

10A NCAC 15 .1651 RADIOACTIVE WASTE CHARACTERISTICS

(a) The following are minimum requirements for all classes of radioactive waste and are intended to facilitate handling and to provide protection of health and safety of personnel at the radioactive waste disposal site. The licensee shall:

- (1) package wastes in conformance with the conditions of the license issued to the site operator to which the waste will be shipped to the extent that such conditions are more restrictive or in addition to the requirements contained in this Rule;
- (2) not package wastes for disposal in cardboard or fiberboard boxes;
- (3) package liquid waste in sufficient absorbent material to absorb twice the volume of the liquid;
- (4) limit the volume of freestanding liquid in solid wastes containing liquid to as little freestanding and non-corrosive liquid as is reasonably achievable, but in no case to more than one percent of the volume;
- (5) limit wastes to those which are not readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water;
- (6) except for radioactive gaseous waste packaged in accordance with Subparagraph (a)(8) of this Rule, limit wastes to those which do not contain, or are not capable of generating quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste;
- (7) treat, prepare and package pyrophoric materials contained in waste in a manner to render them nonflammable;
- (8) package wastes in a gaseous form at an absolute pressure that does not exceed 1.5 atmospheres at 20 degrees C and limit the total activity to no more than 100 curies per container; and
- (9) treat wastes containing hazardous, biological, pathogenic, or infectious material to reduce the potential hazard from the non-radiological material to the maximum extent practicable.

(b) 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. The licensee shall comply with the following requirements, which are intended to provide stability of waste, when the waste is either Class B or Class C waste.

- (1) The licensee shall ensure that the waste has 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.
- (2) Notwithstanding the provisions in Subparagraphs (a)(3) and (4) of this Rule, the licensee shall convert liquid wastes or wastes containing liquids into a form that contains as little freestanding and noncorrosive liquid as is reasonably achievable; but in no case more than one percent of the volume of the waste when the waste is in a disposable container designed to ensure stability; or 0.5 percent of the volume of the waste for waste processed to a stable form.
- (3) The licensee shall reduce void spaces within the waste and between the wastes and its package to the extent practicable.

*History Note: Authority G.S. 104E-7(a)(2);
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