

**WAC 246-249-050 Acceptable radioactive waste forms and packaging.** (1) Packaging.

(a) Wastes shall be packaged in conformance with the conditions of the license issued to the site operator to which the waste will be shipped. Where the conditions of the site license are more restrictive than the provisions of these regulations, the site license condition shall govern. As a minimum, radioactive waste must be packaged in such a manner that waste containers received at the facility do not show:

- (i) Significant deformation;
- (ii) Loss or dispersal of contents;
- (iii) An increase in the external radiation levels recorded on the manifest, within instrument tolerances; or
- (iv) Significant containment degradation due to rust or other chemical actions.

(b) Wastes shall not be packaged for disposal in cardboard or fiberboard. Wood boxes are prohibited after February 28, 1987.

(c) A process control program shall be used which validates the following:

(i) Liquid waste shall be packaged in sufficient approved absorbent material to absorb twice the volume of the liquid, solidified using an approved solidification agent, or stabilized using an approved stabilization agent.

(ii) Solid wastes containing liquid shall contain as little free-standing and noncorrosive liquid as is reasonably achievable, but in no case shall the liquid exceed one percent of the volume.

(d) Waste shall not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water.

(e) Waste shall not contain, or be capable of generating quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste. This does not apply to radioactive gaseous waste packaged in accordance with (g) of this subsection.

(f) Pyrophoric materials contained in wastes shall be treated, prepared, and packaged to be nonflammable.

(g) Waste in gaseous form must be packaged at a pressure that does not exceed 1.5 atmospheres at 20°C. Total activity shall not exceed 100 curies ( $3.7 \times 10^{12}$  Bqs) per container. Class A gaseous waste shall be contained within United States Department of Transportation specification cylinders. Specific approval of the department is required if the gaseous waste is Class B or C.

(h) Wastes containing hazardous, biological, pathogenic, or infectious material shall be treated to reduce the maximum extent practicable the potential hazard from the nonradiological materials. Wastes subject to regulation under Resource Conservation and Recovery Act (RCRA) are not allowed at the disposal site.

(i) Radioactive consumer products, the use and disposal of which is exempt from licensing control, may be received without regard to concentration limits of WAC 246-249-040 Table 2 provided the entire unit is received and is packaged with sufficient sorbent material so as to preclude breakage and rupture of its contents. This subsection allows the disposal of such consumer products as intact household or industrial smoke detector units containing Americium-241 foils and radium or radioactive materials incorporated into self-luminous devices and electron tubes.

(2) The following requirements are intended to provide stability of the waste. Stability is intended to ensure that the waste does not

degrade and affect overall stability of the site through slumping, collapse, or other failure of the disposal unit and thereby lead to water infiltration. Stability is also a factor in limiting exposure to an inadvertent intruder, since it provides a recognizable and nondispersible waste form.

(a) Classes B, C, and A stable waste shall have structural stability. A structurally stable waste form will generally maintain its physical dimensions and its form, under the expected disposal conditions such as weight of overburden and compaction equipment, the presence of moisture, and microbial activity, and internal factors such as radiation effects and chemical changes. Structural stability can be provided by the waste form itself, processing the waste to a stable form, or placing the waste in a disposal container or structure that provides stability after disposal.

(b) Notwithstanding the provisions in subsection (1)(c) and (d) of this section, liquid waste, or waste containing liquid, shall be converted into a form that contains as little free-standing and non-corrosive liquid as is reasonably achievable, but in no case shall the liquid exceed one percent of the volume of the waste when the waste is in a disposal container designed to ensure stability, or 0.5 percent of the volume of the waste for waste processed to a stable form.

(c) Void spaces within the radioactive waste and between the waste and its package shall be reduced to the extent practicable. Unless specifically approved by the department, void spaces in Class A stable, Class B, and Class C waste packages shall be less than 15 percent of the total volume of the disposal package, provided the disposal package is not a high integrity container nor contains activated metals that are too large to put into high integrity containers. For Class B and Class C waste packages containing activated metals, voids shall be reduced to the extent practicable, and shall be demonstrated to be structurally stable by any of the methods discussed in (a) of this subsection.

[Statutory Authority: RCW 70.98.050 and 70.98.080. WSR 91-16-109 (Order 187), § 246-249-050, filed 8/7/91, effective 9/7/91. Statutory Authority: RCW 43.70.040. WSR 91-02-049 (Order 121), recodified as § 246-249-050, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. WSR 87-01-031 (Order 2450), § 402-62-060, filed 12/11/86.]