

SER will be included in the license amendment when it is issued.

### 1.3 Need for Proposed Action

BWXT is currently manufacturing products for the Department of Energy and downblending high-enriched SNM to low-enriched SNM for commercial reactor use. It is requesting the exemption for transportation of LLRW generated during normal, routine operations. The reason for this request is to better utilize shipping containers.

On February 10, 1997, the NRC issued an emergency direct final rule (62 FR 5913) changing the fissile material exemption specifications of 10 CFR part 71. The revised rule limits the fissile-material mass in a consignment and restricts the presence of select moderators with very low neutron-absorption properties (*i.e.*, special moderators). The net effect to BWXT has been an increase in the number of waste shipments and a corresponding increase in costs. Under part 71, BWXT is limited to 400 grams of U-235 per consignment.

BWXT must make many small LLRW shipments to comply with the current SNM limits. With this amendment, BWXT will be able to efficiently utilize the volume of strong-tight containers or intermodal containers, B-25 containers, etc; thus, shipping, in one shipment, LLRW that currently requires several shipments. Therefore, BWXT submitted this license amendment request for a specific exemption from the requirements of 10 CFR 71.55 and 71.59 for specified SNM shipments with greater than 400 grams U-235 per consignment.

### 1.4 Alternative to the Proposed Action

The NRC considered one alternative to the proposed activity which is to take no action (*i.e.*, deny the exemption request).

### 2.0 Affected Environment

The affected environment for the proposed action would be the immediate vicinity of the vehicle used to transport the material to a licensed disposal facility.

The affected environment for no action is the BWXT site. A full description of the site and its characteristics is given in the 1991 EA for the Renewal of the NRC license for BWXT. The BWXT facility is located on a 525 acre site in Campbell County, VA, approximately 5 miles east of Lynchburg, VA.

### 3.0 Environmental Impacts of Proposed Action and Alternatives

#### 3.1 Occupational and Public Health

**Proposed Action.** The risk to human health from the transportation of all radioactive material in the U.S. was evaluated in the Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes (NRC, 1977). The principal radiological environmental impact during normal transportation is direct radiation exposure to nearby persons from radioactive material in the package. The average annual individual dose from all radioactive material transportation in the U.S. was calculated to be approximately 0.5 mrem, well below the 10 CFR part 20 requirement of 100 mrem for a member of the public. The proposed action would result in fewer shipments. Fewer shipments would expose fewer members of the public to radiation, reduce nonradiological truck emissions, and reduce the risk of injuries from traffic accidents. However, the reductions would be so small that the differences would be negligible.

Occupational health was also considered in the Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes (NRC, 1977). The average annual occupational dose to the driver(s) is estimated to be 8.7 mSv (870 mrem), which is below the 10 CFR part 20 requirement of 50 mSv (5000 mrem). The Department of Transportation (DOT) regulations in 49 CFR 177.842(g) require that the radiation dose rate may not exceed 0.02 mSv (2 mrem) per hour in any position normally occupied in a motor vehicle. The proposed action would not cause dose rates to the driver exceeding the DOT limit.

The NRC staff evaluated the possibility of a criticality accident due to transportation of this material. Based on the statements and representations in the application, the staff concluded that limiting the contents as described in the application will provide adequate assurance that an inadvertent criticality cannot occur if the materials are exempt from the fissile material classification and fissile material package standards of 10 CFR 71.55 and 71.59. A detailed discussion of this analysis can be found in the Safety Evaluation Report for this amendment.

Under the proposed action, the doses to the public and to the workers are not increased beyond those considered in the Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes (NRC, 1977). Therefore,

shipment of these materials as proposed would be consistent with the assessment of environmental impacts and the conclusions in the Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes (NRC, 1977).

**No Action.** Denying this amendment request would not result in any significant difference in the risk to the public health from radiological materials. If this amendment request is denied, the licensee would be required to ship the contaminated waste more frequently in smaller containers. The larger number of shipments also is consistent with the assessment of environmental impacts and the conclusions in the Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes (NRC, 1977). As noted above, the level of nonradiological truck emissions and the risk of injuries from traffic accidents would be higher, but the differences would be negligible.

The occupational health impacts would not change significantly as a result of denial of this amendment request. Occupational doses at the facility may be slightly higher as a result of the larger number of packages that workers must prepare and handle; however, the facility will continue to implement NRC-approved, radiation safety procedures for handling radioactive materials. Thus, the dose to workers under the no action alternative will remain within acceptable regulatory limits.

#### 3.2 Effluent Releases, Environmental Monitoring, Water Resources, Geology, Soils, Air Quality, Demography, Biota, Cultural and Historic Resources

**Proposed Action.** The NRC staff has determined that the approval of the proposed amendment will not impact effluent releases, environmental monitoring, water resources, geology, soils, air quality, demography, biota, or cultural or historic resources under normal transport conditions.

**No Action.** The NRC staff has determined that denial of the proposed amendment will not impact effluent releases, environmental monitoring, water resources, geology, soils, air quality, demography, biota, or cultural or historic resources at or near the BWXT site.

#### 3.3 Conclusions

Based on its review, the NRC staff has concluded that the environmental impacts associated with the proposed action are not significant and, therefore, do not warrant denial of the license amendment request. The staff has