

PUBLIC VERSION

Request for Additional Information
License Application Dated November 17, 2006, and Integrated Safety Analysis Summary dated
September 27, 2006, as revised on December 17, 2007
Docket: 70-3098

MIXED OXIDE FUEL FABRICATION FACILITY LICENSE APPLICATION FIRE SAFETY
REQUEST FOR ADDITIONAL INFORMATION

FP-1

Section 7.2.4 of the License Application (November 2006) states that ignition sources are controlled by design such as selection of appropriate electrical equipment in gloveboxes where combustible materials are present. Revise Section 7.6 of the License Application, Codes and Standards, to reference the standards or criteria that are used for selecting appropriate equipment in gloveboxes. Also, briefly describe how each standard listed provides control of ignition (i.e., enclosure, insulation, current limiting, fault detection, etc). The intent of this request for additional information (RAI) is to obtain an understanding of the degree of ignition prevention provided by the utilization of these codes.

The acceptance criteria of Standard Review Plan Section 7.4.3.2 (G), Fire Protection Features and Systems states that electrical wiring for MOX facilities should be designed and provisions should exist to maintain such wiring in accordance with the applicable provisions of the National Electric Code (National Fire Protection Association (NFPA) Standard 70).

FP-2

Section 7.3.1 of the License Application (December 2007), discusses manual fire dampers in the exhaust system process rooms and other C3 ventilation areas. Revise the License Application as follows:

- a) Provide additional detail on the physical process an operator would undertake to operate one of these dampers including the locations of the operational devices in relation to the fire and the penetration being closed.
- b) If there is a secondary means to close the dampers if the initial attempt fails, provide a description of that means, also.

Also, do such dampers exist in C3 areas that do not have dispersable radioactive material such as the hydraulic pump room? If not, what are the defense-in-depth controls to protect the final filters from heat and soot?

The acceptance criteria of Standard Review Plan Section 7.4.3.2 (J) states that where fire barriers are penetrated by the confinement system's ventilation ducting, fire dampers are appropriately used to maintain the barrier integrity. However, the closure of such dampers does not compromise the functions of the confinement system where the loss of confinement may pose a greater threat than the spread of fire.

Enclosure 2

FP-3

Revise Section 7.3.3.3 of the License Application (November 2006) to describe the design application parameters (minimum concentration, soak time, etc) of the clean agent gaseous suppression system and how these parameters were derived from or verified by the tests performed. Identify and justify any deviations from NFPA 2001 or UL2127.

The acceptance criteria in Standard Review Plan Section 7.4.3.2 (R) states that automatic fire suppression is incorporated in areas of significant, or potentially significant fire loading to protect items relied on for safety (IROFS). The design and installation of fire suppression systems and equipment is in accordance with the applicable provisions of appropriate NFPA standards.

FP-4

Revise section 7.3.4 of the License Application (November 2006) to provide the following information:

a) The largest sprinkler or deluge system demand for a system which provides defense-in-depth protection against a nuclear material release or criticality (e.g. truck bay deluge system).

b) A description of the water supply system with main sizes and flow and pressure capabilities demonstrating its ability to meet the requirements of a), above, under normal and severe water demand conditions.

The acceptance criteria in Standard Review Plan Section 7.4.3.2 (Q) states that "The facility design incorporates an adequate and reliable water supply system, designed in accordance with NFPA standards for fire protection use.

FP-5

Revise Section 7.6.2 of the License Application (November 2006), to provide a description of the method used to insure that facility workers can easily open/close egress doors that may have a substantial pressure differential across them.

The acceptance criteria of Standard Review Plan Section 7.4.3.2 (K), states that building layout provides a safe means of egress for plant personnel in the event of fire in accordance with the applicable provisions of the Life Safety Code (NFPA Standard 101).

MOX ISA SUMMARY FIRE SAFETY RAIs

The following regulatory requirement applies to FP-6 to FP-13.

10 CFR 70.65(b)(3) states that the Integrated Safety Analysis (ISA) Summary must contain “a general description of the facility with emphasis on those areas that could affect safety.” The acceptance criteria in Standard Review Plan Section 3.4.3.2(3), Processes, states that a description at a systems level is acceptable provided that it permits the U.S. Nuclear Regulatory Commission reviewer to adequately evaluate (1) completeness of the hazard and identification tasks and (2) the likelihood and consequences of the accidents identified.

FP-6

Provide the results of a fire model calculation of a fire in the hydraulic pump room assuming the ignition of the leakage from one tank of hydraulic fluid into a drip pan. (Remainder of RAI is Official Use Only – Security Related Information).

FP-7

Revise the ISA Summary, September 2006, Section 5.3.4.2.2 to provide details regarding the glovebox VHD system in regard to its ability to remain operational and provide dynamic confinement during a fire scenario. These details should clarify which controls are IROFS or defense-in depth controls for all credible scenarios. (Remainder of RAI is Official Use Only – Security Related Information).

FP-8

Revise the ISA Summary, September 2006, Section 5.3.4.2.2 to provide more detail regarding fire protection for the laboratory VHD system. (Remainder of RAI is Official Use Only – Security Related Information).

FP-9

Revise the ISA Summary, September 2006, Section 5.3.4.2.2 to describe the measures taken to control the temperatures inside the gloveboxes containing the sintering furnace and the calciner. (Remainder of RAI is Official Use Only – Security Related Information).

FP-10

In the discussion of MOX Fuel Transport Casks (ISA Summary, September 2006, page 5.3.4-54), The ISA Summary states that during a fire in truck bay, the MOX fresh fuel package would provide superior thermal performance in an undamaged state compared to the conditions assumed in the thermal analysis (1472°F for 30 minutes). (Remainder of RAI is Official Use Only – Security Related Information).

FP-11

(RAI is Official Use Only – Security Related Information).

FP-12

(RAI is Official Use Only – Security Related Information).

FP-13

(RAI is Official Use Only – Security Related Information).