

REQUEST FOR SUPPLEMENTAL INFORMATION

1.0 **General Information**

Provide a detailed definition for the contents of the small quantity payload.

The specific contents of the small quantity payload are not clearly defined. Page 1-9 of the Safety Analysis Report (SAR) states, "Example fuel types that fall into the small quantity payload category include, but are not limited to, RINSC fuel elements, AFIP elements, etc." The SAR lists and describes fuel types as examples of contents that qualify as a small quantity payload; however, states that fuel types not explicitly listed in the SAR are acceptable for transport provided they meet the U-235 enrichment and fissile loading limits. The definition for the small quantity payloads should include the chemical and physical forms, the geometric dimensions, the thermal characteristics, and the nuclear criticality characteristics of the contents. The SAR should also provide the safety analysis for all the intended content that qualifies as a small quantity payload.

This information is needed to determine compliance with 10 CFR 71.33(b).

7.0 **Operating Procedures**

Provide operating procedures for limiting the total weight of the polyethylene used in wrapping the small quantity contents.

The as analyzed upper bound limit for the amount of polyethylene used in the package is 100 grams. Controls to ensure the total weight of the polyethylene does not exceed 100 grams are not provided in the operating procedures for the small quantity payload.

This information is needed to determine compliance with 10 CFR 71.87.

OBSERVATIONS

3.0 **Thermal Evaluation**

Further clarification of the effect of burning polyethylene on the packaging and contents should be considered. Depending on the amount of available oxygen and polyethylene composition, polyethylene can have an auto-ignition temperature of approximately 320°C, which indicates it would sustain a flame and burn rather than decompose by pyrolysis. Considering polyethylene's high heat of combustion, the effect of the high, local temperatures on the package/contents should be analyzed/discussed further.