



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

July 25, 2006

Mr. Fred Hutchison, Director  
Environmental Health and Safety  
University of Idaho  
1108 West Sixth Street  
Moscow, Idaho 83844-2030

**SUBJECT: ASSESSMENT OF THE FORMER UNIVERSITY OF IDAHO BURIAL SITE**

Dear Mr. Hutchison:

By letter dated April 11, 2006, you submitted to the NRC an assessment for the former radioactive waste burial site located at the University of Idaho. The NRC has performed a technical review of your assessment including a review of the docket file records, comparison of your assessment methodology to current NRC guidance, and independent verification of your dose modeling used to demonstrate compliance with 10 CFR Part 20, Subpart E requirements. In summary, we concur with the results of your assessment and conclude that the former burial site can be released for unrestricted use.

The isotopic information provided in your assessment was based on historical records. The NRC reviewed the docket file for the University of Idaho. No records were identified in the docket file to dispute your conclusions about the amount of material disposed in the former radioactive waste burial site.

The NRC conducted a review of the method that you used to determine the concentration of radionuclides in the soil. The soil concentrations were calculated using Equation J-1 in NUREG-1757, Consolidated NMSS Decommissioning Guidance, Volume 2, which is a conservative approach. Therefore, your method used to determine the residual radioactivity mass balance was considered acceptable.

Your evaluation did not include barium-133 and thallium-204 because these isotopes are not included in the DandD model. The soil concentrations of these two radionuclides were calculated to be  $2.5 \text{ E-4}$  picocuries/gram and  $1.2 \text{ E-5}$  picocuries/gram, respectively. The NRC staff concluded that these two radionuclides would most likely have a minimal impact on the final calculated dose because of these low concentrations.

In your evaluation, you conducted two separate runs of the residential scenario of DandD Version 2.1.0 because all radionuclides could not be included in just one scenario. The doses from the two scenarios were then summed into one total dose. After consultation with a subject expert in the NRC's program office, we concluded that separate results of two program runs can be summed. Therefore, your decision to conduct two separate analyses, then sum the results, was determined to be acceptable.

Your modeling results concluded that doses would not exceed 3 millirems per year. The NRC staff conducted independent dose modeling. The NRC confirmed your calculated doses by validating the modeling results presented in your assessment.

Regulation 10 CFR 20.1402 states that a site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent to an average member of the critical group that does not exceed 25 mrem (0.25 mSv) per year, including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). Based on your assessment and the NRC's review of your assessment, the NRC has concluded that the former burial site is considered acceptable for unrestricted use.

As a reminder, in accordance with the decommissioning record keeping requirements of 10 CFR 30.35(g), you must maintain these burial site assessment records until the entire University of Idaho site is released for unrestricted use. Regulation 10 CFR 30.35(g)(3)(iii) refers to 10 CFR 20.2108 (Records of Waste Disposal), which notes that prior to January 28, 1981, 10 CFR 20.304 permitted burials in soil without specific NRC authorization. Regulation 10 CFR 20.2108 requires that records of such burials be retained by the licensee until license termination.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Should you have any questions concerning this letter, please contact Ms. Beth Alferink, Health Physicist, at (817) 860-8169 or me at (817) 860-8191.

Sincerely,

/RA/

D. Blair Spitzberg, Ph.D., Chief  
Fuel Cycle and Decommissioning Branch  
Division of Nuclear Materials Safety

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cc:  
Craig Halverson  
INEEL Oversight Program Manager  
State INEEL Oversight Program  
1410 North Hilton  
Boise, ID 83706

bcc (via e-mail distribution):

LDWert

DBSpitzberg

RJEvans

BASchlapper

RSBrowder

RIV Nuclear Materials File - 5<sup>th</sup> Floor

SUNSI Review Completed: BSA ADAMS: ☒ Yes ☐ No Initials: BSA  
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