

### 1.2.3 Contents

The Type A and Type B contents of the packaging are physically the same and described below. The primary difference between the two contents is that the uranium fuel for the Type B contents has elevated concentrations of the U-236 isotope that exceed the  $A_2$  value for Type A content. See Table 1 - 4 Isotopes and  $A_2$  Fractions. In addition to the shipment of fuel assemblies, Section 1.2.3.4.2, Section 1.2.3.4.3 and Section 1.2.3.4.4 describe contents configurations for shipping individual fuel rods not contained in a fuel assembly.

#### 1.2.3.1 Type A contents

The Type A content of the packaging is enriched commercial grade uranium Boiling Water Reactor (BWR) nuclear fuel assemblies. A maximum of two fuel assemblies are placed in each packaging, see Table 6-1. The packaging is designed and analyzed to ship fuel configured either in an 8x8, 9x9 or 10x10 array or as loose rods, contained in a cylinder, protective case or positioned in one or both sides of the inner container. See Table 6-2. The fuel assemblies may be shipped in the BWR fuel channel.

The nuclear fuel pellets loaded in rods and contained in the packaging are uranium oxides primarily as ceramic  $UO_2$  and  $U_3O_8$ . The fuel assembly average enrichment is less than or equal to 5.0% U-235 (the fuel rod maximum enrichment is less than or equal to 5.0% U-235).

#### 1.2.3.2 Type B contents

The Type B content of the packaging is enriched commercial grade uranium Boiling Water Reactor (BWR) nuclear fuel assemblies derived from off specification high enriched uranium or reprocessed uranium. The increase in isotopic U-236 causes the contents to fall under the Type B requirements. A maximum of two fuel assemblies are placed in each packaging, see Table 6-1. The packaging is designed and analyzed to ship fuel configured either in an 8x8, 9x9 or 10x10 array or as loose rods, contained in a cylinder, protective case or positioned in one or both sides of the inner container. See Table 6-2. The fuel assemblies may be shipped in the BWR fuel channel.

The nuclear fuel pellets loaded in rods and contained in the packaging are uranium oxides primarily as  $UO_2$  and  $U_3O_8$ . The fuel assembly average enrichment is less than or equal to 5.0% U-235 (the fuel rod maximum enrichment is less than or equal to 5.0% U-235).

#### 1.2.3.3 Quantity of Radioactive Materials of Main Nuclides

The fuel assemblies in this packaging are loaded with low enrichment uranium dioxide less than or equal to 5% U-235. When used as a Type A package the contents conform to the  $A_1$  and  $A_2$  values for a Type A package. Table 1 - 2 shows the quantity of uranium and enrichment common to both the Type A and Type B contents. These values are carried forward to Table 1 - 3 and Table 1 - 4 to calculate total activity, activity fractions and  $A_2$  for the mixture.

Fuel rods assembled into the fuel assemblies comprise those loaded with sintered pellets of uranium dioxide only and those loaded with sintered pellets of uranium dioxide mixed with gadolinium oxide (hereinafter called "gadolinia") referred as gadolinia containing fuel rods. The pellets in gadolinia containing fuel rods contain a minimum of 1.0% gadolinia.