-NRC Memorandum of Understanding dated October 9, 2002. An EPA consultation is not required because there was no groundwater contamination or outdoor soil contamination resulting from previous licensed operations.

In summary, the review of the final status survey report is complete. The results of the final survey meet the criteria of NUREG-1757 and similar guidance documents; therefore, FCDB approves the final status survey report and its proposed derived concentration guideline levels. Please terminate License No. 36-12343-02 as requested by the licensee in its November 30, 2004, letter and return the financial assurance instrument to the license.

Docket No.: 030-05976
License No.: 36-12343-02
Control No.: 470287

Enclosure: Safety Evaluation Report

bcc w/enclosure (via ADAMS e-mail distribution):
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SAFETY EVALUATION REPORT

U.S. ENVIRONMENTAL PROTECTION AGENCY - WESTERN ECOLOGY DIVISION, CORVALLIS AND NEWPORT FACILITIES, OREGON

1.0 Executive Summary

By letter dated November 30, 2004, the U.S. Environmental Protection Agency (EPA) requested termination of Materials License No. 36-12343-02. This Safety Evaluation Report is the NRC staff's evaluation of the radiological consequences of the proposed request. Based on the results of this evaluation, NRC staff recommends approval of the licensee's request to release the facility for unrestricted use in accordance with 10 CFR 20.1402 and to terminate the license.

2.0 Facility Operating History

2.1 License Number/Status/Authorized Activities

Materials License No. 36-12343-02 authorizes EPA to use radioactive material for research and development as defined in 10 CFR 30.4, including tracer studies involving marine organisms and plants (excluding animal studies), sample analysis, soil moisture, and instrument calibration. The licensee has permanently ceased all licensed activities and transferred or disposed of all licensed radioactive materials.

2.2 License History

Radioactive materials were used at the Corvallis facilities from 1977 to 2004. Radioactive materials were used at the Newport facility from 1987-1995 under NRC License No. 36-23261-01, and 1995 to 2004 under NRC License No. 36-12343-02. (License No. 36-23261-01 was terminated in July 1995 after NRC License No. 36-12343-02 was amended to include the Newport facility within its scope). The licensee conducted a historical review and concluded that the radionuclides of concern were carbon-14, calcium-45, chromium-51, hydrogen-3, phosphorus-32, sulfur-35, nickel-63, americium-241, and barium-133. Based on the historical review, the licensee determined that radioactive materials were used at three facilities: Corvallis Environmental Research Laboratory, Willamette Research Station (located in Corvallis), and the Pacific Coastal Ecology Branch Facility in Newport.

At the time of the November 14-17, 2005, confirmatory survey (NRC Inspection Report 030-05976/05-001) the EPA's former offices and laboratories in the Corvallis and Newport facilities were occupied and in-use for non-radioactive materials research. Most of the furniture, equipment, sinks, countertops, and fixtures which were in-use during licensed activities had been removed during remodeling following final status surveys.

ENCLOSURE

2.3 Previous Decommissioning Activities

Until 1994, the licensee's broad scope license allowed unrestricted release of previous locations of use once the areas were shown to be free from residual contamination. In 1994, the license was changed from a broad scope to a license of limited scope. Final status surveys of the former locations of use were conducted when the laboratories were removed from service. Additional final status surveys were performed in 12 areas at the three locations of use during November 2004 because the historical survey records were not adequate or complete. Final status surveys on remaining locations of use that had not been previously released were also performed during June 2004, November 2004 and December 2005. These final status surveys were conducted in buildings and laboratories identified during the historical assessment as previous locations of use with licensed radioactive materials. The areas final status surveyed in December 2005 were identified during the onsite inspection as historical locations of use that were not included in the original submittal from EPA. The NRC conducted a confirmatory survey of the Corvallis and Newport facilities during November 2005 that included the licensee's December 2005 locations of final status surveys.

A Final Status Survey Report (FSSR) was completed by the licensee, and attached to the licensee's November 30, 2004 letter as supplemented by letter dated December 27, 2005. Based on the final status survey results, no decommissioning was necessary.

2.4 Spills

The historical site assessment identified two incidents that may have involved leaking sealed sources. One event occurred in March 1979 involving a sealed source containing a tritium-scandium foil at the Corvallis Environmental Research Laboratory. As a result of the event, the laboratory was cleaned and decontaminated. Significant remodeling had taken place since the laboratory had been cleaned and decontaminated, so additional NRC confirmatory surveys were not performed in this area.

A second event occurred in June 1982, also at the Corvallis Environmental Research Laboratory in a different laboratory than the first incident, involving either a leaking nickel-63 sealed source detector or radiotracers injected into a gas chromatograph. The licensee believed that the detector did not leak and that the contamination was tritium, not nickel-63. The laboratory was decontaminated and the event reported to the NRC at that time. NRC confirmatory surveys, including swipe sampling for removable tritium contamination, were performed in this laboratory during November 2005. None of the confirmatory sample results exceeded the licensee's derived concentration guideline levels (DCGLs) (release criteria) provided in the final status report.

2.5 Prior Onsite Burials

There is no evidence that the licensee buried radioactive material at the facility.

3.0 Facility Description

3.1 Site Location and Description

Corvallis Environmental Research Laboratory and Willamette Research Station are located in Corvallis, Oregon and the Pacific Coastal Ecology Branch Facility is located in Newport, Oregon. The facilities consisted of both laboratories and administrative offices. The licensee's historical review determined that radioactive material had been used or stored in 53 rooms or laboratories at the three facilities. Thirty-nine rooms or laboratories were located at the Corvallis Environmental Research Laboratory, five rooms or laboratories at the Willamette Research Station and nine rooms or laboratories at the Pacific Coastal Ecology Branch Facility in Newport, OR. Only sealed sources were used or stored in 5 of the 53 rooms or laboratories. Based on the licensee's historical site assessment, a list was compiled of rooms at the 3 facilities where radioactive materials were used or stored. The licensee performed final status surveys in these areas.

3.2 Population Distribution

The Corvallis Environmental Research Laboratory is located adjacent to Oregon State University in Corvallis, Oregon with security access required. The Willamette Research Station is located on the outskirts of Corvallis, Oregon within a security fence. The Pacific Coastal Ecology Branch Facility is located alongside a bay in Newport, Oregon. The three facilities are located in light commercial/industrial areas and there are no residences within the immediate vicinity of these facilities. These areas are populated only during normal business hours.

3.3 Current/Future Land Use

The licensee plans to continue to use the Corvallis and Newport facilities for non-radioactive materials research following NRC approval of the free release and license termination. The Corvallis and Newport facilities will continue to be office and laboratory complexes for the foreseeable future.

3.4 Metrology and Climatology

A review of the metrology and climatology for the Corvallis and Newport facilities is not necessary because all licensed operations occurred inside of the facilities.

3.5 Geology and Seismology

A review of the geology and seismology for the Corvallis and Newport facilities is not necessary because all licensed operations occurred inside of the facilities.

3.6 Surface Water and Groundwater Hydrology

A review of the surface water and groundwater hydrology for the Corvallis and Newport facilities is not necessary because all licensed operations occurred inside of the facilities.

3.7 Natural Resources

A review of the natural resources for the Corvallis and Newport facilities is not necessary because all licensed operations occurred inside of the facilities.

3.8 Ecology/Endangered Species

A consultation with the U.S. Fish and Wildlife Service was not conducted because all licensed operations occurred inside of the Corvallis and Newport facilities. There were no incidents or spills that resulted in the release of radioactive material outside of the buildings to the environs.

4.0 Radiological Status of Facility

4.1 Contaminated Structures

As part of the final status survey, surface sampling was conducted on equipment, fixtures, floors, walls, and HVAC systems prior to removal of these systems during subsequent remodeling. All sample points were found to be less than the licensee's release criteria. No contaminated structures were identified during the final status survey.

4.2 Contaminated Systems and Equipment

There were no contaminated systems or equipment in the Corvallis and Newport facilities at the time of the final status survey. Radiological surveys were performed on equipment and fixtures. All items surveyed met the release criteria established by the licensee. The material was subsequently disposed or recycled as appropriate.

4.3 Surface and Subsurface Soil Contamination

Since licensed material was used only within the Corvallis and Newport facilities and there were no spills or releases outside of the buildings, no surface or subsurface soil contamination could have occurred outside of the Corvallis and Newport facilities.

4.4 Surface Water and Groundwater

Licensed material was used only within the 3 subject facilities, and discharges to sewers were reviewed by inspectors during routine inspections to ensure compliance with the release limits specified in 10 CFR Part 20. There were no documented releases of

radioactive material to the municipal sewer in excess of the release limits specified in 10 CFR Part 20; therefore, no surface or groundwater contamination could have occurred.

5.0 Dose Modeling Evaluations

5.1 Unrestricted Use using Screening Criteria

Section 2.5 of NUREG-1757, Volume 2, "Consolidated NMSS Decommissioning Guidance," provides two general approaches for demonstrating compliance with 10 CFR Part 20, Subpart E dose criteria. The two major approaches include the dose modeling approach or the FSSR and DCGLs approach. The licensee chose to use the second approach by submittal of an FSSR with proposed DCGLs.

By NRC letter dated July 19, 2004, EPA was informed that NRC License No. 36-12343-02 would remain active following expiration until EPA submitted a FSSR to the NRC. The NRC also stated that EPA should use the guidance provided in the NRC's NUREG-1757, Volume 1, "Consolidated NMSS Decommissioning Guidance." By letter dated November 30, 2004, EPA submitted a FSSR to the NRC for the three facilities listed as authorized locations of use in License Condition 10. The licensee elected to use the surface contamination limits provided in NUREG-1757, Appendix B, Table B.1, Acceptable License Termination Screening Values of Common Radionuclides for Building-Surface Contamination, for release as unrestricted use.

Table H.1 of NUREG-1757, Volume 2, lists the specific criteria or levels used for the basis of demonstrating that the site can be released for unrestricted use by the licensee. The values used by the licensee were: 1.2E+8 dpm/100 cm^2 for hydrogen-3, 3.7 E+8 dpm/100 cm^2 for carbon-14, 1.3E+7 dpm/100 cm^2 for sulfur-35, and 1.8E+6 dpm/100 cm^2 for nickel-63.

5.2 Unrestricted Release using Site-Specific Information

The licensee did not request a building release using site-specific information as allowed by NUREG-1757.

5.3 Restricted Release using Site-Specific Information

The licensee did not request a restricted release of the building as allowed by 10 CFR 20.1403.

5.4 Release Involving Alternate Criteria

The licensee did not request a building release using alternate criteria as allowed by 10 CFR 20.1404.

6.0 Decommissioning Activities

6.1 Contaminated Structures

Contaminated structures were not identified during the final status survey. All floors and walls were final surveyed, and none of the surfaces exceeded the respective DCGLs.

6.2 Contaminated Systems and Equipment

Contaminated systems and equipment were not identified during the final status survey. Equipment and fixtures were final surveyed by the licensee, and none of these items exceeded the respective DCGLs.

6.3 Soil

Since the soil was not impacted by previous operations involving radioactive material at the Corvallis and Newport facilities, the site soil was not remediated or sampled.

6.4 Surface and Groundwater

Since the surface and groundwater were not impacted by previous operations involving radioactive material, the surface and groundwater sources were not sampled.

6.5 Schedules

The licensee's radiation safety program allowed unrestricted release of previous locations of use once the areas were shown to be free of residual contamination. Final status surveys of the former locations of use were conducted when the laboratories were removed from service. Additional limited final status surveys were performed by the licensee in 12 previous locations of use within the 3 subject facilities during November 2004 because the historical survey records were not adequate or suffciently complete to show that the locations were free from residual contamination.

Final status surveys on remaining locations of use that had not been previously released were also performed during June 2004, November 2004 and December 2005. These final status surveys were conducted in buildings and laboratories identified during the historical site assessment as previous locations of use with licensed radioactive materials.

The FSSR was submitted to the NRC for review and approval during November 2004 and supplemented in December 2005. The FSSR included all 53 historically identified locations of use. A confirmatory survey was conducted during November 2005 by NRC, and the results indicated that no additional radiological surveys are necessary.

7.0 Project Management and Organization

Details of the licensee's project management and organization are provided in the FSSR. The methods and techniques employed during the final status survey, including responsibilities, were provided in Section C, Facility Surveys, Instrumentation, and Survey Details of the FSSR. The work was conducted by a contractor under the oversight of the EPA's radiation safety officer at the Corvallis facilities and by the assistant radiation safety officer at the Newport facilities. The NRC staff concluded that the project management and organization were acceptable based on the scope of work.

8.0 Radiation Safety and Health Program

The FSSR discusses radiation safety and health program attributes; although, the workers were also required to adhere to the conditions of the EPA's radiation protection program. The EPA's radiation safety program was reviewed as part of the NRC's routine licensing and inspection program. The results of each individual inspection was documented in the respective inspection report.

9.0 Environmental Monitoring Program

This program attribute was not reviewed because the work was conducted entirely within the Corvallis and Newport facilities.

10.0 Radioactive Waste Management Program

In its FSSR and NRC Form-314, the licensee states that radioactive waste material from previously licensed operations was transferred to an authorized waste contractor. All other previously licensed non-waste radioactive material were transferred to authorized recipients. Solid waste disposal did not include on-site burial or incineration. Copies of the transfer records were included in the licensee's FSSR.

11.0 Facility Radiation Surveys

11.1 Release Criteria

Discussion of the release criteria is provided in Section 5.1 of this Safety Evaluation Report.

11.2 Final Status Survey Design/Report

The NRC staff compared the design of the licensee's final status survey to the guidance provided by the NRC in its letter dated July 19, 2004. The survey consisted of two major portions, survey of equipment and survey of building surfaces. Direct, fixed-point measurements and swipe samples were collected on equipment and fixtures in each room. The survey results for the equipment and fixtures met the release criteria and the licensee free-released the materials for disposal or recycling.

When designing and conducting the final status survey of the building surfaces, the licensee performed surveys similar to their routine contamination surveys as recommended by the NRC in its letter dated July 19, 2004. All 53 historically identified locations of use were surveyed by the licensee as discussed in Section 6.5.

The licensee focused the surveys based upon historic use of the room and the likelihood of contamination. The licensee determined that chemical fume hoods, lab benches, cabinet handles, floors by work spaces or instruments, sinks, light switches, and door handles were the locations with a high likelihood of contamination. The licensee also performed random area surveys on walls and other surfaces to indentify locations of unexpected contamination. Direct measurements for alpha and beta radioactivity were conducted at each survey point. In addition, a swipe sample was collected at each survey point. The NRC staff determined that the sampling system used and the number of sample points per potentially impacted area were in agreement with the licensee's contamination survey program.

The NRC staff conducted a comparison of the proposed DCGLs and the NRC's screening criteria to the final status survey and confirmatory survey sample results. The FSSR summary tables and the individual location summaries provided results of the beta and alpha survey results. The results were compared to the licensee's proposed DCGLs. All of the licensee's sample results were below its proposed DCGLs. In addition, the licensee compared both alpha and beta sample results to the unity rule, and no exceedances of the unity rule were identified by the licensee.

The NRC staff compared the data presented in the FSSR summary tables to the NRC's screening criteria. The sample results were below the screening criteria in all instances.

The inspectors conducted a confirmatory survey at the three EPA facilities to verify the results of the licensee's final status survey. The confirmatory survey included measurement of total surface contamination, collection of swipe samples for measurement of removable contamination, and measurement of ambient gamma radiation exposure rates. The inspectors did not conduct outdoor measurements because there was no evidence that the licensee ever used or spilled radioactive materials in unsealed form in outdoor areas.

The inspectors conducted radiological surveys in 26 separate rooms in the 3 EPA facilities. The inspectors collected a minium of 10 samples in each of the 26 rooms surveyed. Only two sample results exceeded the instruments' lower limits of detection. With a lower limit of detection of 185 counts per minute (cpm), 1 location in room WRS-12 at the Willamette Research Station measured 192 cpm on the tile floor. This measurement was equivalent to 1833 beta disintegrations per minute per 100 square centimeters (dpm/100 cm^2) above background. The second location with a point above the instrument lower limit of detection was in room CT-2-3 located at the Newport facility. One sample on the tile floor measured 269 cpm with an instrument lower limit of detection of 258 cpm. This measurement was equivalent to 2080 beta dpm/100 cm^2 above background.

Another 17 rooms were identified for possible survey, but the inspectors elected to waive the survey of these areas because the rooms had undergone extensive renovation since radioactive materials were stored or used in these rooms. Of these 17 rooms, one of the rooms had been remodeled in the past from three rooms to one laboratory. Therefore, there were 19 rooms historically identified for possible survey. An additional 5 rooms were used exclusively for storage or use of sealed sources. These rooms were not surveyed because there was no evidence that the sources had ever leaked in these rooms.

Three additional rooms at the Newport facility were surveyed because historical records were identified that indicated unsealed radioactive material had been used in these rooms. The licensee had not included these rooms in the FSSR. The licensee submitted a supplement to the FSSR dated December 27, 2005, which included the three additional rooms at the Newport facility.

Twelve 100 cm^2 swipe samples were collected from areas exhibiting elevated radioactivity measurements (as compared to background). The swipe samples were analyzed by Oak Ridge Institute for Science and Education (ORISE) for carbon-14 and hydrogen-3 concentrations. The removable contamination DCGLs were 10 percent of the Table B.1 values, or 3.7 E+5 dpm/100 cm^2 for carbon-14 and 1.2 E+7 dpm/100 cm^2 for hydrogen-3. The radioactivity on 11 of the 12 smears did not exceed the instrument minimum detectable concentrations of 11 dpm/swipe for hydrogen-3 and 3.9 dpm/swipe for carbon-14. One swipe from room L-108 at the Newport facility statistically exceeded the minimum detectable concentration for hydrogen-3 with a smear count of 10.2 ± 6.8 dpm.

The licensee collected ambient gamma exposure rate measurements during the final status survey. The licensee did not propose a DCGL for ambient gamma exposure rates; although, the inspector noted that the exposure rates in the 3 facilities were comparable to background exposures. The NRC inspector also measured ambient gamma exposure rates during the confirmatory survey and all measurements were at background levels.

12.0 Financial Assurance

A decommissioning funding plan financial instrument is on file with NRC - Region IV.

13.0 Restricted Use/Alternate Criteria

The licensee did not request a restricted site release as allowed by 10 CFR 20.1403 or use of alternate criteria as allowed by 10 CFR 20.1404. Therefore, this subject area was not reviewed.