FAQ Number 06-0025 **FAQ Revision** 5

FAQ Title Scope and Content of Pre-Fire Plans

Plant: Harris Nuclear Plan (HNP) **Date:** December 20, 2007
Contact: Alan Holder **Phone:** 919-546-3372
Email: alan.holder@pgnmail.com

Distribution: ***(NEI Internal Use)***

☒ 805 TF ☐ FPWG ☐ FPRATF

Purpose of FAQ:

FAQ seeks clarification to define the minimum acceptable scope and content for Pre-Fire Plans.

Is this Interpretation of guidance? **Yes** / No

Proposed new guidance not in NEI 04-02? **Yes** / No

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, should refer to a new appendix which lists interpretation of specific sections of NFPA 805 Chapter 3

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.”

Due to the variance in formats, level of detail and content found in current pre-fire plans, desire for standardization and ease of product quality assessment and regulatory enforcement indicates the need for further guidance. Specifically, define the minimum acceptable scope and content for Pre-Fire Plans.

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

NA

Potentially relevant existing FAQ numbers:

FAQ #06-0007

Response Section:

Proposed resolution of FAQ and the basis for the proposal:

This FAQ seeks to define minimum acceptable pre-fire plan scope and content. Current guidance is found in regulatory documents such as 10CFR50, Appendix R, Section K, NUREG 0800 Section BTP CMEB 9.5-1 Rev 3 July 1981 Section 9.5.1 C.2(o) and Generic Letter 77-02 (FRAQA letter). See comparison table below (Note the table is for reference only and will not be included in NEI 04-02). This FAQ provides clarification for continued use of this scope and content through inclusion in NEI 04-02, Appendix K.

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During development of the FAQ, Regulatory Guide 1.189 Revision 1 was issued, while not a part of a transitioning plant's CLB, this guidance included two additional topical areas for pre-fire plans.

- Section 3.5.1.3(c) ii. "SSCs credited for fire safe shutdown"
- Section 3.5.1.3(c) xii. "Communications between the fire brigade leader, fire brigade, offsite mutual aid responders, control room, and licensee's emergency response organization"

Identification of components credited for safe shutdown (now nuclear safety performance criteria) is satisfied by NFPA 805, Section 3.4.2.1, and would be included in Pre-Fire Plans to the extent appropriate for fire fighting as described in bullets four, five, and eleven (new) in the proposed 'NFPA 805, Section 3.4 Clarification'. All components credited for the nuclear safety performance criteria are not specifically called out in the pre-fire plans. Due to the voluminous and highly detailed nature of such a list, this would be of little value and would be distracting for the fire brigade to attempt to use. However, nuclear safety performance criteria components which require entry to the affected fire area should be listed.

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Deleted: involved area or may be impacted by specific fire scenarios within a fire area would be identified.

Inclusion of communications is described separately in NFPA 805 Section 3.4.2.4. This guidance is reflected in the sixth and tenth bullets of the specific clarification proposed below.

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NUREG 0800 (BTPCMEB 9.5-1 Rev 3 July 1981) Section 9.5.1 C.2(o)	10CFR50, Appendix R (III.K.12)	Generic Letter 77-02 FRACQA Letter (06/20/77)	NFPA 805 Appendix A (FAQ 06-0025)
Define the strategies for fighting fires in all safety-related areas and areas presenting a hazard to safety-related equipment. These strategies should designate:	Define the strategies for fighting fires in all safety-related areas and areas presenting a hazard to safety-related equipment. These strategies should designate:	The strategies established for fighting fires in all safety-related areas and areas presenting a hazard to safety-related equipment. As a minimum the following subjects should be covered:	As a minimum, the pre-fire plans should include a description of the following:
Fire hazards in each area covered by the specific pre-fire plans.	Fire hazards in each area covered by the specific pre-fire plans.	Identification of combustibles in each plant zone covered by the specific fire fighting procedures.	
Fire extinguishants best suited for controlling the fires associated with the fire hazards in that area and the nearest location of these extinguishants.	Fire extinguishants best suited for controlling the fires associated with the fire hazards in that area and the nearest location of these extinguishants.	Fire extinguishants best suited for controlling the fires associated with the combustible loadings in that zone and the nearest location of these extinguishants.	Available fire protection systems Fire extinguisher locations
Most favorable direction from which to attack a fire in each area in view of the ventilation direction, access hallways, stairs, and doors that are most likely to be free of fire, and the best station or elevation for fighting the fire. All access and egress routes that involve locked doors should be specifically identified in the procedure with the appropriate precautions and methods for access specified.	Most favorable direction from which to attack a fire in each area in view of the ventilation direction, access hallways, stairs, and doors that are most likely to be free of fire, and the best station or elevation for fighting the fire. All access and egress routes that involve locked doors should be specifically identified in the procedure with the appropriate precautions and methods for access specified.	Most favorable direction from which to attack a fire in each area, in view of the ventilation direction, access hallways, stairs and doors which are most likely to be fire-free, and the best station or elevation for fighting the fire. A specific identification system shall designate all hallways, stairs, doors fire equipment and system control locations, and other items described in the fire fighting procedures. This identification should be used in the procedures and the corresponding plant items should be prominently marked so that they can be recognized in	Fire barriers Fire doors Locked doors Inaccessible of limited access areas

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NUREG 0800 (BTPCMEB 9.5-1 Rev 3 July 1981) Section 9.5.1 C.2(o)	10CFR50, Appendix R (III.K.12)	Generic Letter 77-02 FRACQA Letter (06/20/77)	NFPA 805 Appendix A (FAQ 06-0025)
		dim light. All access and egress routes that involve locked doors should be specifically identified in the procedure with the appropriate precautions and methods for access specified.	
Plant systems that should be managed to reduce the damage potential during a local fire and the location of local and remote controls for such management (e.g., any hydraulic or electrical systems in the zone covered by the specific fire fighting procedure that could increase the hazards in the area because of overpressurization or electrical hazards).	Plant systems that should be managed to reduce the damage potential during a local fire and the location of local and remote controls for such management (e.g., any hydraulic or electrical systems in the zone covered by the specific fire fighting procedure that could increase the hazards in the area because of overpressurization or electrical hazards).	Designation of plant systems that should be managed to reduce the damage potential during a local fire; location of local and remote controls for such management (e.g., any hydraulic or electrical systems in the zone covered by the specific fire fighting procedure that cold increase the hazards in the area because of overpressurization or electrical hazards).	Safe shutdown equipment
Vital heat-sensitive system components that need to be kept cool while fighting a local fire. Particularly hazardous combustibles that need cooling should be designated.	Vital heat-sensitive system components that need to be kept cool while fighting a local fire. Particularly hazardous combustibles that need cooling should be designated.	Designation of vital heat-sensitive system components that need to be kept cool while fighting a local fire. Critical equipment which are particularly hazardous combustible sources should be designated to receive cooling.	
Organization of fire fighting brigades and the assignment of special duties according to job title so that all fire fighting functions are covered by any complete shift personnel complement. These duties include	Organization of fire fighting brigades and the assignment of special duties according to job title so that all fire fighting functions are covered by any complete shift personnel	Organization of fire fighting brigades and the assignment of special duties according to job title so that all fire fighting functions are covered by any complete shift personnel	Communication equipment

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command control of the brigade, transporting fire suppression and support equipment to the fire scenes, applying the extinguishant to the fire, communication with the control room, and coordination with outside fire departments.	complement. These duties include command control of the brigade, transporting fire suppression and support equipment to the fire scenes, applying the extinguishant to the fire, communication with the control room, and coordination with outside fire departments.	complement. These duties include command control of the brigade, fire hose laying, applying the extinguishant to the fire, advancing support supplies to the fire scene, communication with the control room, coordination with outside fire departments.	
Potential radiological and toxic hazards in fire zones	Potential radiological and toxic hazards in fire zones.	Identification radiological and toxic hazards in fire zones.	Radiological hazards Special hazards Pre-fire plans should detail radiologically hazardous areas and radiation protection barriers.
Ventilation system operation that ensures desired plant air distribution when the ventilation flow is modified for fire containment or smoke clearing operation.	Ventilation system operation that ensures desired plant air distribution when the ventilation flow is modified for fire containment or smoke clearing operation.	Ventilation system operation that ensures desired plant air pressure distribution when the ventilation flow is modified for fire containment or smoke clearing operations.	Ventilation capabilities 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.
Operations requiring control room and shift engineer coordination or authorization.	Operations requiring control room and shift engineer coordination or authorization.	Operations requiring control room and shift engineer coordination or authorization.	Areas subject to flooding Water drainage methods should be reviewed and included in the pre-fire plan for each area.
Instructions for plant operators and general plant personnel during fire.	Instructions for plant operators and general plant personnel during fire.	Instructions for plant operators and general plant personnel during fire.	

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

Clarification of specific sections of NFPA 805 as applied under 10 CFR 50.48(c), will be included in a new Appendix K, to NEI 04-02 (final formatting to be provided by NEI). Include the following information in Appendix K:

NFPA 805, Section 3.4 Clarification:

As a minimum, the pre-fire plans should define the strategies for fighting fires in all areas in which a fire could jeopardize the ability to meet the performance criteria described in Section 1.5. These pre-fire plans should designate:

- Fire hazards in each area covered by the specific pre-fire plans.
- Fire extinguishants best suited for controlling the fires associated with the fire hazards in that area and the nearest location of these extinguishants.
- Most favorable direction from which to attack a fire in each area in view of the ventilation direction, access hallways, stairs, and doors that are most likely to be free of fire, and the best station or elevation for fighting the fire. All access and egress routes that involve locked doors should be specifically identified in the procedure with the appropriate precautions and methods for access specified.
- Plant systems that should be managed to reduce the damage potential during a local fire and the location of local and remote controls for such management (e.g., any hydraulic or electrical systems in the zone covered by the specific fire fighting procedure that could increase the hazards in the area because of overpressurization or electrical hazards).
- Vital heat-sensitive system components that need to be kept cool while fighting a local fire. Particularly hazardous combustibles that need cooling should be designated.
- Organization of fire fighting brigades and the assignment of special duties according to job title so that all fire fighting functions are covered by any complete shift personnel complement. These duties include command control of the brigade; transporting fire suppression and support equipment to the fire scenes, applying the extinguishant to the fire, communication with the control room, and coordination with outside fire departments.
- Potential radiological and toxic hazards in fire zones
- Ventilation system operation that ensures desired plant air distribution when the ventilation flow is modified for fire containment or smoke clearing operation.
- Operations requiring control room and shift engineer coordination or authorization.
- Instructions for plant operators and general plant personnel during fire.
- Components necessary to achieve the nuclear safety performance criteria which require entry to the affected fire area.

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