FAQ Number **06-0022 Rev. 0**

Plant:	Arkansas Nulear One - ANO	Submittal Date:	11/30/06
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Subject:

Interpretation of guidance? ***Yes***

Proposed new guidance not in NEI 04-02? ***Yes***

Details:

NEI 04-02 guidance needing interpretation (include section, paragraph, and line numbers as applicable):

NEI 04-02, Section 4.3.1, Fundamental Fire Protection Program and Design Elements Transition Review, appendices to list acceptable interpretations to the NFPA 805 standard (future).

Circumstances requiring guidance interpretation or new guidance:

Clarification of NFPA-805, Standard for Fire Protection for Light Water Reactor Electric Generating Plants (2001 Edition), Chapter 3, Section 3.3.5 "Electric cable construction shall comply with a flame propagation test as acceptable to the AHJ."

Specifically, identify a list of typical flame propagation test which are acceptable to the AHJ.

Detail contentious points if licensee and NRC have not reached consensus on the facts and circumstances:

None

Potentially relevant existing FAQ numbers:
FAQ 06-0007

Response Section:

Proposed resolution of FAQ and the basis for the proposal:

Section 3.3.5.3 of NFPA 805 discusses the requirement for flame propagation in electric cable construction testing as acceptable to the AHJ to support the control of combustible materials.

NEI 04-02, Section 2.2 provides a list of NRC "exception, modifications and supplementation of NFPA 805". In that list the following is provided:

> ***Existing cables § 50.48(c)(2)(iv) – Section 3.3.5.3 of the standard provides that electric cable construction shall comply with a flame propagation test acceptable to the AHJ. For this rulemaking, the NRC is requiring compliance with 10 CFR 50.48 (c)(2)(v), which provides for the use of flame-retardant coatings on electric cables or an automatic fixed fire suppression system in lieu of installing cables meeting an acceptable flame propagation test.***

The below listed tests are either established industry standards or consensus standards regards fire testing. Establishing these as acceptable to the AHJ at this time will simplify the review process and reduce burden on both the staff and the licensees, while maintaining the prescribed level of regulatory review. Nothing herein would limit review and acceptance of other testing documents as may be submitted on a plant specific basis to establish compliance.

If appropriate, provide proposed rewording of guidance for inclusion in the next Revision:

As follows;

Clarification NFPA 805 specific sections as may be applied under NEI 04-02, to be included in (New) Appendix K, to NEI 04-02 upon approval of specific clarification (final formatting to be provided by NEI contract writers).

Specific clarification to NFPA 805 section, 3.3.5.3, from FAQ 06-0022
The following list of standard fire tests, but not limited to, are considered acceptable as "flame propagation tests":

- FM Test Standard 3972, Test Standard for Cable Fire Propagation, dated March 1994
- ASTM D5537-03, Standard Test Method for Heat Release, Flame Spread, Smoke Obscuration, and Mass Loss Testing of Insulating Materials Contained in Electrical or Optical Fiber Cables When Burning in a Vertical Cable Tray Configuration
- UL 1666, UL Standard for Safety Test for Flame Propagation Height of Electrical and Optical-Fiber Cables Installed Vertically in Shafts, November 2000
- NFPA 262, Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces, 2007 Edition
- IEEE 1202: Standard for Flame Testing of Cables for Use in Cable Tray in Industrial and Commercial Occupancies

- IEEE Std 817-1993 IEEE Standard Test Procedure for Flame-Retardant Coatings Applied to Insulated Cables in Cable Trays –Description
- UL 1685, Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables, Dated Feb. 1997
- IEC 60332-1 -- Test on Electric Cables Under Fire Conditions Part 1: Test on a Single Vertical Insulated Wire and Cable
- IEC 60332-3-10 -- Tests on Electric Cables Under Fire Conditions - Part 3-10: Test for Vertical Flame Spread of Vertically Mounted Bunched Wires or Cables – Apparatus
- T-30-520 – "Guide for Conducting Vertical Cable Tray Flame Tests – 70,000 BTU/Hour."
- CSA, FT4 - Tray Flame Test (FT4) was developed by the industry with participation of Ontario Hydro, and adopted by CSA
- IPCEA- S-61-402, Thermoplastic-Insulated Wire and Cable
- IPCEA-S-16-81, (almost identical to UL 83 and UL 44)
- IEEE 383-1974
- UL 83, UL Standard for Safety Thermoplastic-Insulated Wires and Cables, November 2003
- UL 44, Standard for Safety Thermoset-Insulated Wires and Cables, July 2005