

Table B-1 - NFPA 805 Ch. 3 Transition

<u>NFPA 805 Ch. 3 Ref.</u>	<u>Requirements/Guidance</u>	<u>Compliance Statement</u>	<u>Compliance Basis</u>	<u>Reference Document</u>	<u>Document Detail</u>
3.1 General	<p>3.1* General.</p> <p>This chapter contains the fundamental elements of the fire protection program and specifies the minimum design requirements for fire protection systems and features. These fire protection program elements and minimum design requirements shall not be subject to the performance-based methods permitted elsewhere in this standard. Previously approved alternatives from the fundamental protection program attributes of this chapter by the AHJ take precedence over the requirements contained herein.</p>	N/A	N/A - General statement; No technical requirements	Plant USA-M/BMRK-0011, Code Compliance Evaluation NFPA 805,2003,, Rev. 000,	All
3.2 Fire Protection Plan	N/A	N/A	N/A - General statement; No technical requirements	, , Rev. ,	
3.2.1 Intent	<p>3.2.1 Intent.</p> <p>A site-wide fire protection plan shall be established. This plan shall document management policy and program direction and shall define the responsibilities of those individuals responsible for the plan's implementation. This section establishes the criteria for an integrated combination of components, procedures, and personnel to implement all fire protection program activities</p>	Complies	No Additional Clarification	, , Rev. ,	
3.2.2 Management Policy Direction and Responsibility.	<p>3.2.2* Management Policy Direction and Responsibility.</p> <p>A policy document shall be prepared that defines management authority and responsibilities and establishes the general policy for the site fire protection program.</p>	Complies	No Additional Clarification	, , Rev. ,	
3.2.2.1 [Management Policy on Senior Management]	<p>3.2.2.1*</p> <p>The policy document shall designate the senior management position with immediate authority and responsibility for the fire protection program.</p>	Complies	No Additional Clarification	, , Rev. ,	
3.2.2.2 [Management Policy on Daily Administration]	<p>3.2.2.2*</p> <p>The policy document shall designate a position responsible for the daily administration and coordination of the fire protection program and its implementation.</p>	Complies	No Additional Clarification	, , Rev. ,	
3.2.2.3 [Management Policy on Interfaces]	<p>3.2.2.3*</p> <p>The policy document shall define the fire protection interfaces with other organizations and assign responsibilities for the coordination of activities. In addition, this policy document shall identify the various plant positions having the authority for implementing the various areas of the fire protection program.</p>	Complies	No Additional Clarification	, , Rev. ,	
3.2.2.4 [Management Policy on AHJ]	<p>3.2.2.4*</p> <p>The policy document shall identify the appropriate AHJ for the various areas of the fire protection program.</p>	Further Action Required		, , Rev. ,	

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3.2.3 Procedures	<p>3.2.3* Procedures.</p> <p>Procedures shall be established for implementation of the fire protection program. In addition to procedures that could be required by other sections of the standard, the procedures to accomplish the following shall be established:</p> <p>(1) * Inspection, testing, and maintenance for fire protection systems and features credited by the fire protection program</p> <p>(2) * Compensatory actions implemented when fire protection systems and other systems credited by the fire protection program and this standard cannot perform their intended function and limits on impairment duration</p> <p>(3) * Reviews of fire protection program — related performance and trends</p> <p>(4) Reviews of physical plant modifications and procedure changes for impact on the fire protection program</p> <p>(5) Long-term maintenance and configuration of the fire protection program</p> <p>(6) Emergency response procedures for the plant industrial fire brigade.</p>	Complies	No Additional Clarification	, , Rev. ,	
3.3 Prevention	<p>3.3 Prevention.</p> <p>A fire prevention program with the goal of preventing a fire from starting shall be established, documented, and implemented as part of the fire protection program. The two basic components of the fire prevention program shall consist of both of the following:</p> <p>(1) Prevention of fires and fire spread by controls on operational activities</p> <p>(2) Design controls that restrict the use of combustible materials</p> <p>The design control requirements listed in the remainder of this section shall be provided as described.</p>	N/A	N/A - General statement; No technical requirements	, , Rev. ,	
3.3.1 Fire Prevention for Operational Activities.	<p>3.3.1 Fire Prevention for Operational Activities.</p> <p>The fire prevention program activities shall consist of the necessary elements to address the control of ignition sources and the use of transient combustible materials during all aspects of plant operations. The fire prevention program shall focus on the human and programmatic elements necessary to prevent fires from starting or, should a fire start, to keep the fire as small as possible.</p>	Complies	No Additional Clarification	NLS-86-137, Point by Point Comparison of Plant USA to Requirements of NUREG 0800, Rev. , 5/7/1986	

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3.3.1.1 General Fire Prevention Activities.	<p>3.3.1.1 General Fire Prevention Activities.</p> <p>The fire prevention activities shall include but not be limited to the following program elements:</p> <p>(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</p> <p>(2) * Documented plant inspections including provisions for corrective actions for conditions where unanalyzed fire hazards are identified</p> <p>(3) * Administrative controls addressing the review of plant modifications and maintenance to ensure that both fire hazards and the impact on plant fire protection systems and features are minimized.</p>	(1) Further Action Required	FAQ 06-0028 Rev 0	, , Rev. ,	
		(2) Complies	No Additional Clarification	OMM-001, Operations-Conduct of Operations, Rev. 067, AP-930, Plant Observation Program, Rev. 005, AP-003, General Plant Personnel Safety and Housekeeping, Rev. 026,	
		(3) Complies	No Additional Clarification	EGR-NGGC-0005, Engineering Change, Rev. 026, ADM-NGGC-0104, Work Management Process, Rev. 030,	

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3.3.1.2 Control of Combustible Materials	<p>3.3.1.2* Control of Combustible Materials.</p> <p>Procedures for the control of general housekeeping practices and the control of transient combustibles shall be developed and implemented. These procedures shall include but not be limited to the following program elements:</p> <p>(1) * Wood used within the power block shall be listed pressure-impregnated or coated with a listed fire-retardant application.</p> <p>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.</p> <p>(2) Plastic sheeting materials used in the power block shall be fire-retardant types that have passed NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films, large-scale tests, or equivalent.</p> <p>(3) Waste, debris, scrap, packing materials, or other combustibles shall be removed from an area immediately following the completion of work or at the end of the shift, whichever comes first.</p> <p>(4) * Combustible storage or staging areas shall be designated, and limits shall be established on the types and quantities of stored materials.</p> <p>(5) * Controls on use and storage of flammable and combustible liquids shall be in accordance with NFPA 30, Flammable and Combustible Liquids Code, or other applicable NFPA standards.</p> <p>(6) * Controls on use and storage of flammable gases shall be in accordance with applicable NFPA standards.</p>	(1) Complies	FAQ 06-0019 Rev 0	, , Rev. ,	
		(2) Complies	FAQ 06-0019 Rev 0	, , Rev. ,	
		(3) LAR		, , Rev. ,	
		(4) Complies	No additional clarification	, , Rev. ,	
		(5) Complies with Clarification	FAQ 06-0020 Rev 0	, , Rev. ,	
		(6) Complies	No additional clarification	, , Rev. ,	
3.3.1.3 Control of Ignition Sources	3.3.1.3 Control of Ignition Sources	N/A	N/A - General statement no technical requirements	, , Rev. ,	
3.3.1.3.1 [Control of Ignition Sources Code Requirements]	<p>3.3.1.3.1*</p> <p>A hot work safety procedure shall be developed, implemented, and periodically updated as necessary in accordance with NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, and NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations.</p>	Further Action Required	FAQ 06-0020 Rev 0	FIR-NGGC-0003, Hot Work Permit, Rev. 001,	All

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3.3.1.3.2 [Control of Ignition Sources on Smoking Limitations]	3.3.1.3.2 Smoking and other possible sources of ignition shall be restricted to properly designated and supervised safe areas of the plant.	Complies with Clarification	Smoking is prohibited inside all site structures, and only allowed in specific designated outside areas per procedure AP-003. Restrictions for other possible ignition sources are addressed by section 3.3.1.3.1,3,4.	AP-003, General Plant Personnel Safety and Housekeeping, Rev. 026,	Section 6.2.6.5
3.3.1.3.3 [Control of Ignition Sources for Leak Testing]	3.3.1.3.3 Open flames or combustion-generated smoke shall not be permitted for leak or air flow testing	Complies	No Additional Clarification	, , Rev. ,	
3.3.1.3.4 [Control of Ignition Sources on Portable Heaters]	3.3.1.3.4* Plant administrative procedure shall control the use of portable electrical heaters in the plant. Portable fuel-fired heaters shall not be permitted in plant areas containing equipment important to nuclear safety or where there is a potential for radiological releases resulting from a fire.	Further Action Required		AP-003, General Plant Personnel Safety and Housekeeping, Rev. 026,	Section 5.3
3.3.2 Structural.	3.3.2 Structural. Walls, floors, and components required to maintain structural integrity shall be of noncombustible construction, as defined in NFPA 220, Standard on Types of Building Construction.	Complies Via Previous Approval	Submittal Document NLS-86-137 Project Conformance C.5.a(9) - "Interior walls and structural components, radiation shielding materials, and soundproofing are noncombustible." NUREG 1038 states in part "Interior walls and structural components, are noncombustible or are listed by a nationally recognized testing laboratory, such as Factory Mutual (FM) or UL, or have flame-spread, smoke, and fuel contribution of 25 or less. The staff finds this in accordance with the guidelines of BTP CMEB 9.5-1 Section C.5.a, and, therefore acceptable."	NUREG-1038, Safety Evaluation Report Related to the Operation of the Plant USA Nuclear Power Plant, Units 1 and 2 - Docket Nos. STN-50-400 and STN 50-401, Rev. Original, 11/1/1983 NLS-86-137, Point by Point Comparison of Plant USA to Requirements of NUREG 0800, Rev. , 5/7/1986	SER - SSER4 Section C.5.A(9)
3.3.3 Interior Finishes	3.3.3 Interior Finishes. Interior wall or ceiling finish classification shall be in accordance with NFPA 101®, Life Safety Code®, requirements for Class A materials. Interior floor finishes shall be in accordance with NFPA 101 requirements for Class I interior floor finishes.	Complies	No Additional Clarification	NUREG-1038, Safety Evaluation Report Related to the Operation of the Plant USA Nuclear Power Plant, Units 1 and 2 - Docket Nos. STN-50-400 and STN 50-401, Rev. Original, 11/1/1983	Section 9.5.1.4

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3.3.4 Insulation Materials	3.3.4 Insulation Materials. Thermal insulation materials, radiation shielding materials, ventilation duct materials, and soundproofing materials shall be noncombustible or limited combustible.	Further Action Required	LAR - HVAC DUCT SER - Approval for runner material in HVAC duct Section C.5.a of BTP CMEB 9.5-1 states that flexible air duct coupling in ventilation and filter systems should be noncombustible. In Revision 3 to the comparison with BTP CMEB 9.5-1, the applicant informed the staff that combustible flexible air duct coupling is utilized in ventilation and filter systems at Harris. The applicant conservatively estimated that this combustible material constitutes less than 1.5% of the total ductwork footage and that there are no large concentrations of the material in any plant area. On the basis of its limited use, the staff concludes that the combustible flexible duct couplings will not contribute appreciably to the spread of fire. This is, therefore, an acceptable deviation from Section C.5.a of BTP CMEB 9.5-1.	, , Rev. ,	
3.3.5 Electrical.	N/A	N/A	N/A - General statement; No technical requirements	, , Rev. ,	
3.3.5.1 [Electrical Wiring Above Suspended Ceiling Limitations]	3.3.5.1 Wiring above suspended ceiling shall be kept to a minimum. Where installed, electrical wiring shall be listed for plenum use, routed in armored cable, routed in metallic conduit, or routed in cable trays with solid metal top and bottom covers.	Complies	No Additional Clarification	NLS-86-137, Point by Point Comparison of Plant USA to Requirements of NUREG 0800, Rev. , 5/7/1986	Section C.5.a(11)
3.3.5.2 [Electrical Raceway Construction Limits]	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.	Further Action Required	FAQ 06-0021 Rev 0	NUREG-1038, Safety Evaluation Report Related to the Operation of the Plant USA Nuclear Power Plant, Units 1 and 2 - Docket Nos. STN-50-400 and STN 50-401, Rev. Original, 11/1/1983	Section 9.5.1.4
3.3.5.3 [Electrical Cable Flame Propagation Limits]	3.3.5.3* Electric cable construction shall comply with a flame propagation test as acceptable to the AHJ. Exception: Existing cable in place prior to the adoption of this standard shall be permitted to remain as is.	Complies	FAQ 06-0022 Rev 0	NUREG-1038, Safety Evaluation Report Related to the Operation of the Plant USA Nuclear Power Plant, Units 1 and 2 - Docket Nos. STN-50-400 and STN 50-401, Rev. Original, 11/1/1983	section 9.5.1, page 9-49

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3.3.6 Roofs.	3.3.6 Roofs. Metal roof deck construction shall be designed and installed so the roofing system will not sustain a self-propagating fire on the underside of the deck when the deck is heated by a fire inside the building. Roof coverings shall be Class A as determined by tests described in NFPA 256, Standard Methods of Fire Tests of Roof Coverings.	Further Action Required	Metal deck roofs are not used on safety-related structures. (Unremoved metal forms used for the casting of reinforced concrete floors or walls do not constitute a metal deck roof or partition.)	NUREG-1038, Safety Evaluation Report Related to the Operation of the Plant USA Nuclear Power Plant, Units 1 and 2 - Docket Nos. STN-50-400 and STN 50-401, Rev. Original, 11/1/1983	Pg 9-48
3.3.7 Bulk Flammable Gas Storage.	3.3.7 Bulk Flammable Gas Storage. Bulk compressed or cryogenic flammable gas storage shall not be permitted inside structures housing systems, equipment, or components important to nuclear safety.	Complies via Previous Approval	SER Supplement 2 states "Safety-related systems have been isolated or separated from combustible materials as much as possible. Compressed gases are stored outdoors. By letter dated February 24, 1984, the applicants committed to provide hydrogen lines in safety-related areas that are either seismically designed, sleeved, or provided with excess flow valves. The staff finds this commitment acceptable. On the basis of its review, the staff concludes that the control of combustible materials meets its guidelines in Section C.5.d and is therefore, acceptable."	NUREG-1038, Safety Evaluation Report Related to the Operation of the Plant USA Nuclear Power Plant, Units 1 and 2 - Docket Nos. STN-50-400 and STN 50-401, Rev. Original, 11/1/1983	SSER 2

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3.3.7.1 [Bulk Flammable Gas Location Requirements]	3.3.7.1 Storage of flammable gas shall be located outdoors, or in separate detached buildings, so that a fire or explosion will not adversely impact systems, equipment, or components important to nuclear safety. NFPA 50A, Standard for Gaseous Hydrogen Systems at Consumer Sites, shall be followed for hydrogen storage.	Complies via Previous Approval	Approval Document NUREG-1038 Section 9.5.1 states "Safety-related systems have been isolated or separated from combustible materials as much as possible. Compressed gases are stored outdoors. By letter dated February 24, 1984, the applicants committed to provide hydrogen lines in safety-related areas that are either seismically designed, sleeved, or provided with excess flow valves. The staff finds this commitment acceptable. On the basis of its review, the staff concludes that the control of combustible materials meets its guidelines in Section C.5.d and is therefore, acceptable." NLS - 86-137 states "C.5.d(2) Bulk storage of compressed or cryogenic-gases is not permitted within structures housing safety-related equipment. Flammable gases such as hydrogen are stored outdoors and will not adversely affect safety-related equipment, systems of structures. Care will be taken to locate high pressure gas storage containers with the long axis parallel to building walls, to minimize the possibility of wall penetration in the event of a container failure. Use of-compressed gases (especially flammable and fuel gases) inside buildings will be controlled."	AR 206165, , Rev. , 11/19/2007 AR 200493, , Rev. , 11/1/2007	
3.3.7.2 [Bulk Flammable Gas Container Restrictions]	3.3.7.2 Outdoor high-pressure flammable gas storage containers shall be located so that the long axis is not pointed at buildings.	Complies	No Additional Clarification	NLS-86-137, Point by Point Comparison of Plant USA to Requirements of NUREG 0800, Rev. , 5/7/1986	C.5.d.(2)
3.3.7.3 [Bulk Flammable Gas Cylinder Limitations]	3.3.7.3 Flammable gas storage cylinders not required for normal operation shall be isolated from the system.	Complies	No Additional Clarification	, , Rev. ,	
3.3.8 Bulk Storage of Flammable and Combustible Liquids.	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.	Complies with Clarification	FAQ 06-0023 Rev. 0 is applicable. The two Emergency Diesel Generator Day Tanks are located in the safety related Emergency Diesel Generator Building. Each tank is located within its own dedicated Fire Area separated from the remainder of the Emergency Diesel Generator Building by fire barriers.	LAP-83-306, , Rev. ,	page 266 SER open item 109

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3.3.9 Transformers.	3.3.9* Transformers. Where provided, transformer oil collection basins and drain paths shall be periodically inspected to ensure that they are free of debris and capable of performing their design function.	Complies	No Additional Clarification	EC 48017, Xmer pit sizing, Rev. , 9/8/2006 OMM-016, Operators Rounds, Rev. 062,	Section 5.3.10
3.3.10 Hot Pipes and Surfaces.	3.3.10* Hot Pipes and Surfaces. Combustible liquids, including high flashpoint lubricating oils, shall be kept from coming in contact with hot pipes and surfaces, including insulated pipes and surfaces. Administrative controls shall require the prompt cleanup of oil on insulation.	Complies	No additional clarification	, , Rev. ,	
3.3.11 Electrical Equipment	3.3.11 Electrical Equipment Adequate clearance, free of combustible material, shall be maintained around energized electrical equipment.	Complies	FAQ 06-0024 Rev 0	, , Rev. ,	
3.3.12 Reactor Coolant Pumps.	3.3.12* Reactor Coolant Pumps. For facilities with non-inerted containments, reactor coolant pumps with an external lubrication system shall be provided with an oil collection system. The oil collection system shall be designed and installed such that leakage from the oil system is safely contained for off normal conditions such as accident conditions or earthquakes. All of the following shall apply. (1) The oil collection system for each reactor coolant pump shall be capable of collecting lubricating oil from all potential pressurized and nonpressurized leakage sites in each reactor coolant pump oil system. (2) Leakage shall be collected and drained to a vented closed container that can hold the inventory of the reactor coolant pump lubricating oil system. (3) A flame arrestor is required in the vent if the flash point characteristics of the oil present the hazard of a fire flashback. (4) Leakage points on a reactor coolant pump motor to be protected shall include but not be limited to the lift pump and piping, overflow lines, oil cooler, oil fill and drain lines and plugs, flanged connections on oil lines, and the oil reservoirs, where such features exist on the reactor coolant pumps. (5) The collection basin drain line to the collection tank shall be large enough to accommodate the largest potential oil leak such that oil leakage does not overflow the basin.	Complies	No Additional Clarification	LER 97-10, , Rev. , 2165-S-0685, SFD - CONTM'T, TURBINE BLDG & TANK AREA & SEC. BLD, Rev. 027, 1364-053480, RCP-GEN ASSY OIL SPILL PROTESTON SYS, Rev. 001, NLS-86-137, Point by Point Comparison of Plant USA to Requirements of NUREG 0800, Rev. , 5/7/1986 NUREG-1038, Safety Evaluation Report Related to the Operation of the Plant USA Nuclear Power Plant, Units 1 and 2 - Docket Nos. STN-50-400 and STN 50-401, Rev. Original, 11/1/1983	sh 1-7
3.4 Industrial Fire Brigade.	N/A	N/A	N/A - General statement; No technical requirements	, , Rev. ,	

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3.4.1 On-Site Fire-Fighting Capability.	<p>3.4.1 On-Site Fire-Fighting Capability.</p> <p>All of the following requirements shall apply.</p> <p>(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:</p> <p>(1) NFPA 600, Standard on Industrial Fire Brigades (interior structural fire fighting)</p> <p>(2) NFPA 1500, Standard on Fire Department Occupational Safety and Health Program</p> <p>(3) NFPA 1582, Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians</p> <p>(b) * Industrial fire brigade members shall have no other assigned normal plant duties that would prevent immediate response to a fire or other emergency as required.</p> <p>(c) During every shift, the brigade leader and at least two brigade members shall have sufficient training and knowledge of nuclear safety systems to understand the effects of fire and fire suppressants on nuclear safety performance</p> <p>Exception: Sufficient training and knowledge shall be permitted to be provided by an operations advisor dedicated to industrial fire brigade support criteria.</p> <p>(d) * The industrial fire brigade shall be notified immediately upon verification of a fire.</p> <p>(e) Each industrial fire brigade member shall pass an annual physical examination to determine that he or she can perform the strenuous activity required during manual fire-fighting operations. The physical examination shall determine the ability of each member to use respiratory protection equipment.</p>	Complies with Clarification	FAQ 06-0007 Rev 0 is applicable. NFPA 1500 and NFPA 1582 are not applicable to Plant USA as defined within their respective scope statements.	QCC FP FBBCERTH, INITIAL FIRE BRIGADE MEMBER CERTIFICATION CARD FBBCERTH, Rev. 006,	
3.4.2 Pre-Fire Plans.	<p>3.4.2* Pre-Fire Plans.</p> <p>Current and detailed pre-fire plans shall be available to the industrial fire brigade for all areas in which a fire could jeopardize the ability to meet the performance criteria described in Section 1.5.</p>	Further Action Required		NLS-86-137, Point by Point Comparison of Plant USA to Requirements of NUREG 0800, Rev. , 5/7/1986	
3.4.2.1 [Pre-Fire Plan Contents]	<p>3.4.2.1*</p> <p>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.</p>	Further Action Required - FAQ/Clarification	FAQ 06-0025 Rev 0	, , Rev. ,	
3.4.2.2 [Pre-Fire Plan Updates]	<p>3.4.2.2</p> <p>Pre-fire plans shall be reviewed and updated as necessary.</p>	Complies	No Additional Clarification	PRO-NGGC-0204, Procedure Review and Approval, Rev. 009, FP-002, Fire Emergency, Rev. ,	

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3.4.2.3 [Pre-Fire Plan Locations]	3.4.2.3* Pre-fire plans shall be available in the control room and made available to the plant industrial fire brigade.	Complies	No Additional Clarification	, , Rev. ,	
3.4.2.4 [Pre-Fire Plan Coordination Needs]	3.4.2.4* Pre-fire plans shall address coordination with other plant groups during fire emergencies.	Complies with Clarification	Site procedure FPP-002, "Fire Emergency" is not specifically a fire pre-plan however FPP-002 provides specific instructions for actions required from key groups at Plant USA supporting the fire brigade/fire emergency actions. There are detailed response coordination actions specified for Control Room personnel and the Security group. Any other coordination actions would be initiated by Control Room personnel as needed for any plant emergency.	, , Rev. ,	

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3.4.3 Training and Drills.	<p>3.4.3 Training and Drills.</p> <p>Industrial fire brigade members and other plant personnel who would respond to a fire in conjunction with the brigade shall be provided with training commensurate with their emergency responsibilities.</p> <p>(a) Plant Industrial Fire Brigade Training. All of the following requirements shall apply.</p> <p>(1) Plant industrial fire brigade members shall receive training consistent with the requirements contained in NFPA 600, Standard on Industrial Fire Brigades, or NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, as appropriate.</p> <p>(2) Industrial fire brigade members shall be given quarterly training and practice in fire fighting, including radioactivity and health physics considerations, to ensure that each member is thoroughly familiar with the steps to be taken in the event of a fire.</p> <p>(3) A written program shall detail the industrial fire brigade training program.</p> <p>(4) Written records that include but are not limited to initial industrial fire brigade classroom and hands-on training, refresher training, special training schools attended, drill attendance records, and leadership training for industrial fire brigades shall be maintained for each industrial fire brigade member.</p> <p>(b) Training for Non-Industrial Fire Brigade Personnel.</p> <p>Plant personnel who respond with the industrial fire brigade shall be trained as to their responsibilities, potential hazards to be encountered, and interfacing with the industrial fire brigade.</p> <p>(c) * Drills. All of the following requirements shall apply.</p> <p>(1) Drills shall be conducted quarterly for each shift to test the response capability of the industrial fire brigade.</p> <p>(2) Industrial fire brigade drills shall be developed to test and challenge industrial fire brigade response, including brigade performance as a team, proper use of equipment, effective use of pre-fire plans, and coordination with other groups. These drills shall evaluate the industrial fire brigade's abilities to react, respond, and demonstrate proper fire-fighting techniques to control and extinguish the fire and smoke conditions being simulated by the drill scenario.</p> <p>(3) Industrial fire brigade drills shall be conducted in various plant areas, especially in those areas identified to be essential to plant operation and to contain significant fire hazards.</p> <p>(4) Drill records shall be maintained detailing the drill scenario, industrial fire brigade member response, and ability of the industrial fire brigade to perform as a team.</p> <p>(5) A critique shall be held and documented after each</p>	a) Complies with Clarification	FAQ 06-0007 Rev 0	TPP-219, Emergency Services Training Program, Rev. 011,	

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		b) Complies	No Additional Clarification	, , Rev. ,	
		c) Complies	No Additional Clarification	TPP-219, Emergency Services Training Program, Rev. 011,	
3.4.4 Fire-Fighting Equipment.	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.	Complies with Clarification	Fire Brigade turnout gear is purchased to meet applicable NFPA codes. Care and maintenance is based on actual field usage and sufficient to ensure the gear is capable of performing its design functions. Radiation monitoring equipment and personal dosimeters are provided to the fire brigade, and they are maintained in accordance with the site procedures consistent with other radiation monitoring equipment and personal dosimeters in use at Plant USA. Fire suppression equipment such as hose and nozzles are available to the fire brigade in the staging area or are staged in the plant for the fire brigade use. The fire suppression equipment such as hose and nozzles comply with applicable NFPA codes. Fire Extinguishers are located as necessary throughout the areas of the plant as described in the response to Section 3.7.	HPP-630, Respiratory Protection Program, Rev. 020,	
3.4.5 Off-Site Fire Department Interface.	N/A	N/A	N/A - General statement; No technical requirements	, , Rev. ,	
3.4.5.1 Mutual Aid Agreement.	3.4.5.1 Mutual Aid Agreement. Off-site fire authorities shall be offered a plan for their interface during fires and related emergencies on site.	Complies	No Additional Clarification	TPP-219, Emergency Services Training Program, Rev. 011,	
3.4.5.2 Site-Specific Training.	3.4.5.2* Site-Specific Training. Fire fighters from the off-site fire authorities who are expected to respond to a fire at the plant shall be offered site-specific training and shall be invited to participate in a drill at least annually.	Complies	No Additional Clarification	TPP-219, Emergency Services Training Program, Rev. 011,	
3.4.5.3 Security and Radiation Protection.	3.4.5.3* Security and Radiation Protection. Plant security and radiation protection plans shall address off-site fire authority response.	Complies	No Additional Clarification	PLP-201, Emergency Plan, Rev. 052,	
3.4.6 Communications.	3.4.6* Communications. An effective emergency communications capability shall be provided for the industrial fire brigade.	Complies	No Additional Clarification	FSAR Section 9.5.2, Communication System, Rev. ,	
3.5 Water Supply	N/A	N/A	N/A - General statement; No technical requirements	, , Rev. ,	

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<u>NFPA 805 Ch. 3 Ref.</u>	<u>Requirements/Guidance</u>	<u>Compliance Statement</u>	<u>Compliance Basis</u>	<u>Reference Document</u>	<u>Document Detail</u>
3.5.1 [Water Supply Flow Code Requirements]	<p>3.5.1 A fire protection water supply of adequate reliability, quantity, and duration shall be provided by one of the two following methods.</p> <p>(a) Provide a fire protection water supply of not less than two separate 300,000-gal (1,135,500-L) supplies.</p> <p>(b) Calculate the fire flow rate for 2 hours. This fire flow rate shall be based on 500 gpm (1892.5 L/min) for manual hose streams plus the largest design demand of any sprinkler or fixed water spray system(s) in the power block as determined in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems, or NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection. The fire water supply shall be capable of delivering this design demand with the hydraulically least demanding portion of fire main loop out of service.</p>	Complies with Clarification	FAQ 06-0019 Rev. 0 is applicable. The available Plant USA water supply meets the criteria of section 3.5.1(b) for sprinkler systems which meet the Nuclear Safety Performance Criteria.	, , Rev. ,	
3.5.2 [Water Supply Tank Code Requirements]	<p>3.5.2* The tanks shall be interconnected such that fire pumps can take suction from either or both. A failure in one tank or its piping shall not allow both tanks to drain. The tanks shall be designed in accordance with NFPA 22, Standard for Water Tanks for Private Fire Protection.</p> <p>Exception No. 1: Water storage tanks shall not be required when fire pumps are able to take suction from a large body of water (such as a lake), provided each fire pump has its own suction and both suctions and pumps are adequately separated.</p> <p>Exception No. 2: Cooling tower basins shall be an acceptable water source for fire pumps when the volume is sufficient for both purposes and water quality is consistent with the demands of the fire service.</p>	Complies with Clarification	Plant USA utilizes exception No. 1. The fire protection pumps take suction from the Auxiliary Reservoir.	NUREG 1083, NUREG 1083, Rev. ,	
3.5.3 [Water Supply Pump Code Requirements]	<p>3.5.3* Fire pumps, designed and installed in accordance with NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection, shall be provided to ensure that 100 percent of the required flow rate and pressure are available assuming failure of the largest pump or pump power source.</p>	Complies	No Additional Clarifications	Plant USA-M/BMRK-0007, Code Compliance Evaluation NFPA 20 - Centrifugal Fire Pumps, Rev. 001,	
3.5.4 [Water Supply Pump Diversity and Redundancy]	<p>3.5.4 At least one diesel engine-driven fire pump or two more seismic Category I Class IE electric motor-driven fire pumps connected to redundant Class IE emergency power buses capable of providing 100 percent of the required flow rate and pressure shall be provided.</p>	Complies with Clarification		, , Rev. ,	

Table B-1 - NFPA 805 Ch. 3 Transition

<u>NFPA 805 Ch. 3 Ref.</u>	<u>Requirements/Guidance</u>	<u>Compliance Statement</u>	<u>Compliance Basis</u>	<u>Reference Document</u>	<u>Document Detail</u>
3.5.5 [Water Supply Pump Separation Requirements]	3.5.5 Each pump and its driver and controls shall be separated from the remaining fire pumps and from the rest of the plant by rated fire barriers.	Complies via Previous Approval	Submittal Document NLS-86-137 Section C.6.b(6) Project Conformance "As shown in FSAR Figure 9.5.1-1 two 100% capacity fire pumps, one electric and one diesel driven, installed in accordance with NFPA 20, are provided. The pumps are installed at opposite ends of the emergency service water intake structure which provides spatial separation in lieu of a fire wall." SER section 9.5.1 pg 9-51 states in part "The fire pumps are located in the emergency service-water screening structure. The fire pumps are separated by the intake water structure. A single fire is, therefore, unlikely to cause damage to both pumps. Based on its review, the staff concludes that the fire protection water supply system meets Section C.6.c of BTP CMEB 9.5-I and is, therefore, acceptable."	NUREG 1083, NUREG 1083, Rev. ,	
3.5.6 [Water Supply Pump Start/Stop Requirements]	3.5.6 Fire pumps shall be provided with automatic start and manual stop only.	Complies	No Additional Clarification	, , Rev. ,	
3.5.7 [Water Supply Pump Connection Requirements]	3.5.7 Individual fire pump connections to the yard fire main loop shall be provided and separated with sectionalizing valves between connections.	Complies	No Additional Clarification	2165-S-0556, , Rev. 13, 2165-S-0555, , Rev. 18, 2165-S-0557, , Rev. 7,	
3.5.8 [Water Supply Pressure Maintenance Limitations]	3.5.8 A method of automatic pressure maintenance of the fire protection water system shall be provided independent of the fire pumps.	Complies	No Additional Clarification	NUREG 1083, NUREG 1083, Rev. ,	
3.5.9 [Water Supply Pump Operation Notification]	3.5.9 Means shall be provided to immediately notify the control room, or other suitable constantly attended location, of operation of fire pumps.	Complies	No Additional Clarification	, , Rev. ,	
3.5.10 [Water Supply Yard Main Code Requirements]	3.5.10 An underground yard fire main loop, designed and installed in accordance with NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, shall be installed to furnish anticipated water requirements.	Complies	No Additional Clarification	Plant USA-M/BMRK-0008, Code Compliance Evaluation NFPA 24 - Standard for Outside Protection, Rev. 001,	

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<u>NFPA 805 Ch. 3 Ref.</u>	<u>Requirements/Guidance</u>	<u>Compliance Statement</u>	<u>Compliance Basis</u>	<u>Reference Document</u>	<u>Document Detail</u>
3.5.11 [Water Supply Yard Main Maintenance Issues]	3.5.11 Means shall be provided to isolate portions of the yard fire main loop for maintenance or repair without simultaneously shutting off the supply to both fixed fire suppression systems and fire hose stations provided for manual backup. Sprinkler systems and manual hose station standpipes shall be connected to the plant fire protection water main so that a single active failure or a crack to the water supply piping to these systems can be isolated so as not to impair both the primary and backup fire suppression systems.	Complies via Previous Approval	SER Section 9.5.1 pg 9-51 states in part "Approved post-indicator sectional control valves are provided to isolate portions of the underground main for maintenance or repair without shutting off the supply to primary and backup fire suppression systems that serve areas containing or exposing safety-related systems. Based on its review, the staff concludes that the fire protection water supply system meets Section C.6.c of BTP CMEB 9.5-I and is, therefore, acceptable." "Each automatic sprinkler system and interior hose standpipe is supplied through separate connections from the yard main or from the internal cross connections through buildings to ensure that no single failure in the water supply system will impair both the primary and backup fire protection in building areas. Each sprinkler and standpipe system connection to the distribution system is equipped with an indicating gate valve, so that groups of sprinkler systems and/or manual hose stations can be isolated without interrupting the supply to other sprinkler systems and manual hose stations connected to the same header Based on its evaluation, the staff finds that sprinkler and standpipe systems have been provided in accordance with Section C.6.(C) of BTP CMEB 9.5-I and are, therefore, acceptable. " Submittal Document NLS-86-137 Sections C.6.b(2) and C.6.c(1) Project Conformance "Post indicator valves are provided in the distribution system for adequate sectionalization of loops and isolation of branch lines to facilitate system maintenance. Isolation valves are located in branch lines connecting fire suppression systems in the buildings to avoid closing sectional valves in the main loop. Sectional isolation valves are provided in the yard loop piping to minimize the impairment of fire protection water supply if maintenance on the loop or yard hydrants becomes necessary. Sprinkler systems and manual hose station standpipes have connections to the plant underground water main so that a single active failure or a crack in a moderate-energy line cannot impair both the primary and backup fire suppression systems."	, , Rev. ,	

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<u>NFPA 805 Ch. 3 Ref.</u>	<u>Requirements/Guidance</u>	<u>Compliance Statement</u>	<u>Compliance Basis</u>	<u>Reference Document</u>	<u>Document Detail</u>
3.5.12 [Water Supply Compatible Thread Connections]	<p>3.5.12</p> <p>Threads compatible with those used by local fire departments shall be provided on all hydrants, hose couplings, and standpipe risers.</p> <p>Exception: Fire departments shall be permitted to be provided with adapters that allow interconnection between plant equipment and the fire department equipment if adequate training and procedures are provided.</p>	Complies	No Additional Clarification	, , Rev. ,	
3.5.13 [Water Supply Header Options]	<p>3.5.13</p> <p>Headers fed from each end shall be permitted inside buildings to supply both sprinkler and standpipe systems, provided steel piping and fittings meeting the requirements of ANSI B31.1, Code for Power Piping, are used for the headers (up to and including the first valve) supplying the sprinkler systems where such headers are part of the seismically analyzed hose standpipe system. Where provided, such headers shall be considered an extension of the yard main system. Each sprinkler and standpipe system shall be equipped with an outside screw and yoke (OS&Y) gate valve or other approved shutoff valve.</p>	Complies	No Additional Clarification	, , Rev. ,	
3.5.14 [Water Supply Control Valve Supervision]	<p>3.5.14*</p> <p>All fire protection water supply and fire suppression system control valves shall be under a periodic inspection program and shall be supervised by one of the following methods.</p> <p>(a) Electrical supervision with audible and visual signals in the main control room or other suitable constantly attended location.</p> <p>(b) Locking valves in their normal position. Keys shall be made available only to authorized personnel.</p> <p>(c) Sealing valves in their normal positions. This option shall be utilized only where valves are located within fenced areas or under the direct control of the owner/operator.</p>	Complies	No Additional Clarification	, , Rev. ,	
3.5.15 [Water Supply Hydrant Code Requirements]	<p>3.5.15</p> <p>Hydrants shall be installed approximately every 250 ft (76 m) apart on the yard main system. A hose house equipped with hose and combination nozzle and other auxiliary equipment specified in NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, shall be provided at intervals of not more than 1000 ft (305 m) along the yard main system.</p> <p>Exception: Mobile means of providing hose and associated equipment, such as hose carts or trucks, shall be permitted in lieu of hose houses. Where provided, such mobile equipment shall be equivalent to the equipment supplied by three hose houses.</p>	Complies with Clarification		, , Rev. ,	

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<u>NFPA 805 Ch. 3 Ref.</u>	<u>Requirements/Guidance</u>	<u>Compliance Statement</u>	<u>Compliance Basis</u>	<u>Reference Document</u>	<u>Document Detail</u>
3.5.16 [Water Supply Dedicated Limits]	<p>3.5.16*</p> <p>The fire protection water supply system shall be dedicated for fire protection use only.</p> <p>Exception No. 1: Fire protection water supply systems shall be permitted to be used to provide backup to nuclear safety systems, provided the fire protection water supply systems are designed and maintained to deliver the combined fire and nuclear safety flow demands for the duration specified by the applicable analysis.</p> <p>Exception No. 2: Fire protection water storage can be provided by plant systems serving other functions, provided the storage has a dedicated capacity capable of providing the maximum fire protection demand for the specified duration as determined in this section.</p>	Complies with Clarification		, , Rev. ,	
3.6 Standpipe and Hose Stations.	N/A	N/A	N/A - General statement; No technical requirements	, , Rev. ,	

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<u>NFPA 805 Ch. 3 Ref.</u>	<u>Requirements/Guidance</u>	<u>Compliance Statement</u>	<u>Compliance Basis</u>	<u>Reference Document</u>	<u>Document Detail</u>
3.6.1 [Standpipe and Hose Station Code Requirements]	3.6.1 For all power block buildings, Class III standpipe and hose systems shall be installed in accordance with NFPA 14, Standard for the Installation of Standpipe, Private Hydrant, and Hose Systems.	Complies Via Previous Approval	<p>Approval Document NUREG-1038 Section 9.5.1.5 Sprinkler and Standpipe System states "Each sprinkler and standpipe system connection to the distribution system is equipped with an indicating gate valve, so that groups of sprinkler systems and/or manual hose stations can be isolated without interrupting the supply to other sprinkler systems and manual hose stations connected to the same heat' Based on its evaluation, the staff finds that sprinkler and standpipe systems have been provided in accordance with Section C.6.(C) of BTP CMEB 9.5-I and are, therefore, acceptable. Manual hose stations are located throughout the plant in accordance with NFPA 14. Standpipe system piping for hose stations protecting safe shutdown equipment has been analyzed for SSE loading and is provided with seismic supports. The staff concludes that the design of the standpipe system piping meets Section C.6.c of BTP CMEB 9.5-I and is, therefore, acceptable."</p> <p>Approval Document NUREG-1038 Supplement No. 4 Section 9.5.1 states "In SER Supplement 3, the staff indicated that its review of the applicant's fire protection program for Harris was complete. By letters dated May 7, June 4, June 18, June 20, July 22, and August 6, 1986, the applicant provided additional information (including Revision 3 to its point-by-point comparison with BTP CMEB 9.5-I), requests for additional deviations from BTP CMEB 9.5-1, and FSAR Amendment 27. The information provided contained changes resulting from continued program development, and incorporated information previously provided via docketed correspondence, editorial changes, and clarifications. Only those changes that affect the staff's previous safety evaluations are addressed in this supplement.</p> <p>The Plant USA response NLS-86-137 to section C.6.c(4) states in part "Interior manual hose stations are provided in each plant area so that all portions of the plant are protected with at least one effective hose stream, except the tank area: Diesel Fuel Oil Storage Tank</p>	<p>NLS-86-137, Point by Point Comparison of Plant USA to Requirements of NUREG 0800, Rev. , 5/7/1986</p> <p>Plant USA SER initial and Supplement 4, , Rev. ,</p> <p>Plant USA-M/BMRK-0006, Code Compliance Evaluation NFPA 14-1976, Standpipe and Hose Stations, Rev. 001, SPant USAP FSAR 9.5.1, , Rev. ,</p>	Section 9.5.1

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<u>NFPA 805 Ch. 3 Ref.</u>	<u>Requirements/Guidance</u>	<u>Compliance Statement</u>	<u>Compliance Basis</u>	<u>Reference Document</u>	<u>Document Detail</u>
			<p>and Transfer Pumps area and ESW intake and screen-structure, which are protected by yard hydrants." "Individual standpipes are 4 inches in diameter for multiple hose stations and 2-1/2 inches for single hose stations. These systems follow the requirements of NFPA 14</p> <p>"Standpipe and Hose Systems" Class II, for sizing, spaces, and pipe support requirements. Hose stations are located as dictated by the fire hazard analysis to facilitate access and use for firefighting operations. Alternative hose stations are provided for an area if the fire hazard could block access to a single hose station serving that area."</p>		

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<u>NFPA 805 Ch. 3 Ref.</u>	<u>Requirements/Guidance</u>	<u>Compliance Statement</u>	<u>Compliance Basis</u>	<u>Reference Document</u>	<u>Document Detail</u>
3.6.2 [Standpipe and Hose Station Capability Limitations]	3.6.2 A capability shall be provided to ensure an adequate water flow rate and nozzle pressure for all hose stations. This capability includes the provision of hose station pressure reducers where necessary for the safety of plant industrial fire brigade members and off-site fire department personnel.	Complies Via Previous Approval	<p>Submittal Document NLS-86-137 Section C.6.c(4) Project Conformance "Interior manual hose stations are provided in each plant area so that all portions of the plant are protected with at least one effective hose stream, except the tank area: Diesel Fuel Oil Storage Tank and Transfer Pumps area and ESW intake and screen-structure, which are protected by yard hydrants. Each interior hose station is provided with 100 feet of 1 ½ inches Angus "Red Chief" rubber-lined, rubber coated hose and adjustable nozzles suitable for use on electrical equipment. Individual standpipes are 4 inches in diameter for multiple hose stations and 2-1/2 inches for single hose stations. These systems follow the requirements of NFPA 14 Standpipe and Hose Systems Class II, for rising, spaces, and pipe support requirements. Hose stations are located as dictated by the fire hazard analysis to facilitate access and use for firefighting operations. Alternative hose stations are provided for an area if the fire hazard could block access to a single hose station serving that area."</p> <p>Approval Document NUREG-1038 Section 9.5.1.5 Sprinkler and Standpipe Systems states "Each sprinkler and standpipe system connection to the distribution system is equipped with an indicating gate valve, so that groups of sprinkler systems and/or manual hose stations can be isolated without interrupting the supply to other sprinkler systems and manual hose stations connected to the same heat' Based on its evaluation, the staff finds that sprinkler and standpipe systems have been provided in accordance with Section C.6.(C) of BTP CMEB 9.5-I and are, therefore, acceptable. Manual hose stations are located throughout the plant in accordance with NFPA 14."</p> <p>FSAR section 9.5.1 states, "The guidelines of NFPA 14 were followed in the design of the standpipe. Individual standpipes are a minimum of 4 inches diameter for multiple hose connections and 2-1/2 inch for single hose connections. The stand pipe system is designed and sized to provide to the most remote hose station the flow rate and pressure</p>	<p>Plant USA SER initial and Supplement 4, , Rev. , AR 76621, Evaluate Electrical Nozzles, Rev. , 11/12/2003 AR 25032, Evaluation of NFPA 14 Deviations, Rev. , 4/15/2002 Plant USA-M/BMRK-0006, Code Compliance Evaluation NFPA 14-1976, Standpipe and Hose Stations, Rev. 001, NLS-86-137, Point by Point Comparison of Plant USA to Requirements of NUREG 0800, Rev. , 5/7/1986 SPlant USAP FSAR 9.5.1, , Rev. ,</p>	

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<u>NFPA 805 Ch. 3 Ref.</u>	<u>Requirements/Guidance</u>	<u>Compliance Statement</u>	<u>Compliance Basis</u> required for effective hose streams."	<u>Reference Document</u>	<u>Document Detail</u>
3.6.3 [Standpipe and Hose Station Nozzle Restrictions]	3.6.3 The proper type of hose nozzle to be supplied to each power block area shall be based on the area fire hazards. The usual combination spray/straight stream nozzle shall not be used in areas where the straight stream can cause unacceptable damage or present an electrical hazard to fire-fighting personnel. Listed electrically safe fixed fog nozzles shall be provided at locations where high-voltage shock hazards exist. All hose nozzles shall have shutoff capability and be able to control water flow from full open to full closed.	Complies	No Additional Clarification	AR 25032, Evaluation of NFPA 14 Deviations, Rev. , 4/15/2002 NFPA 14-1976, Standpipes and Hose Stations, Rev. , Plant USA SER initial and Supplement 4, , Rev. , NLS-86-137, Point by Point Comparison of Plant USA to Requirements of NUREG 0800, Rev. , 5/7/1986	

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<u>NFPA 805 Ch. 3 Ref.</u>	<u>Requirements/Guidance</u>	<u>Compliance Statement</u>	<u>Compliance Basis</u>	<u>Reference Document</u>	<u>Document Detail</u>
3.6.4 [Standpipe and Hose Station Earthquake Provisions]	<p>3.6.4 Provisions shall be made to supply water at least to standpipes and hose stations for manual fire suppression in all areas containing systems and components needed to perform the nuclear safety functions in the event of a safe shutdown earthquake (SSE).</p> <p>Exception: For existing plants that are not capable of meeting this requirement, provisions to restore a water supply and distribution system for manual fire-fighting purposes shall be made. This provisional manual fire-fighting standpipe/hose station system shall be capable of providing manual fire-fighting protection to the various plant locations important to supporting and maintaining the nuclear safety function. The provisions for establishing this provisional system shall be preplanned and be capable of being implemented in a timely manner following an SSE.</p>	Complies via Previous Approval	<p>Deviation Request-</p> <p>From NLS-86-315</p> <p>SUMMARY</p> <p>Carolina Power & Light Company (CP&L) would lie to identify a deviation from BTP 9.5-1, Section C.6.c (4) of NUREG-0800 from having to provide manual Safe Shutdown Earthquake (SSE) hose stations in three areas of the plant identified below.</p> <p>BACKGROUND</p> <p>Section 9.5.15 of the November 1983 Harris Safety Evaluation Report (SER) stated that: "Based on its evaluation, the Staff finds that sprinkler and standpipe systems have been provided in accordance with Section C.6.(c) of BTP CMEB 9.5-I and are, therefore, acceptable."</p> <p>"Standpipe system piping for hose stations protecting safe shutdown equipment has been analyzed for SSE loading and is provided with seismic supports. The Staff concludes the design of the standpipe system piping, meets Section C.6.c of BTP CMEB 9:5-I and is, therefore, acceptable."</p> <p>The above SER statements were based on CP&L's October 1983 response to NRC Question 280.1. However, the SER did not address the deviations identified in CP&L's response (specifically, that SSE hose stations were not provided for the diesel generator and fuel oil storage buildings). Amendment No. 20 of the Harris Final Safety Analysis Report, dated May 10,1985, identified the Emergency Service Water Intake structure as an additional area where SSE hose stations are not provided. Following recent conversations with your Staff, CP&L was requested to provide justification for not providing SSE hose stations for the below three areas.</p> <p>DISCUSSION</p> <p>The Company requests approval of a deviation from the requirements to provide-SSE hose stations in the following plant areas:</p> <p>Plant Location:</p> <p>a) Diesel Generator Building</p> <p>b) Diesel Fuel Oil Storage Building</p> <p>c) Emergency Service Water Intake Structure</p> <p>Fire Area:</p>	<p>Plant USA SER initial and Supplement 4, , Rev. , NLS-86-137, Point by Point Comparison of Plant USA to Requirements of NUREG 0800, Rev. , 5/7/1986</p> <p>Plant USA-M/BMRK-0006, Code Compliance Evaluation NFPA 14-1976, Standpipe and Hose Stations, Rev. 001,</p>	

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			<p>a) I-D-DGA, I-D-DCB, I-D-DTA, I-D-DTB b) 12-O-TA, 12-O-TB, I-O-PA, I-O-PB, 5-O-BAL c) I2-I-ESWPA, I2-I-ESWPB SSA Area: a) FADDGA, FADDGB, FADDTA, FADDTB b) FCOTKA, FCOTKB, FAOPA, FAOPB, FPOBAL c) FCIESA, FCIESB Other safe shutdown equipment within the SSA area: a) Diesel Generator, Diesel Generator Day Tanks, and Diesel Control Panels b) Diesel Generator Fuel Oil Transfer Pumps, Diesel Generator Storage Tanks c) Emergency Service Water Pumps and Controls The Company considers this deviation justified because: 1-the above redundant safe shutdown equipment is separated from each other by three-hour rated barriers, which are Seismic Class I structures, 2-these areas are provided with non-seismic fire protection systems, and 3-the combustible loading in these areas is considered low, except in the case of the diesel day tank and storage tank area where the enclosures are Seismic Class I or ASME Section III. CONCLUSION Based on the fire protection provided and described above, CP&L believes that a commensurate level of protection has been provided in lieu of additional SSE hose stations as described in Section C.6,c (4) of NUREG-0800.</p> <p>Plant USA initial SER states "Each sprinkler and standpipe system connection to the distribution system is equipped with an indicating gate valve, so that groups of sprinkler systems and/or manual hose stations can be isolated without interrupting the supply to other sprinkler systems and manual hose stations connected to the same heat' Based on its evaluation, the staff finds that sprinkler and standpipe systems have been provided in accordance with Section C.6.(C) of BTP CMEB 9.5-I and are, therefore, acceptable. Manual</p>		

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			<p>hose stations are located throughout the plant in accordance with NFPA 14. Standpipe system piping for hose stations protecting safe shutdown equipment has been analyzed for SSE loading and is provided with seismic supports. The staff concludes that the design of the standpipe system piping meets Section C.6.c of BTP CMEB 9.5-I and is, therefore, acceptable."</p> <p>SER 4 - In the SER, the staff stated that standpipe system piping for hose stations protecting safe shutdown equipment has been analyzed for safe-shutdown earthquake (SSE) loading and is provided with seismic supports in accordance with Section C.6.c of BTP CMEB 9.5-I. In fact, this is not the case for the diesel generator building, the diesel fuel oil storage building, and the emergency service water intake structures. By letter dated August 25, 1986, the applicant justified this deviation from staff guidelines. On the basis of its review of the applicant's justification, which is based on the separation of the redundant safe-shutdown equipment located in the diesel generator building, the diesel fuel oil storage building, and the emergency service water (ESW) intake structure by seismic Category I 3-hour fire rated barriers, and the provision of alternative means of manual firefighting, the staff concludes that the standpipe system is acceptable. The lack of seismically qualified hose stations in the diesel generator and fuel oil storage buildings and the emergency service water (ESW) intake structure is an acceptable deviation from Section C.6.c of BTP CMEB 9.5-I. 9.5.1.6.</p>		
3.6.5 [Standpipe and Hose Station Seismic Connection Limitations]	3.6.5 Where the seismic required hose stations are cross-connected to essential seismic non-fire protection water supply systems, the fire flow shall not degrade the essential water system requirement.	Complies	No Additional Clarification	NLS-86-137, Point by Point Comparison of Plant USA to Requirements of NUREG 0800, Rev. , 5/7/1986 Plant USA SER initial and Supplement 4, , Rev. , Plant USA-M/BMRK-0006, Code Compliance Evaluation NFPA 14-1976, Standpipe and Hose Stations, Rev. 001,	

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<u>NFPA 805 Ch. 3 Ref.</u>	<u>Requirements/Guidance</u>	<u>Compliance Statement</u>	<u>Compliance Basis</u>	<u>Reference Document</u>	<u>Document Detail</u>
3.7 Fire Extinguishers.	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.	LAR		Plant USA-M/BMRK-0005, CODE COMPLIANCE EVALUATION NFPA 10, PORTABLE FIRE EXTINGUISHERS, Rev. 001, AR 25033, , Rev. , 4/15/2002 , , Rev. ,	
3.8 Fire Alarm and Detection Systems.	N/A	N/A	N/A - General statement; No technical requirements		
3.8.1 Fire Alarm.	3.8.1 Fire Alarm. Alarm initiating devices shall be installed in accordance with NFPA 72, National Fire Alarm Code®. Alarm annunciation shall allow the proprietary alarm system to transmit fire-related alarms, supervisory signals, and trouble signals to the control room or other constantly attended location from which required notifications and response can be initiated. Personnel assigned to the proprietary alarm station shall be permitted to have other duties. The following fire-related signals shall be transmitted: (1) Actuation of any fire detection device (2) Actuation of any fixed fire suppression system (3) Actuation of any manual fire alarm station (4) Starting of any fire pump (5) Actuation of any fire protection supervisory device (6) Indication of alarm system trouble condition	Further Action Required		Plant USA-M/BMRK-0001, CODE COMPLIANCE EVALUATION NFPA 72E, AUTOMATIC FIRE DETECTORS, Rev. 001,	
3.8.1.1 [Fire Alarm Communication Requirements]	3.8.1.1 Means shall be provided to allow a person observing a fire at any location in the plant to quickly and reliably communicate to the control room or other suitable constantly attended location.	Complies	FAQ 06-0019 Rev 0 is applicable.		, , Rev. ,
3.8.1.2 [Fire Alarm Prompt Notification Limits]	3.8.1.2 Means shall be provided to promptly notify the following of any fire emergency in such a way as to allow them to determine an appropriate course of action: (1) General site population in all occupied areas (2) Members of the industrial fire brigade and other groups supporting fire emergency response (3) Off-site fire emergency response agencies. Two independent means shall be available (e.g., telephone and radio) for notification of off-site emergency services	Complies	No Additional Clarification		, , Rev. ,
3.8.2 Detection.	3.8.2 Detection. If automatic fire detection is required to meet the performance or deterministic requirements of Chapter 4, then these devices shall be installed in accordance with NFPA 72, National Fire Alarm Code, and its applicable appendices.	Further Action Required		Plant USA-M/BMRK-0001, CODE COMPLIANCE EVALUATION NFPA 72E, AUTOMATIC FIRE DETECTORS, Rev. 001,	
3.9 Automatic and Manual Water-Based Fire Suppression Systems.	N/A	N/A	N/A - General statement; No technical requirements		, , Rev. ,

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3.9.1 [Fire Suppression System Code Requirements]	3.9.1* If an automatic or manual water-based fire suppression system is required to meet the performance or deterministic requirements of Chapter 4, then the system shall be installed in accordance with the appropriate NFPA standards including the following: (1) NFPA 13, Standard for the Installation of Sprinkler Systems (2) NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection (3) NFPA 750, Standard on Water Mist Fire Protection Systems (4) NFPA 16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems	Further Action Required		, , Rev. ,	
3.9.2 [Fire Suppression System Flow Alarm]	3.9.2 Each system shall be equipped with a water flow alarm.	Complies	No Additional Clarification	SPlant USAP FSAR 9.5.1 Amendment 48, , Rev. ,	Section 9.5.1, page 9.5.1-23
3.9.3 [Fire Suppression System Alarm Locations]	3.9.3 All alarms from fire suppression systems shall annunciate in the control room or other suitable constantly attended location.	Complies	No Additional Clarification	SPlant USAP FSAR 9.5.1 Amendment 48, , Rev. ,	Section 9.5.1, page 9.5.1-25
3.9.4 [Fire Suppression System Diesel Pump Sprinkler Protection]	3.9.4 Diesel-driven fire pumps shall be protected by automatic sprinklers.	LAR		, , Rev. ,	
3.9.5 [Fire Suppression System Shutoff Controls]	3.9.5 Each system shall be equipped with an OS&Y gate valve or other approved shutoff valve.	Complies	No Additional Clarification	, , Rev. ,	
3.9.6 [Fire Suppression System Valve Supervision]	3.9.6 All valves controlling water-based fire suppression systems required to meet the performance or deterministic requirements of Chapter 4 shall be supervised as described in 3.5.14.	Complies	No Additional Clarification	OP-149, Fire Protection, Rev. 037,	
3.10 Gaseous Fire Suppression Systems.	N/A	N/A	N/A - General statement; No technical requirements	, , Rev. ,	
3.10.1 [Gaseous Suppression System Code Requirements]	3.10.1 If an automatic total flooding and local application gaseous fire suppression system is required to meet the performance or deterministic requirements of Chapter 4, then the system shall be designed and installed in accordance with the following applicable NFPA codes: (1) NFPA 12, Standard on Carbon Dioxide Extinguishing Systems (2) NFPA 12A, Standard on Halon 1301 Fire Extinguishing Systems (3) NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems	N/A	Gaseous suppression not used at Plant USA.	, , Rev. ,	

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3.10.2 [Gaseous Suppression System Alarm Location]	3.10.2 Operation of gaseous fire suppression systems shall annunciate and alarm in the control room or other constantly attended location identified.	N/A	Gaseous suppression not used at Plant USA.	, , Rev. ,	
3.10.3 [Gaseous Suppression System Ventilation Limitations]	3.10.3 Ventilation system design shall take into account prevention from over-pressurization during agent injection, adequate sealing to prevent loss of agent, and confinement of radioactive contaminants.	N/A	Gaseous suppression not used at Plant USA.	, , Rev. ,	
3.10.4 [Gaseous Suppression System Single Failure Limits]	3.10.4* In any area required to be protected by both primary and backup gaseous fire suppression systems, a single active failure or a crack in any pipe in the fire suppression system shall not impair both the primary and backup fire suppression capability.	N/A	Gaseous suppression not used at Plant USA.	, , Rev. ,	
3.10.5 [Gaseous Suppression System Disarming Controls]	3.10.5 Provisions for locally disarming automatic gaseous suppression systems shall be secured and under strict administrative control.	N/A	Gaseous suppression not used at Plant USA.	, , Rev. ,	
3.10.6 [Gaseous Suppression System CO2 Limitations]	3.10.6* Total flooding carbon dioxide systems shall not be used in normally occupied areas.	N/A	Gaseous suppression not used at Plant USA.	, , Rev. ,	
3.10.7 [Gaseous Suppression System CO2 Warnings]	3.10.7 Automatic total flooding carbon dioxide systems shall be equipped with an audible pre-discharge alarm and discharge delay sufficient to permit egress of personnel. The carbon dioxide system shall be provided with an odorizer.	N/A	Gaseous suppression not used at Plant USA.	, , Rev. ,	
3.10.8 [Gaseous Suppression System CO2 Required Disarming]	3.10.8 Positive mechanical means shall be provided to lock out total flooding carbon dioxide systems during work in the protected space.	N/A	Gaseous suppression not used at Plant USA.	, , Rev. ,	
3.10.9 [Gaseous Suppression System Cooling Considerations]	3.10.9 The possibility of secondary thermal shock (cooling) damage shall be considered during the design of any gaseous fire suppression system, but particularly with carbon dioxide.	N/A	Gaseous suppression not used at Plant USA.	, , Rev. ,	
3.10.10 [Gaseous Suppression System Decomposition Issues]	3.10.10 Particular attention shall be given to corrosive characteristics of agent decomposition products on safety systems.	N/A	Gaseous suppression not used at Plant USA.	, , Rev. ,	

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3.11 Passive Fire Protection Features	3.11 Passive Fire Protection Features. This section shall be used to determine the design and installation requirements for passive protection features. Passive fire protection features include wall, ceiling, and floor assemblies, fire doors, fire dampers, and through fire barrier penetration seals. Passive fire protection features also include electrical raceway fire barrier systems (ERFBS) that are provided to protect cables and electrical components and equipment from the effects of fire.	N/A	N/A - General statement; No technical requirements	Plant USA-M/BMRK-0011, Code Compliance Evaluation NFPA 805,2003,, Rev. 000,	3.11
3.11.1 Building Separation.	3.11.1 Building Separation. Each major building within the power block shall be separated from the others by barriers having a designated fire resistance rating of 3 hours or by open space of at least 50 ft (15.2 m) or space that meets the requirements of NFPA 80A, Recommended Practice for Protection of Buildings from Exterior Fire Exposures. Exception: Where a performance-based analysis determines the adequacy of building separation, the requirements of 3.11.1 shall not apply.	Further Action Required-	FAQ 06-0008 Rev 0 is applicable.	2165-G-0003, SITE PLAN, Rev. 018, 2165-G-0002, PLOT PLAN, Rev. 023, E-5525, Safe Shutdown Analysis in Case of Fire, Rev. 015,	
3.11.2 Fire Barriers.	3.11.2 Fire Barriers. Fire barriers required by Chapter 4 shall include a specific fire-resistance rating. Fire barriers shall be designed and installed to meet the specific fire resistance rating using assemblies qualified by fire tests. The qualification fire tests shall be in accordance with NFPA 251, Standard Methods of Tests of Fire Endurance of Building Construction and Materials, or ASTM E 119, Standard Test Methods for Fire Tests of Building Construction and Materials.	Further Action Required		, , Rev. ,	

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3.11.3 Fire Barrier Penetrations.	<p>3.11.3* Fire Barrier Penetrations.</p> <p>Penetrations in fire barriers shall be provided with listed fire-rated door assemblies or listed rated fire dampers having a fire resistance rating consistent with the designated fire resistance rating of the barrier as determined by the performance requirements established by Chapter 4. (See 3.11.3.4 for penetration seals for through penetration fire stops.) Passive fire protection devices such as doors and dampers shall conform with the following NFPA standards, as applicable:</p> <p>(1) NFPA 80, Standard for Fire Doors and Fire Windows (2) NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems (3) NFPA 101, Life Safety Code</p> <p>Exception: Where fire area boundaries are not wall-to-wall, floor-to-ceiling boundaries with all penetrations sealed to the fire rating required of the boundaries, a performance-based analysis shall be required to assess the adequacy of fire barrier forming the fire boundary to determine if the barrier will withstand the fire effects of the hazards in the area. Openings in fire barriers shall be permitted to be protected by other means as acceptable to the AHJ.</p>	Further Action Required		Plant USA-M/BMRK-0003, Code Compliance Evaluation NFPA 80, Standard for Fire Doors and Windows, Rev. 001, Plant USA-M/BMRK-0004, Code Compliance Evaluation NFPA 90A, Air Conditioning and Ventilating Systems (1981), Rev. 001,	

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3.11.4 Through Penetration Fire Stops.	<p>3.11.4* Through Penetration Fire Stops.</p> <p>Through penetration fire stops for penetrations such as pipes, conduits, bus ducts, cables, wires, pneumatic tubes and ducts, and similar building service equipment that pass through fire barriers shall be protected as follows.</p> <p>(a) The annular space between the penetrating item and the through opening in the fire barrier shall be filled with a qualified fire-resistive penetration seal assembly capable of maintaining the fire resistance of the fire barrier. The assembly shall be qualified by tests in accordance with a fire test protocol acceptable to the AHJ or be protected by a listed fire-rated device for the specified fire-resistive period.</p> <p>(b) Conduits shall be provided with an internal fire seal that has an equivalent fire-resistive rating to that of the fire barrier through opening fire stop and shall be permitted to be installed on either side of the barrier in a location that is as close to the barrier as possible.</p> <p>Exception: Openings inside conduit 4 in. (10.2 cm) or less in diameter shall be sealed at the fire barrier with a fire-rated internal seal unless the conduit extends greater than 5 ft (1.5 m) on each side of the fire barrier. In this case the conduit opening shall be provided with noncombustible material to prevent the passage of smoke and hot gases. The fill depth of the material packed to a depth of 2 in. (5.1 cm) shall constitute an acceptable smoke and hot gas seal in this application.</p>	Further Action Required		, , Rev. ,	

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3.11.5 Electrical Raceway Fire Barrier Systems (ERFBS).	<p>3.11.5* Electrical Raceway Fire Barrier Systems (ERFBS). ERFBS required by Chapter 4 shall be capable of resisting the fire effects of the hazards in the area. ERFBS shall be tested in accordance with and shall meet the acceptance criteria of NRC Generic Letter 86-10, Supplement 1, "Fire Endurance Test Acceptance Criteria for Fire Barrier Systems Used to Separate Safe Shutdown Trains Within the Same Fire Area." The ERFBS needs to adequately address the design requirements and limitations of supports and intervening items and their impact on the fire barrier system rating. The fire barrier system's ability to maintain the required nuclear safety circuits free of fire damage for a specific thermal exposure, barrier design, raceway size and type, cable size, fill, and type shall be demonstrated.</p> <p>Exception No. 1: When the temperatures inside the fire barrier system exceed the maximum temperature allowed by the acceptance criteria of Generic Letter 86-10, "Fire Endurance Acceptance Test Criteria for Fire Barrier Systems Used to Separate Redundant Safe Shutdown Training Within the Same Fire Area," Supplement 1, functionality of the cable at these elevated temperatures shall be demonstrated. Qualification demonstration of these cables shall be performed in accordance with the electrical testing requirements of Generic Letter 86-10, Supplement 1, Attachment 1, "Attachment Methods for Demonstrating Functionality of Cables Protected by Raceway Fire Barrier Systems During and After Fire Endurance Test Exposure."</p> <p>Exception No. 2: ERFBS systems employed prior to the issuance of Generic Letter 86-10, Supplement 1, are acceptable providing that the system successfully met the limiting end point temperature requirements as specified by the AHJ at the time of acceptance.</p>	Complies with Clarification	<p>AT Plant USA there are five different ERFBS installed which are credited in Chapter 4, Hemyc, MT, Thermo-lag, Interam, and Meggitt Cable.</p> <p>HEMYC The fire resistive rating of the Hemyc ERFBS is established by testing conducted in accordance with the guidance and acceptance criteria of GL 86-10 Supp 1. The rating varies from 28 minutes to 56 minutes. The Hemyc testing addressed the design requirements and limitations of supports and intervening items and their impact on the fire barrier system rating. The testing also established the fire barrier system's bounding barrier design, raceway size and type, cable size, fill, and type's. Specific applications credited by Chapter 4 are evaluated as acceptable based on the rating via the change evaluation process and included within the LAR.</p> <p>MT The fire resistive rating of the MT ERFBS is established by testing conducted in accordance with the guidance and acceptance criteria of GL 86-10 Supp 1. The rating varies from 116 minutes to 3 hours. The MT testing addressed the design requirements and limitations of supports and intervening items and their impact on the fire barrier system rating. The testing also established the fire barrier system's bounding barrier design, raceway size and type, cable size, fill, and type's. Specific applications credited by Chapter 4 are evaluated as acceptable based on the rating via the change evaluation process and included within the LAR.</p> <p>Thermo-lag The fire resistive rating of the Thermo-lag ERFBS is established by testing conducted in accordance with the guidance and acceptance criteria of GL 86-10 Supp 1. The Thermo-lag as installed at Plant USA is a 1 hour rated ERFBS. The Thermo-lag testing addressed the design requirements and limitations of supports and intervening items and their impact on the fire barrier system rating. The testing also established the fire barrier</p>	, , Rev. ,	

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			<p>system's bounding barrier design, raceway size and type, cable size, fill, and type's.</p> <p>Interam</p> <p>The fire resistive rating of the Interam ERFBS is established by testing conducted in accordance with the guidance and acceptance criteria of GL 86-10 Supp 1. The Interam as installed at Plant USA is installed in both 1 hour rated and 3 hour rated ERFBS configurations. The Interam testing addressed the design requirements and limitations of supports and intervening items and their impact on the fire barrier system rating. The testing also established the fire barrier system's bounding barrier design, raceway size and type, cable size, fill, and types.</p> <p>Meggitt Safety Systems Cable</p> <p>The Meggitt Safety Systems Cable is not specifically an ERFBS but it will be addressed under this section due to its design function and qualification testing equivalent to an ERFBS. The Meggitt Safety Systems Cable was tested to establish that it is capable of performing its design function during and after a fire exposure.</p>		