

## Obtaining Certificates of Compliance for Transportation Packages -ABSTRACT

The United States Department of Energy Office of Environmental Management (DOE-EM) has developed, designed, analyzed, and tested DOE standard canisters for use during interim storage, transportation, and disposal of its spent nuclear fuels (SNF). These DOE standard canisters have been analyzed and/or tested to demonstrate they remain leak-tight and critically safe under normal transport and hypothetical accident conditions prescribed by 10CFR71. Based on the robustness of these canisters, the DOE is preparing a series of topical reports as a means to obtain NRC review and approval for crediting the DOE standard Spent Nuclear Fuel Canisters as a leak-tight boundary in the safety analyses prescribed by 10CFR71. Transportation system vendors may then use and reference these topical reports during preparation of their safety analyses report packages in support of submittal for certificates of conformance. The DOE believes this approach is consistent with the regulatory requirements prescribed within 10CFR71.55 for both normal transport conditions and hypothetical accident conditions and will increase safety and surety of operations by relying upon engineered and tested safety features, rather than on properties of spent fuel that may have relatively large margins of uncertainty. This approach will also avoid radiological wastes and personnel exposure from potential needs to re-open and/or repackage fuels prior to transportation. Although shipment of DOE SNF is not anticipated to occur prior to opening of a geologic repository, packaging of these SNF into DOE canisters will occur at DOE SNF sites as facilities are retired and fuels are packaged and consolidated for interim storage and disposal. Preparation and submittal of these topical reports at this time will enable the DOE to move forward with its plans for interim storage and management of its SNF with the assurance that SNF will be adequately packaged for transportation as well as for repository disposal. These topical reports also demonstrate that leakage into or from the canister is not credible and that criticality safety is achieved even assuming 1) the most reactive credible configuration of the fissile material, 2) water leakage into the cask cavity, and 3) optimal reflection on all sides.