March 5, 2008

MEMORANDUM TO: AFPB File

FROM: Alexander Klein, Chief **/RA/**
Fire Protection Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

SUBJECT: CLOSE-OUT OF NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 805 FREQUENTLY ASKED QUESTION 06-0019, Definition of "Power Block" and "Plant"

The NRC staff has reviewed Frequently Asked Question (FAQ) 06-0019, Revision 4. FAQ 06-0019, Revision 4 was proposed by the transition team at the Shearon Harris nuclear plant (the authors) to provide guidance on the definitions of "power block" and "plant" as found in National Fire Protection Association Standard (NFPA) 805.

Industry Proposal

The authors of FAQ 06-0019, Revision 4 proposed that clarification regarding the definition of the phrase "power block" be included in the industry document developed to provide guidance to perform the NFPA 805 transition process, Nuclear Energy Institute document NEI 04-02, "Guidance for Implementing a Performance-Based, Risk-Informed Fire Protection Program Under *10 CFR 50.48(c)*" (NEI 04-02). The authors also proposed that each licensee would identify those site structures that fall under the clarified definition of power block in the *10 CFR 50.48(c)* license amendment request.

The authors of FAQ 06-0019, Revision 4 proposed to add the following clarification to NEI 04-02:

> "Where used in Chapter 3, 'power block' and 'plant' refers to structures that have equipment required for nuclear plant operations, such as Containment, auxiliary building, service building, control building, fuel building, rad waste, water treatment, turbine building, and intake structure, or structures that are identified in the facility's current license basis (CLB). Applicable structures will be identified in the 10 CFR 50.48(c) License Amendment Request."

NRC Staff Evaluation

The NRC staff (the staff) has evaluated the FAQ 06-0019, Revision 4 proposal with respect to regulatory compliance and technical adequacy.

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The paragraph proposed by the authors provides a list of typical structures that would normally house systems and equipment that are required for nuclear plant operations.

NFPA 805 Section 1.6.46 defines Power Block as "Structures that have equipment required for nuclear plant operations." NFPA 805 Appendix A also contains amplifying guidance on the definition of "power block." NFPA 805 Section A.1.6.46 describes the term power block as: "Containment, auxiliary building, service building, control building, fuel building, rad waste, water treatment, turbine building and intake structure are examples of power block structures."

The definition of "power block" provided in FAQ 06-0019, Revision 4 is consistent with the definition of "power block" provided in NFPA 805, Section 1.6.46 and the explanatory material provided NFPA 805 Section A.1.6.46. The staff finds that the list of power block structures provided in FAQ 06-0019, Revision 4 is consistent with NFPA 805 and accepted industry practice and is therefore acceptable.

The proposal to include the list of power block structures in the *10 CFR 50.48(c)* license amendment request provides the NRC staff documentation of the structures considered to be included under the definition of power block structures and adds clarity and reduces ambiguity during future inspections. The NRC staff finds this acceptable.

The staff has reviewed the proposed changes to NEI 04-02 as presented in FAQ 06-0019, Revision 4 and finds that nothing in this FAQ would prevent continued endorsement of NEI 04-02. In accordance with RIS 2007-19, the guidance in this FAQ is acceptable for use by licensees in transition. The final endorsement of this FAQ will be addressed by the next revision to Regulatory Guide 1.205.

See the enclosure to this memorandum for a chronological history of this FAQ.

References:

For details regarding this FAQ, please see the following:

- FAQ 06-0019, Revision 0 (12/06) (ADAMS accession number ML070030437)
- NRC Staff Response to FAQ 06-0019, Revision 0, (02/07) (ADAMS accession number ML070510365)
- FAQ 06-0019, Revision 1 (5/07) (ADAMS accession number ML071340184)
- FAQ 06-0019, Revision 2 (9/07) (ADAMS accession number ML072550063)
- FAQ 06-0019, Revision 3 (10/07) (ADAMS accession number ML072740255)
- NRC Staff Response to FAQ 06-0019, Revision 3 (10/07) (ADAMS accession number ML073060471)
- FAQ 06-0019, Revision 4 (11/07) (ADAMS accession number ML073060545)
- NEI 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program Under 10 CFR 50.48(c), Revision 1, (ADAMS accession number ML052590476)
- NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition (available through the Public Document Room or NFPA)

- Regulatory Guide 1.205, Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants (ADAMS accession number ML061100174)
- NRC Regulatory Information Summary 2007-19, Process For Communicating Clarifications Of Staff Positions Provided In Regulatory Guide 1.205 Concerning Issues Identified During The Pilot Application Of National Fire Protection Association Standard 805 (ADAMS accession number ML071590227)

Enclosure:
As Stated

- Regulatory Guide 1.205, Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants (ADAMS accession number ML061100174)
- NRC Regulatory Information Summary 2007-19, Process For Communicating Clarifications Of Staff Positions Provided In Regulatory Guide 1.205 Concerning Issues Identified During The Pilot Application Of National Fire Protection Association Standard 805 (ADAMS accession number ML071590227)

Enclosure:
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FAQ 06-0019 History

INITIAL FAQ 06-0019 PROPOSAL

The NFPA 805 Transition Team at the Shearon Harris nuclear plant initiated FAQ 06-0019 and processed it through the Nuclear Energy Institute's NFPA 805 Task Force in order to provide guidance to licensees transitioning to NFPA 805 regarding the definition of the words "power block" and "plant." The FAQ 06-0019, Revision 0 definition for "power block" and "plant" was:

"Where used in Chapter 3, the terms "power block" and "plant" are equivalent to "areas in which a fire could jeopardize the ability to meet the performance criteria described in Section 1.5.1, Nuclear Safety Performance Criteria."

NRC STAFF RESPONSE TO FAQ 06-0019, REVISION 0

The NRC staff responded with a comment that the definitions of power block and plant did not include a tie to fire-induced damage to structures, systems and components that are required to meet the nuclear safety performance criteria. The staff recommended a change to the definition:

"Where used in Chapter 3, the terms "power block" and "plant" are equivalent to areas in which a fire could jeopardize the ability of structures, systems and components required to meet the performance criteria described in Section 1.5.1, Nuclear Safety Performance Criteria."

FAQ 06-0019, REVISION 1

The authors revised the FAQ to include the recommended words from the NRC staff comment.

NRC STAFF VERBAL COMMENTS ON FAQ 06-0019, REVISION 1

The NRC staff voiced concern that a liberal reading of the FAQ as presented in Revision 1 could allow a licensee to exclude plant structures that play a key role in maintaining Defense-in-Depth with regard to fire protection. Specifically, the Turbine Building at some plants does not contain any safety-related or important-to-safety structures, systems or components, yet is typically considered to be one of the highest risk fire areas due to the potential for large, damaging fires. A Turbine Building fire can very likely have a direct impact on plant risk through the loss of electrical distribution equipment as well as balance-of-plant systems and components. The NRC staff expressed the opinion that the FAQ 06-0019 definition of "power block" and "plant" should at least list those structures that normally contain equipment required for nuclear plant operations, including the Turbine Building.

FAQ 06-0019, REVISION 2

The authors revised the clarification provided in the FAQ to include a minimum list of major plant structures taken from NFPA 805 Appendix A, Section 1.6.46: "As a minimum, containment/reactor building, auxiliary building, control building, rad waste building, fuel building and turbine building should be considered for applicability in the scope of NFPA 805."

NRC STAFF VERBAL COMMENTS ON FAQ 06-0019, REVISION 2

The NRC staff voiced concern that implementation of the FAQ as written would result in the implementation of performance-based methods in the categorization of plant areas under the definition of “power block” and “plant.” Since “power block” and “plant” are definitions used to implement NFPA 805 Chapter 3 attributes, NFPA 805 and Regulatory Guide 1.205 require the submittal of a license amendment request in order to utilize performance-based methods. The staff requested that FAQ 06-0019, be revised such that performance-based methods were not being used.

FAQ 06-0019, REVISION 3

The authors revised FAQ 06-0019 such that no reference was made to the Nuclear Safety Performance Criteria in NFPA 805 Section 1.5.1. The guidance was revised to include those structures that are identified in the facility’s current license basis (CLB). The scope of equipment required for plant operations was defined by components and cables selected per NFPA 805 Section 2.4.2. FAQ 06-0019, Revision 3 also included a requirement that applicable structures will be identified in the *10 CFR 50.48(c)* license amendment request submitted for transition.

NRC STAFF COMMENTS ON FAQ 06-0019, REVISION 3

The NRC staff requested that the authors remove the sentence “The scope of equipment required for plant operations is defined by components and cables selected per NFPA 805 2.4.2.” NFPA 805 Section 2.4.2 is limited in scope to those components that are required to meet the Nuclear Safety Performance Criteria. The letter and the intent of the NFPA 805 definition for “power block” and “plant” (“Structures that have equipment required for nuclear plant operations”) includes all equipment needed to generate electricity (main turbine, feedwater, circulating water, service water, main steam, etc.) as well as that equipment needed to mitigate accidents required by the Technical Specifications (safety injection, emergency diesel generators, containment spray, emergency service water, etc.).

FAQ 06-0019, REVISION 4

The FAQ authors addressed all the NRC staff comments.