

Brandon,

Here is an e-copy of the requested closure memo for FAQ 06-0001.

It has recently been declared in ADAMS at ML063480169.

Please distribute it to the NEI 805 Task Force members.

Thanks,

Chuck

Charles Moulton
Fire Protection Engineer
NRR/DRA/AFPB
Phone: 415-2751
Mailstop: O11A11

Mail Envelope Properties (4587DEC1.E1A : 12 : 9706)

Subject: E-copy of FAQ #1 closure memo
Creation Date Tue, Dec 19, 2006 7:44 AM
From: Charles Moulton

Created By: CEM4@nrc.gov

Recipients	Action	Date & Time
nei.org btj (internet:btj@nei.org)	Transferred	12/19/06 7:45 AM
nrc.gov PWL.TWGWPO01.HQGWDO01 CC (Paul Lain)	Delivered Opened	12/19/06 7:44 AM 12/19/06 9:25 AM
nrc.gov SDW1.TWGWPO04.HQGWDO01 CC (Sunil Weerakkody)	Delivered 12/19/06 7:44 AM Opened	Delivered 12/19/06 8:14 AM
Post Office	Delivered	Route nei.org nrc.gov nrc.gov

Files	Size	Date & Time
MESSAGE	1034	Tuesday, December 19, 2006 7:44 AM
faq 06-0001 close.pdf	64392	Tuesday, December 19, 2006 7:36 AM

Options

Auto Delete: No
Expiration Date: None
Notify Recipients: No
Priority: Standard
ReplyRequested: No
Return Notification: None

Concealed Subject: No
Security: Standard

To Be Delivered: Immediate
Status Tracking: Delivered & Opened

Attachment 1:

December 14, 2006

MEMORANDUM TO: AFPB File

FROM: Sunil D. Weerakkody, Chief */RA/*
Fire Protection Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

SUBJECT: CLOSURE OF NATIONAL FIRE PROTECTION ASSOCIATION 805
FREQUENTLY ASKED QUESTION NUMBER 06-0001

Disposition of Frequently Asked Question (FAQ) 06-0001

Based on mutual agreement between U.S. Nuclear Regulatory Commission staff members and Nuclear Energy Institute (NEI) National Fire Protection Association (NFPA) 805 task force members, it was determined that NFPA 805 FAQ 06-0001 was redundant with later FAQs and should therefore be withdrawn. Some of the details of this FAQ were incorporated into Revision 1 of FAQ 06-0012. FAQ 06-0001 is thus closed.

References

For details regarding this FAQ, please see the following:

- FAQ 06-0001, Revision 0 (4/27/2006) (ADAMS accession number ML061440420)
- FAQ 06-0012, Revision 1 (10/26/2006) (ADAMS accession number ML063170362)
- NEI 04-02, Revision 1 (ADAMS accession number ML052590476)
- NFPA 805, 2001 Edition (available through the Public Document Room or NFPA)
- Regulatory Guide 1.205 (ADAMS accession number ML061100174)
- NFPA 805 FAQ Process Document, Revision 1 (ADAMS accession number ML061660105)

CONTACT: Charles Moulton, DRA/NRR
301-4152751

December 14, 2006

MEMORANDUM TO: AFPB File

FROM: Sunil D. Weerakkody, Chief */RA/*
Fire Protection Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

SUBJECT: CLOSURE OF NATIONAL FIRE PROTECTION ASSOCIATION 805
FREQUENTLY ASKED QUESTION NUMBER 06-0001

Disposition of Frequently Asked Question (FAQ) 06-0001

Based on mutual agreement between U.S. Nuclear Regulatory Commission staff members and Nuclear Energy Institute (NEI) National Fire Protection Association (NFPA) 805 task force members, it was determined that NFPA 805 FAQ 06-0001 was redundant with later FAQs and should therefore be withdrawn. Some of the details of this FAQ were incorporated into Revision 1 of FAQ 06-0012. FAQ 06-0001 is thus closed.

References

For details regarding this FAQ, please see the following:

- FAQ 06-0001, Revision 0 (4/27/2006) (ADAMS accession number ML061440420)
- FAQ 06-0012, Revision 1 (10/26/2006) (ADAMS accession number ML063170362)
- NEI 04-02, Revision 1 (ADAMS accession number ML052590476)
- NFPA 805, 2001 Edition (available through the Public Document Room or NFPA)
- Regulatory Guide 1.205 (ADAMS accession number ML061100174)
- NFPA 805 FAQ Process Document, Revision 1 (ADAMS accession number ML061660105)

DISTRIBUTION: AKlein PBarbadoro RRadlinski SWeerakkody
 PLain AFPB R/F CMoulton

ADAMS Accession#: ML063480169 NRC-001

OFFICE	NRR/DRA/AFP
NAME	SWeerakkody
DATE	12/14/06

OFFICIAL AGENCY RECORD

Please find the attached FAQs for submittal:

FAQs 7, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28

Thank you,

Brandon Jamar
NEI
202.739.8043

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Subject: 12/19/06 FAQ Submittal
Creation Date Tue, Dec 19, 2006 9:05 AM
From: "JAMAR, Brandon" <btj@nei.org>

Created By: btj@nei.org

Recipients

nrc.gov
CEM4 (Charles Moulton)
PWL (Paul Lain)

nrc.gov
SDW1 CC (Sunil Weerakkody)

Post Office

Route
nrc.gov
nrc.gov

Files	Size	Date & Time
MESSAGE	750	Tuesday, December 19, 2006 9:05 AM
FAQ 06-0007 Rev. 1.pdf	16773	
FAQ 06-0016 - Rev. 0.pdf	146925	
FAQ 06-0017 - Rev. 0.pdf	125971	
FAQ 06-0018 Rev. 0.pdf	114462	
FAQ 06-0019 Rev. 0.pdf	14315	
FAQ 06-0020 Rev. 0.pdf	14191	
FAQ 06-0021 Rev. 0.pdf	14294	
FAQ 06-0023 Rev. 0.pdf	14681	
FAQ 06-0024 Rev. 0.pdf	14221	
FAQ 06-0025 Rev. 0.pdf	15122	
FAQ 06-0026 Rev. 0.pdf	14689	
FAQ 06-0028 Rev. 0.pdf	14442	
FAQ 06-0022 Rev. 0.pdf	24953	
Mime.822	752413	

Options

Expiration Date: None
Priority: Standard
ReplyRequested: No
Return Notification: None

Concealed Subject: No
Security: Standard

Junk Mail Handling Evaluation Results

Message is eligible for Junk Mail handling
This message was not classified as Junk Mail

Junk Mail settings when this message was delivered

Junk Mail handling disabled by User
Junk Mail handling disabled by Administrator
Junk List is not enabled
Junk Mail using personal address books is not enabled
Block List is not enabled

Attachment 1:

**NFPA-805 Transition Pilot Plant
Frequently Asked Questions
(Template)**

Plant:	<u>Harris Nuclear Plant (HNP)</u>	FAQ # <u>06-0007 Rev. 1</u>
Submittal Date:	<u>07-20-06</u>	
Licensee Contact:	<u>Alan Holder</u>	Tele/email <u>919-546-3372</u>
NRC Contact:	<u></u>	Tele/email <u></u>

Subject

Interpretive Guidance? Yes / No

Proposed New Guidance not currently in NEI 04-02? Yes / No

Details

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

NEI 04-02, Section 4.3.1.

Circumstances requiring guidance interpretation or new guidance:

Clarification of NFPA-805, Chapter 3 applicability requirements for fire brigades.

Detail contentious points if licensee and NRC have not reached agreement:

NA

Potentially relevant existing FAQ numbers:

NA

Response Section

Proposed Resolution of FAQ and basis for the proposal:

Clarification to questions as presented.

If appropriate, provide proposed rewording of guidance for inclusion in next revision.

As follows;

From NFPA-805, Standard for Fire Protection for Light Water Reactor Electric Generating Plants (2001 Edition)

3.4 Industrial Fire Brigade

3.4.1 **On-Site Fire-Fighting Capability.** All of the following requirements shall apply.

- (a) A fully staffed, trained, and equipped fire-fighting force shall be available at all times to control and extinguish all fires on site. This force shall have a minimum complement of five persons on duty and shall conform with the following NFPA standards as applicable:
 - (1) NFPA 600, *Standard on Industrial Fire Brigades* (interior structural fire fighting)
 - (2) NFPA 1500, *Standard on Fire Department Occupational Safety and Health Programs*
 - (3) NFPA 1582, *Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians*

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). Appendix K will be prefaced with the following, which shall be applicable to all future specific clarifications unless specifically excluded.

Appendix K, Specific Clarifications

While recognizing that Regulatory Guide 1.205, Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants NEI 04-02, Nuclear Energy Institute, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program Under 10 CFR 50.48(c), does not provide interpretations to the standard NFPA 805, there are instances where implementation of the standard does require further specific clarification as to what is an acceptable method or process to the AHJ. These instances are collectively presented in this Appendix, and referenced to the Frequently Asked Question (FAQ) in which they were originally presented during the pilot plant process and subsequent plant transitioning processes.

Specific clarification to NFPA section 3.4, from FAQ #06-0007, it is acceptable to apply the section as;

- 1 NFPA-600 would apply only to plants with a traditional fire brigade made up of employees from one or more plant departments.
- 2 NFPA-1500 and 1582 would apply only to those plants which utilize a dedicated fire department organization.
- 3 Reference in section 3.4.1(a)(1), to “(interior structural fire fighting)” limits the applicable sections of NFPA-600 (2000 edition) to Chapters 2 and 5, (excluding incipient stage fire fighting, and advanced exterior fire fighting, Chapters 3,4,6).

Attachment 2:

FAQ Number	06-0016, Revision 0
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Plant: Harris Nuclear Plant (HNP) FAQ # 06-0016 Rev. 0
Submittal Date: 11-6-06
Licensee Contact: David Miskiewicz Tele/email 919-546-7588
NRC Contact: _____ Tele/email _____

Distribution: Check all that apply (*NEI Internal Use*)

FPWG **RIRWG** **NSSS OG** **NFPA 805 TF**

Subject: Clarification/enhancement of Ignition Source counting guidance for Electrical Cabinets in NUREG/CR-6850, supporting NFPA-805 Fire PRA application.

Interpretation of guidance? Yes

Proposed new guidance not in NEI 04-02? Yes

Details:

NEI 04-02 Guidance needing interpretation (include section, paragraph number, and line number):

New attachment on interpretation issues

Circumstances requiring guidance interpretation or new guidance:

The guidance provided in NUREG/CR-6850 for Task 6, Fire Ignition Frequency (Section 6.5.6, Bin 15), states:

Bin 15 – Electrical Cabinets (Plant-Wide Components): Electrical cabinets represent such items as switchgears, motor control centers, DC distribution panels, relay cabinets, control and switch panels (excluding panels that are part of machinery), fire protection panels, etc. Electrical cabinets in a nuclear power plant vary significantly in size, configuration, and voltage. Size variation range from small-wall mounted units to large walk-through vertical control cabinets, which can be 20’ to 30’ long. The configuration can vary based on number of components that contribute to ignition, such as relays and circuit cards, and combustible loading, which also affects the fire frequency. Voltages in electrical cabinets vary from low voltage (120 V) panels to 6.9 kV switchgears. Even though it is expected that these features affect the likelihood of fire ignition, from a simple analysis of the event data involving the electrical cabinets, it was determined that the variation by cabinet type did not warrant separate frequency evaluation. Therefore, one fire frequency was estimated for the electrical cabinets.

This guidance infers that cabinet size is not a factor for ignition source counting. However, additional guidance states that electrical cabinets “... should be counted by their vertical segments ...”. During the presentation of Pilot Project results it was determined that differences related to the definition of ‘segments’ could result in notable inconsistency between individual users of NUREG/CR-6850.

The discussion of this issue found that this issue affects only general electrical cabinets and panels. In the case of switchgears, load centers, unit substations, and motor control centers the term 'segment' was uniformly interpreted to be equal to the individual vertical sections that define these types of components. As applied to general electrical cabinets and panels, the term 'segments' could be interpreted to mean different metrics.

- A segment could be defined as an enclosed element that is generally independent of size or volume (also referred to as a vertical section).
- A segment could be defined as an individual section of an enclosure regardless of whether it was fully enclosed.
- A segment could be defined based on a 'standard' or reference sample panel size.

Depending on the metric being used, the counting of electrical cabinets would result in varying results and consequently, different fire ignition frequency values. While NUREG/CR-6850 allows the establishment of plant specific criteria for counting of electrical cabinets, additional guidance is required to achieve a consistent basis for determining the ignition frequencies.

Detail contentious points if licensee and NRC have not reached agreement

This topic has impact on the NFPA-805 pilots, non-pilots and other users of NUREG/CR-6850.

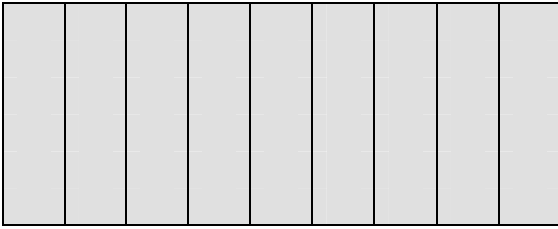
Potentially relevant existing FAQ numbers:

This guidance is specific to the characterization of electrical cabinets for Bin 15 ignition frequency determination. The characterization of switchgear and load center segments for the purposes of high energy arcing faults is addressed by FAQ 06-0017.

Response Section

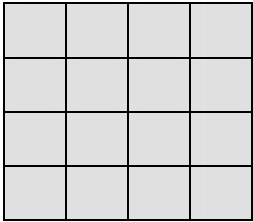
A generalized counting criterion for general electrical cabinets and panels is proposed. This proposed criterion would involve two elements.

For switchgears, load centers, unit substations, and motor control centers the counting for the purposes of NUREG/CR-6850, Task 6, Bin 15 would be based on vertical section. This counting is illustrated in the following examples.



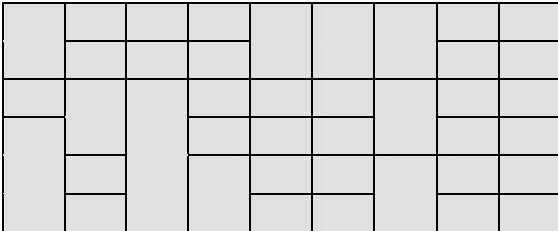
Medium Voltage Switchgear

9 Breakers and Sections
Count = 9 for Bin 15



Load Center or Unit Substation

16 Breakers in 4 Sections
Count = 4 for Bin 15



Motor Control Center

41 Breakers/Starters in 9 Sections
Count = 9 for Bin 15

For general electrical cabinets and panels, it is proposed that the counting be based on a physically enclosed element. A physically enclosed element means that the cabinet or panel is fully enclosed by 6 solid elements with the provision that a non-combustible floor or ceiling may represent the bottom or top. The term ‘solid’ element is not intended to mean that the element is substantially continuous. Consequently, breeches or unsealed penetrations could still be treated as ‘solid’. The term ‘solid’ is intended to prevent a panel that is divided by an element that is substantially open from being treated as two separate panels.

This proposed counting for electrical cabinets and panels is to be applied for a wide range of panel sizes. However, recognizing that the ignition frequency is more a function of the cabinet contents than the cabinet size, a basis is needed to address outlier conditions. It is proposed that each user be required to establish criteria for identifying the outliers and the basis for counting them. As an example, they can be counted by establishing a nominal ‘standard’ or reference cabinet size. The count could also be based on evaluating the cabinet internals relative to a defined ‘standard’ or reference configuration.

For example, a particular user may define a cabinet with any horizontal dimension more than 8 feet as an outlier, and a ‘standard’ cabinet as being nominally 4 feet in length x 3 feet deep. (cabinet height is not generally an issue based on the use of vertical sections). Using this example, the following cabinet and panel examples would be counted as follows:

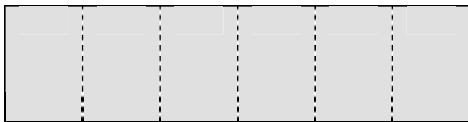
6 ft



Cabinet is not an outlier –
Count = 1



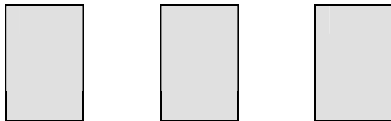
Cabinet is same as standard
Count = 1



Internal dividers are not solid
Count = 1



Internal dividers are solid
Count = 6



Three independent cabinets
Count = 3

12 feet, 3 ft deep



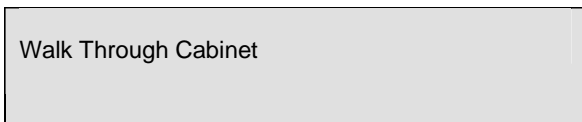
Panel is an outlier,
using a 4' standard
cabinet -
Count = 3

9 ft long , 6 ft deep



Cabinet is an outlier, no evaluation of
contents, based on reference cabinet
Count = 3 – due to both variation
from the standard length and width..

9 ft long , 6 ft deep



Cabinet is an outlier, evaluation of
contents shows low cable loading
typical of the standard cabinet -
Count = 1

The intent is that a basis for the counting of outliers is required. A volumetric comparison is not required. Also, to prevent any appearance that this treatment is intended to be based on physical measurements, the proposed approach allows only integer counting. The assignment of fractional values would not be allowed. In addition, the proposed methodology retains the option for screening small cabinets resulting in a count of zero for them (as discussed in NUREG/CR-6850). As applied in this case, the user would be allowed to screen cabinets or panels based on defined criteria and exclude them from the overall population count. When performing detailed fire modeling, the fire should be applied to the actual cabinet footprint by vertical section, including outliers.

Basis:

The existing guidance in NUREG/CR-6850 is based on industry data which has only been provided with fidelity adequate to support plant level ignition frequencies for electrical cabinets. Although the guidance does address the broad applicability of the data, it leaves room for variability that can create issues with PRA quality. It is important that the ignition frequency results be of sufficient quality to support not only NFPA-805 transition but also the more broad scope of regulatory inspection and enforcement issues.

The guidance proposed will provide more consistency when determining plant specific electrical cabinet ignition frequencies while working within the bounds of the exiting data provided by the NUREG. This should facilitate the review and acceptability of the results.

Attachment 3:

FAQ Number 06-0017, Revision 0

Plant:	<u>Oconee</u>	FAQ # <u>06-0017 Rev. 0</u>
Submittal Date:	<u>11-6-06</u>	
Licensee Contact:	<u>Kiang Zee</u>	Tele/email _____
NRC Contact:	_____	Tele/email _____

Distribution: Check all that apply (*NEI Internal Use*)

- FPWG** **RIRWG** **NSSS OG** **NFPA 805 TF**

Subject: Clarification/enhancement of Ignition Source counting guidance for High Energy Arcing Faults (HEAF) in NUREG/CR-6850, supporting NFPA-805 Fire PRA application.

Interpretation of guidance? Yes

Proposed new guidance not in NEI 04-02? Yes

Details:

NEI 04-02 Guidance needing interpretation (include section, paragraph number, and line number):

New attachment on interpretation issues

Circumstances requiring guidance interpretation or new guidance:

The guidance provided in NUREG/CR-6850 for Task 6, Fire Ignition Frequency (Section 6.5.6, Bin 16), states:

Bin 16 – High-Energy Arcing Faults (Plant-Wide Components): High-energy arcing faults are associated with switchgear and load centers. Switchyard transformers and isolation phase buses are not part of this bin. For this bin, similar to electrical cabinets, the vertical segments of the switchgear and load centers should be counted. Additionally, to cover potential explosive failure of oil filled transformers (those transformers that are associated with 4.16 or 6.9kV switchgear and lower voltage load centers) may be included in vertical segment counts of the switchgear.

Pilot discussions and benchmarking of NUREG/CR-6850 for Task 6, Fire Ignition Frequency, has shown inconsistency in the treatment of High Energy Arcing Faults (Bin 16). Strict interpretation of the guidance is that the HEAF count should mimic the electrical cabinet counts for switchgear and load centers. The application of such a counting method is expected to result in reported High Energy Arcing Fault (HEAF) frequency values for an individual plant being inconsistent with industry experience. The industry experience and consequently the HEAF frequency is based on 3 events occurring on medium voltage switchgears and ½ event occurring on a 480 VAC Load Center. Because of the relative numbers of switchgears and load centers at an individual plant, it is expected that the resultant frequency may be inappropriately skewed. There is a concern that the occurrence of a HEAF frequency distribution that departs significantly from the 3 to ½ ratio would cause results to be challenged.

There is also a question of counting Bus Ducts. The specific guidance for NUREG/CR-6850, Task 6 does not require any counting of bus ducts. However, the discussion in Appendix M of NUREG/CR 6850 notes that bus ducts are susceptible to HEAF events.

There is a need to resolve these issues to prevent future rework and to reduce burden associated with uncertainty treatment.

Detail contentious points if licensee and NRC have not reached agreement

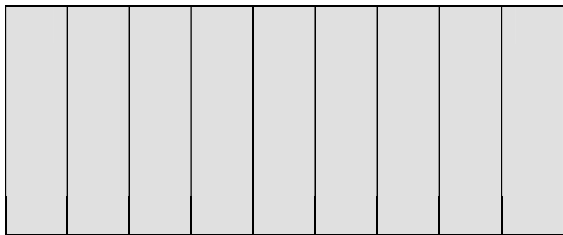
This topic has impact on the NFPA-805 pilots, non-pilots and other users of NUREG/CR-6850.

Potentially relevant existing FAQ numbers:

This guidance is specific to the characterization of electrical cabinets for Bin 16 HEAF determination. The characterization and counting of electrical cabinets for Bin 15 determination is addressed by FAQ 06-0016.

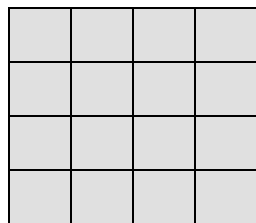
Response Section

It is proposed that the existing guidance in NUREG/CR-6850 that recommends counting based on segments be modified. Since industry experience shows that the medium voltage switchgears are most likely to experience this event, it is proposed that each low voltage switchgear (usually referred to as load centers or unit substations) operating at 440 Vac or higher be counted as a single unit regardless of the number of vertical sections or segments. This treatment would ensure that the majority of the HEAF frequency is allocated to the medium voltage switchgears. When performing detailed fire modeling, the HEAF should be distributed by vertical section of the applicable load center.



Medium Voltage Switchgear

9 Breakers and Sections
Count = 9 for Bin 16



Low Voltage Switchgear \geq 440 Vac
(Load Centers or Unit Substations)

16 Breakers in 4 Sections
Count = 1 for Bin 16

In the case of bus ducts a possible approach is to count them as being equivalent to an individual section, regardless of length. However, there have been no reported occurrences of a HEAF event originating at (on) a bus duct and the most likely location for such an event if it were to occur is at the termination point of the bus duct at the switchgear and/or transformer. The treatment of a HEAF event at these terminal ends would already bound the anticipated consequences. Because the specific guidance for NUREG 6850 Task 6 does not require the counting of bus ducts, a HEAF event originating at (on) a bus duct has not occurred, and the potential consequences if it were to occur at its terminal end is bounded by the HEAF treatment of that terminal, it is proposed that no specific treatment or counting of bus ducts be required for fire frequency determination.

Basis:

The existing guidance in NUREG/CR-6850 is based on industry data which has only been provided with fidelity adequate to support plant level ignition frequencies for HEAFs. Although the guidance does address the data, it leaves room for variability that can create issues with PRA quality. It is important that the ignition frequency results be of sufficient quality to support not only NFPA-805 transition but also the more broad scope of regulatory inspection and enforcement issues.

The guidance proposed will provide more consistency when determining plant specific electrical cabinet ignition frequencies while working within the bounds of the exiting data provided by the NUREG. This should facilitate the review and acceptability of the results.

Attachment 4:

FAQ Number 06-0018, Revision 0

Plant: Harris Nuclear Plant (HNP) FAQ # 06-0018 Rev. 0
Submittal Date: 11-6-06
Licensee Contact: David Miskiewicz Tele/email 919-546-7588
NRC Contact: _____ Tele/email _____

Distribution: Check all that apply (*NEI Internal Use*)

FPWG **RIRWG** **NSSS OG** **NFPA 805 TF**

Subject: Clarification/enhancement of Ignition Source counting guidance for Main Control Board (MCB) in NUREG/CR-6850, supporting NFPA-805 Fire PRA application.

Interpretation of guidance? Yes

Proposed new guidance not in NEI 04-02? Yes

Details:

NEI 04-02 Guidance needing interpretation (include section, paragraph number, and line number):

 New attachment on interpretation issues

Circumstances requiring guidance interpretation or new guidance:

 NUREG/CR-6850, Section 6.5.6

The guidance provided in NUREG/CR-6850 for Task 6, Fire Ignition Frequency, is subject to application inconsistency in the treatment of Main Control Board (Bin 4). The guidance for Task 6 does not provide any specific definition or characterization of what constitutes a Main Control Board (MCB) other than a reference to it being the central element of the room. A discussion amongst the Pilot Plants that included consideration of other plants in their respective fleets found wide variability in the configuration of the main control room. There was a concern that inconsistent treatment of this bin would unnecessarily challenge the completion and review of the Fire PRA. This challenge would be manifested by a notable change in the fire frequency assigned to an individual panel depending on whether it was counted as Bin 4 or Bin 15.

Further review of NUREG/CR-6850 found that a definition of MCB is provided in Appendix L. However, this Appendix develops a fire modeling treatment of fire behavior within a panel enclosure. There was a concern that absent documented agreement, there could be a future challenge to the use of the definition in Appendix L for the purposes of Task 6, Bin 4 counting.

Detail contentious points if licensee and NRC have not reached agreement

 This topic has impact on the NFPA-805 pilots, non-pilots and other users of NUREG/CR-6850.

Potentially relevant existing FAQ numbers:

This guidance is specific to the characterization of Main Control Board for Bin 4 determination. The characterization and counting of electrical cabinets for Bin 15 determination is addressed by FAQ 06-0016.

Response Section

It is proposed that the definition of Main Control Board provided in NUREG/CR-6850, Appendix L be accepted as also being applicable for Task 6, Bin 4 counting.

Basis:

The guidance proposed will provide more consistency when determining plant specific control room ignition frequencies while working within the bounds of the existing data provided by the NUREG. This should facilitate the review and acceptability of the results.

Attachment 5:

**NFPA-805 Transition Pilot Plant
Frequently Asked Questions**

Plant:	<u>Harris Nuclear Plant (HNP)</u>	FAQ # <u>06-0019 Rev. 0</u>
Submittal Date:	<u>11-30-06</u>	
Licensee Contact:	<u>Alan Holder</u>	Tele/email <u>919-546-3372</u>
NRC Contact:	_____	Tele/email _____

Subject

Interpretive Guidance? Yes / No

Proposed New Guidance not currently in NEI 04-02? Yes / No

Details

NEI 04-02 Guidance needing interpretation (include section, paragraph number, and line number 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 3.3.1.2 Control of Combustibles. “(1) Wood used within the power block shall be listed pressure-impregnated or coated with a listed fire-retardant application.”

Specifically, the definition of “Power Block” and “Plant” and how these will be applied when reviewing Chapter 3 transition.

Detail contentious points if licensee and NRC have not reached agreement:

NA

Potentially relevant existing FAQ numbers:

FAQ 06-0007

Response Section

Proposed Resolution of FAQ and basis for the proposal:

This FAQ asks to define, where used in Chapter 3, “power block” and “plant” are intended to mean or are equivalent to, “areas in which a fire could jeopardize the ability to meet the performance criteria described in section 1.5.1”.

This is based on RIN 3150-AG48 (Statement of Considerations), which states in part, “under NFPA 805, the 10CFR50.48(a)(2)(iii) requirement to limit fire damage to SSCs important to safety so that the capability to safely shut down the plant is ensured is satisfied by meeting the performance criteria in Section 1.5.1 of NFPA 805”, the Chapter 3 applicability is limited to only these SSCs. Therefore for regulatory purposes, the “power block” and “plant” is synonymous with areas in which a fire could jeopardize the ability to meet the performance criteria described in section 1.5.1, Nuclear Safety Performance Criteria.

If appropriate, provide proposed rewording of guidance for inclusion in 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 Chapter 3, from FAQ 06-0019,

Where used in Chapter 3, “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.”

Attachment 6:

**NFPA-805 Transition Pilot Plant
Frequently Asked Questions**

Plant:	<u>Harris Nuclear Plant (HNP)</u>	FAQ # <u>06-0020 Rev. 0</u>
Submittal Date:	<u>11-30-06</u>	
Licensee Contact:	<u>A.L. Holder</u>	Tele/email <u>919-546-3372</u>
NRC Contact:	<u></u>	Tele/email <u></u>

Subject

Interpretive Guidance? **Yes** / No

Proposed New Guidance not currently in NEI 04-02? **Yes** / No

Details

NEI 04-02 Guidance needing interpretation (include section, paragraph number, and line number 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 3.3.1.2 Control of Combustibles. “(6) Controls on use and storage of flammable gases shall be in accordance with applicable NFPA standards.”

Specifically, identify “applicable NFPA standards” to be used during reviews associated with Chapter 3 transition..

Detail contentious points if licensee and NRC have not reached agreement:

NA

Potentially relevant existing FAQ numbers:

FAQ 06-0007

Response Section

Proposed Resolution of FAQ and basis for the proposal:

This FAQ asks to identify, where used in Chapter 3, “applicable NFPA standards” for review of programs structures, systems, and components as may be required for Chapter 3 transition using NFPA 805. Because existing fire protection programs for facilities generally provide a listing of NFPA standards used in the development, implementation and maintenance of the fire protection program, the term, “applicable NFPA Standards”, shall be considered to be equivalent to those NFPA standards identified in the Current License Bases (CLB) for the facility (generally found in the FSAR or approved Fire Protection Program), Where used in NFPA 805, Chapter 3. Because these NFPA standards have been previously approved by the staff for a given facility, this further establishes their applicability, and applications of the general concept of safe today, safe tomorrow as the facility transitions to the 805 standard.

If appropriate, provide proposed rewording of guidance for inclusion in 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, Chapter 3, from FAQ 06-00020, Where used in NFPA 805, Chapter 3, the term, “applicable NFPA Standards”, is considered to be equivalent to those NFPA standards identified in the Current License Basis (CLB) for the facility (generally found in the FSAR or approved fire protection program).

Attachment 7:

**NFPA-805 Transition Pilot Plant
Frequently Asked Questions**

Plant:	<u>Harris Nuclear Plant (HNP)</u>	FAQ # <u>06-0021 Rev. 0</u>
Submittal Date:	<u>11-30-06</u>	
Licensee Contact:	<u>A.L. Holder</u>	Tele/email <u>919-546-3372</u>
NRC Contact:	<u></u>	Tele/email <u></u>

Subject

Interpretive Guidance? Yes / No

Proposed New Guidance not currently in NEI 04-02? Yes / No

Details

NEI 04-02 Guidance needing interpretation (include section, paragraph number, and line number 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 3.3.5.2, “Only metal tray and metal conduits shall be used for electrical raceways. Thin wall metallic tubing shall not be used for power, instrumentation, or control cables. Flexible metallic conduits shall only be used in short lengths to connect components.”

Specifically, this FAQ asks to clarify that air drops are acceptable. Pilot Plant HNP has exposed cable drops ~ 3’ in length, which are a previously approved configuration.

Detail contentious points if licensee and NRC have not reached agreement:

NA

Potentially relevant existing FAQ numbers:

FAQ 06-0007

Response Section

Proposed Resolution of FAQ and basis for the proposal:

This FAQ asks to clarifying that air drops are acceptable. “HNP has exposed cable drops ~ 3’ in length.” Because air drops are a typical industry configuration, and for the most part have been identified and approved in facility CLBs there is no need to burden staff or licensees with the need for additional justification or review of such configurations. Likewise, based on the widespread application of airdrops in the industry there is no reason to include submittal of these airdrops as items previously approved when a bounding interpretation will address the configuration.

If appropriate, provide proposed rewording of guidance for inclusion in 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 for NFPA 805 section 3.3.5.2, from FAQ 06-0021,
Where used in section 3.3.5.2, the term, “Flexible metallic conduits shall only be used in short lengths to connect components”, shall be considered to be equivalent to “cable air drops of limited length, or as may have been previously approved in the CLB.”

Attachment 8:

**NFPA-805 Transition Pilot Plant
Frequently Asked Questions**

Plant:	<u>Harris Nuclear Plant (HNP)</u>	FAQ # <u>06-0023 Rev. 0</u>
Submittal Date:	<u>11-30-06</u>	
Licensee Contact:	<u>A.L. Holder</u>	Tele/email <u>919-546-3372</u>
NRC Contact:	<u></u>	Tele/email <u></u>

Subject

Interpretive Guidance? Yes / No

Proposed New Guidance not currently in NEI 04-02? Yes / No

Details

NEI 04-02 Guidance needing interpretation (include section, paragraph number, and line number 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 3.3.8, Bulk Storage of Flammable and Combustible Liquids, “Bulk storage of flammable and combustible liquids shall not be permitted inside structures containing systems, equipment, or components important to nuclear safety. As a minimum, storage and use shall comply with NFPA 30, Flammable and Combustible Liquids Code.”

Specifically, this FAQ asks to grant exception for Diesel Fuel Oil Day Tanks located within structures containing systems, equipment, or components important to nuclear safety (e.g., Diesel Generator Buildings).

Detail contentious points if licensee and NRC have not reached agreement:

NA

Potentially relevant existing FAQ numbers:

FAQ #06-0007

Response Section

Proposed Resolution of FAQ and basis for the proposal:

This FAQ asks to grant exception for Diesel Fuel Oil Day Tanks located within structures containing systems, equipment, or components important to nuclear safety (e.g., Diesel Generator Buildings). Because diesel fuel oil day/ storage tanks are part of the approved and existing design of most nuclear power plants, No exception should be necessary for the current arrangements of bulk diesel fuel oil storage to support emergency diesel driven equipment. Typical plant designs call for installation of diesel fuel oil day / storage tanks inside structures containing systems, equipment, or components important to nuclear safety for the protection of the fuel supplies. These installations have been previously approved as part of the CLB. As such, there is no need to burden staff or licensees with the need for additional justification or review of such configurations. Likewise, based on the widespread application of the arrangement in the industry there is no reason to include submittal when a bounding interpretation will address the configuration.

If appropriate, provide proposed rewording of guidance for inclusion in 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 for NFPA 805 section 3.3.8, from FAQ 06-0023, Where used in Chapter 3, Section 3.3.8, “Bulk storage of flammable and combustible liquids shall not be permitted inside structures containing systems, equipment, or components important to nuclear safety.” No exception will be necessary for the current arrangements of bulk diesel fuel oil storage to support emergency diesel driven equipment.

Attachment 9:

**NFPA-805 Transition Pilot Plant
Frequently Asked Questions**

Plant:	<u>Harris Nuclear Plant (HNP)</u>	FAQ # <u>06-0024 Rev. 0</u>
Submittal Date:	<u>11-30-06</u>	
Licensee Contact:	<u>Alan Holder</u>	Tele/email <u>919-546-3372</u>
NRC Contact:	<u></u>	Tele/email <u></u>

Subject

Interpretive Guidance? **Yes** / No

Proposed New Guidance not currently in NEI 04-02? **Yes** / No

Details

NEI 04-02 Guidance needing interpretation (include section, paragraph number, and line number 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 3.3.11 Electrical Equipment, “Adequate clearance, free of combustible material, shall be maintained around energized electrical equipment.”

Specifically, clarify what is “adequate clearance”, and “energized electrical equipment” to be used during reviews associated with Chapter 3 transition.

Detail contentious points if licensee and NRC have not reached agreement:

NA

Potentially relevant existing FAQ numbers:

FAQ #06-0007

Response Section

Proposed Resolution of FAQ and basis for the proposal:

This FAQ asks to clarify the definition of, “Adequate clearance”, and “energized electrical equipment”, where used in Chapter 3. There is no existing fire protection regulatory guidance to readily lend these definitions. Therefore, adequate clearance would be defined as 3’-0” based on similar guidance found in (OSHA) 29CFR1910.303, Subpart S, Electrical. In the case where a plant has existing administration controls for combustible materials “adequate” would be as defined therein (the procedure having been review, approved and based on some degree of previous evaluation, analysis or defined engineering judgment).

Likewise, “Energized Electrical Equipment”, would be defined for the purposes of Chapter 3 transition, to be that equipment identified in Bin 15 of the Fire PRA (ref.: NUREG 6850, Fire PRA Methodology for Nuclear Power Facilities).

If appropriate, provide proposed rewording of guidance for inclusion in 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 for NFPA 805, Chapter 3, from FAQ 06-0024,
Where used in Chapter 3, the term “Adequate Clearance” is defined as, 3’-0” based on similar guidance found in (OSHA) 29CFR1910.303, Subpart S, Electrical.

Where used in Chapter 3, the term “Energized Electrical Equipment”, is defined as, equipment identified in Bin 15 of the Fire PRA (ref.: NUREG 6850, Fire PRA Methodology for Nuclear Power Facilities).

Attachment 10:

**NFPA-805 Transition Pilot Plant
Frequently Asked Questions**

Plant:	<u>Harris Nuclear Plant (HNP)</u>	FAQ # <u>06-0025 Rev. 0</u>
Submittal Date:	<u>11-30-06</u>	
Licensee Contact:	<u>A.L. Holder</u>	Tele/email <u>919-546-3372</u>
NRC Contact:	<u></u>	Tele/email <u></u>

Subject

Interpretive Guidance? Yes / No

Proposed New Guidance not currently in NEI 04-02? Yes / No

Details

NEI 04-02 Guidance needing interpretation (include section, paragraph number, and line number 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 3.4, Industrial Fire Brigade, section 3.4.2.1, “The plans shall detail the fire area configuration and fire hazards to be encountered in the fire area, along with any nuclear safety components and fire protection systems and features that are present.”

Specifically, define the minimum acceptable scope and content for fire pre-plans.

Detail contentious points if licensee and NRC have not reached agreement:

NA

Potentially relevant existing FAQ numbers:

FAQ #06-0007

Response Section

Proposed Resolution of FAQ and basis for the proposal:

This FAQ asks to define minimum acceptable pre-plan scope. Pre-Plan scope and content are described in Appendix A to NFPA 805, (ref.; A.3.4.2, A.3.4.2.1) This guidance clarifies the guidance previously found in regulatory documents such as 10CFR50, Appendix R, Section K, and NUREG 0800. This will generally allow for continued use of the facility's pre-plans while moving towards a standardized format that will ease inspection and development burdens.

If appropriate, provide proposed rewording of guidance for inclusion in 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 for NFPA 805 section 3.4, from FAQ 06-0025,
As a minimum, the pre-fire plans should include a description of the following:

- Available fire protection systems
- Fire barriers
- Fire doors
- Locked doors
- Inaccessible or limited access areas
- Safe shutdown equipment
- Fire extinguisher locations
- Ventilation capabilities
- Communication equipment
- Radiological hazards
- Special hazards
- Areas subject to flooding

Pre-fire plans should detail radiologically hazardous areas and radiation protection barriers. Methods of smoke and heat removal should be identified for all fire areas in the pre-fire plans. These can include the use of dedicated smoke and heat removal systems or use of the structure's heating ventilating and air-conditioning (HAC) system if it can operate in the 100 percent exhaust mode.

Water drainage methods should be reviewed and included in the pre-fire plan for each area.

Pre-fire plans should also contain at least minimal information on any hazardous materials located in the fire area (i.e., acids, caustics, chemicals).

Attachment 11:

**NFPA-805 Transition Pilot Plant
Frequently Asked Questions**

Plant:	<u>Harris Nuclear Plant (HNP)</u>	FAQ # <u>06-0026 Rev. 0</u>
Submittal Date:	<u>11-30-06</u>	
Licensee Contact:	<u>A.L. Holder</u>	Tele/email <u>919-546-3372</u>
NRC Contact:	<u></u>	Tele/email <u></u>

Subject

Interpretive Guidance? Yes / No

Proposed New Guidance not currently in NEI 04-02? Yes / No

Details

NEI 04-02 Guidance needing interpretation (include section, paragraph number, and line number 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 3.4.4, Fire Fighting Equipment, “Protective clothing, respiratory protective equipment, radiation monitoring equipment, personal dosimeters, and fire suppression equipment such as hoses, nozzles, fire extinguishers, and other needed equipment shall be provided for the industrial fire brigade. This equipment shall conform with the applicable NFPA standards.”

Specifically, clarify that the intent of “conform with the applicable NFPA standards”, is for specification and procurement aspects of the equipment.

Detail contentious points if licensee and NRC have not reached agreement:

NA

Potentially relevant existing FAQ numbers:

FAQ #06-0007 & FAQ #06-0020.

Response Section

Proposed Resolution of FAQ and basis for the proposal:

This FAQ asks to clarify that the intent of “conform with the applicable NFPA standards”, as they relate to fire brigade equipment. Applicable NFPA standards are addressed in FAQ #06-0020. Because the NFPA standards related to fire brigade equipment have evolved greatly beyond the CLB for plants, and in light of the fact that nuclear power plant fire fighting equipment is exposed to limited actual field use, it is not reasonable to require some of the maintenance activities and periodicities that are applied to equipment used by municipal fire departments and therefore contained in some NFPA standards. Rather, the industry recognizes and agrees that equipment should be purchased to NFPA standards, in force at the time of purchase. Along with this reasonable care and maintenance of equipment should be determined and implemented based on the actual level of field usage (ref. guidance found in IN-2000-12, Potential Degradation of Firefighter Primary Protective Garments).

If appropriate, provide proposed rewording of guidance for inclusion in 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 for NFPA 805 section 3.4.4, from FAQ 06-0026, Where used in section 3.4.4, the term, “conform with the applicable NFPA standards”, is be limited to the specification and procurement of firefighting equipment, and those NFPA standards in effect at the time of purchase for that equipment, care and maintenance will be determined by the licensee based on equipment condition and performance.

Attachment 12:

**NFPA-805 Transition Pilot Plant
Frequently Asked Questions**

Plant:	<u>Harris Nuclear Plant (HNP)</u>	FAQ # <u>06-0028 Rev. 0</u>
Submittal Date:	<u>11-30-06</u>	
Licensee Contact:	<u>Alan Holder</u>	Tele/email <u>919-546-3372</u>
NRC Contact:	<u></u>	Tele/email <u></u>

Subject

Interpretive Guidance? Yes / No

Proposed New Guidance not currently in NEI 04-02? Yes / No

Details

NEI 04-02 Guidance needing interpretation (include section, paragraph number, and line number 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 3.3.1.1 General Fire Prevention Activities, “(1) Training on fire safety information for all employees and contractors including, as a minimum, familiarization with plant fire prevention procedures, fire reporting, and plant emergency alarms.”

Specifically, clarify what is “familiarization with plant fire prevention procedures, fire reporting, and plant emergency alarms” regarding scope of or depth of the training.”?

Detail contentious points if licensee and NRC have not reached agreement:

NA

Potentially relevant existing FAQ numbers:

NA

Response Section

Proposed Resolution of FAQ and basis for the proposal:

This FAQ asks for clarification of what is “familiarization with plant fire prevention procedures, fire reporting, and plant emergency alarms” regarding scope of or depth of the training.” Because existing employee general access and indoctrination training is a mature program, and based on NEI 03-04, Guide for Plant Access Training, section 7.5 Fire Protection, consistent information of sufficient detail, is provided at all sites by their General Employee Training (GET) Program. The proposed interpretation contains those key elements listed in the NEI guidance.

If appropriate, provide proposed rewording of guidance for inclusion in next revision.

As follows;

Interpretation for NFPA 805 specific sections as may be applied under NEI 04-02, to be included in Appendices of NEI 04-02 upon approval of interpretation (final formatting to be provided by NEI contract writers).

Where used in section 3.3.1.1, the term, “familiarization with plant fire prevention procedures, fire reporting, and plant emergency alarms”, shall be considered to be equivalent to that information presented in the plant’s approved General Employee Training (GET). Specific training objectives should include;

- State individual responsibilities regarding fire barriers such as fire dampers, doors, and seals.
- State actions an individual is required to take upon discovery of a fire.
- State individual responsibilities regarding the control of fire loading (wood, solvents, oil) and the disposal of flammable materials.
- State examples of the types of hot work requiring a permit.
- Recognize and state the response to a station fire alarm.

Attachment 13:

Plant:	<u>Arkansas Nuclear One - ANO</u>	Submittal Date:	<u>11/30/06</u>
Submitter Contact:	<u>Rebecca Puckett</u>	Phone	<u>479-858-4518</u>
		Submitter Email:	<u>rpucket@entergy.com</u>

Distribution: *(NEI Internal Use)*

805 TF FPWG RATF RIRWG BWROG PWROG

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

Paul, Brandon, and Chuck:

I plan to review each of these FAQs before we accept. The purpose of review is to determine whether the issue is clearly defined.

Sunil

>>> "JAMAR, Brandon" <btj@nei.org> 12/19/2006 9:05 AM >>>
Please find the attached FAQs for submittal:

FAQs 7, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28

Thank you,

Brandon Jamar
NEI
202.739.8043

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Subject: Re: 12/19/06 FAQ Submittal
Creation Date Tue, Dec 19, 2006 9:42 AM
From: Sunil Weerakkody

Created By: SDW1@nrc.gov

Recipients

nei.org
btj (Brandon JAMAR)

nrc.gov
CEM4 (Charles Moulton)
PWL (Paul Lain)

Post Office

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Files	Size	Date & Time
MESSAGE	1840	Tuesday, December 19, 2006 9:42 AM

Options

Expiration Date: None
Priority: Standard
ReplyRequested: No
Return Notification: None

Concealed Subject: No
Security: Standard

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Junk Mail handling disabled by User
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Please find the attached 805 Task Force FAQ Log. This may assist you in your review and clarification of issues.

We plan to submit this to the Staff on a periodic basis for tracking and management purposes.

Thanks!

Brandon

-----Original Message-----

From: Sunil Weerakkody [<mailto:SDW1@nrc.gov>]

Sent: Tuesday, December 19, 2006 9:42 AM

To: JAMAR, Brandon; Charles Moulton; Paul Lain

Subject: Re: 12/19/06 FAQ Submittal

Paul, Brandon, and Chuck:

I plan to review each of these FAQs before we accept. The purpose of review is to determine whether the issue is clearly defined.

Sunil

>>> "JAMAR, Brandon" <btj@nei.org> 12/19/2006 9:05 AM >>>

Please find the attached FAQs for submittal:

FAQs 7, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28

Thank you,

Brandon Jamar

NEI

202.739.8043

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Mail Envelope Properties (4587FBA4.C6F : 22 : 64623)

Subject: RE: 12/19/06 FAQ Submittal
Creation Date Tue, Dec 19, 2006 9:49 AM
From: "JAMAR, Brandon" <btj@nei.org>

Created By: btj@nei.org

Recipients

nrc.gov
CEM4 (Charles Moulton)
PWL (Paul Lain)

nrc.gov
SDW1 (Sunil Weerakkody)

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Files	Size	Date & Time
MESSAGE	1404	Tuesday, December 19, 2006 9:49 AM
faq log - 11-30-06.pdf	21089	
Mime.822	33041	

Options

Expiration Date: None
Priority: Standard
ReplyRequested: No
Return Notification: None

Concealed Subject: No
Security: Standard

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Junk Mail handling disabled by User
Junk Mail handling disabled by Administrator
Junk List is not enabled
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Block List is not enabled

Attachment 1:

FAQ #	Name	Summary	Status Actions and Notes	Submitter		Submittal Date		Tentative approval	Final Approval
				Plant	Licensee Contact	NEI Task Force	NRC		
06-0001	Fire Affected Train Operator Manual Actions	Add in clarification that fire affected train manual actions are 'allowed' and therefore do not require evaluation.	NRC rejected the statements regarding SER approval without Exemptions Tentatively approved. Superseded by FAQ 06-0012.	Harris Nuclear Plant	Jeff Ertman	4/27/2006	4/25/2006		
06-0002	NEI 04-02 Section 5.3.3 and App. I, Order of Questions for Change Analysis Screening	Change Figure 5-1, text, and Appendix 1 to ask the Chapter 4 questions before Chapter 3 questions.	NRC agreed in principle, however wanted wording clarified to "make clear the distinction between Chapter 3 requirements that are subject to Chapter 4 evaluations versus the Chapter 3 requirement that are independent of Chapter 4" added clarification to 'boxes' at end of Questions 1 and 2 in Change Analysis Form NRC added 'included required recovery actions to text of 5.3.3 and added 'including Human actions' to Question 4.e of Change Analysis Form Task Force agrees to first request. Task force is evaluating the addition of NRC rejected the statements regarding SER approval without Exemptions Committed to revise based on RIS 2006-10 and NRC Public Meeting June 9, 2006. See RIS 2006-12 'human actions' to the risk screening questions. - tentatively approved - will resubmit 10/26/06	Harris Nuclear Plant	Jeff Ertman	4/27/2006 RESUBMIT 10/26/06	4/25/2006	10/26/2006	
06-0003	Change Analysis Screening	Change 'greater than minimal' to 'potentially greater than minimal'	Tentatively approved by Task Force Reviewers. Will resubmit 10/26/06 Tentatively approved 10/26/06	Harris Nuclear Plant	Jeff Ertman	4/27/2006 RESUBMIT 10/26/06	4/25/2006	10/26/2006	
06-0004	Clarify NFPA 805 Chapter 4 and 3 relationship for 'required' FP systems/features	How fire protection systems and features transition is highly dependent on how they are 'required' to meet the nuclear safety criteria of Chapter 4.	Note NRC was using NEI 04-02 Revision 2H figures and not figures in FAQ NRC to re-review in appropriate context & provide status on 10/26/06 Received NRC comments 11/29/06	Harris Nuclear Plant	Jeff Ertman	5/12/2006	5/12/2006		
06-0005	Guidance on FPP-related changes	NEI 04-02 does not provide guidance what should be considered a FPP-related change or not. Since failure to obtain NRC pre-approval for using risk reductions from a non-FPP related change would be contrary to the guidance in RG 1.205, additional guidance should be provided to clarify what is considered a FPP-related change once NFPA-805 is implemented.	FAQ has been revised. Resubmit to NRC 11/30/06	Harris Nuclear Plant	Jeff Ertman	7/20/2006 RESUBMIT 11/30/06	8/24/2006		
06-0006	High-low pressure interface definition and NEI 00-01/NFPA 805 discrepancies	Definition of High-Low Pressure interface is not consistent between NFPA 805 and NEI 00-01. Need to provide clarification.	Received NRC Comments. Resubmitted 10/26/06 Tentatively approved 10/26/06 Submitted to NRC 9/28/06. Will status 10/26/06	Duke	Harry Barrett	7/20/2006 RESUBMIT 10/26/06	8/24/2006	10/26/2006	
06-0007	NFPA 805 Chapter 3 Requirements for Fire Brigades	Need clarification on when NFPA 600 or NFPA 1500 apply. Also clarify if requirements apply to interior structural fire fighting brigade.	FAQ to be revised to mark up NEI 04-02 to show the addition of an appendix for NFPA 805 Clarifications. To be resubmitted 12/14/06	Harris Nuclear Plant	Alan Holder	7/20/2006	8/24/2006		
06-0008	Alternate method for Engineering Evaluations	Many Generic Letter 86-10 evaluations exist at facilities today. Transition of these existing evaluations is essential for the success of the Pilot Plants. In addition the use of engineering evaluations for Chapter 3 issues post transition needs to be clarified.	Presented 9/28/06 After agreement in concept, NEI 04-02 will be revised. Under NRC review. Comments received from NRC on 11/29/06.	NEI	Andy Ratchford	9/28/2006	9/28/2006		
06-0009	NEI 04-02 Typo Corrections	Editorial changes to NEI 04-02	Projected submittal 2Q/07	NEI	Liz Kleinsorg				
06-0010	Incorporate Regulatory Guide 1.205 Baseline concept into NEI 04-02	Based on changes to Regulatory Guide 1.205, NEI 04-02 needs to reflect the baseline risk	Projected submittal mid-2007	NEI	Jeff Ertman				
06-0011	Clarify III.G.3 Compliance Transition	Alternative Shutdown is not specifically addressed in NFPA 805.	Approved by Task Force Reviewers. Submitted to NRC 9/28/06. Under NRC review. Comments received from NRC on 11/29/06.	NEI	Tom Jutras	9/28/2006	9/28/2006		
06-0012	Clarify Manual Action Transition in Appendix B	Some manual actions are either allowed by the current regulation or have been	Submitted to NRC 9/28/06. Resubmit 10/26/06 as combined with FAQ 06-0001 Comments received from NRC on 11/30/06.	NEI	Liz Kleinsorg	9/28/2006 RESUBMIT 10/26/06	9/28/2006		
06-0013	Clarify Chapter 4 Methodology Transition Process Bases on Pilot Plant Results	Will be presented at 2006 HNP Pilot meeting.	Will be presented at 2006 HNP Pilot meeting. Duke to submit end of first Quarter 2007	NEI	Harry Barrett				
06-0014	Cumulative Risk	Regulatory Guide 1.205 requires tracking of changes to assess cumulative risk. NEI 04-02 does not provide guidance on this issue	To be presented NFPA 805 TF 12/14/06	NEI	Bob Rishel				
06-0015	Guidance on not-red determination	Process for determining if non-compliances found during the transition process are 'not red' needs to be simplified.	Sent to Task Force for review 11/30/06 Ken Heffner to provide regulatory input to this FAQ by 12/14/06 Amir Afzali to provide PRA screening criteria for 'not red' determination by 12/14/06	NEI	Tom Jutras				

06-0016	Ignition Source counting guidance for Electrical Cabinets	Clarification/enhancement of Ignition Source counting guidance for Electrical Cabinets in NUREG/CR-6850, supporting NFPA-805 Fire PRA application.	Presented at November 2006 pilot meeting Submitted to Task Force 11/30/06. Comments from Task Force to initiator by 12/14/06	HNP	David Miskiewicz				
06-0017	Ignition Source counting guidance for High Energy Arcing Faults (HEAF)	Clarification/enhancement of Ignition Source counting guidance for High Energy Arcing Faults (HEAF) in NUREG/CR-6850, supporting NFPA-805 Fire PRA application.	Presented at November 2006 pilot meeting Submitted to Task Force 11/30/06. Comments from Task Force to initiator by 12/14/06	HNP	David Miskiewicz				
06-0018	Ignition Source counting guidance for Main Control Board (MCB)	Clarification/enhancement of Ignition Source counting guidance for Main Control Board (MCB) in NUREG/CR-6850, supporting NFPA-805 Fire PRA application	Presented at November 2006 pilot meeting Submitted to Task Force 11/30/06. Comments from Task Force to initiator by 12/14/06	HNP	David Miskiewicz				
06-0019	Define "power block" and "plant"	Define where used in Chapter 3, "power block" and "plant" are intended to mean "areas in which a fire could jeopardize the ability to meet the performance criteria described in section 1.5." 3.3.1.2 Control of Combustible Materials (1)Wood used within the power block shall be listed pressure-impregnated or coated with a listed fire-retardant application. Exception: Cribbing timbers 6 in. by 6 in. (15.2 cm by 15.2 cm) or larger shall not be required to be fire-retardant treated.	Presented to Task Force 11/30/06 Comments from Task Force to initiator by 12/14/06	HNP	Alan Holder				
06-0020	Definition of "applicable"	(6) Controls on use and storage of flammable gases shall be in accordance with applicable NFPA standards.	Presented to Task Force 11/30/06 Comments from Task Force to initiator by 12/14/06	HNP	Alan Holder				
06-0021	Clarify that air drops are acceptable.	3.3.5.2 - Only metal tray and metal conduits shall be used for electrical raceways. Thin wall metallic tubing shall not be used for power, instrumentation, or control cables. Flexible metallic conduits shall only be used in short lengths to connect components. HNP as well as other plants have exposed cable drops - 3' in length.	Presented to Task Force 11/30/06 Comments from Task Force to initiator by 12/14/06	HNP	Alan Holder				
06-0022	Identify a list of typical flame propagation tests which are considered acceptable.	3.3.5.3 - Electric cable construction shall comply with a flame propagation test as acceptable to the AHJ.	Presented to Task Force 11/30/06 Comments from Task Force to initiator by 12/14/06	ANO	Becky Puckett				
06-0023	Grant exception for Diesel Generator Day Tanks located within Diesel Generator Buildings.	3.3.8 Bulk Storage of Flammable and Combustible Liquids - Bulk storage of flammable and combustible liquids shall not be permitted inside structures containing systems, equipment, or components important to nuclear safety. As a minimum, storage and use shall comply with NFPA 30, Flammable and Combustible Liquids Code.	Presented to Task Force 11/30/06 Comments from Task Force to initiator by 12/14/06	HNP	Alan Holder				
06-0024	Define what "adequate clearance" is.	3.3.11 Electrical Equipment - Adequate clearance, free of combustible material, shall be maintained around energized electrical equipment. Need to provide a clearer definition of 'adequate clearance'. Could be based on OSHA 3ft requirement.	Presented to Task Force 11/30/06 Comments from Task Force to initiator by 12/14/06	HNP	Alan Holder				
06-0025	Define minimum acceptable pre-plan scope.	3.4 Industrial Fire Brigade - 3.4.2.1 - The plans shall detail the fire area configuration and fire hazards to be encountered in the fire area, along with any nuclear safety components and fire protection systems and features that are present. Suggest define more clearly what the minimum acceptable pre-plan scope is. Consider use of existing guidance.	Presented to Task Force 11/30/06 Comments from Task Force to initiator by 12/14/06	HNP	Alan Holder				
06-0026	Clarify NFPA code requirements for gear maintenance	3.4.4 Fire-Fighting Equipment - Protective clothing, respiratory protective equipment, radiation monitoring equipment, personal dosimeters, and fire suppression equipment such as hoses, nozzles, fire extinguishers, and other needed equipment shall be provided for the industrial fire brigade. This equipment shall conform with the applicable NFPA standards. Clarify that intent is for design and purchase of equipment. NFPA code requirements for gear maintenance is not applicable.	Presented to Task Force 11/30/06 Comments from Task Force to initiator by 12/14/06	HNP	Alan Holder				
06-0027	Clarify the "where provided" statement.	3.7 Fire Extinguishers - Where provided, fire extinguishers of the appropriate number, size, and type shall be provided in accordance with NFPA 10, Standard for Portable Fire Extinguishers. Extinguishers shall be permitted to be positioned outside of fire areas due to radiological conditions. Part of NFPA 10 is placement / travel distances for extinguishers. The 'where provided' statement needs clarification.		ANO	Becky Puckett				
06-0028	Clarify intent of "familiarization with plant fire prevention procedures, fire reporting, and plant emergency alarms" regarding scope of or depth of the training.	3.3.1.1 General Fire Prevention Activities - (1) Training on fire safety information for all employees and contractors including, as a minimum, familiarization with plant fire prevention procedures, fire reporting, and plant emergency alarms Clarify the intent of 'familiarization'.	Presented to Task Force 11/30/06 Comments from Task Force to initiator by 12/14/06	HNP	Alan Holder				

Please find the attached FAQ for resubmittal.

The change reflects the following sentence removal from the document:

"The definition in NEI 00-01 for high-low pressure interfaces is not in strict alignment with NFPA 805 (2001 edition, Section 1.6.31) and NEI 00-01, Revision 1, Appendix C)."

Thank you,

Brandon Jamar

NEI

202.739.8043

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FAQ TEMPLATE

Plant: Harris Nuclear Plant (HNP) FAQ # 06-0006, Rev. 2
Submittal Date: 12-19-06
Licensee Contact: Jeff Ertman Tele/email 919-546-3681
NRC Contact: _____ Tele/email _____

Distribution: Check all that apply (*NEI Internal Use*)

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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 number, and line number):

NEI 04-02 Section 4.3.2

NEI 04-02 Appendix B, Section B.2.1

Circumstances requiring guidance interpretation or new guidance:

Section 4.3.2 of NEI 04-02 Revision 1 discusses the process for the Nuclear Safety Performance Criteria Transition Review. This section includes the process for the safe shutdown methodology review, evaluates the existing post-fire safe shutdown analyses against the guidance provided in Section 2.42 of NFPA 805. Appendix B-2 of NEI 04-02 provides details regarding the transition review. Section 2.1 of NEI 04-02 states:

“The review should be conducted against the methodology provided in NEI 00-01. This review is intended to ensure that the transitioning nuclear safety analysis meets basic established criteria for identification and analysis of equipment and cables. Exceptions and clarifications identified during the transition review should be documented in order to provide a well-established baseline for future changes.”

During a pilot plant review of the post-fire safe shutdown methodology against NEI 00-01 methodology. It was noted that the definition of high-low pressure interface provided in NEI 00-01 Revision 1 Appendix C, is not in strict alignment with the definition provided in NFPA 805 (2001 edition) section 1.6.31.

Since this has historically been an area of varying interpretations, it is recommended that the NEI 00-01 Revision 1 interpretation be utilized as part of the NEI 04-02 Revision 1 nuclear safety performance criteria methodology review.

Detail contentious points if licensee and NRC have not reached agreement

Pilot plant meetings yielded no disagreement on this topic. This is Parking Lot Item 4 from the

November 2005 Pilot Meeting (NRC meeting notes – ADAMS Accession No. ML060250034, Att. 2) and the March 2006 Pilot Meeting.

This topic has been a subject of varying interpretations for years. A consistent definition moving forward will avoid future confusion and interpretation by licensees, NRC inspectors, and NRR staff.

Potentially relevant existing FAQ numbers:

None

Response Section

Proposed Resolution of FAQ and the basis for the proposal:

Revise Section B.2.1 of NEI 04-02 to state (underlined section is the proposed resolution):

“Tables B-2 and B-3 of this Appendix outline a recommended method to review the acceptability of a program for transition by examining the basic components of a nuclear safety capability assessment. These worksheets organize the transition of the ‘pre-transitional safe shutdown analysis’ to the ‘nuclear safety analysis’ as follows:

1. Nuclear Safety Capability System and Equipment Selection
2. Nuclear Safety Capability Circuit Analysis
3. Nuclear Safety Equipment and Cable Location
4. Fire Area Assessment

The review should be conducted against the methodology provided in NEI 00-01. This review is intended to ensure that the transitioning nuclear safety analysis meets basic established criteria for identification and analysis of equipment and cables. Exceptions and clarifications identified during the transition review should be documented in order to provide a well-established baseline for future changes.

For the purpose of the methodology review, the methodology presented in NEI 00-01 could be used as the basis for acceptability for high-low pressure interfaces involving downstream piping for intersystem LOCAs. Reactor coolant boundary valves whose spurious opening could cause loss of inventory that could not be mitigated in sufficient time to achieve the nuclear safety performance criteria should be considered as part of the plant's nuclear safety analysis, and need not be evaluated in the same stringent manner as high-low pressure interfacing systems are analyzed in NEI 00-01.

If the existing licensing basis is vague or silent on the methodologies identified, then a licensing basis should be clearly defined during the transition period. For example, if the existing licensing basis is vague or silent on the methodology for circuit analysis (selection and/or protection of circuits) or evaluation of the failures of circuits within a fire area (single failure,

any and all, one-at-a-time, sequential/concurrent, cumulative effects) a licensing basis should be established against which changes can be assessed post transition.”

Basis:

A consistent definition moving forward will avoid future confusion and interpretation by licensees, NRC inspectors, and NRR staff.

The interpretation of high-low pressure interface components is provided in NEI 00-01, Appendix C:

“Based on the above guidance, the following criterion is established to determine if a RCPB valve is considered a high/low pressure interface valve component: *A valve whose spurious opening could result in a loss of RPV/RCS inventory and, due to the lower pressure rating or other breaches such as relief valve operations on the downstream piping, an interfacing LOCA (i.e., pipe rupture in the low pressure piping).*”

The NRC has endorsed the methodology for safe shutdown analysis in NEI 00-01 on several occasions, most notably:

NRC Regulatory Issue Summary (RIS) 2005-30, Clarification of Post-Fire Safe-Shutdown Circuit Regulatory Requirements, dated December 20, 2005 (ADAMS Accession No. ML053360069) pages 1 and 2, states:

“This RIS also gives the NRC staff’s views on the use of NEI guidance document NEI 00-01, “Guidance for Post-Fire Safe Shutdown Circuit Analysis,” Revision 1 (ML050310295), in complying with Appendix R. The deterministic methodology presented in NEI 00-01, when applied in accordance with the regulatory expectations described in this RIS, is one acceptable approach to the analysis of post-fire, safe-shutdown circuits.”

In addition, the Draft Generic Letter 2006-XX, NRC Generic Letter 2006-XX: Post-Fire Safe-Shutdown Circuit Analysis Spurious Actuations (May 2006, ADAMS Accession No. ML061280517), page 7, states:

“The deterministic methodology in NEI 00-01, Rev. 1 (January 2005), “Guidance for Post-Fire Safe Shutdown Circuit Analysis,” Chapter 3 (including the associated appendices), for analysis of post-fire safe-shutdown circuits, in conjunction with the guidance provided in this GL, is one acceptable approach to achieving regulatory compliance with post-fire safe-shutdown circuit protection requirements for multiple spurious actuations. Licensees should assume that the fire may affect all unprotected cables and equipment within the fire area simultaneously and address all cable and equipment impacts affecting the required safe-shutdown path in the fire area. All potential impacts within the fire area should be addressed.”

Section B-2.1 of NEI 04-02 also states:

“The NRC staff has reviewed Revision 1 of NEI 00-01 and concluded that Chapter 3 provides an acceptable way to select circuits, and Chapter 4 provides an acceptable way to determine risk- significance of circuit findings.”

NEI 04-02 has been formally endorsed, with exceptions noted by Regulatory Guide 1.205, *Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants*, May 2006 (ADAMS Accession No. ML0601100174). Besides endorsement of NEI 04-02, the following statement is also provided in Section 3.3 of Regulatory Guide 1.205:

“Industry guidance document NEI 00-01, Revision 1, “Guidance for Post-Fire Safe Shutdown Circuit Analysis,” used in conjunction with NFPA 805 and this regulatory guide, provides one acceptable approach to circuit analysis for a plant that has transitioned to a 10 CFR 50.48(c) licensing basis.”