



COOK NUCLEAR PLANT

NFPA 805 FIRE PROTECTION PROGRAM MANUAL (NFPPM)

Rev. 4

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1.0 INTRODUCTION

1.1 Executive Summary

The NFPA 805 Fire Protection Program Manual (NFPPM) provides a description of the risk-informed, performance-based Fire Protection Program for the Cook Nuclear Plant (CNP), including references to the documents that comprise the Fire Protection Program.

The NFPPM describes the overall Fire Protection Program at Cook Nuclear Plant, provides a single reference to the documents that comprise the licensing basis of the Fire Protection Program, and includes the studies and evaluations that support the Fire Protection Program.

Engineering evaluations provide the basis for demonstrating issues of compliance with NFPA 805 at CNP. Other evaluations that support issues with the Fire Protection Program are also referenced in the NFPPM.

1.2 NFPPM Description

The NFPPM describes the Cook Nuclear Plant and American Electric Power Service Corporation (AEPSC) procedures, evaluations, and other documents used by AEPSC and Indiana Michigan Power Company (I&M) to ensure that the Cook Nuclear Plant complies with federal regulations governing fire protection. It is not intended, however, that the NFPPM, by reference to these procedures, controls them. When differences exist between the NFPPM and the procedures, the procedures shall govern. The intent of the NFPPM is to serve as a guide regarding the overall Fire Protection Program structure.

AEPSC has established an Independent Spent Fuel Storage Installation (ISFSI) at the Cook Nuclear Plant to implement dry fuel storage under the General License provisions of 10 CFR 72.210. As used in this Fire Protection Program Manual, the terms “Cook Nuclear Plant” and “Plant” include both the two units operating under the provisions of 10 CFR 50 and the ISFSI operating under the provisions of 10 CFR 72.210. Unless specifically delineated otherwise, the Fire Protection Program applies to both the operating units and the ISFSI.

The Cook Nuclear Plant Fire Protection Program ensures that a fire will not diminish the ability to maintain the plant in a safe and stable hot standby condition and minimize the release of radioactivity through the defense-in-depth concept. Defense-in-depth is intended to prevent fires from starting, quickly detect and suppress a fire should it occur, limit the extent of damage caused by fire, and preserve the capability to utilize the required functions in the event of a fire. Putting this concept into practice is the Fire Protection Program’s primary objective.

1.3 Revision Summary

Revision 0 represents the initial issue of this document.

Revision 1 was updated based on the plant at the time of transition to NFPA 805. This document was reorganized and now includes the content of Technical Evaluation 12.28, *Technical Evaluation for Fundamental Fire Protection Program and Design Elements Review*, Technical Evaluation 12.31, *Technical Evaluation for Radioactive Release Review*, and Technical Evaluation 7.1, *Technical Evaluation for Licensing Action Review*. These Technical Evaluations are superseded by this document. Technical changes are noted by the use of revision bars (except as noted within the text of selected attachments).

Revision 2 updates to incorporate NFPA 805 Fire Protection Program Changes as implemented by:

FPPR 2014-0009, UFSAR 9.8.1 Update for NFPA 805

FPPR-2015-0002, Revise PMP-2270-CCM-001 AR 2015-3026 IACE

FPPR-2015-0010, Update Reference Documents to NFPPM Attachment 1 elements 3.5.3 and 3.5.4 to include reference to Report R2527-001-001

FPPR-2015-0074,

FPPR-2016-0006, AR 2016-1349, AR 2016-1463 Update NFPPM

FPPR-2016-0007, AR 2016-1349, AR 1463 Update NFPPM

FPPR-2016-0010, GT-2016-12344-17 Replace 12-EHP-2270-FPPR-001 with 12-EHP-2270-FPIR-001 and 12-EHP-2270-FPCE-001

FPPR-2016-0011, NFPPM Rev. 2 update for minor corrections and changes from the last submittal of the Updated Final Safety Analysis Report (UFSAR) to support the new UFSAR submittal in accordance with 10 CFR 50.71(e), UFSAR Update and PMP-2350-COM-001, Communications with the Nuclear Regulatory Commission and Other Regulatory Agencies.

Revision 3 updates to incorporate NFPA 805 Fire Protection Program Changes as implemented by:

FPCE-2018-0007 Updates made to Attachment 1 section 3.3.8 to clarify compliance basis.

FPCE-2017-0008 Update made to Attachment 1 section 3.11.3(1), Attachment 2 section NFPA 80, and Attachment 4 to include reference to EEE-11-72.

FPCE-2017-0011 Update made to Attachment 1 section 3.11.3(1), Attachment 2 section NFPA 80, and Attachment 4 to include reference to EEE-11-71.

FPCE-2017-0001 Updates made to reflect changes from EHP series procedures to FPE series procedures resulting from consolidation of Fire Protection under the Operations department. Reference also CDI GT-2017-10673-1.

FPCE-2017-0018 Updates made to reflect transition of Technical Evaluation 11.69 to EEE-11-69.
Reference GT 2016-1960-7.

FPCE-2017-0021 Updates made to Attachment 1 3.3.1.2(4) to reflect changes to PMP-2270-CCM-001 to allow for a graded approach based on multiple factors including the risk significance of the room, current in-situ combustible loading and potential to exceed the combustible loading limits of the FSA.

FPCE-2017-0024 Updates made to Attachment 1 3.11.3(1) to reflect EEE-11-69.

FPCE-2017-0025 Updates to the NFPPM Section 3.7.1 and Attachment 1, Elements 3.2.3(4) and 3.3.1.1(3) to change reference from 12-EHP-5040-MOD-009, Engineering Change Reference Guide to IP-ENG-001, Standard Design Process.

FPCE-2018-0006 Update Attachment 1 section 3.9.1(1) reference documents to delete incorrect references to Technical Evaluation-N, O, and P.

FPCE-2017-0004 and FPCE-2017-0017 Updated the compliance basis for NFPA 805 design element 3.5.15 to reflect the use of a mobile means of delivering fire hose and equipment in the lieu of storage of hose in fire hose house. Removed reference specific to the fire truck as a mobile means of delivering fire hose and equipment.

FPCE-2016-0014 Updated attachment 6 to list wrapped cables.

FPCE-2016-0017 and FPCE-2016-0017A updated Appendix A section 3.3.5.1 to reflect installation of EC-0000054707 and EC-0000054824.

Corrected section 4.1 to indicate system descriptions are historical documents.

Updated to reflect revision of EEE-11-44 per AR 2016-1829-4.

Updated section 2.1 to explain the use of defense in depth equipment and procedures that previously required by the Appendix R program.

Added Section 6.2.3 to discuss compliance by NRC approval. Sections were added to describe license amendments that allow existing instances of cables over suspended ceilings, and the use of thin walled metal conduit and embedded plastic conduit. These updates are also reflected in Attachment 1 Sections 3.3.5.1 and 3.3.5.2.

Revision 4

FPCE-2018-0017 documents NRC approval for the use of flexible metallic conduit in configurations other than to connect components, and in lengths greater than "short lengths".

FPCE-2019-0001 updated the title of EEE-11-18 in Attachment 1 section 3.11.2 and Attachment 4.

GT 2017-0785-8 update reference for design element 3.11.2.

Reference to FAQ 06-0022 was added as an editorial change to Compliance Section 3.3.5.3 to document the use of equivalent flame spread tests to IEEE-383.

FPCE-2019-0013 updated the title of EEE-11-19, Rev. 1 in Attachment 4.

Section 4.1.5, Emergency Lighting, was updated per FPCE-2019-0014

Per FPCE-2019-0015, EEE-11-49 was removed as a reference from Attachment 1 sections 3.11.4, 3.11.4(a), and 3.11.4(b). EEE-11-79 and EEE-11-80 were added as referenced to Attachment 1 sections 3.11.4. EEE-11-49 was marked as superseded and removed as a credited EEE in Attachment 4. EEE-11-79 and EEE-11-80 were added to Attachment 4 and marked as credited EEE.

Updated sections 4.1.3, 4.1.4, and 4.1.8 to include information previously contained in the FHA.

Made numerous editorial corrections and reference updates to Attachment 1.

2.0 FIRE PROTECTION PROGRAM BASIS

2.1 Historical Background

Following the Brown's Ferry Nuclear Plant fire in 1975, the NRC concluded that measures should be instituted to decrease the frequency and severity of fires. In 1976, the Auxiliary Power Conversion and System Branch (APCSB) issued Branch Technical Position (BTP) APCS 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants," and its Appendix A, with a request that utilities respond in writing to the NRC describing how the utility implemented the guidelines therein. Cook Nuclear Plant responded to this request by letter to the NRC dated January 31, 1977. The NRC had 53 initial questions regarding the submittal. The initial questions were followed by a second round of questions and five questions concerning administrative controls and quality assurance. These were answered by AEPSC letters dated August 19, 1977, September 30, 1977, October 27, 1977, and November 22, 1977. A schedule for completion of modifications to the fire protection system was submitted on February 3, 1978. Results of fire barrier penetration sealing tests were submitted on June 12, 1978 (AEP:NRC:004) and responses to questions on the fire test were submitted on August 16, 1978 (AEP:NRC:067). These responses and submittals formed the basis for the 1979 SER provided by the NRC. On November 19, 1980, the NRC issued 10 CFR 50.48 and Appendix R to 10 CFR 50 as a clarification to BTP APCS 9.5-1 and Appendix A. However, the adoption of this rule imposed new, more stringent fire protection regulations on nuclear utilities. This new regulation, 10 CFR 50.48 and Appendix R to 10 CFR 50, was geared towards upgrading fire protection at nuclear power plants by requiring resolution of certain contested generic issues. Plants licensed to operate prior to January 1, 1979, were only required to comply with Sections III.G, III.J, and III.O of Appendix R as well as to maintain their compliance with BTP APCS 9.5-1, Appendix A. In addition, Section III.L of 10 CFR 50 Appendix R is also applicable to plants taking credit for alternative shutdown capabilities as a compliance strategy.

On July 16, 2004, the NRC amended 10 CFR 50.48, Fire Protection, to add a new subsection, 10 CFR 50.48(c), which establishes new risk-informed, performance-based (RI-PB) fire protection requirements. 10 CFR 50.48(c) incorporates by reference, with exceptions, the National Fire Protection Association's NFPA 805, *Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants*, 2001 Edition, as a voluntary alternative to 10 CFR 50.48 Section (b), Appendix R.

As stated in 10 CFR 50.48(c)(3)(i), any licensee's adoption of a RI-PB program that complies with the rule is voluntary. For operating nuclear power plants, this program may be adopted as an acceptable alternative method for complying with either 10 CFR 50.48(b), for plants licensed to operate before January 1, 1979, or the fire protection license conditions for plants licensed to operate after January 1, 1979.

The Nuclear Energy Institute (NEI) developed NEI 04-02 to assist licensees in adopting NFPA 805 and making the transition from their current fire protection program to a program based on NFPA 805. The NRC issued Regulatory Guide (RG) 1.205, *Risk-Informed, Performance-Based Fire Protection for Existing Light Water Nuclear Power Plants*, which endorses NEI 04-02 with exceptions, in December 2009.

I&M submitted a letter of intent to the NRC on December 28, 2005 (ML060090370) for CNP to adopt NFPA 805 in accordance with 10 CFR 50.48(c). In that letter of intent, I&M stated its understanding that the letter would initiate a period of enforcement discretion during which no enforcement actions would be taken for non-safety-significant non-compliances discovered as a result of evaluations performed during the transition process. The NFPA 805 Transition License Amendment Request (LAR) was submitted on July 1, 2011 and supplemented by letters dated September 2, 2011, April 27, 2012, June 29, 2012, August 9, 2012, October 15, 2012, November 9, 2012, January 14, 2013, February 1, 2013, May 1, 2013, June 21, 2013, and September 16, 2013. The LAR was approved in the Safety Evaluation (SE) dated October 24, 2013.

The D.C. Cook Nuclear Plant Fire Protection Program transitioned to a NFPA 805 compliant program in October 2014 and thereby is no longer required to meet the requirements of Appendix R to 10 CFR 50. Under the requirements of 10 CFR 50 Appendix R, CNP was required to go to cold shutdown during a fire event. The NFPA 805 Fire Protection Program does not require that CNP go to cold shut down as we have shown that CNP can meet the nuclear safety performance goal by maintaining hot stand-by conditions. Therefore there are a number of procedures, equipment labels and other supporting documents no longer required to meet the program requirements. Although not required, CNP has kept and maintained the ability to go to cold shutdown as defense-in-depth during fire event. Therefore the Appendix R designation remains a valid basis for many procedures, equipment labels and other supporting documentation for those defense-in-depth actions.

Cook Nuclear Plant uses the following major requirements and guidance documents to provide the framework for its NFPA 805 fire protection program:

2.1.1 NFPA 805 Requirements

- The US Code of Federal Regulations 10 CFR 50.48(c), which allows licensees to adopt National Fire Protection Association standard 805 (NFPA 805).
- NEI 04-02, *Guidance for Implementing a Risk-informed, Performance-based Fire Protection Program Under 10 CFR 50.48(c)*
- NFPA 805, *Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants*, 2001 Edition
- Regulatory Guide (RG) 1.205, *Risk-Informed, Performance-Based Fire Protection for Existing Light Water Nuclear Power Plants*, Revision 1
- NUREG/CR 6850, *EPRI/NRC-RES Fire PRA Methodology for Nuclear Power Facilities*, as guidance and a revision to the Internal Events PRA to support the Fire PRA
- LAR - Indiana Michigan Power, Donald C. Cook Nuclear Plant Units 1 & 2, Docket Nos. 50-315 and 50-316, Transition to 10 CFR 50.48(c) - NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition
- SE - Donald C. Cook Nuclear Plant, Units 1 And 2 - Issuance of Amendments Regarding Transition to a Risk-Informed, Performance-Based Fire Protection Program In Accordance With 10 CFR 50.48(c) (Tag Nos. ME6629 and ME6630)

2.1.2 Compliance with these regulations and implementation of NRC guidance is described and/or maintained by the following NFPA 805 documents:

- D. C. Cook Nuclear Plant Fire Safety Analysis (FSA)
- NFPA 805 Fire Protection Program Manual (NFPPM) *this document
- Nuclear Safety Capability Assessment (NSCA)
- Technical Requirements Manual (TRM) [Unit 1/Unit 2]
- Updated Final Safety Analysis Report (UFSAR)
- Evaluation of Fire and Explosion Hazards for ISFSI (EFEH)

The applicability and purpose of the UFSAR and licensing reference information are described in subsections 2.2.1 and 2.2.2, respectively, while applicability and purpose of the NFPPM has already been introduced in Section 1.0. The NSCA, FSA, and TRM are discussed in Section 3.6.

Federal law requires that all commercial nuclear power plants have nuclear property and liability insurance. These insurance guidelines form a further basis for the fire protection program and are implemented through various procedures and specifications. Nuclear Electric Insurance Limited (NEIL) provides guidelines for the implementation of insurance requirements into the fire protection program. These guidelines, combined with NEIL representative consultations and inspections, form the basis for the Cook Nuclear Plant Fire Protection Program compliance with NEIL requirements. The NFPPM does not address these requirements except where overlap exists between regulatory and insurance requirements.

2.2 Licensing

2.2.1 Operating License and Fire Protection License Conditions

The Cook Nuclear Plant has an operating license for Units 1 and 2 and a general license for the ISFSI. Fire protection license conditions place additional operational constraints upon the Cook Nuclear Plant. Consequently, the Fire Protection License Conditions are an important part of the overall Cook Nuclear Plant licensing scheme.

2.2.2 UFSAR

The UFSAR Section 9.8.1 addresses the principal design criteria for the fire protection system, stating in part how the requirements of 10 CFR 50, Appendix A, Criterion 3, are to be met. It describes and/or references supporting documents that describe the fire detection, fire alarm and fire suppression systems used at Cook Nuclear Plant. It also discusses and/or references supporting documents that discuss the conduct of operations, organization and responsibilities, training, standards and procedures, records, and review and audit of operations for all areas including fire protection. The UFSAR is also a part of Cook Nuclear Plant's license basis for operation.

2.2.3 Technical Specifications

The requirements formerly contained in the Technical Specifications related to the fire protection program are now contained in the Cook Nuclear Plant Technical Requirements Manual (TRM).

2.2.4 Quality Assurance

The Fire Protection Quality Assurance Program is specified in the Donald C. Cook Nuclear Plant Quality Assurance Program Description (QAPD).

3.0 FIRE PROTECTION PROGRAM

3.1 Purpose

The purpose of the D.C. Cook Fire Protection Program is to incorporate, identify and discuss the applicable commitments, documents, controls, departments and activities which together form the D.C. Cook Fire Protection Program.

3.2 Scope

The Fire Protection Program is the mechanism through which D.C. Cook Nuclear Plant integrates the activities and elements of the Fire Protection Program required by 10 CFR 50.48(c), NFPA 805. These activities and elements include the following:

- Organizations and positions that are responsible for the Fire Protection Program,

- Qualifications of fire protection personnel,
- Specific features necessary to adequately implement the Fire Protection Program,
- Implementation of fire and emergency activities, and
- Fire Protection Quality Assurance.

Operating requirements/limitations, surveillance requirements and compensatory measures for fire protection identified by the Fire Protection Program must be followed to assure an acceptable level of protection is provided.

3.3 Plant Fire Protection Policy

It is the policy of D. C. Cook Nuclear Plant to implement a Fire Protection Program that provides assurance, through a defense-in-depth design, that a fire will not:

- Adversely impact the health and safety of the general public and plant employees.
- Prevent the performance of necessary nuclear safety functions.
- Increase the risk of radioactive releases to the environment
- Adversely impact the Station's investment in facilities and equipment.

3.4 Fire Protection Program Philosophy

The Fire Protection Program uses the Defense-In-Depth concept to achieve a high degree of fire safety at Cook Nuclear Plant by:

- Preventing fires from starting,
- Detecting and quickly controlling and suppressing those fires that do occur, while limiting their damage, and
- Providing protection for structures, systems, and components important to safety so that a fire that is not promptly extinguished by fire suppression activities will not prevent maintaining the plant in a safe and stable condition.

3.5 Fire Protection Program Administration

This Plan was developed and is maintained to satisfy 10 CFR 50.48(a), which requires each operating nuclear plant to have a Fire Protection Program that satisfies Criterion 3 of 10 CFR 50 Appendix A.

3.5.1 Licensing Documents

3.5.1.1 Safety Evaluation Reports

The NFPA 805 Safety Evaluation Report (Unit 1 Amendment 322 and Unit 2 Amendment 305, dated October 24, 2013) is a summary of the NRC's review of D.C. Cook Nuclear Plant's NFPA 805 fire protection program analysis including a physical inspection of the plant's

safety related components, systems, and structures and their relationship with combustibles and the associated fire detection/suppression systems.

3.5.1.2 Updated Final Safety Analysis Report

The Updated Final Safety Analysis Report (UFSAR) incorporates Safety Evaluation Reports issued by the NRC and describes the approved fire protection program as it applies to the nuclear safety capability of the plant.

The UFSAR references specific documents that address different facets of the Fire Protection Program in greater detail. These documents are:

- a. Engineering Equivalency Evaluation 14.1.1, *NFPA Code Conformance Report*
- b. Nuclear Safety Capability Assessment (NSCA)
- c. NFPA 805 Fire Protection Program Manual (NFPPM) *this document
- d. D. C. Cook Fire Safety Analysis (FSA)
- e. PMI-2270, *Fire Protection Program*

3.6 Other Documents:

3.6.1 D. C. Cook Fire Safety Analysis (FSA)

This document demonstrates the achievement of the nuclear safety and radioactive release performance criteria of NFPA 805 as required by 10 CFR 50.48(c). The Fire Safety Analysis is a key part of compliance with Section 2.7.1.2, "Fire Protection Program Design Basis Document," of NFPA 805.

3.6.2 Nuclear Safety Capability Assessment (NSCA)

This document identifies the safe and stable hot standby system requirements of the plant relative to the fire protection guidelines of NFPA 805, as described by NEI 04-02. It provides a listing of system components and a discussion of how the specific functions necessary to satisfy NFPA 805 are achieved.

3.6.3 Technical Requirements Manual (TRM)

The Technical Requirements Manual provides a means of tracking and maintaining control of important operational requirements and station commitments which are not included in, or have been removed from, the plant Technical Specifications.

3.6.4 Evaluation of Fire and Explosion Hazards for ISFSI (EFEH).

The EFEH report (13090401-R-M-009) documents the review of potential D.C. Cook Nuclear Plant site specific fire and explosion hazards that could affect spent fuel storage operations at the ISFSI and/or ISFSI cask transport operations along the ISFSI haul route, and demonstrates that

fire and explosions which could occur at the D.C. Cook Nuclear Plant site are enveloped by the parameters considered in the HI-STORM 100 FSAR and related NRC SER.

3.7 Fire Protection Program Changes

Fire Protection program changes shall be reviewed in accordance with applicable CNP Procedures as allowed by the CNP NFPA 805 License Condition (Section 5.0):

- a. IP-ENG-001, *Standard Design Process* [FPCE-2017-0025]
- b. 12-FPE-2270-FPCE-001, *Fire Protection Program Change Evaluation* [Reference: FPPR-2016-010, and FPCE 2017-0001]
- c. 12-FPE-2270-RICE-001, *NFPA 805 Fire Protection Program Risk Informed Change Evaluation*

3.7.2 Reporting Requirements

Two categories of reporting requirements are applicable to the Fire Protection Program. The first is the reporting of Fire Protection Program changes, and the second is reporting of Fire Protection Program non-conformances.

3.7.3 Non-conformances

The Fire Protection Program Manager is responsible for the interpretation of Fire Protection Program documents. This position may use whatever resources are available to aid in the determination of significance of a nonconformance (i.e. Operations, Licensing Department, Engineering, etc.).

Documentation of nonconformance to the Fire Protection Program may be accomplished in accordance with the D.C. Cook Corrective Action Program, or any other procedurally controlled nonconformance documentation system applicable to fire protection.

3.7.4 Special Reports and Licensee Event Reports

Nonconformances to the Fire Protection Operational Requirements of the Technical Requirements Manual shall be evaluated for reportability to the NRC in a special report per 10 CFR 50.72(b).

Any fire that posed an actual threat to the safety of the nuclear plant or significantly hampered site personnel in the performance of duties necessary for the safe operation of the plant is reported in accordance with the requirements of 10 CFR 50.73, Licensee Event Report System.

Nonconformances to the Fire Protection Program that impact the ability to achieve and maintain a safe and stable plant condition are reported in accordance with the requirements of 10 CFR 50.73, Licensee Event Reports System.

3.7.4.1 Records

The Fire Protection Program and subsequent revisions are to be maintained for the life of the plant.

3.7.4.2 Reviews, Inspections and Audits

a. Review of the Fire Protection Program

The Fire Protection Program is to be reviewed once every 24 months for content and accuracy by the Fire Protection Program Manager or a designee knowledgeable of the Fire Protection Program.

b. Biennial Inspection of the Fire Protection Program

A fire protection inspection shall be performed at least once every 24 months, utilizing either qualified offsite/independent licensee personnel or a qualified outside fire protection consultant. A fire protection inspection shall be performed using an outside independent fire protection consultant at least once every 36 months.

The inspection shall consist of:

1. Inspections of representative safety related areas of the Plant to verify conformance with the Fire Safety Analysis. [Reference: GT 2015-5725 and FPPR-2014-0009]
2. A review of the fire brigade organization, training and drills to verify conformance to the requirements applicable to the D.C. Cook Nuclear Plant.
3. A review of compliance with the Fire Protection Quality Assurance Program.
4. A review of implementing procedures to assure that the requirements for design, procurement, fabrication, implementation, testing, maintenance and administrative controls continue to be included in the QA/QC program for fire protection; and that the Fire Protection Program continues to meet the criteria of the QA/QC program.

c. Triennial Inspection:

A fire protection inspection shall be performed at least once every thirty-six (36) months by the NRC, the Authority Having Jurisdiction (AHJ).

The purpose of this inspection is to verify that the fire protection program commitments, modifications, and procedure revisions have not decreased the level of safety in the plant. The review should include inspection of plant areas for which fire protection is provided and in particular, examine fire barriers, fire detection systems, and fire suppression systems provided for safety-related equipment.

3.8 **Organization**

3.8.1 Responsibilities and Authorities

Responsibilities and Authorities within the fire protection program are defined in Section 3, *Responsibilities*, of Procedure PMI-2270, *Fire Protection Program*.

3.8.2 Qualifications

Minimum qualifications for personnel are defined in Section 4.1, *Personnel Qualifications*, or Procedure PMI-2270, *Fire Protection Program*.

3.9 **Administrative Controls and Procedures**

3.9.1 Control of Combustible Materials

Administrative controls, implemented through procedures, are designed to control the type, amount, use and location of combustibles at D.C. Cook Nuclear Plant. Proper control of combustibles minimizes the possibility of starting, spreading, or contributing to a fire. Combustibles are classified as either in-situ or transient.

Additional details on control of combustible materials can be found in Procedure PMP-2270-CCM-001, *Control of Combustible Materials*.

3.9.1.1 In-Situ Combustibles

In-situ combustibles are the permanent fire loading comprised of fixed plant features and are evaluated and documented as contributors to the fire loading in their respective fire areas and zones. In-situ combustibles in the respective fire analysis areas/zones are maintained in the SAFE Database.

3.9.1.2 Transient Combustibles

Transient combustibles represent the variable fire loading present at D.C. Cook Nuclear Plant.

Administrative and functional controls include the following:

- Handling and limitation on the use of combustibles, flammable, and explosive hazards and assurance that these items are not stored in safety related areas.
- Review of the quantity of transient fire loads introduced during maintenance and modifications. Addition of fire protection and suppression equipment for excessive loading.
- Removal of all transient combustibles resulting from work activities following completion of the activity.

3.10 Control of Ignition Sources

Many areas are vital to the safe and orderly shutdown of the plant. It is imperative that these areas be protected from fire as a normal course of plant operation. Any work in these areas must also be carefully planned to ensure that adequate controls are established prior to starting work and during the progress of the job.

Refer to 12-FPP-2270-066-011, *Fire Watch Activities*, and PMP-2270-WBG-001, *Welding, Burning and Grinding Activities*, for additional details regarding control of ignition sources.

3.10.1 Welding, Burning, and Grinding Activities

The use of open flames, welding, burning, or grinding is controlled by a permit system.

Areas surrounding the work area are surveyed by the responsible work supervisor to verify combustible material below and within a 35-foot radius of the ignition source has been removed, all immovable combustible materials below and within that radius are thoroughly protected by appropriate firefighting equipment, a trained fire watch is present throughout any operations where there is potential for fire that might damage safety related equipment, and all equipment is in a safe, working condition.

The Facilities Maintenance Department, Fire Protection Section, monitors welding, burning, and grinding activities and the control of ignition sources for those activities being conducted outside permanent shop areas.

3.10.2 Smoking Restrictions

Smoking is not allowed on AEPNGG property, which includes the entire D.C. cook plant site geographic boundary, except for designated areas and employees' personal vehicles while on the way to work or when exiting plant parking facilities.

3.10.3 Leak Testing Methods

The use of open flames as a testing medium is prohibited.

3.11 Fire Rated Assemblies (Barriers)

Fire rated assemblies have been installed to ensure that fire damage will be limited. These design features minimize the possibility of a single fire involving more than one fire area prior to detection and extinguishment.

When any fire rated assembly is rendered inoperable, the Fire Protection Section shall be notified to establish the required compensatory actions. Discovery of a non-functional fire rated assembly by site personnel requires that the Fire Protection Section be notified that the assembly is inoperable.

3.12 **Plant Modifications and Program Changes**

All plant modifications and program changes are reviewed for their impact on the Fire Protection Program.

3.13 **Controls and Compensatory Measures**

3.13.1 System/Component Operability

The operability or inoperability of a fire protection system or component is determined through periodic surveillance.

3.13.2 Procurement

When parts and materials for fire protection equipment/systems are required per Design Change Packages (DCPs) and/or work requests, these items are procured in accordance with plant procedures that maintain the proper fire protection system configuration.

3.14 **Fire Brigade**

3.14.1 Fire Brigade Composition and Support

The Fire Brigade at D.C. Cook Nuclear Plant is organized to extinguish any fire that might occur at the plant site. Fire Brigade organization is consistent with licensing bases commitments.

A dedicated Fire Brigade of at least five (5) members is maintained on site at all times. If the number of brigade members falls below the required number of five, it must be restored to a full complement within 2 hours as required by the Technical Requirements Manual and Section 3.1.1.4 of the NFPA 805 Safety Evaluation.

The Operations Department provides one person with a reactor operator's license or equivalent training to act as an advisor to the Brigade Leader on nuclear safety capability and general plant systems in the fire area.

Fire Brigade Training and the Fire Brigade Training Staff requirements are contained in procedure TPD-600-FP, *Fire Protection Training Program Description*.

3.14.2 Fire Pre-Plans

The Fire Pre-Plans exist to describe the facility layout, access, contents, construction, hazards, hazardous materials, types and locations of fire protection systems, radioactive release concerns and other information pertinent to the formulation and planning of emergency fire response.

3.15 Outside Assistance (Mutual Aid) Agreement

An Outside Assistance (Mutual Aid) Agreement exists with the Bridgman/Lake Township Volunteer Fire Department. In the event of fire at Cook Nuclear Plant, the Bridgman/Lake Township department will respond to assist in firefighting activities. In the event that fire occurs within the protected area, the Fire Brigade Leader will be the on-scene commander and the volunteer force will report to him. The volunteer department fire chief will assume the on-scene commander's position for firefighting activities outside of the protected area.

3.16 Fire Protection Systems

Fire suppression systems consisting of water, carbon dioxide (CO₂) and Halon systems have been installed throughout the plant to provide protection for life safety, and plant equipment. Systems protecting safety-related equipment, systems required for NFPA Chapter 4 Separation, systems required for a Licensing Action, and systems determined to have a high safety significance in the NFPA 805 Monitoring program, are controlled by plant Technical Requirements Manual (TRM).

Fire detection systems are located throughout the plant and some areas of the office buildings.

Permanently mounted plant fire extinguishers are positioned to meet NRC commitments, the requirements of NFPA codes and the occupancy of the area in which they are located.

The D. C. Cook Fire Safety Analysis (FSA) contains a listing of fire protection systems and features in each fire area.

3.17 Quality Assurance

Fire Protection Quality Assurance requirements are in place to assure that the quality assurance requirements specified in NFPA 805, 2001 Edition, as explained in the NFPA 805 Safety Evaluation dated October 24, 2013, are satisfied. The following quality assurance functions apply within the scope of the fire protection program, as outlined in Section 2.7.3 of NFPA 805.

- **Independent reviews:** Analyses, calculations, and evaluations performed in support of compliance with 10 CFR 50.48(c) have been and will be performed in accordance with CNP procedures that require independent review.
 - CNP Procedure 12-EHP-5040-DES-003, which addresses independent review of calculations for 10 CFR 50 Appendix B, is applied to the PRA model calculations
 - Reviews of engineering changes (physical modification or procedural change) require independent review per 12-FPE-2270-FPCE-001, Fire Protection Program Change Evaluation .

- **Verification and validation of calculational models and numerical methods:** Calculational models and numerical methods used in support of compliance with 10 CFR 50.48(c) have been and will be verified and validated as required by Section 2.7.3.2 of NFPA 805.
- **Limitations of use (appropriate use of engineering methods and numerical models):** Engineering methods and numerical models used in support of compliance with 10 CFR 50.48(c) were used and will be used appropriately as required by Section 2.7.3.3 of NFPA 805.
- **Qualification of users:** Cognizant personnel who use and apply engineering analysis and numerical methods in support of compliance with 10 CFR 50.48(c) shall be competent and experienced as required by Section 2.7.3.4 of NFPA 805. This requirement was met and will continue to be met by adherence to CNP procedures and project management of contractor support staff.
- **Uncertainty analysis performed:** Uncertainty analyses have been and will be performed as required by 2.7.3.5 of NFPA 805 and the results have been and will be considered in the context of the application.

4.0 FIRE PROTECTION ENGINEERING AND SYSTEM DESIGN

This section begins with a description of the fire protection systems and features which may be found at Cook Nuclear Plant in support of the defense-in-depth concept of fire protection under the NFPA 805 risk-informed, performance-based concept of a Fire Protection Program.

Specific details regarding the particular uses of these systems and features may be found in the Nuclear Safety Capability Assessment (NSCA) and Fire Protection System Descriptions (SD). Fire-protection-related engineering evaluations are an important compliance mechanism used at the Cook Nuclear Plant to demonstrate how actual physical conditions in the plant, which differ from strict compliance to the requirements, provide an equivalent measure of protection. Evaluations credited for compliance are listed in Attachment 4.

4.1 System Descriptions (SD)

Cook Nuclear Plant employs features that are designed to prevent, detect and suppress fires. In addition, these systems will help to minimize the level of damage to nuclear safety equipment should a fire occur. The fire protection system descriptions presented in this section are categorized as either automatic, manual, or passive fire protection features. An historical description of the systems may be obtained by referring to the following Fire Protection System Descriptions for the NFPA-805-based Fire Protection Program:

- SD-12-FIRA-100, "Fire Detection and Alarm Systems"
- SD-12-FIRE-100, "Automatic Fire Suppression System"
- SD-12-FIRE-110, "Fire Protection System - Water Supply System"
- SD-12-FIRE-120, "Fire Protection Miscellaneous System"

- SD-12-COAUX-100, "Low Pressure Carbon Dioxide Fire Fighting System"
- SD-12-HALON-100, "Fire Protection - Halon Systems"

4.1.1 Automatic Fire Alarm Systems

Automatic fire alarm systems are actuated by either detectors that sense fire conditions or through manual pull stations. Fire detectors that may be used include ionization smoke detectors, heat detectors, infrared flame detectors, and air duct ionization smoke detectors.

The fire suppression system alarm signaling capabilities that may be used involve automatic sprinkler waterflow supervisory alarms, fire pump monitoring, carbon dioxide system monitoring, and halon system monitoring.

Fire alarm detection devices generally transmit signals to the local fire alarm panels and then to the control room annunciators, or they transmit signals directly to the control room annunciators. In some cases, they will also actuate automatic fire suppression systems to control a fire prior to the response of the plant's fire brigade.

4.1.2 Automatic Water Fire Suppression Systems

The automatic water fire suppression systems include all equipment or systems necessary for sprinkler or spray system protection. There are four basic types of automatic and manual water suppression systems used at Cook Nuclear Plant: wet pipe sprinkler systems, deluge water spray systems, pre-action water spray systems and pre-action sprinkler systems.

Water necessary for firefighting is provided by three primary fire pumps (one 2,500 gpm at 155 psi electric motor-driven horizontal centrifugal pump and two 2,500 gpm at 155 psi diesel engine-driven horizontal centrifugal pumps). The primary fire pumps take suction from either of two fire water storage tanks. The source of water to fill the dedicated fire protection water storage tanks is Lake Township drinking water. Each tank is nominally sized at 685,000 gallons, and the normal tank water level is between 612,000 gallons and 621,000 gallons. The minimum tank water level is set at 565,000 gallons.

The primary water pumps are arranged for (1) automatic sequential starting by operation of pressure sensing devices, (2) remote manual start of the fire pumps in either control room and (3) local starting at each pump. They cannot be shut down until extinguishment of a fire is verified by control room operators. Shutdown must be performed at the local fire pump control panels.

The fire water system provides water in sufficient quantity and pressure for fire hydrants and water-based suppression systems throughout the site. The water from the fire pumps is discharged into an underground 12" ring header located around the outside of the plant. Isolating valves with post indicators or curb boxes are installed in this header so that the entire loop interior header is connected to the outdoor loop header by valved connections routed through the turbine building, screenhouse, service building, auxiliary building and the yard. This arrangement forms a series of

smaller interior-exterior loops. The interior piping network is equipped with isolating valves and supplies water to the fixed fire protection and standpipe systems.

4.1.3 Carbon Dioxide Suppression Systems

Cook Nuclear Plant has automatic and manual low pressure carbon dioxide systems to suppress fires in specified areas that are normally unoccupied. Distribution of carbon dioxide within each system is accomplished by means of valves and piping extending from the storage unit to the protected area.

The carbon dioxide storage unit consists of a pressure vessel, refrigeration system, gauges, alarm system, and a safety vent assembly. All of these components are enclosed within a steel housing on a single welded base.

The refrigeration system automatically maintains the carbon dioxide in the pressure vessel in a liquid state. Cook Nuclear Plant has a 17-ton storage unit for the auxiliary and turbine buildings. Individual Cardox system panels are located at the entrances to protected areas. Each automatic suppression system has an isolation switch that may be used to prevent the local electrical actuation of the carbon dioxide system during zone occupation by plant personnel. A manual means for actuating each system is available for emergency use or if the automatic feature fails.

Fire Areas and Zones that are protected by Carbon Dioxide systems have boundary penetrations (i.e., dampers, seismic gaps and openings around cables, conduits and pipes) sealed to ensure retention of the Carbon Dioxide concentrations. In some fire areas, however, dampers have not been provided for duct work that communicates directly with the plant exterior or that pass through other areas within rated construction boundaries to the plant exterior. For the CO₂ systems in these fire areas, concentration tests have been performed that demonstrate that the required concentration levels can be maintained without dampers. The affected fire zones in which this situation exists are 40A, 40B, 42A, 45, 46A, 47A and 47B.

4.1.4 Automatic Halon Fire Suppression System

Cook Nuclear Plant has several locations protected by automatic Halon 1301 total flooding systems. Halon 1301 cylinders are provided to supply a minimum five percent concentration to the protected areas. Penetration seals have been provided to ensure that the required concentration of the agent is maintained.

4.1.5 Emergency Lighting

Portable hands-free lighting is provided to operators to support access to safe shutdown equipment and components that must be manually operated or maintained during and after a fire, if normal area lighting is lost. The portable hands-free lighting is able to provide a minimum of 2 hour of continuous light. 2 hours of continuous light is evaluated as exceeding the duration to complete necessary recovery actions, but spare batteries are provided for the unlikely event that the portable lighting fails prior to the completion of the recovery actions.

Fixed emergency lighting is available throughout the plant and was installed to support the previous 10CFR50, Appendix R, section III.J requirements (or exemptions granted). These lights are energized upon failure of the normal AC lighting system and de-energized when the normal AC lighting system is returned to service. The existing emergency lighting system, together with portable lighting (e.g., miner's hats), will be maintained under NFPA 805.

Recovery actions credited under NFPA 805 are required to be feasible and must be evaluated to ensure sufficient lighting is available to perform the intended action, including operation of the components and for access and egress routes. Ongoing review and modifications will be performed as part of the NFPA 805 recovery action related implementation items documented in Technical Evaluation R1900-0026-001, Recovery Action Transition in Support of NFPA 805. [Reference: FPCE-2019-0014]

4.1.6 Portable Manual Fire Fighting Features

Portable manual fire protection is available as a backup to automatic or manual fixed fire suppression systems or as the primary suppression method in various areas throughout the plant. Manual features include hydrants, standpipe hose stations, firefighting tools, protective clothing, self-contained breathing apparatus (SCBA), portable fire extinguishers, and smoke removal equipment. The plant also utilizes a fire truck, which is stationed on site.

Fire hydrants are equipped with three hose connections. The largest connection is 4½ inches and is used in combination with the fire truck soft suction hose and pump when operating from the underground fire header. The two smaller connections are 2½ inches and can be used for the same purpose or for direct connection of 2½-inch fire hose. For the latter use, gate valves are provided on the 2½-inch outlets to better control the hose lines.

The plant is equipped with standpipes and fire hose stations, which provide manual fire suppression capability in plant buildings. The usual hose station is equipped with either 75 or 100 feet of 1½-inch hose; however, in isolated cases, several hose stations have up to 125 feet of available hose. In other cases, the hose station has also been provided with a second hose reel with up to 100 feet of either 1½-inch or 2½-inch hose.

Firefighting tools, protective clothing, self-contained breathing apparatus and smoke removal equipment are provided for the fire brigade at designated locations throughout the plant. These locations are reviewed with the fire brigade during training sessions and fire drills.

Portable fire extinguishers are provided throughout the plant for use in fighting small fires. These fire extinguishers include dry chemical types for fighting Class A, B, C fires and B, C type fires. Carbon dioxide fire extinguishers are also provided for fighting B, C type fires.

Class A fires involve ordinary combustible materials such as wood, paper, plastics, rubber, cloth, etc. Class B fires involve flammable or combustible liquids and flammable gases. Class C fires

involve live electrical equipment. The type of portable fire extinguisher chosen for an area is dependent on the type of hazard anticipated, its location and availability of other firefighting equipment.

4.1.7 Communications

Plant personnel are notified that a fire emergency exists through the use of a fire horn alarm system. The preferred communication method during a fire is portable hand-held radios supported by a repeater system within the plant. Sound-powered telephones and a public address (PA) system are available as backup methods of interplant communication. The standard fire system monitoring devices, such as horns, alarms, bells, bells, and lights, provide fire condition notification in areas protected by Halon and CO₂.

4.1.8 Passive Fire Protection Features

Passive fire protection features are those plant configurations and special systems designed to provide fire protection but which are not part of an active or manual fire suppression system. Passive features include fire barriers, fire barrier penetration seals, separation distances between plant components, and the reactor coolant pump lube oil collection system.

Separation is used as a passive fire protection criterion to isolate redundant safe shutdown systems from unacceptable fire hazards, and to separate redundant safe shutdown systems from each other so that both are not damaged by a single fire.

An alternative, passive method of fire protection allows the use of one-hour fire rated material to enclose the cables, trays, or conduits necessary for safe shutdown. Fire barrier material is used as a cable tray, conduit and cable fire wrap to provide separation between redundant divisions of equipment and cables outside of containment. Another method of passive fire protection is the installation of fire stops, perpendicular to the run of an electrical cable tray, to prevent the spread of fire along cables.

Fire barriers provide a physical separation to delay or prevent the spread of fire from one space to another. Fire barriers include walls, floors, ceilings, and their structural supports that are rated by approved laboratories in hours of resistance to fire.

Fire barriers are penetrated by doors, ventilation systems, piping systems (including tubing), and electrical conduits and cable trays. The fire rating of barriers is maintained by sealing resulting openings at these penetrations. Fire barrier penetrations are sealed by rated fire doors, fire dampers, or mechanical penetration seals. Fire door assemblies include any combination of a fire door, frame, hardware, and other accessories that together provide a specific degree of fire protection to an opening and are labeled by an independent testing laboratory (typically Underwriter's Lab and/or Factory Mutual).

Rated fire dampers are installed in HVAC systems to interrupt air flow and restrict the passage of flame and smoke. These fire dampers are rated and labeled by an independent testing laboratory.

Mechanical penetration seals are installed around piping, cable trays, and conduit and in and around cable trays to provide a fire resistant barrier when required. Under certain situations, one end of double open ended conduits are sealed to prevent the passage of fire through the conduit to the other side of the fire barrier. A variety of seal types is used; however, most employ silicone foam. Specification ES-FIRE-0601-QCF, *Fire Rated Seals*, governs mechanical penetration seals at CNP.

4.1.8.1 RCP Lube Oil Collection System

The four RCP motors in each unit have a common oil collection system that terminates in an oil collection tank. Each RCP motor is provided with oil collection enclosures to capture oil from potential pressurized and unpressurized leakage sites in the lube oil system. The oil collection system is designed to prevent RCP lube oil from making contact with hot RCS piping and other ignition sources. Leakage is collected and drained to a vented collection tank located at the basement level of containment.

The oil is drained through carbon steel piping which has been seismically supported. Threaded fittings which have been seal welded and socket weld fittings were used in the design. Tygon tubing is also used in the RCP oil collection piping system. The tubing acts as a flexible pipe connector and as a non-conductive connector intended to insulate the upper portion of the motor from ground, thereby preventing a shorting of the upper motor bearing electrical insulation. Refer to Section 12.9 for a future discussion of the tygon tubing and its seismic qualifications.

The collection tank has been reinforced to meet DBE seismic criteria and has a design capacity of 275 gallons. The tank capacity is designed to hold the oil from only one motor (approximately 265 gallons). The collection tank is arranged such that if a failure of more than one RCP motor lube system occurred, the oil will overflow through a two inch pipe above the tank and onto the lower containment floor. Once on the floor, it will then drain to the lower containment sump. There are no ignition sources at the floor level of the lower containment.

In the event of a RCP lube oil leak occurring under normal operating conditions, the oil collection system will function to contain the oil and drain it to the oil collection tank. The oil collection system will prevent the lube oil from making contact with hot RCS piping and other external ignition sources. In addition, the containment spray system is available as an effective fire suppression system.

The RCP motor lube oil system is capable of withstanding the safe shutdown earthquake. Since the RCP lube oil system is designed to withstand the safe shutdown earthquake, the oil collection system need only be designed to handle random oil leaks as indicated in NRC Generic Letter 86-10 (Enclosure 2, Section 6.1). As a result, the system is only required to be sized to channel the

quantity of oil from one pump to a vented closed container. Generic Letter 86-10 provides an additional basis for the acceptability of the Cook Nuclear Plant oil retention tanks.

The RCP oil collection system was originally provided to meet our commitments of Appendix A to BTP APCS 9.5-1. This system also fulfilled the requirements of Appendix R to 10CFR50, Section III.0. However, the RCP motor lube oil system does not comply with Section III.0 because the oil collection tank is not sized to contain the entire lube oil system inventory. The design of the RCP oil collection system has been reviewed by the NRC. A safety evaluation report (SER dated 12/23/83) was prepared by the NRC for the exemption from the requirements of Appendix R Section III.0. Refer to Section 6.2.1 for additional details regarding this prior approval.

4.1.9 Repair of NFPA 805 Equipment

NFPA 805 requires that nuclear utilities be able to achieve and maintain a safe and stable hot standby. With a mission time of 24 hours, plant operation beyond that time will be governed by the EOPs. Temporary repairs for NFPA 805 equipment are allowed to be credited in support of the EOPs. These repairs are performed with special equipment and procedures that are reserved for the express purpose of accomplishing the necessary repair actions.

- 4.1.10 Attachment 6 provides information regarding raceways that are wrapped with fire retardant materials. This table was added directly from the Fire Protection Program Manual (FPPM), Revision 13 dated September 3, 2013. Updates to the table found in this document are marked with revision bars.

4.2 Fire Protection Specifications

CNP engineering specifications are controlled in accordance with CNP Procedures. There are several specifications applicable to fire protection for the Cook Nuclear Plant. These include:

- ES-FIRE-0601-QCF, Fire Rated Seals
- DCC-FP-103-QCF, Fire Protection Equipment and Systems QA Requirements
- DCC-PV-110-QCF, Shop and Field Fabrication and Erection of Fire Protection Piping
- ES-CABLE-0221-QCN, Design and Installation Criteria for Cable, Trough, and Conduit
- ES-HVAC-0803-QCN, Fire Dampers

4.3 Nuclear Safety Capability Assessment (NSCA)

Nuclear facilities are required to perform a fire safety analysis to (1) consider potential in-situ and transient hazards, (2) determine the consequences of fire in any location in the plant and the ability to maintain the reactor in a safe and stable hot standby condition, and (3) address measures

for fire prevention, detection, suppression and containment, as required for each fire area containing nuclear safety-related items per NRC regulations and guidelines. Cook Nuclear Plant has chosen to respond to these requirements by performing a fire safety analysis (FSA) for each fire area and a Nuclear Safety Capability Assessment (NSCA) separately.

The NSCA documents the analysis of the ability to successfully maintain the plant in a safe and stable hot standby condition in the event of a fire. The NSCA also identifies the fire areas that contain the equipment and cables necessary to achieve a safe and stable hot standby of the Cook Nuclear Plant. The method and selection of the NFPA 805 systems, equipment, and cables is also delineated. Transition from hot standby to the EOPs within 24 hours after the event's initiation, at which time temporary repairs may be performed, if required.

The NSCA is updated and maintained as part of continued compliance with NFPA 805.

4.4 **Fire Safety Analysis (FSA)**

The FSA is a comprehensive evaluation of the fire hazards that exist for all fire areas at the Cook Nuclear Plant. The FSA is updated and maintained by a fire protection engineer. A typical analysis is performed on a fire area basis and discusses the following items:

- Identify significant fire hazards in each fire area based on an NFPA 805 approach to analyze the plant from an ignition source and fuel package perspective.
- Summarize Nuclear Safety Capability Assessment (NSCA) compliance strategies.
- Summarize Non-Power Operational Modes compliance strategies.
- Summarize Radioactive Release compliance strategies.
- Provide Fire Probabilistic Risk Assessment summary based on the results from the plant Fire PRA.
- Perform risk-informed, performance-based evaluations if needed for the performance based approach.
- Summarize Defense-in-Depth strategy for each fire area.
- Determine key analysis assumptions which are candidates to be included in the NFPA 805 monitoring program.
- Provide conclusions relative to NFPA 805 compliance.

The Fire Safety Analysis Report designates "fire areas" within the plant that are separated from other areas by fire-rated walls, floors, or ceilings. The fire safety analysis evaluates the effects of a fire within each separate fire area of the plant.

The FSA is updated and maintained as part of continued compliance with NFPA 805.

5.0 **FIRE PROTECTION LICENSE CONDITION**

This section briefly describes the Fire Protection License Conditions and NRC Safety Evaluations (SEs) that form part of the licensing basis for the DC Cook NFPA 805 Fire Protection Program.

The following subsections are quoted from the D.C. Cook NFPA 805 Safety Evaluation dated October 24, 2013.

(Note: sections are renumbered to be consistent with this document.)

5.1 Fire Protection Program

Indiana Michigan Power Company shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee's amendment request dated July 1, 2011, as supplemented by letters dated September 2, 2011, April 27, 2012, June 29, 2012, August 9, 2012, October 15, 2012, November 9, 2012, January 14, 2013, February 1, 2013, May 1, 2013, June 21, 2013, and September 16, 2013, and as approved in the Safety Evaluation dated October 24, 2013. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

5.1.1 Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed Fire PRA (FPRA) model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

- 5.1.1.1 Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.
- 5.1.1.2 Prior NRC review and approval is not required for individual changes that result in a risk increase less than $1\text{E-}07/\text{year (yr)}$ for CDF and less than $1\text{E-}08/\text{yr}$ for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

5.1.2 Other Changes that May Be Made Without Prior NRC Approval

5.1.2.1 Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program and Design Elements

Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3, element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3, elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are as follows:

- "Fire Alarm and Detection Systems" (Section 3.8);
- "Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
- "Gaseous Fire Suppression Systems" (Section 3.10); and,
- "Passive Fire Protection Features" (Section 3.11).

This License Condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

5.1.2.2 Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in the NRC Safety Evaluation dated October 24, 2013, to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

5.1.3 Transition License Conditions

5.1.3.1 The letter from the NRC dated October 24, 2013 contains the NFPA 805 Safety Evaluation. Enclosure 1 to the letter is License Amendment No. 322 to DPR-58, Donald C. Cook Nuclear

Plant Unit 1 Renewed Operating License. Enclosure 2 to the letter is License Amendment No. 305 to DPR-74, Donald C. Cook Nuclear Plant Unit 2 Renewed Operating License. Section 2.C.(4)(c) of the amended DPR-58 and Section 2.C.(3)(o)(III) of the amended DPR-74 contain the Unit 1 and Unit 2 transition license conditions.

6.0 FUNDAMENTAL FIRE PROTECTION PROGRAM AND DESIGN ELEMENTS REVIEW

- 6.1 Compliance with Chapter 3 of NFPA 805 is documented in Attachment 1, *NFPA 805 Fundamental FP Program and Design Elements (NFPA 805 Chapter 3)*.
- 6.2 The D. C. Cook NFPA 805 Safety Evaluation (SE) dated October 24, 2013 finds acceptable *Complies via Previous NRC Approval* and *Submit for NRC Approval* compliance strategies stated in Attachment 1. The following text is adapted from the SE dated October 24, 2013.

6.2.1 Compliance Strategy -- Complies via Previous NRC Approval

Certain NFPA 805 Chapter 3 requirements were supplanted by an alternative that was previously approved by the NRC. NRC approval was documented in (1) an SE dated July 31, 1979, supporting Amendments Nos. 31 and 12 to the CNP Unit 1 and 2, operating licenses; (2) an exemption dated December 23, 1983, approving the use of the reactor coolant pump (RCP) motor lube oil system that is not sized to contain the entire lube oil system inventory; (3) a Safety Evaluation (SE) dated June 16, 1988, approving the installation of carpet in the control room having a flame spread greater than that recommended by NRC staff guidance; (4) an SE dated April 9, 1991, approving the use of a minimum fire brigade shift crew size of four members for up to 2 hours under certain conditions; (5) an SER dated January 24, 1995, approving the installation and use of certain unsupervised circuits; (6) an exemption dated August 27, 1985, approving the use of 22 Auxiliary Building undampened ventilation duct penetrations; and (7) an SER dated April 26, 1990, approving the internal conduit seal program.

In each instance, the licensee evaluated the basis for the original NRC approval and determined that, in all cases, the bases were still valid. The NRC staff reviewed the information provided by the licensee and concluded that previous NRC approval had been demonstrated using suitable documentation that meets the approved guidance contained in RG.1.205, Revision 1. Based on the licensee's statements for the continued validity of the previously approved alternatives to the NFPA 805 Chapter 3 requirements, the NRC staff concludes that the licensee's statements of compliance in these instances are acceptable.

The following NFPA 805 sections identified in Attachment 1 as complying via this method required additional review by the NRC staff:

6.2.1.1 3.3.12 Reactor Coolant Pumps

NFPA 805 Section 3.3.12 provides requirements for the reactor coolant pump (RCP) oil

collection system. By letter dated October 11, 2012, the NRC staff issued request for additional information (RAI) 57 to correct a reference listed in the basis of LAR Attachment K associated with Exemption 7.5. By letter dated November 9, 2012, the licensee responded to the RAI and indicated that the licensing action described in LAR Attachment K, associated with Exemption 7.15, contains a typographical error. The discussion in the Basis section should have referred to NFPA 805 Section 3.3.12(2).

The NRC staff concludes that the licensee's statements of compliance in this instance are acceptable.

6.2.1.2 3.4.1 On-Site Fire-Fighting Capability

NFPA 805 Section 3.4.1 provides requirements for the fire brigade members including a minimum crew size of five. The licensee had originally claimed to comply with a clarification that there was a prior approval to use a reduced fire brigade crew size. During the NRC staff's review, NRC FAQ 12-0063, "Fire Brigade Make-Up," was issued and provided additional guidance regarding the reduction in minimum crew size for up to 2 hours under certain conditions, and provisions for the appropriate compliance strategy. The licensee's response, dated April 27, 2012, to RAI 10, dated January 27, 2012, identified that its current FPP allows for the same minimum crew size under similar conditions and limitations. In response to the RAI, the licensee changed its compliance strategy from "complies with clarification" to "complies by previous NRC approval." The licensee quoted its Technical Requirements Manual (TRM) Section 10.1, which stated "the composition of the fire brigade may be less than the minimum requirements for a period of time not to exceed 2 hours, in order to accommodate unexpected absence provided immediate action is taken to fill the required positions." This provision was approved by the NRC staff in Section 2.0(3) of the SE dated April 9, 1991, for Amendment Nos. 154 and 138 for Unit 1 and Unit 2, respectively.

6.2.2 Compliance Strategy -- Submit for NRC Approval (at transition)

For two of the NFPA 805 Chapter 3 requirements, the licensee requested approval for the use of a performance-based method to demonstrate compliance with a fundamental FPP element. In accordance with 10 CFR 50.48(c)(2)(vii), the licensee requested that specific approval be included in the license amendment approving the transition to NFPA 805 at CNP. The NFPA 805 sections identified in Table B-1 as complying with this method are as follows:

6.2.2.1 3.2.3(1) Procedures - Inspection, Testing, and Maintenance

In Table B-1, the licensee identified that EPRI Technical Report (TR)-1006756, "Fire Protection Surveillance Optimization and Maintenance Guide for Fire Protection Systems and Features," July 2003, may be used to determine performance-based

surveillance frequencies. EPRI TR-1006756 is published by the Electric Power Research Institute and provides guidance for licensees to follow in order to optimize their fire protection surveillance and testing practices and frequencies for fire protection systems, structures, and components based upon performance. In RAI 05 dated January 27, 2012, and RAI 05.01 dated October 11, 2012, the NRC staff identified this compliance strategy as unacceptable and stated that if the licensee intends to use a performance-based alternative program for managing inspection, testing, and maintenance, then a request for approval must be submitted to the NRC in accordance with 10 CFR 50.48(c)(2)(vii). The licensee's response, dated October 15, 2012, provided a new Approval Request #2 in accordance with 10 CFR 50.48(c)(2)(vii). This request was evaluated by the NRC as described below:

As described by the licensee, performance-based inspection, testing, and maintenance frequencies would be established using the methods described in EPRI TR-1006756, "Fire Protection Surveillance Optimization and Maintenance Guide for Fire Protection Systems and Features," Final Report, July 2003.

The licensee stated that the use of this method for establishing inspection, testing, and maintenance frequencies will have no adverse impact on the ability to provide assurance that the availability and reliability of the fire protection systems and features are maintained to the levels assumed in the NFPA 805 engineering analyses.

The licensee stated that there will be no impact on the NFPA 805 nuclear safety performance goals, performance objectives, and performance criteria because the use of performance based test frequencies established per EPRI Technical Report TR-1006756 methods, combined with NFPA 805, Section 2.6, will provide assurance that the availability and reliability of the fire protection systems and features are maintained to the levels assumed in the NFPA 805 engineering analyses. This will ensure that there is no impact on the ability of the fire protection systems and features to perform its function.

The licensee also stated that the radiological release performance goals, objectives, and criteria are satisfied based on the determination of limiting radioactive release (LAR Attachment E). Fire protection systems and features are credited as part of that evaluation. Use of performance based test frequencies established per EPRI Technical Report TR-1006756 methods combined with NFPA 805, Section 2.6 Monitoring Program will ensure that the availability and reliability of the fire protection systems and features are maintained to the levels assumed in the NFPA 805 engineering analyses, which include those assumptions credited to meet the Radioactive Release performance criteria. Therefore, there will be no adverse impact to Radioactive Release performance criteria.

The licensee further stated that the proposed alternative maintains the safety margins of the licensee's analyses because it will provide assurance that the availability and

reliability of the fire protection systems and features are maintained to the levels assumed in the NFPA 805 engineering analyses, which includes those assumptions credited in the FRE safety margin discussions. In addition, the use of these methods in no way invalidates the inherent safety margins contained in the codes used for design and maintenance of fire protection systems and features. Therefore, the safety margin inherent and credited in the analyses will be preserved.

The three echelons of DID described in NFPA 805, Section 1.2 are (1) to prevent fires from starting (combustible/hot work controls); (2) rapidly detect, control and extinguish fires that do occur thereby limiting damage (fire detection systems, automatic fire suppression, manual fire suppression, pre-fire plans); and (3) provide adequate level of fire protection for systems and structures so that a fire will not prevent essential safety functions from being performed (fire barriers, fire rated cable, success path remains free of fire damage, RAs). Echelon 1 is not affected by the use of EPRI Technical Report TR-1006756 methods. Use of performance-based test frequencies established per EPRI Technical Report TR-1006756 methods, combined with NFPA 805, Section 2.6, will provide assurance that the availability and reliability of the fire protection systems and features credited for DID are maintained to the levels assumed in the NFPA 805 engineering analyses. Therefore, there will be no adverse impact to Echelons 2 and 3 of DID.

Based on its review of the information submitted by the licensee, and in accordance with 10 CFR 50.48(c)(2)(vii), the NRC staff concludes that the proposed performance-based method is an acceptable alternative to the corresponding NFPA 805, Section 3.2.3(1) requirement because it satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release, maintains sufficient safety margin, and maintains adequate fire protection DID.

6.2.2.2 3.5.16 Water Supply - For Fire Protection Use Only

Contrary to the requirements of NFPA 805 Section 3.5.16 and NFPA 24, *Standard for the Installation of Private Fire Service Mains and their Appurtenances*, Section 5-7, the fire protection water supply system at CNP may periodically be used to supply water for non-fire protection purposes. This request was evaluated by the NRC as described below:

By letters dated April 27 and October 15, 2012, in response to NRC staff RAIs 11 dated January 27, 2012, and 11.01 dated October 11, 2012, regarding the controls in place for uses of fire water for non-fire protection purposes, the licensee stated there are only two identified uses of non-fire protection purposes:

- Permanently piped cooling water (approximately 240 gallons per minute (gpm) maximum) to the Security Diesel Generator jacket water coolers.

- Tube sheet water lance cleaning of the Unit 1 or 2 Main Feed Pump Turbine Condensers via various fire hose stand pipe locations (approximately 100 gpm). This use is controlled as a proceduralized temporary plant modification in accordance with station procedures.

As described by the licensee, this usage is subject to the following conditions: (1) prior approval is obtained from the CNP fire protection staff and (2) personnel utilizing the fire protection water are in contact with the CNP Control Room. These controls are described as sufficient to ensure that the fire water system is not impaired and can be secured and restored to full capacity should a fire occur.

Additional controls in place for use of the fire water for non-fire use other than the two specific purposes described above are:

- Engineering evaluation has concluded that there is sufficient pumping capacity to supply the largest demand as well as non-fire use operation.
- Control Room Operations staff and fire brigade are notified of the non-fire uses, and contingencies established for prompt restoration in a fire event.
- Should non-fire water use of the fire water system impact operability of any of the three primary fire pumps, station procedure[s] provides guidance for establishing backup fire water capability from specified local township fire hydrants and for refilling the fire water storage tanks.
- A station procedure ensures that work activities on plant SSCs are conducted within the requirements of the station license, including TRM Section 8.7.5. All non-fire water uses of the fire water system are included in the Work Control Process, which includes proper planning, scheduling, execution, and risk assessment.

The licensee stated that the use of the fire protection water for non-fire protection system water demands would have no adverse impact on the ability of the fire protection system to provide required flow and pressure based on the following:

- Controls in place, as described above, to cease the non-fire protection use should a fire condition occur.
- The system, which consists of one 2,500 gpm electric motor driven fire pump and two redundant 2,500 gpm diesel engine driven fire pumps connected by a common header to two 685,000 gallon fire protection water storage tanks, is designed to provide water in excess of that required to suppress a fire.
- During a largest demand fire scenario, a safety margin of approximately 1,300 gpm is maintained even with only two of the three pumps in operation.

The licensee concluded that the use of the fire protection water for non-fire protection uses does not impact the NSPC because the CNP fire water system has excess capacity to supply the combined demands of automatic and manual water-based fire suppression systems and non-fire protection uses in the event of a fire, even in the unlikely event of a delay in ceasing

the use the fire protection water for non-fire protection purposes. For this same reason, the licensee concluded that the use of the CNP fire water system for non-fire protection uses has no impact on maintaining fire protection defense-in-depth because suppression systems are not affected.

The licensee also stated that this alternative will have no effect on the NFPA 805 radiological release performance goals, performance objectives, and performance criteria, since use of the CNP fire water system for non-fire protection uses has no impact on the radiological release.

The licensee further stated that the proposed alternative maintains the safety margins of the licensee's analyses related to fire water use functions, because the proposed alternative will not alter the methods, input parameters, and acceptance criteria used in fire water demand. The CNP fire water system has excess capacity to supply the combined demands of the automatic and manual water-based fire suppression systems and non-fire protection uses in the event of a fire. Finally, the licensee stated that fire protection defense-in-depth will be maintained because the fire water system pumps have excess capacity to supply demands of automatic and manual water-based fire suppression systems and non-fire protection uses in the event of a fire.

Based on its review of the information submitted by the licensee, and in accordance with 10 CFR 50.48(c)(2)(vii), the NRC staff concludes that the proposed performance-based method is an acceptable alternative to the corresponding NFPA 805, Section 3.5.16 requirement because it satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release, maintains sufficient safety margin, and maintains adequate fire protection DID.

6.2.3 Compliance Strategy -- Submit for NRC Approval (post transition)

6.2.3.1 For two of the NFPA 805 Chapter 3 requirements, the licensee requested approval for the use of a performance-based method to demonstrate compliance with a fundamental FPP element.

Amendments were requested to approve deviation from the requirements of National Fire Protection Association Standard 805, Section 3.3.5.1, regarding the use of non-plenum listed cables above suspended ceilings, and Section 3.3.5.2, regarding the use of electric metallic tube and embedded/buried polyvinyl chloride conduit. The licensee submitted the proposed license amendment request in accordance with Title 10 of the Code of Federal Regulations, Section 50.48(c)(2)(vii), requesting to use a performance based method in a fire protection program element.

The NFPA 805 sections identified in Attachment 1 as complying with this method are as follows:

6.2.3.1.1

3.3.5.1 Electrical Wiring Above Suspended Ceiling Limitations

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. Contrary to these requirements, CNP has wiring installed above suspended ceilings not routed in raceways that could not be verified as rated for plenum use. These cables are considered “unverified cables” and it is assumed that some population of these unverified cables is not listed for plenum use.

These unverified cables above suspended ceilings are located in the following areas:

Fire Analysis Area AA2:

- Fire Zone 87 (Makeup Water Plant Office)
- Fire Zone 126 (Shift Manager's Office (SMO) and Technical Support Center (TSC))
- Fire Zone 129 (Auxiliary Equipment Operator (AEO) Break Room, Online Laboratory, and Turbine office)

Fire Analysis Area AA36/42:

- Fire Zone 43 (Turbine/Auxiliary Building Access (TRPAC))

The licensee provided the following basis for its request, which it stated applies to all zones except when stated otherwise:

- Suspended ceiling finishes comply [...] with NFPA 805, Section 3.3.3, Interior Finishes. Their supports are noncombustible.
- All NSCA cables in Fire Zone 43 meet the criteria defined in Section 3.3.5.1 of NFPA 805. The population of unverified cabling consists of low-voltage communications and data network cables, which are less susceptible to self-ignition and electrical shorts that could result in a fire in the enclosed space.
- CNP areas currently with suspended ceilings inside the NFPA 805 defined power block include office areas and do not affect risk significant fire scenarios. The use of non-plenum cables does not impact any NSCA PB evaluations. Fire Zone 43 contains Variance from Deterministic Requirements (VFDRs) defined in the current license basis and a detailed evaluation is provided below.
- Exposed, nonplenum-rated electrical wiring located above suspended ceilings is minimal, is sufficiently dispersed, and adds limited combustible loading. CNP complies[...] to NFPA 805, Section 3.3.5.3, Electrical Cable Flame Propagation Limits. Although this is recognized as not equivalent to plenum rated cable, it does reflect that most non-plenum cables have some fire resistive capability.

- The NFPA 805 requirement to require plenum cable exceeds National Electrical Code (NEC) (NFPA 70) requirements for cables not in plenum spaces. Original fire protection installation criteria did not mandate plenum cables in suspended ceiling spaces as required by NFPA 805 (2001). Non-plenum spaces have stagnant air versus flowing air in plenum areas in which smoke filled air can travel through to other locations of the plant. The SMO (Fire Zone 126), Turbine office (Fire Zone 129), on line Lab (Fire Zone 129), AEO Break Room (Fire Zone 129) and Make up Plant (Fire Zone 87) locations do not contain plenum spaces.
- Based on walk downs and a review of CNP Technical Evaluations, no fixed ignition sources, per NUREG/CR-6850, were identified in the area above the suspended ceilings.
- CNP modification procedures ensure that future cable installations above suspended ceilings will meet the requirements of NFPA 805 Section 3.3.5.1.
- Fire barriers prevent propagation of fires to adjacent fire areas. Areas above suspended ceilings do not cross established fire barriers.
- CNP procedures have been updated to specifically restrict the storage of combustible material, including extension cords above suspended ceilings.
- For areas located within Fire Zone 129, areas above suspended ceilings are not used as plenum spaces and do not contain any NSCA related equipment.
- There are no automatic suppression or detection systems within the suspended ceiling space for these locations. An automatic suppression system protects the exterior of the Makeup Water Plant Office (it is an enclosure. within Fire Zone 87). Ionization smoke detectors are installed below the ceilings in the AEO Break Room, the SMO and TSC, and TRPAC (Fire Zone 129, Fire Zone 43, and Fire Zone 126). Fire barriers bound the Fire Areas comprising these zones. Hose streams are available throughout these Zones. These fire protection features, in combination with persons who routinely occupy these areas along with the dedicated fire brigade, are expected to detect and suppress fires prior to fire expanding and effecting cables/equipment in additional Fire Zones.

The licensee stated that Fire Zone 43, TRPAC, has some NSCA considerations that were evaluated further. The licensee provided a supplemental evaluation of the fire protection features and impacts on the NSCA. This included a description of the automatic fire detection system, fire doors, internal walls, and HVAC system. The licensee also described the detailed fire modeling that was performed for Fire Zone 43,

which determined that the risk, safety margin, and DID met the acceptance criteria of NFPA 804 Section 4.2.4. The licensee stated, "There is no impact to this analysis due to the potential for minimal amounts of non-plenum exposed cables in the suspended ceiling."

The licensee stated that, in general, the presence of nonplenum-rated cables above suspended ceilings in the identified locations does not adversely affect nuclear safety capability, and that the wiring above the suspended ceilings is kept to a minimum. The licensee further stated that the low-voltage communications and data network cables are not prone to heat-generating overload faults, and that in the unlikely event of a fire occurring in the area above the suspended ceiling, there will be no impact on the ability of CNP to achieve and maintain the NSPC of NFPA 805.

The licensee stated that the location of nonplenum-rated wiring above suspended ceilings has no impact on the radioactive release performance criteria and that the radioactive release review was performed based on the potential location of radiological concerns and is independent of the type of wiring and locations of suspended ceilings. The licensee further stated that radioactive release performance criteria are satisfied based on the determination of limiting radioactive release, which is not affected by the cables above suspended ceilings that do not comply with the requirements specified in Section 3.3.5.1 of NFPA 805.

The licensee stated that power, control, and instrumentation cables are already in use in the plenum space above the Unit 1 and Unit 2 Main Control Room and complies with NFPA 805, Section 3.3.5.3, Electrical Cable Flame Propagation Limits. The licensee further stated that its fire probabilistic risk assessment (FPRA) uses historical fires and fire tests as the basis for many inputs, and, therefore, the inherent safety margin present in the FPRA methods is acceptable because NRC accepted methods are used to perform the FPRA. The licensee further stated that deviations are evaluated against the methods and criteria for the overall internal events of probabilistic risk assessment (PRA) and FPRA model development for consistency, or confirmation of bounding treatment, to confirm that the safety margin inherent in the PRA model is unaffected.

The licensee stated that the limited amount of low voltage communications/data cable above suspended ceilings is not susceptible to shorts that would result in a fire and thus, their presence above suspended ceilings has no impact on the analytical methods used in the FPRA to evaluate potential fire scenarios. Therefore, the inherent safety margin in these methods remains unchanged.

The licensee provided a discussion of the three elements of DID, which are: 1) prevent fires from starting, 2) rapidly detect, control and extinguish fires that do occur, thereby limiting damage, and 3) provide adequate level of fire protection for systems and structures so that a fire will not prevent essential safety functions from being performed.

With regard to preventing fires from starting, the licensee stated that the use of non-listed communication/data cables routed above the suspended ceilings does not impact the fire protection DID and that the cables do not pose an ignition hazard. The licensee further stated that its fire analysis supports the loss of all cables and equipment in the affected areas with no impact to the ability to meet the NFPA 805 performance goals.

With regard to detecting, controlling, and extinguishing fires, the licensee stated that the cables above suspended ceilings will have no effect on the performance of area suppression or detection, and that areas without automatic features are provided with manual suppression and fire brigade response. The licensee further stated that fire analysis has been performed to demonstrate any fire that does occur will be small and contained within the fire analysis area.

With regard to providing an adequate level of fire protection so that a fire will not prevent essential safety functions from being performed, the licensee stated that there are no essential safety functions impacted by a fire in any of the affected fire zones. The only exception is Fire Zone 43, which was modeled as whole room burnout with no loss in the ability to achieve or maintain the NFPA 805 Performance Goals.

Based on its review of the information submitted by the licensee, and in accordance with 10 CFR 50.48(c)(2)(vii), the NRC staff concludes that the proposed PB method as described by the licensee in its request to use non-plenum listed cable above suspended ceilings, is an acceptable alternative to the corresponding NFPA 805, Section 3.3.5.1 requirement. The proposed PB method is acceptable because it satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release, maintains safety margins, and maintains fire protection DID (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).

6.2.3.1.2

3.3.5.2 Electrical Raceway Construction Limits

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. Contrary to these requirements, CNP has used electrical metallic tubing (EMT) extensively throughout the power block and that per CNP specification for cables, all exposed rigid metal conduit 2" or smaller inside the plant (excluding containment) is EMT, except as noted on drawings. Additionally, other sizes of EMT are not prohibited and EMT is used for power, instrumentation, and control cables. Further, per CNP specification, some conduit used in structural slabs is polyvinyl chloride (PVC) which is a plastic and is nonmetallic.

Regarding the use of EMT, the licensee stated that the use of EMT was not prohibited by original Fire Protection Design Guidelines, is impact resistant, and has been a basic conduit type for the life of plant at CNP. The licensee stated that, based on a review of Corrective Action Program requests, its presence has not adversely affected NSPC, radiological release performance criteria, safety margin, or DID. Additionally, the licensee stated that the CNP cable installation specification provides installation criteria to prevent damage to cables, and limits installation of EMT in close proximity to equipment that may induce damage due to equipment vibration.

The licensee stated:

The NEC allows the use of EMT for both "exposed" and "concealed" work but the area must "not be subject to severe physical damage." Per the NFPA Report on Proposals for Revision to NFPA 805-2001, Section 3.3.5.2 of NFPA 805 was revised for consistency with the NEC (NFPA 70) to remove the requirement prohibiting thin-wall EMT. The current edition of NFPA 805 (2015), retains this change. Although the current edition of NFPA 805 is not within the CNP licensing bases, the change to NFPA 805 was made by the NFPA Technical Committee on Fire Protection for Nuclear Facilities, which is made up of experts representing varied viewpoints and interests concerning nuclear facility fire protection, through a consensus standards development process.

Regarding the use of plastic conduit, the licensee stated that the CNP cable installation specification requires that all concrete encased nonmetallic conduit be plastic, and that metallic conduit be used to extend plastic conduit runs out of the floor slabs, with the plastic not extending past the concrete surface. The nonmetallic conduit provides

physical protection and separation for the conduit. The plastic conduit embedded in concrete is not subject to direct flame/heat impingement from an external source. The licensee stated that the NEC (NFPA 70), allows use of rigid nonmetallic conduit for underground and embedded applications, and that no PB evaluations (i.e., use of fire modeling) were performed on VFDRs associated with embedded conduits during CNP's NFPA 805 transition on embedded conduit.

The licensee stated that the use of EMT does not affect NFPA 805 credited success paths, as conduit type is not credited to withstand the effects of fire, and, therefore, there is no impact on the NSPC.

The licensee stated that the use of nonmetallic conduit for raceways embedded in concrete is allowed by NFPA 70, NEC, and provides adequate physical and electrical protection for cables. The licensee further stated that the use of PVC conduit in embedded/buried locations does not affect nuclear safety, as the material in which conduits are run within an embedded location are not subject to the failure mechanisms that could potentially result in circuit damage or resultant damage to external targets and, therefore, there is no impact on the NSPC.

The licensee stated that the use of nonmetallic conduit in embedded/buried installations and EMT does not have any impact on the radiological release performance criteria, and that the radiological release review was performed based on the manual fire suppression capabilities in areas containing, or potentially containing, radioactive materials and is not dependent on the type of conduit material. The licensee further stated that the conduit material does not change the radiological release evaluation which concludes that potentially contaminated water is contained and smoke is monitored, and the conduits do not add additional radiological materials to the area or challenge system boundaries.

The licensee stated that EMT is noncombustible and that self-ignited cable fires contained within conduit are not postulated to spread beyond the conduit. The licensee further stated that precautions and limitations on use and installation ensure that these materials do not impact the analysis of the fire event, and, therefore, the inherent safety margin and conservatism in these analysis methods remain unchanged.

The licensee stated that embedded nonmetallic conduit is protected from mechanical damage and from damage resulting from either an exposure fire or from a fire within the conduit impacting other targets. The licensee further stated that the areas with plastic conduit have been

analyzed in their current configuration and that precautions and limitations on use ensure that these materials do not impact the analysis of the fire event, and, therefore, the inherent safety margin and conservatism in these analysis methods remain unchanged.

The licensee provided a discussion of the use of EMT on the three elements of DID. With regard to preventing fires from starting, the licensee stated that the use of EMT and embedded/buried plastic conduit does not create ignition sources and does not impact fire prevention. The licensee further stated that EMT and embedded plastic conduit have been in use since original plant construction, are allowed by the NEC, and do not increase the potential for a fire to start.

With regard to detecting, controlling, and extinguishing fires, the licensee stated that the EMT and embedded plastic conduit have no impact on the ability of the automatic suppression or detection systems to perform their functions. The licensee further stated that portable fire extinguishers and hose reel stations are available for manual firefighting activities by the site fire brigade and are unaffected by the presence of EMT and embedded/buried plastic conduit. The licensee further stated that EMT provides a similar level of cable protection during a fire as rigid conduit.

With regard to providing an adequate level of fire protection so that a fire will not prevent essential safety functions from being performed, the licensee stated that the use of EMT and embedded/buried plastic conduit does not result in compromising automatic fire suppression functions, manual fire suppression functions, or post-fire safe shutdown capability, and will not prevent essential safety functions from being performed.

Based on its review of the information submitted by the licensee, and in accordance with 10 CFR 50.48(c)(2)(vii), the NRC staff concludes that the proposed PB method as described by the licensee in its request to use electric metallic tubing and embedded/buried polyvinyl chloride conduit, is an acceptable alternative to the NFPA 805, Section 3.3.5.2, requirement. The proposed PB method is acceptable because it satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release, maintains safety margins, and maintains fire protection DID (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).

- 6.2.3.2 For one of the NFPA 805 Chapter 3 requirements, the licensee requested approval for the use of a performance-based method to demonstrate compliance with a fundamental FPP element.

Amendments were requested to approve deviation from the requirements of National Fire Protection Association Standard 805, Section 3.3.5.2, regarding the use of flexible metallic conduit in configurations other than to connect components, and in lengths greater than “short lengths”. The licensee submitted the proposed license amendment request in accordance with Title 10 of the Code of Federal Regulations, Section 50.48(c)(2)(vii), requesting to use a performance based method in a fire protection program element.

The NFPA 805 section identified in Attachment 1 as complying with this method is as follows:

3.3.5.2 Electrical Raceway Construction Limits

Only metal tray and metal conduits shall be used for electrical raceways. Thin wall metallic tubing shall not be used for power, instrumentation, or control cables. Flexible metallic conduits shall only be used in short lengths to connect components.

Specifically, CNP has used flexible metallic conduit in other applications than to connect components that are original to plant construction, and flexible metallic conduit has been used at building transitions, building expansion joints, as raceway expansion joints, and in congested areas in place of complex rigid conduit or electrical metallic tubing (EMT) bends. CNP has used flexible metallic conduits in lengths greater than short lengths throughout the CNP power block and that prior to transition to NFPA 805, engineering specification for cables allowed the use of flexible metallic conduits up to 5 feet in length, and also allowed for longer lengths when approved in accordance with the configuration change process.

Based on its review of the information submitted by CNP, and in accordance with 10 CFR 50.48(c)(2)(vii), the NRC staff concludes that the proposed PB method as described by the licensee in its basis for the request, for the use of flexible metallic conduit in configurations other than to connect components, and for the use of flexible metallic conduit in lengths greater than short lengths, are acceptable alternatives to the corresponding NFPA 805, Section 3.3.5.2 requirements. The proposed PB methods satisfy the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release, maintains safety margins, and maintains fire protection DID (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).

7.0 NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODE COMPLIANCE REVIEWS

Attachment 2, *NFPA Codes of Record Summary*, contains a table which includes NFPA codes of record, applicable code compliance review(s), and/or documentation which justifies compliance with each code of record.

8.0 RADIOACTIVE RELEASE REVIEW

Compliance with the radioactive release performance criteria of NFPA 805 is documented in Attachment 3, *Radioactive Release Review*.

9.0 ENGINEERING EQUIVALENCY EVALUATIONS

- 9.1 During the process of transition to NFPA 805 as the fire protection licensing basis, engineering equivalency evaluations (EEEs) were reviewed and documented in R1900-001-003, *Existing Engineering Evaluation Review*. In reviewing the EEEs, a determination was made as to whether the document reflects the present configuration of the plant; and whether it meets the criteria for an EEE as described in Nuclear Energy Institute (NEI) report 04-02, *Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program Under 10 CFR 50.48(c)*; NEI 02-03, *Guidance for Performing a Regulatory Review of Proposed Changes to the Approved Fire Protection Program*; and NRC Generic Letter 82-21, *Technical Specifications for Fire Protection Audits*. Those EEEs which were determined to be required for compliance with the NFPA 805 fire protection program have “EEE” listed in the “Credited As EEE” column of Attachment 4, *Engineering Equivalency Evaluations and Technical Evaluations*.

The listing of EEEs required for the fire protection program will be maintained in Attachment 4 of this document, instead of R1900-001-003. In order to ensure that compliance with NFPA 805 is maintained, the credited bases of each EEE / Technical Evaluation listed in Attachment 4 as “Credited as EEE” must be maintained.

Attachment 4 also lists additional evaluations that support the fire protection program, but which do not fall within the category of suppression, detection, or boundary evaluations (i.e., not EEEs). These Technical Evaluations do not have “EEE” listed in the “Credited As EEE” column of Attachment 4. Some of these evaluations do not have any specific relevance to NFPA 805, but are included for historical reference.

10.0 EXISTING LICENSING ACTION REVIEW

10.1 Overview of Evaluation Process

The existing licensing actions (exemption requests and SEs) review was performed in accordance with NEI 04-02. The methodology for the licensing action review included the following:

- Determination of the bases for acceptability of the licensing action.
- Determination that these bases for acceptability are still valid and required for NFPA 805.

10.2 Results

Attachment 5 contains the detailed results of the Licensing Action Review for licensing actions which have been transitioned to NFPA 805.

The following licensing actions have been transitioned into the NFPA 805 fire protection program as previously approved (NFPA 805 Section 2.2.7). The bases for previous acceptance of these licensing actions have been verified and determined to remain valid. These licensing actions are considered acceptable under 10 CFR 50.48(c).

- Exemption for the lack of automatic suppression for Fire Zone 29G, Circulating Water Pump MCC Room, Elevation 575 feet, both units (NRC SER Dated December 23, 1983)
- Exemption from the requirements of 10 CFR 50 Appendix R Section III.O, Reactor Coolant Pump Oil Collection System (NRC SERs Dated December 23, 1983 and January 19, 2001)

11.0 NON-POWER OPERATIONAL MODES REVIEW

NFPA 805 requires that, for a fire during operations at power, the ability to achieve and maintain safe and stable hot standby conditions is assured until the fire is extinguished and the plant is capable of transitioning to cold shutdown. Similarly, ensuring the post-fire ability to accomplish required key safety functions during non-power operational (NPO) modes is also necessary.

The goal of this NPO review is to identify fire areas where a fire affects the ability to maintain key safety functions (KSF) and to ensure that contingency plans and additional protective measures are established. During low risk periods, normal risk management controls and fire prevention / protection processes and procedures will be utilized. During NPO conditions when CNP is engaged in higher risk evolutions (HRE) the risk of losing KSFs is intrinsically high; therefore, additional protective controls/measures are established when considering potential fire impact.

The NPO review ensures that CNP can maintain or achieve its key safety functions post-fire during plant shutdown conditions from hot shutdown to refueling conditions (Modes 4 and below). The capability of CNP to achieve safe and stable (Hot Standby – Mode 3) from a fire occurring during power operation (Modes 1, 2) is covered separately under the Nuclear Safety Capability Assessment (NSCA).

The CNP NPO review is documented in Technical Evaluation R1900-005-001, *Cook Nuclear Plant Non-Power Operation Modes Transition Review*.

1.0 PURPOSE

The Fundamental Fire Protection Program and Design Elements Review is intended to compare the minimum design requirements specified in each section and subsection of Chapter 3 of National Fire Protection Association (NFPA) Standard 805, *Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants*, 2001 edition, to the fire protection program and design features at Cook Nuclear Plant (CNP).

2.0 METHODOLOGY

The Fundamental Fire Protection Program and Design Elements Review was performed by comparing the minimum design requirements specified in each section and subsection of Chapter 3 of NFPA 805 to the fire protection program and design features at CNP in accordance with EPM Division Procedure EPM-DP-FP-008. A Fundamental Elements Review Table similar to NEI 04-02, Table B-1, has been prepared to perform the fundamental elements review. The table displays the NFPA 805 requirements, fundamental program and design elements, methods of compliance, and licensing basis references.

2.1 Determination of the Current Licensing Basis (CLB)

To determine the Current Licensing Basis (CLB), guidance documents, plant submittals to the NRC, and corresponding NRC SERs were reviewed. Through this document review, the appropriate plant licensing basis was identified as Appendix A to BTP 9.5-1.

Specific compliance statements in existing licensing documents (e.g., exemptions, SERs, etc.) are reviewed to determine “prior approval” of an alternative to compliance with the similar Chapter 3 attribute and documented in the Fundamental Elements Review Table. The compliance statements in previous licensing basis documents for which alternate compliance was approved by the NRC will continue to be acceptable by the NRC as long as the NFPA 805 requirement is identical to the original requirement. Although, in some cases, previously approved alternatives may contradict Section 3.1 of NFPA 805, which, in part, states, “These fire protection program elements and minimum design requirements shall not be subject to the performance-based methods permitted elsewhere in this standard” these will continue to be acceptable to the NRC as approved alternate compliance, as long as the basis are still valid. The rationale and references used to demonstrate “prior approval” are documented in the Fundamental Elements Review Table (Appendix A of this attachment).

2.2 Mapping of NFPA 805 Chapter 3 Requirements to Appendix A to BTP 9.5-1 Requirements

As CNP was required by the NRC to comply with Appendix A to BTP 9.5-1 prior to the adoption of NFPA 805, proof of compliance with these similar requirements is utilized in the justification of compliance with the particular section of NFPA 805. Based on the similarities between sections of NFPA 805 and those of current licensing basis documents, a review was performed to map the NFPA 805 Chapter 3 requirements to those requirements of the licensing basis

document. For those sections and/or subsections of NFPA 805 Chapter 3 that have not been previously evaluated in the current licensing basis documentation, a review of the CNP Fire Protection Program (e.g., procedures, drawings) against each individual requirement is performed to justify compliance.

2.3 Evaluation of Compliance with NFPA 805 Chapter 3 Requirements

The determination of compliance with the requirements of NFPA 805 is performed through research of plant documents including NRC SERs, correspondence between CNP and the NRC, Updated Fire Safety Analysis Report (UFSAR), plant procedures, system descriptions, and specifications. Each requirement (termed a “fundamental element”) in each specific section and subsection of Chapter 3 of NFPA 805 is reviewed through these plant documents for status of compliance.

The “required” fire protection systems and features reviewed for compliance with NFPA 805 Chapter 3 were those credited for NFPA 805 Chapter 4 deterministic separation, credited for an engineering equivalency evaluation, credited in an exemption, credited in the Fire PRA, or required for defense-in-depth, as determined by a Fire Risk Evaluation. The “required” fire protection systems and features are identified in the D. C. Cook Nuclear Plant Fire Safety Analysis (FSA).

3.0 OVERVIEW OF THE EVALUATION PROCESS

3.1 Each section and subsection of NFPA 805 Chapter 3 was reviewed to determine if the current CNP FPP complied with the section or subsection. The NFPA 805 Chapter 3 sections and subsections are listed in the “NFPA 805 Elements” column of Table B-1 provided in Appendix A of this attachment. The text of the NFPA 805 Chapter 3 section or subsection is presented in the “NFPA 805 Requirement” column of Table B-1. As shown in Table B-1, one or more of the following “Compliance Statements” was assigned to the NFPA 805 Chapter 3 section or subsection:

- a) “Complies” was assigned to those NFPA 805 sections/subsections determined to be met by the existing CNP FPP.
- b) “Complies with Clarification” was assigned to those NFPA 805 Chapter 3 sections/subsections determined to be met by the existing CNP FPP with the NFPA 805 Chapter 3 requirement clarified as stated in the “Compliance Basis” column of the table.
- c) “Complies by previous NRC approval” was assigned to those NFPA 805 Chapter 3 sections/subsections that are not met by the existing CNP FPP, but previous NRC approval of the associated CNP configuration exists.
- d) “Complies with use of EEEEs” was assigned to those NFPA 805 Chapter 3 sections/subsections determined to be met by the existing CNP FPP through the use of EEEEs showing equivalency to the NFPA 805 requirement(s).
- e) “Submit for NRC Approval” was assigned to those NFPA 805 Chapter 3 sections/subsections for which approval is requested to use performance based methods to establish compliance in

accordance with 10 CFR 50.48(c)(2)(vii) as detailed in Attachment L to the D. C. Cook NFPA 805 Transition Report.

- f) “Complies with Required Action” was assigned to those NFPA 805 Chapter 3 sections/subsections determined to be met by the CNP FPP after completion of an action, to be completed after submittal of the NFPA 805 License Amendment Request.

3.2 The “Compliance Basis” column in Table B-1 provides details regarding above defined Compliance Statements. In some cases multiple Compliance Statements were assigned to a specific NFPA 805 Chapter 3 section/subsection. Where this is the case, the Compliance Basis clearly delineates the aspects of the basis statement that correspond to the Compliance Statement. The “Reference Document” column in Table B-1 identifies the CNP documents that establish compliance with the indicated NFPA 805 Chapter 3 section/subsection.

4.0 RESULTS OF THE EVALUATION PROCESS

4.1 NFPA 805 Chapter 3 Requirements Met or Previously Approved by the NRC

Appendix A of this attachment contains NEI 04-02 Table B-1, Transition of Fundamental FP Program and Design Elements. This table provides the compliance basis for the requirements in NFPA 805 Chapter 3. Except as identified in Sections below, Appendix A of this attachment demonstrates that the fire protection program at CNP either:

- Complies directly with the requirements of NFPA 805 Chapter 3,
- Compiles with clarification with the requirements of NFPA 805 Chapter 3,
- Complies through the use of existing engineering equivalency evaluations which are valid and of appropriate quality, or
- Complies with a previously NRC-approved alternative to NFPA 805 Chapter 3 and therefore the specific requirement of NFPA 805 Chapter 3 is supplanted.
- Complies with a required action to be performed after submittal of the NFPA 805 License Amendment Request

4.2 NFPA 805 Chapter 3 Requirements Requiring Clarification of Prior NRC Approval

NFPA 805 Section 3.1 states in part, “Previously approved alternatives from the fundamental protection program attributes of this chapter by the AHJ take precedence over the requirements contained herein.” In some cases prior NRC approval of an NFPA 805 Chapter 3 program attribute may be unclear. As a result of this review, there were no previous approvals credited that require clarification by the NRC.

4.3 NFPA 805 Chapter 3 Requirements not Previously Approved by the NRC

There are no sections of NFPA 805 Chapter 3 that are not specifically met, or for which previous NRC approvals of alternatives do not exist. As such no 10 CFR 50.48(c)(2)(vii) performance-based methods will be provided in Attachment L of the D. C. Cook NFPA 805 Transition Report.

5.0 REFERENCES

NOTE: References utilized in demonstrating compliance with NFPA 805 Chapter 3 elements are identified in those specific subsections of Appendix A of this attachment in which they are referenced.

- 5.1 EPM Division Procedure EPM-DP-FP-002, *Performance of Field Walkdowns*, Rev. 0
- 5.2 EPM Division Procedure EPM-DP-FP-008, NFPA 805 Fundamental Fire Protection Program and Design Elements Review, Rev. 1
- 5.3 NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition
- 5.4 NEI 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c), Rev. 2
- 5.5 NRC Regulatory Guide 1.205, Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants, Rev. 1

NFPA 805 Chapter 3 Transition of Fundamental FP Program and Design Elements

The remaining pages of Attachment 1 are Appendix A to Attachment 1, Table B-1.

Note: revision bars are not used to denote changes from Table B-1 as contained in Technical Evaluation 10.28, *Technical Evaluation for NFPA Chapter 3 Fire Protection Program and Design Elements Review*. This revision made changes to the B-1 table to reflect the completion of NFPA 805 implementation items and documents NRC approval of requests for approval made in the License Amendment Request.

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NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.1 General	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. N/A - Section Heading, see sub-sections for any specific compliance statements.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements.	N/A
3.2 Fire Protection Plan	N/A	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements.	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.2.1 Intent	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.	Complies	A site-wide fire protection program (FPP) has been established. The purpose of the CNP FPP is to incorporate, identify and discuss the applicable commitments, documents, administrative controls, departmental responsibilities and activities which together form the CNP FPP.	PMI-2270, Fire Protection Program
3.2.2 Management Policy Direction and Responsibility	A policy document shall be prepared that defines management authority and responsibilities and establishes the general policy for the site fire protection program.	Complies	The FPP procedure defines management authority and responsibilities and establishes the general policy for the site FPP.	PMI-2270, Fire Protection Program
3.2.2.1 [Management Policy on Senior Management]	The policy document shall designate the senior management position with immediate authority and responsibility for the fire protection program.	Complies	The Senior Vice President/Chief Nuclear Officer is responsible for development, implementation, and periodic assessment of the CNP FPP.	PMI-2270, Fire Protection Program

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.2.2.2 [Management Policy on Daily Administration]	The policy document shall designate a position responsible for the daily administration and coordination of the fire protection program and its implementation.	Complies	The Fire Protection Program Manager is responsible for assuring adequate implementation of the overall FPP.	PMI-2270, Fire Protection Program
3.2.2.3 [Management Policy on Interfaces]	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.	Complies	PMI-2270 identifies the various plant positions having the authority for implementing the various areas of the FPP and identifies interfaces between the FPP and other organizations.	PMI-2270, Fire Protection Program
3.2.2.4 [Management Policy on AHJ]	The policy document shall identify the appropriate AHJ for the various areas of the fire protection program.	Complies	The AHJ is identified in CNP Procedure PMI-2270.	PMI-2270, Fire Protection Program

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.2.3 Procedures	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:	Complies	Procedures have been established for implementation of the FPP. These procedures accomplish the requirements outlined in the sub-sections of this element.	NFPPM, NFPA 805 Fire Protection Program Manual (NFPPM) PMI-2270, Fire Protection Program
3.2.3(1) Procedures	Inspection, testing, and maintenance for fire protection systems and features credited by the fire protection program.	Complies with Clarification	Complies with clarification: Procedures have been established for inspection, testing, and maintenance for fire protection systems and features credited by the FPP. These procedures are listed in the NFPA 805 Monitoring Program Analysis (FPMP). Where practical, performance-based surveillance frequencies may be established as described in Electric Power Research Institute (EPRI) Technical Report (TR) 1006756, “Fire Protection Surveillance Optimization and Maintenance Guide for Fire Protection Systems and Features”.	Electric Power Research Institute (EPRI) Technical Report (TR) 1006756, Fire Protection Surveillance Optimization and Maintenance Guide for Fire Protection Systems and Features FPMP, NFPA 805 Monitoring Program Analysis PMI-4030, Technical Specification Surveillance Test Program PMP-2291-PLN-001, Work Control Activity Planning Process

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.2.3(2) Procedures	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	Complies	Procedures have been established to implement compensatory actions when fire protection systems and other systems credited by the FPP cannot perform their intended function.	12-FPP-2270-066-013, Control of Inoperable Fire Protection Systems, Structures, or Components 1-OHP-4030-066-4025, UNIT 1 NFPA 805 AND VENTILATION REQUIREMENTS FOR UNIT 2 2-OHP-4030-066-4025, UNIT 2 NFPA 805 REQUIREMENTS FOR UNIT 1 PMI-2270, Fire Protection Program PMP-2291-PLN-001, Work Control Activity Planning Process

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.2.3(3) Procedures	Reviews of fire protection program — related performance and trends	Complies	Procedures have been established for reviewing performance and trends of the FPP.	PMI-4030, Technical Specification Surveillance Test Program PMP-2291-PLN-001, Work Control Activity Planning Process PMP-7034-SAP-001, Conduct of Self-Assessments Procedure 12-FPE-2270-FPMP-001, Fire Protection Required SSC Monitoring Program

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.2.3(4) Procedures	Reviews of physical plant modifications and procedure changes for impact on the fire protection program	Complies	Procedures have been established for reviews of physical plant modifications and procedure changes for impact on the FPP.	PMP-5043-CCD-001, Configuration Change Determinations Procedure 12-FPE-2270-EVL-001, Preparation and Approval of Fire Protection Technical Evaluations Procedure 12-FPE-2270-FPCE-001, Fire Protection Program Change Evaluation Procedure 12-FPE-2270-RICE-001, NFPA 805 Fire Protection Program Risk Informed Change Evaluation Procedure IP-ENG-001, Standard Design Process

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.2.3(5) Procedures	Long-term maintenance and configuration of the fire protection program	Complies	Procedures have been established for long-term maintenance and configuration of the FPP.	<p>Quality Assurance Program Description</p> <p>PMP-5043-CCD-001, Configuration Change Determinations</p> <p>Procedure 12-FPE-2270-EVL-001, Preparation and Approval of Fire Protection Technical Evaluations</p> <p>Procedure 12-FPE-2270-FPCE-001, Fire Protection Program Change Evaluation</p> <p>Procedure 12-FPE-2270-RICE-001, NFPA 805 Fire Protection Program Risk Informed Change Evaluation</p>
3.2.3(6) Procedures	Emergency response procedures for the plant industrial fire brigade	Complies	An emergency response procedure for the plant industrial fire brigade has been established (Fire Pre-Plan).	<p>CNP Fire Pre-Plans, Volumes I, II, and III,</p> <p>PMP-2270-FRP-001, Fire Response Plan</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3 Prevention	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:	Complies	The CNP FPP establishes, documents, and implements, specific requirements for fire prevention. The two basic components of fire prevention are met as described in the sub-sections of this element.	PMI-2270, Fire Protection Program
3.3(1) Prevention	Prevention of fires and fire spread by controls on operational activities	Complies	CNP procedures establish controls on operation activities in order to prevent fires and fire spread.	12-FPP-2270-066-011, Fire Watch Activities PMI-2270, Fire Protection Program PMP-2270-CCM-001, Control of Combustible Materials PMP-2270-WBG-001, Welding, Burning and Grinding Activities
3.3(2) Prevention	Design controls that restrict the use of combustible materials The design control requirements listed in the remainder of this section shall be provided as described.	Complies	CNP procedures establish design controls that restrict the use of combustible materials.	PMI-2270, Fire Protection Program Procedure 12-FPE-2270-FPCE-001, Fire Protection Program Change Evaluation

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.1 Fire Prevention for Operational Activities	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.	Complies	CNP procedures establish requirements to address the control of ignition sources and the use of transient combustible materials during all aspects of plant operations. These procedures 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.	Quality Assurance Program Description 12-FPP-2270-066-012, Transient Combustible Monitoring PMI-2270, Fire Protection Program PMP-2270-CCM-001, Control of Combustible Materials PMP-2270-WBG-001, Welding, Burning and Grinding Activities
3.3.1.1 General Fire Prevention Activities	The fire prevention activities shall include but not be limited to the following program elements:	Complies	Plant procedures for fire prevention activities have been implemented. The procedures address, at a minimum, the FPP elements identified in this section, but are not limited to these elements. The NFPA 805 code requirements for this element are satisfied.	Refer to basis documentation in the sub-sections of this element.

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.1.1(1) General Fire Prevention Activities	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	Complies	I&M establishes training requirements for all plant personnel, including plant fire prevention procedures, fire reporting, and familiarization with plant emergency alarms.	DCC-CEST-200-QCS, Auxiliary Building Reroofing Section 07526 Modified Bitumous Sheet Roofing Seismic Class III Application Nuclear Energy Institute (NEI) 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c), Rev. 2 / Section K.3 (FAQ 06-0028) Training Document GEI-NG02, NANTEL INITIAL PLANT ACCESS TRAINING

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.1.1(2) General Fire Prevention Activities	Documented plant inspections including provisions for corrective actions for conditions where unanalyzed fire hazards are identified	Complies	CNP procedures establish requirements for spot plant inspections to ensure that combustibles are properly controlled and are not allowed to accumulate in amounts that are in excess of that analyzed in the Fire Safety Analysis (FSA). Periodic tours by the fire brigade are established by station procedures (FPCE-2017-0021). If problems with conditions or combustible loading are identified, corrective actions are required to be taken.	12-FPP-2270-066-011, Fire Watch Activities 12-FPP-2270-066-012, Transient Combustible Monitoring

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.1.1(3) General Fire Prevention Activities	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	Complies	Procedures have been established for reviews of physical plant modifications and maintenance for impact on the FPP.	PMP-5043-CCD-001, Configuration Change Determinations Procedure 12-EHP-2270-FPCE-001, Fire Protection Program Change Evaluation Procedure 12-FPE-2270-EVL-001, Preparation and Approval of Fire Protection Technical Evaluations Procedure 12-FPE-2270-RICE-001, NFPA 805 Fire Protection Program Risk Informed Change Evaluation Procedure IP-ENG-001, Standard Design Process
3.3.1.2 Control of Combustible Materials	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:	Complies	Plant procedures for the control of general housekeeping practices and the control of transient combustibles have been implemented. The procedures address, at a minimum, the FPP elements identified in this section, but are not limited to these elements.	12-FPP-2270-066-012, Transient Combustible Monitoring PMP-2220-HSK-001, Housekeeping and Material Condition PMP-2270-CCM-001, Control of Combustible Materials

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.1.2(1) Control of Combustible Materials	Wood used within the power block shall be listed pressure-impregnated or coated with a listed fire-retardant application. Exception: Cribbing timbers 6 in. by 6 in. (15.2 cm by 15.2 cm) or larger shall not be required to be fire-retardant treated.	Complies	Wood smaller than 6 inch by 6 inch used in the power block shall be listed pressureimpregnated or coated with a listed fire-retardant paint. Wood materials not meeting this requirement will be monitored by trained fire watch personnel (FPPR-2015-0002).	PMP-2270-CCM-001, Control of Combustible Materials
3.3.1.2(2) Control of Combustible Materials	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"	Complies	All sheet plastic used in the power block is required to meet the requirements of NFPA 701.	PMP-2270-CCM-001, Control of Combustible Materials

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.1.2(3) Control of Combustible Materials	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.	Complies	Whenever possible, equipment or parts shipped or packed in combustible materials are required to be removed from their shipping crates or containers prior to those items being taken into a safety related area. Those items that cannot be removed from shipping/packing materials may be taken into safety related areas when needed, unpacked and the shipping/packing materials immediately removed.	12-FPP-2270-066-012, Transient Combustible Monitoring PMP-2220-HSK-001, Housekeeping and Material Condition PMP-2270-CCM-001, Control of Combustible Materials

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Clarification	<p>All waste, debris, scrap, or other combustibles resulting from an activity is required to be cleaned up, and stored in proper containers or removed from the area during the work activity, upon completing the activity and/or at the end of each work shift. All waste is required to be disposed of in proper containers.</p> <p>Procedure PMP-2270-CCM-001, “Control of Combustible Materials,” provides guidance for limiting the quantity and duration of combustible materials (e.g., debris, packing materials etc.) for safety-related and critical buildings. These requirements include: (1) a review by the Fire Protection Supervisor/Designee for Compensatory actions (e.g., fire watch tour, storage in metal container etc.) if anticipated combustibles are to exceed the Fire Safety Analysis (FSA) allowable limits and (2) a review by Fire Protection Engineering to assure that all long term/permanent combustibles comply with licensing bases requirements. Procedure 12-FPE-2270-FPCE-001, Fire Protection Program Change Evaluation, provides guidance for review of combustible loading on fire protection/safe shutdown equipment/components and installation activities. These</p>	<p>12-FPP-2270-066-012, Transient Combustible Monitoring</p> <p>PMP-2220-HSK-001, Housekeeping and Material Condition</p> <p>PMP-2270-CCM-001, Control of Combustible Materials</p> <p>Procedure 12-FPE-2270-FPCE-001, Fire Protection Program Change Evaluation</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			controls comply with NFPA 805, Section 3.3.1.2 (4), which allows combustible storage to be used if such storage is in a designated storage/staging area with limits placed on the types and quantities of stored materials. Additionally, CNP has a “Clean As You Go Policy” as described in Procedure PMP-2220-HSK-001, "Housekeeping and material Condition", to preclude in-situ storage of waste, debris, scrap packing materials, or other combustibles as required by NFPA 805.	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.1.2(4) Control of Combustible Materials	Combustible storage or staging areas shall be designated, and limits shall be established on the types and quantities of stored materials.	Complies	Transient combustible storage is controlled on the basis of physical location and restricted to the limitations set forth in the D. C. Cook Fire Safety Analysis (FSA). CNP has chosen graded approach to combustible material control based on multiple factors including risk significance of the room, current in-situ combustible loading, as well as potential to exceed the combustible loading limits set forth in the Fire Safety Analysis. (FPCE-2017-0021).	FSA, D. C. Cook Fire Safety Analysis PMP-2270-CCM-001, Control of Combustible Materials
3.3.1.2(5) Control of Combustible Materials	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."	Complies with Clarification	Plant procedures are in place to control the use and storage of flammable and combustible liquids. These controls use NFPA 30 as a developmental reference. No other NFPA Standards were determined to be applicable based on guidance in NEI 04-02, section K.1 (FAQ 06-0020).	Nuclear Energy Institute (NEI) 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c), Rev. 2 / Section K.1 (FAQ 06-0020) PMP-2270-CCM-001, Control of Combustible Materials

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEEs	CNP complies with NFPA 30, 1987 edition, as evaluated in the CNP NFPA 30 Code Compliance Evaluation.	NFPA 30 Code Compliance Evaluation for Donald C. Cook Nuclear Plant Unit 1 and 2, dated July 25, 1990 Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications
3.3.1.2(6) Control of Combustible Materials	Controls on use and storage of flammable gases shall be in accordance with applicable NFPA standards.	Complies with Clarification	A plant procedure is in place to control use and storage of flammable gases. These controls use NFPA 50A "Standard for Gaseous Hydrogen Systems at Consumer Sites", as a developmental reference. No other NFPA Standards were determined to be applicable based on guidance in NEI 04-02, section K.1 (FAQ 06-0020)	Nuclear Energy Institute (NEI) 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c), Rev. 2 / Section K.1 (FAQ 06-0020) PMP-2270-CCM-001, Control of Combustible Materials
		Complies with Use of EEEEEs	CNP complies with NFPA 50A, 1999 edition, as evaluated in Engineering Equivalency Evaluation 14.1.1.	Engineering Equivalency Evaluation 14-1-1, CNP Fire Protection Code Conformance Review

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.1.3 Control of Ignition Sources	Control of Ignition Sources.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements.	N/A
3.3.1.3.1 [Control of Ignition Sources Code Requirements]	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."	Complies with Clarification	A hot work safety procedure and a fire watch procedure have been developed, implemented, and are periodically updated as necessary. Fire watch personnel may have multiple duties.	12-FPP-2270-066-011, Fire Watch Activities PMP-2270-WBG-001, Welding, Burning and Grinding Activities
		Complies with Use of EEEEs	The hot work safety procedure and fire watch procedure comply with the requirements of NFPA 51B, 1971 Edition, and NFPA 241, 2000 Edition, as evaluated in Engineering Equivalency Evaluation 14.1.1.	Engineering Equivalency Evaluation 14-1-1, CNP Fire Protection Code Conformance Review

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.1.3.2 [Control of Ignition Sources Smoking Limitations]	Smoking and other possible sources of ignition shall be restricted to properly designated and supervised safe areas of the plant.	Complies	Smoking is not allowed in any plant building or any other specific area posted as "No Smoking", per procedure PMI-2270. Restrictions for other possible ignition sources are addressed by sections 3.3.1.3.1, 3, and 4.	PMI-2270, Fire Protection Program
3.3.1.3.3 [Control of Ignition Sources for Leak Testing]	Open flames or combustion-generated smoke shall not be permitted for leak or air flow testing.	Complies	Precautions and limitations are listed for all fire protection testing procedures. These precautions and limitations require that there be no deviations from the listed test sequence unless specific instructions to the contrary exist within the test procedure. Test procedures do not use open flames or combustion-generated smoke for leak or air flow testing.	12-FPP-2270-066 Series Procedure, 2-IHP-4030-266 Series Procedure, 1-IHP-4030-166 Series

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.1.3.4 [Control of Ignition sources on Portable Heaters]	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.	Complies	CNP procedures control the use of portable electrical heaters in the plant. CNP procedures also require that portable fuel-fired heaters are not permitted in plant areas containing equipment important to nuclear safety or where there is a potential for radiological releases resulting from a fire.	PMI-2270, Fire Protection Program PMP-2270-CCM-001, Control of Combustible Materials
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	Interior walls, floors, and structural components are noncombustible. Noncombustible is defined by NFPA 220-1999 edition, as a material that, in the form in which it is used and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat.	Procedure 12-EHP-2270-FPCE-001, Fire Protection Program Change Evaluation

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by Previous NRC Approval	<p>By the response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977, item D.1.(d) I&M stated:</p> <p><i>"Interior wall and structural components, thermal insulation, radiation shielding, and sound proofing are, to the extent possible, noncombustible or have the UL flame spread, smoke, and fuel contribution rating of 25 or less. Where this was not possible, these materials are protected by other means. In the two cases where this occurred (noted below) the following was done:</i></p> <p><i>Building expansion or seismic gaps were filled in some cases with urethane or styrene foam plastic to act as a seal to prevent infiltration of air or sand, or to act as non-removable forms between concrete pours. In areas where this material violated fire rated walls or where the material, if ignited, could potentially damage adjacent equipment; a fire proofing method was devised by raking out the foam plastic to a four or six inch depth, filling the void with rolled refractory fiber insulation held in place with glass fiber screening and noncombustible silicone adhesive, all of which is covered with a glass fiber reinforced</i></p>	<p>I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977 / item D.1.(d)</p> <p>NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 / Page 79</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p><i>silicone sheet material cemented to the concrete walls with noncombustible silicone adhesive. Tests of this concept were conducted in March 1975. The test was an ASTM E-119 wall test where the refractory fiber/silicone sheet was used to seal a pipe sleeve. After five hours of exposure, the seal was still intact and functional."</i></p> <p>The NRC Safety Evaluation, dated July 31, 1979 states:</p> <p><i>"We conclude that the administrative controls [including controls on construction of walls, floors and components required to maintain structural integrity], fire brigade equipment and training conform to the recommendations of the National Fire Protection Association and Appendix A to Branch Technical Position 9.5-1 and are, therefore, acceptable."</i></p> <p>The noncombustible features (i.e. the expansion and seismic gap filling materials, the interior wall and structural components, thermal insulation, radiation shielding and sound proofing), as approved by the SE Report, are still installed at CNP. There have been no plant modifications or other changes that would invalidate the basis for</p>	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			approval. These features have not been changed.	

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NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
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 by Previous NRC Approval	<p>By the response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977, item D.1.(d) I&M stated:</p> <p><i>"Interior wall and structural components, thermal insulation, radiation shielding, and sound proofing are, to the extent possible, noncombustible or have the UL flame spread, smoke, and fuel contribution rating of 25 or less."</i></p> <p>The NRC Safety Evaluation, dated July 31, 1979 states:</p> <p><i>"We conclude that the administrative controls [including interior wall, ceiling and floor finishes], fire brigade equipment and training conform to the recommendations of the National Fire Protection Association and Appendix A to Branch Technical Position 9.5-1 and are, therefore, acceptable."</i></p> <p>By letter dated May 30, 1986, I&M informed the NRC that carpeting had been installed in both units' control rooms to close out human factors concerns as a result of the Detailed Control Room Design Review. The licensee stated that this carpeting had a flame spread rating of 30 which is higher than the 25 recommended by NRC staff guidance. The carpeting also has a</p>	<p>NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 / page 17</p> <p>I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977 / item D.1.(d)</p> <p>I&M Letter to NRC, Control Room Carpeting, dated May 30, 1986</p> <p>NRC Safety Evaluation, Installation of Carpet in the Control Rooms, dated June 16, 1988</p> <p>PMI-2270, Fire Protection Program</p> <p>Procedure 12-EHP-2270-FPCE-001, Fire Protection Program Change Evaluation</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p>radiant flux rating of .98 watts/cm.</p> <p>The NRC Safety Evaluation, "Installation of Carpet in the Control Rooms", dated June 16, 1988 states:</p> <p><i>"The carpeting installed in the control room deviates from NRC staff guidance because the flame spread rating is higher than identified in Section D.1.d of Appendix A to BTP APCSB 9.5-1. The concern is that a fire involving carpeting with a high flame spread could propagate rapidly, potentially damaging safe shutdown equipment and also making the control room uninhabitable. However, the flame spread of the carpeting installed in the D.C. Cook control rooms is only slightly higher than staff guidance, 30 versus 25.</i></p> <p><i>Since the issuance of the staff guidelines, objections have been raised in the fire protection industry regarding the measure of flame spread to evaluate floor coverings. The test method used to evaluate flame spread, NFPA 255, "Surface Burning Characteristics of Building Materials," holds the test specimen upside down in a position that bears no resemblance to its position when it is installed. In a effort to correctly assess the flame spread hazard of floor</i></p>	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p><i>coverings, the concept of radiant flux was used and NFPA 253, "Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source" was developed. NFPA 253 involves subjecting a horizontal floor covering specimen to a radiant energy flux which decreases along the length of the specimen according to a standard energy flux vs. distance profile. The higher the critical heat flux rating a carpet has, the more resistive it is to flame spread.</i></p> <p><i>The subject carpeting has a critical heat flux of .98 watts/cm(2). This rating is significantly higher than the minimum of 0.45 watts/cm(2) used to define a Class I interior finish in NFPA 101, "Life Safety Code." Since the control rooms are continuously manned, fires would be detected quickly and extinguished using portable fire extinguishers. Based on the above, there is reasonable assurance that the slightly higher flame spread rating of control room carpeting would not adversely affect plant safety.</i></p> <p><i>Based on the above evaluation, the staff finds that the installation of carpeting in the control rooms which has a flame spread rating of 30 is an acceptable deviation from</i></p>	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p><i>the guidance provided in Appendix A to BTP APCSB 9.5-1, Section D.1.d."</i></p> <p>The carpeting, as approved by the SE Report, is still installed in the control room at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. The carpeting features remain unchanged.</p>	
		<p>Complies with Use of EEEEs</p>	<p>Epoxy floor coating is used in some fire areas. This has been evaluated as acceptable via an Engineering Equivalency Evaluation and AR GT00120103.</p>	<p>Engineering Equivalency Evaluation 11-55, Flammability of Floor Coating Systems AR GT00120103</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.4 Insulation Materials	Thermal insulation materials, radiation shielding materials, ventilation duct materials, and soundproofing materials shall be noncombustible or limited combustible.	Complies	Thermal insulation materials, shielding materials, ventilation duct materials and soundproofing materials at CNP are of limited combustibility.	12-THP-6010-RPP-015, Temporary Shielding ES-HVAC-0804-QCN, Nuclear Grade Ductwork ES-HVAC-0806-QCS, Conventional HVAC Ductwork ES-PIPE-1007-QCS, Thermal Insulation Procedure 12-FPE-2270-FPCE-001, Fire Protection Program Change Evaluation

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by Previous NRC Approval	<p>By the response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977, item D.1.(d) I&M stated:</p> <p><i>"Interior wall and structural components, thermal insulation, radiation shielding, and sound proofing are, to the extent possible, noncombustible or have the UL flame spread, smoke, and fuel contribution rating of 25 or less. Where this was not possible, these materials are protected by other means. In the two cases where this occurred (noted below) the following was done:</i></p> <p><i>Building expansion or seismic gaps were filled in some cases with urethane or styrene foam plastic to act as a seal to prevent infiltration of air or sand, or to act as non-removable forms between concrete pours. In areas where this material violated fire rated walls or where the material, if ignited, could potentially damage adjacent equipment; a fire proofing method was devised by raking out the foam plastic to a four or six inch depth, filling the void with rolled refractory fiber insulation held in place with glass fiber screening and noncombustible silicone adhesive, all of which is covered with a glass fiber reinforced silicone sheet material cemented to</i></p>	<p>NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 / page 17 and table 1, item 8.</p> <p>I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977 / item D.1.(d)</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p><i>the concrete walls with noncombustible silicone adhesive. Tests of this concept were conducted in March 1975. The test was an ASTM E-119 wall test where the refractory fiber/silicone sheet was used to seal a pipe sleeve. After five hours of exposure, the seal was still intact and functional."</i></p> <p>The NRC Safety Evaluation, dated July 31, 1979 states:</p> <p><i>"We conclude that the administrative controls [including controls on thermal insulation, radiation shielding materials, ventilation duct materials and soundproofing materials], fire brigade equipment and training conform to the recommendations of the National Fire Protection Association and Appendix A to Branch Technical Position 9.5-1 and are, therefore, acceptable."</i></p> <p>The noncombustible features (i.e. the expansion and seismic gap filling materials, the interior wall and structural components, thermal insulation, radiation shielding and sound proofing), as approved by the SE Report, are still used at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. These features have not been changed.</p>	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.5 Electrical.	Electrical	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.5.1 [Electrical Wiring Above Suspended Ceiling Limitations]	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 by Previous NRC Approval	<p>By the response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977, item D.1.(f) I&M stated:</p> <p><i>"The only locations containing Class I equipment with suspended ceilings are each of the control rooms. The ceiling in this case consists of acoustic metal tiles which are noncombustible, and plastic diffusers (egg crate) under the recessed fluorescent lighting. These diffusers meet the UL 25 flame spread requirements."</i></p> <p>The NRC Safety Evaluation, dated July 31, 1979 states:</p> <p><i>"We conclude that the administrative controls [including controls on wiring above suspended ceilings], fire brigade equipment and training conform to the recommendations of the National Fire Protection Association and Appendix A to Branch Technical Position 9.5-1 and are, therefore, acceptable."</i></p> <p>EC-0000054707 and EC-0000054824 changed the fluorescent lighting to LED lighting and replaced the (egg crate) diffusers with polycarbonate prismatic diffusers that meet the flame spread and smoke generation requirements of NFPA 286 for a</p>	<p>NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 / page 17 and table 1, item 3.D.1.</p> <p>I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977 / item D.1.(f)</p> <p>EC-0000054707, UNIT 1 CONTROL ROOM FLUORESCENT LIGHTING REPLACEMENT TO LED</p> <p>EC-0000054824, UNIT 2 CONTROL ROOM FLUORESCENT LIGHTING REPLACEMENT TO LED</p> <p>Procedure 12-FPE-2270-FPCE-001, Fire Protection Program Change Evaluation</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			ceiling application in the Unit 1 and Unit 2 Main Control Rooms. [FPCE-2016-0017]	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by NRC Approval	<p>Contrary to these requirements, CNP has wiring installed above suspended ceilings not routed in raceways that could not be verified as rated for plenum use. These cables are considered “unverified cables” and it is assumed that some population of these unverified cables is not listed for plenum use. These unverified cables above suspended ceilings are located in the following areas:</p> <p>Fire Analysis Area AA2: Fire Zone 87 (Makeup Water Plant Office) Fire Zone 126 (Shift Manager's Office (SMO) and Technical Support Center (TSC)) Fire Zone 129 (Auxiliary Equipment Operator (AEO) Break Room, Online Laboratory, and Turbine office) Fire Analysis Area AA36/42: Fire Zone 43 (Turbine/Auxiliary Building Access (TRPAC))</p> <p>Based on its review of the information submitted by the licensee, and in accordance with 10 CFR 50.48(c)(2)(vii), the NRC staff concludes that the proposed PB method as described by the licensee in its request to use non-plenum listed cable above suspended ceilings, is an acceptable alternative to the corresponding NFPA 805, Section 3.3.5.1 requirement. The proposed PB method is acceptable because it</p>	None

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p>satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release, maintains safety margins, and maintains fire protection DID (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).</p> <p>This approval was provided in ML18131A253 dated July 6, 2018.</p>	
3.3.5.2 [Electrical Raceway Construction Limits]	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.	Complies with Clarification	All exposed electrical raceways are metal tray or metal conduit. In general, all cable is run through conduits or trays, with the exception of short cable air drops. The approximately 3 foot air drops align with the guidance of Section K.4 to NEI-04-02 (FAQ 06-0021) and are therefore acceptable.	<p>ES-CABLE-0221-QCN, Design and Installation Criteria for Cable, Trough, and Conduit</p> <p>Nuclear Energy Institute (NEI) 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c), Rev. 2 / Section K.4 (FAQ 06-0021)</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by NRC Approval	<p>Contrary to these requirements, CNP has used electrical metallic tubing (EMT) extensively throughout the power block and that per CNP specification for cables, all exposed rigid metal conduit 2" or smaller inside the plant (excluding containment) is EMT, except as noted on drawings. Additionally, other sizes of EMT are not prohibited and EMT is used for power, instrumentation, and control cables. Further, per CNP specification, some conduit used in structural slabs is polyvinyl chloride (PVC) which is a plastic and is nonmetallic.</p> <p>Based on its review of the information submitted by the licensee, and in accordance with 10 CFR 50.48(c)(2)(vii), the NRC staff concludes that the proposed PB method as described by the licensee in its request to use electric metallic tubing and embedded/buried polyvinyl chloride conduit, is an acceptable alternative to the NFPA 805, Section 3.3.5.2, requirement. The proposed PB method is acceptable because it satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release, maintains safety margins, and maintains fire protection DID (fire prevention, fire detection, fire suppression,</p>	None

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p>mitigation, and post-fire safe shutdown capability).</p> <p>This approval was provided in ML18131A253 dated July 6, 2018.</p>	
			<p>Contrary to these requirements, CNP has used flexible metallic conduit in configurations other than to connect components, and in lengths greater than “short lengths” throughout the power block.</p>	
			<p>Based on its review of the information submitted by the licensee, and in accordance with 10 CFR 50.48(c)(2)(vii), the NRC staff concludes that the proposed PB method for the use of flexible metallic conduit in lengths greater than short lengths, and for the use of flexible metallic conduit in configurations other than to connect components, are acceptable alternatives to the NFPA 805, Section 3.3.5.2, requirement. In each case, the proposed PB method is acceptable because it satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release, maintains safety margins, and maintains fire protection DID (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe</p>	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			shutdown capability).	
			This approval was provided in ML18284A254 dated November 16, 2018.	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.5.3 [Electrical Cable Flame Propagation Limits]	<p>Electric cable construction shall comply with a flame propagation test as acceptable to the AHJ.</p> <p>Note: the exception to this section is not endorsed by 10 CFR 50.48(c)(2)(v) and has been removed.</p>	Complies by Previous NRC Approval	<p>By the response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977, item D.3.(f) I&M stated:</p> <p><i>"Cables used in Unit 1 were not required to pass any fire test at time of purchase. Samples of all cables were subjected to the IPCEA S-19-81 paragraph 6.19.6 vertical flame resisting test. The vertical flame test IPCEA S-19 is adequate to show the flame resistance capability of these cables since they are already in use. All cables passed this test with the exception of 600 volt, unjacketed, power cables using cross linked polyethylene insulation and one type of two conductor control cable supplied by one of the two manufacturers who supplied the cable. This cable is currently installed in Unit 1 and there are no present plans to replace the cable. Cable insulation materials were selected for their electrical properties, radiation and containment environment resistance at the time of their purchase for Unit 1. Flame resistance properties were not the only factors to consider when Unit 1 cables were-purchased."</i></p> <p><i>"All cables installed in Unit 2 were documented to have passed the vertical flame test of IPCEA</i></p>	<p>NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 / page 17.</p> <p>I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977 / item D.3.(f)</p> <p>ES-CABLE-0221-QCN, Design and Installation Criteria for Cable, Trough, and Conduit</p> <p>FAQ 06-0022, Acceptable Electrical Cable Construction Tests, Rev. 3 / All Sections</p> <p>Procedure 12-FPE-2270-FPCE-001, Fire Protection Program Change Evaluation</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p><i>S-19-81 Para. 6.19.6. Power cables used on safety systems within the containment were documented to pass the vertical flame test of IEEE 383."</i></p> <p>The NRC Safety Evaluation, dated July 31, 1979 states:</p> <p><i>"We conclude that the administrative controls [including cable construction], fire brigade equipment and training conform to the recommendations of the National Fire Protection Association and Appendix A to Branch Technical Position 9.5-1 and are, therefore, acceptable."</i></p> <p>The electrical cables, as approved by the SE Report, are still installed at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval.</p> <p>Any new cable installed at CNP will be constructed similar or superior to the original cable and meeting the requirements of IEEE-383 or equivalent tests per FAQ 06-0022.</p>	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
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."	Complies by Previous NRC Approval	<p>By the response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977, item D.1.(d), I&M stated:</p> <p><i>The auxiliary building roof at Cook Plant is reinforced concrete over metal pan (Q deck) ceiling. To prevent condensation it was necessary to add urethane foam insulation between the concrete and the metal pan. The foam selected met the UL25 flame spread requirement; however, for additional protection a layer of fire rated gypsum board was installed between the metal pan and the urethane foam. This will protect the foam from an interior building fire which could degrade the foam, liberating combustible gases which can contribute to the intensity and spread of the fire."</i></p> <p>By response to Item D.1.(e), I&M stated:</p> <p><i>"All roofs at the Cook Plant are of UL Class A and FM Class I construction."</i></p> <p>The NRC Safety Evaluation, dated July 31, 1979 states:</p> <p><i>"We conclude that the administrative controls [including roof construction], fire brigade equipment and training conform to</i></p>	<p>NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 / page 17</p> <p>I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977 / item D.1.(d) and (e)</p> <p>DCC-CEST-200-QCS, Auxiliary Building Reroofing Section 07526 Modified Bitumous Sheet Roofing Seismic Class III Application</p> <p>Procedure 12-FPE-2270-FPCE-001, Fire Protection Program Change Evaluation</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<i>the recommendations of the National Fire Protection Association and Appendix A to Branch Technical Position 9.5-1 and are, therefore, acceptable."</i>	
			The Auxiliary Building roof construction, as approved by the SE Report, is still installed at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. This feature remains unchanged.	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
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 with Clarification	Bulk compressed flammable gas cylinder storage is located in the Gas Bottle Storage Facility, which is separated from structures housing systems, equipment, or components important to nuclear safety. The 3-hour rated concrete wall that separates the full bottle storage area of the Gas Cylinder Storage Building is a maximum fire loss (MFL) type firewall. The combination of the firewall and spatial separation from the south wall of Fire Zones 97 and 98 provides assurance that a gas cylinder fire would not damage safety related equipment.	Engineering Equivalency Evaluation 11-11, Storage of Flammable Gases in Fire Areas AA2 and YD FSA, D. C. Cook Fire Safety Analysis PMP-2270-CCM-001, Control of Combustible Materials

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.7.1 [Bulk Flammable Gas Location Requirements]	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 with Clarification	Bulk compressed flammable gas cylinder storage is located in the Gas Bottle Storage Facility. The 3-hour rated concrete wall that separates the full bottle storage area of the Gas Cylinder Storage Building is an MFL type firewall. The combination of the firewall and spatial separation from the south wall of Fire Zones 97 and 98 provides assurance that a gas cylinder fire would not adversely impact systems, equipment, or components important to nuclear safety.	FSA, D. C. Cook Fire Safety Analysis PMP-2270-CCM-001, Control of Combustible Materials
		Complies with Use of EEEEs	Hydrogen storage complies with NFPA 50A-1999 Edition, as evaluated in Engineering Equivalency Evaluation 14.1.1.	Engineering Equivalency Evaluation 14-1-1, CNP Fire Protection Code Conformance Review

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.7.2 [Bulk Flammable Gas Container Restrictions]	Outdoor high-pressure flammable gas storage containers shall be located so that the long axis is not pointed at buildings.	Complies with Use of EEEEs	Bulk hydrogen storage is configured so the that the long axis is not pointed at buildings, as evaluated in Engineering Equivalency Evaluation 11.11.	Engineering Equivalency Evaluation 11-11, Storage of Flammable Gases in Fire Areas AA2 and YD
3.3.7.3 [Bulk Flammable Gas Cylinder Limitations]	Flammable gas storage cylinders not required for normal operation shall be isolated from the system.	Complies	Flammable gas storage cylinders not required for normal operation are either returned to the gas bottle storage facility upon the completion of a job or are isolated from the system.	12-OHP Procedure Series PMP-2270-CCM-001, Control of Combustible Materials

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
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	<p>Per plant procedure PMP-2270-CCM-001, "Control of Combustible Materials", the following areas are designated storage for flammable/combustible liquids:</p> <ul style="list-style-type: none"> • Storage of flammable liquids (NFPA Diamond Rating of 3 or 4) in quantities greater than one gallon per container shall be restricted to the U-1 Flammable Liquids Storage Room located on the 595' level of the Service Building. • Bulk storage of combustible liquids (those having a flash point above 100°F, NFPA Diamond Rating of 2 or less) will be permitted in the U-2 Storage Room located on the 591' level at the south end of the Turbine Building. <p>These areas are separated from systems, equipment, and components important to nuclear safety, by 3-hour fire resistive barriers.</p>	<p>FSA, D. C. Cook Fire Safety Analysis</p> <p>PMP-2270-CCM-001, Control of Combustible Materials</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by Previous NRC Approval	<p>By the response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977, item D.2.(a)(1), I&M stated (in part):</p> <p><i>"The emergency diesel generator fuel oil day tanks are enclosed in a 3 hour rated enclosure within each of the diesel generator rooms. The enclosure has 3 hour rated walls, floor, ceiling, doors, and dampers, is equipped with thermally actuated fire detection which operates a fixed automatic CO2 fire suppression system, and also is drained to remove any oil spill."</i></p> <p><i>"While not safety related or an exposure hazard to safety related equipment, the turbine generator, its lube oil system, and the area surrounding it are fully fire protected. This is considered to be the highest fire potential area in a power plant."</i></p> <p>The NRC Safety Evaluation, dated July 31, 1979 states:</p> <p><i>"We conclude that the administrative controls [including storage of flammable and combustible liquids], fire brigade equipment and training conform to the recommendations of the National Fire Protection Association and Appendix A to Branch Technical Position 9.5-1</i></p>	<p>NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 / page 17</p> <p>I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977 / item D.2.(a)</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<i>and are, therefore, acceptable."</i>	
			The storage configurations of combustible liquids, as approved by the SE Report, are still used at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval.	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEEs	<p>Storage of flammable and combustible liquids complies with NFPA 30-1987 Edition, as evaluated in the "NFPA 30 Code Compliance Evaluation for Donald C. Cook Nuclear Plant Unit 1 and 2".</p> <p>The fire barriers of the Lube Oil Storage Rooms have been evaluated in accordance with NFPA 805, section 3.11.2, and by Engineering Equivalency Evaluation 11.16.</p> <p>The fire barriers of the Diesel Generator Fuel Oil Day Tank Rooms have been evaluated in accordance with NFPA 805, section 3.11.2, and by Engineering Equivalency Evaluation 11.17.</p>	<p>Engineering Equivalency Evaluation 11-16, ENGINEERING EQUIVALENCY EVALUATION FOR LUBE OIL STORAGE ROOMS FIRE ZONES 83, 88, 95 AND 100 (AA2), BOUNDARY EVALUATION</p> <p>Engineering Equivalency Evaluation 11-17, Diesel Generator Fuel oil Day Tank Rooms Fire Zones 15 (AA14), 16 (AA15), 18 (AA23) and 19 (AA24) Boundary Evaluation</p> <p>NFPA 30 Code Compliance Evaluation for Donald C. Cook Nuclear Plant Unit 1 and 2, dated July 25, 1990</p> <p>Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
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	CNP environmental review documents include requirements for inspecting transformer oil collection basins and drain paths.	12-EA-6090-ENV-112, Auxiliary Building Wastewater Management ENVG-SUR-001, ENVIRONMENTAL SURVEILLANCE GUIDELINE PMP-6090-ADM-001, Environmental Reviews and Surveillance
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	CNP procedures designate storage areas for combustible materials, none of which are around hot pipes and surfaces. Also, CNP procedures require that piping be clean, well maintained and free of all clutter. Procedure PMP-2220-HSK-001 states that plant personnel responsible for area housekeeping.	PMP-2220-HSK-001, Housekeeping and Material Condition PMP-2270-CCM-001, Control of Combustible Materials

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.11 Electrical Equipment	Adequate clearance, free of combustible material, shall be maintained around energized electrical equipment.	Complies	CNP procedures designate storage areas for combustible materials, none of which are around energized electrical equipment. Energized electrical components are maintained free from adjacent combustible material per PMP-2270-CCM-001. Procedure PMP-2220-HSK-001 states that plant personnel are responsible for area housekeeping. Environmental procedures require the clean up of all oil spills.	12-FPP-2270-066-012, Transient Combustible Monitoring Nuclear Energy Institute (NEI) 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c), Rev. 2 / Section K.5 (FAQ 06-0024) PMP-2220-HSK-001, Housekeeping and Material Condition PMP-2270-CCM-001, Control of Combustible Materials PMP-6090-ADM-001, Environmental Reviews and Surveillance

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
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.	Complies by Previous NRC Approval	<p>NRC Safety Evaluation dated December 23, 1983, states:</p> <p><i>"Each unit has four reactor coolant pumps with an oil collection system which drains to a vented closed collection tank. The quantity of lubricating oil in each pump is 265 gallons; the capacity of the oil collection tank is 275 gallons.</i></p> <p><i>The collection tank is arranged such that if a failure of more than one RCP motor lube system occurred, the oil collection tank would over-flow onto the lower containment floor. There are no ignition sources at the floor level of the lower containment.</i></p> <p><i>The RCP motor lube oil system does not comply with Section III.O because the oil collection tank is not sized to contain the entire lube oil system inventory.</i></p> <p><i>The RCP motor lube oil system is capable of withstanding the safe shutdown earthquake. The oil collection tank is provided with sufficient capacity to hold the total lube oil inventory of one reactor coolant pump with margin and is designed so that any overflow will be drained to a safe location.</i></p> <p><i>Based on the above evaluation, the existing RCP motor lube oil</i></p>	<p>I&M Letter to NRC, Fire Protection - Appendix R Compliance, dated July 19, 1982</p> <p>I&M Letter to NRC, Fire Protection - 10 CFR 50, Appendix R, Section III.O, dated December 30, 1982</p> <p>NRC Safety Evaluation, Donald C. Cook Nuclear Power Plant, Unit Nos. 1 and 2 Fire Protection - Request for Exemption from requirements of Appendix R to 10 CFR 50, Sections III.G and III.O, dated December 23, 1983 / Pages 10 and 11, and enclosure 2, pages 15 and 16</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p><i>collection system provides a level of safety equivalent to the technical requirements of Section III.O and, therefore, the exemption should be granted."</i></p> <p>The oil collection tank for the RCP motor lube system, as approved by the SE Report, is still used at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. This feature remains unchanged.</p>	
3.3.12(1) Reactor Coolant Pumps	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.	Complies	As stated in the FPPM, section 12.8, each RCP is provided with oil collection enclosures to capture oil from potential pressurized and unpressurized leakage sites in the lube oil system.	NFPPM, NFPA 805 Fire Protection Program Manual (NFPPM)

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.12(2) Reactor Coolant Pumps	Leakage shall be collected and drained to a vented closed container that can hold the inventory of the reactor coolant pump lubricating oil system.	Complies by Previous NRC Approval	<p>NRC Safety Evaluation dated December 23, 1983, states:</p> <p><i>"Each unit has four reactor coolant pumps with an oil collection system which drains to a vented closed collection tank. The quantity of lubricating oil in each pump is 265 gallons; the capacity of the oil collection tank is 275 gallons.</i></p> <p><i>The collection tank is arranged such that if a failure of more than one RCP motor lube system occurred, the oil collection tank would over-flow onto the lower containment floor. There are no ignition sources at the floor level of the lower containment.</i></p> <p><i>The RCP motor lube oil system does not comply with Section III.O because the oil collection tank is not sized to contain the entire lube oil system inventory.</i></p> <p><i>The RCP motor lube oil system is capable of withstanding the safe shutdown earthquake. The oil collection tank is provided with sufficient capacity to hold the total lube oil inventory of one reactor coolant pump with margin and is designed so that any overflow will be drained to a safe location.</i></p> <p><i>Based on the above evaluation, the existing RCP motor lube oil</i></p>	<p>I&M Letter to NRC, Fire Protection - Appendix R Compliance, dated July 19, 1982</p> <p>I&M Letter to NRC, Fire Protection - 10 CFR 50, Appendix R, Section III.O, dated December 30, 1982</p> <p>NRC Safety Evaluation, Donald C. Cook Nuclear Power Plant, Unit Nos. 1 and 2 Fire Protection - Request for Exemption from requirements of Appendix R to 10 CFR 50, Sections III.G and III.O, dated December 23, 1983 / Pages 10 and 11, and enclosure 2, pages 15 and 16</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p><i>collection system provides a level of safety equivalent to the technical requirements of Section III.O and, therefore, the exemption should be granted."</i></p> <p>The oil collection tank for the RCP motor lube system, as approved by the SE Report, is still used at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. This feature remains unchanged.</p>	
3.3.12(3) Reactor Coolant Pumps	A flame arrestor is required in the vent if the flash point characteristics of the oil present the hazard of a fire flashback.	Complies	A flame arrestor is provided in the vent.	<p>DB-12-APPR, American Electric Power Nuclear Organization Donald C. Cook Nuclear Plant Design Basis Document for 10 CFR 50 Appendix R / Section 4.4</p> <p>NFPPM, NFPA 805 Fire Protection Program Manual (NFPPM)</p> <p>RFC-DC-12-2225, INSTALL OIL SPILLAGE PROTECTION & CONTROL SYSTEM AT EACH REACTOR COOLANT PUMP IN UNIT 1 & UNIT 2</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.12(4) Reactor Coolant Pumps	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.	Complies	All leakage points are protected on reactor coolant pump motors.	DB-12-APPR, American Electric Power Nuclear Organization Donald C. Cook Nuclear Plant Design Basis Document for 10 CFR 50 Appendix R NFPPM, NFPA 805 Fire Protection Program Manual (NFPPM)
3.3.12(5) Reactor Coolant Pumps	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	A calculation has been performed to verify that the RCP oil collection system is sufficient to permit flow from all of the drip pans where the flow is driven by gravity and resisted by pipe friction. The calculation also verified the adequacy of the drain piping in the event that the lube oil lift pump discharges directly into its housing.	Engineering and Control Procedure 1-L3-01, Calculation of Flow in RCP Oil Collection System for Unit
3.4 Industrial Fire Brigade	Industrial Fire Brigade.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements.	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.1 On-Site Fire-Fighting Capability	On-Site Fire-Fighting Capability. All of the following requirements shall apply.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements - See NFPA 600 CCR.	Engineering Equivalency Evaluation 14-1-1, NFPA 600 Code Conformance Review
3.4.1(a) On-Site Fire-Fighting Capability	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:	Complies	A fully staffed, trained, and equipped fire-fighting force is available at all times to control and extinguish all fires on site. This force is required to have a minimum complement of five persons on duty and conforms with the applicable NFPA standards of this element.	PMI-2270, Fire Protection Program TRM-U1, UNIT 1 TECHNICAL REQUIREMENTS MANUAL / 10.1 TRM-U2, UNIT 2 TECHNICAL REQUIREMENTS MANUAL / 10.1

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by Previous NRC Approval	Per the "Technical Requirements Manual and Bases", "The composition of the fire brigade may be less than the minimum requirements for a period of time not to exceed 2 hours, in order to accommodate unexpected absence provided immediate action is taken to fill the required positions." This provision is allowed by CNP TRM Section 10.1. This provision was approved by the NRC via Unit 1 and Unit 2 Licensee Amendments 154 and 138, respectively, dated April 9, 1991. Therefore, the provision is considered to be previously approved by the NRC.	NRC Safety Evaluation supporting License Amendment Nos. 154 and 138, dated April 9, 1991 / Page 2, Section 2.0(3). Technical Requirements Manual and Bases, Unit 1: Rev. 1, Unit 2: Rev. 1, Section 10.1, Administrative Controls, Site Fire Brigade, Unit 1 Rev. 1, Unit 2 Rev. 1.

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.1(a)(1) On-Site Fire-Fighting Capability	NFPA 600, "Standard on Industrial Fire Brigades" (interior structural fire fighting)	Complies with Clarification	As required, and in accordance with the guidance of Section K to NEI-04-02 (FAQ 06-0007), the CNP Fire Brigade has the ability to control and extinguish exterior fires similarly to interior fires, through the development, review, and maintenance of associated fire emergency plans and fire attack plans; regular training and education; the use of appropriate protective clothing and equipment; and brigade member medical and physical performance requirements; as addressed through compliance with NFPA 600-2000 Edition, Chapters 2 and 5.	Nuclear Energy Institute (NEI) 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c), Rev. 2 / Section K.6 (FAQ 06-0007) PMP-2270-FRP-001, Fire Response Plan
		Complies with Use of EEEEs	For interior fire fighting, CNP complies with NFPA 600–2000 Edition, Chapter 5. The fire brigade has been reviewed against the requirements of NFPA 600, 2000 Edition, Chapters 2 and 5, as detailed in the CNP "Fire Protection Code Conformance Review".	Engineering Equivalency Evaluation 14-1-1, NFPA 600 Code Conformance Review

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.1(a)(2) On-Site Fire-Fighting Capability	NFPA 1500, "Standard on Fire Department Occupational Safety and Health Program"	N/A	CNP complies with NFPA 600 and as such NFPA 1500 is not applicable to CNP per Section K.6 of NEI 04-02, which states, "The NFPA standards divide fire brigades into two types, based on organization and duties: "Industrial fire Brigades" and "Industrial Fire Departments." Practically this means that a fire fighting organization at a nuclear power plant must comply with either NFPA 600 (for an Industrial Fire Brigade) or both NFPA 1500 and NFPA 1582 (for an Industrial Fire Department)."	Nuclear Energy Institute (NEI) 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c), Rev. 2 / Section K.6 (FAQ 06-0007)

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.1(a)(3) On-Site Fire-Fighting Capability	NFPA 1582, "Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians"	N/A	CNP complies with NFPA 600 and as such NFPA 1582 is not applicable to CNP per Section K.6 of NEI 04-02, which states, "The NFPA standards divide fire brigades into two types, based on organization and duties: "Industrial fire Brigades" and "Industrial Fire Departments." Practically this means that a fire fighting organization at a nuclear power plant must comply with either NFPA 600 (for an Industrial Fire Brigade) or both NFPA 1500 and NFPA 1582 (for an Industrial Fire Department)."	Nuclear Energy Institute (NEI) 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c), Rev. 2 / Section K.6 (FAQ 06-0007)
3.4.1(b) On-Site Fire-Fighting Capability	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.	Complies	CNP Fire Brigade members have no other assigned normal plant duties that would prevent immediate response to a fire or other emergency as required.	PMP-2270-FRP-001, Fire Response Plan

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.1(c) On-Site Fire-Fighting Capability	<p>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 criteria.</p> <p>Exception to (c): Sufficient training and knowledge shall be permitted to be provided by an operations advisor dedicated to industrial fire brigade support.</p>	Complies	CNP meets the exception to (c) Per PMP-2270-FRP-001, "One person from the Operations Department with a reactor operator's license or equivalent training will advise the Fire Brigade Leader on safety related/safe shutdown and general plant systems in the fire area".	PMP-2270-FRP-001, Fire Response Plan
3.4.1(d) On-Site Fire-Fighting Capability	The industrial fire brigade shall be notified immediately upon verification of a fire.	Complies	Per CNP procedures, the fire brigade is immediately notified in the event of a fire alarm.	PMP-2270-FRP-001, Fire Response Plan

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.1(e) On-Site Fire-Fighting Capability	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 firefighting operations. The physical examination shall determine the ability of each member to use respiratory protection equipment.	Complies	<p>Per TPD-600-FP, when selected for initial training, students must complete physical examination requirements as well as a physical ability test. They are also subject to the requirements of PMP-2281-RES-001. Here, formal respiratory training is required to be completed prior to the initial use of a respiratory protection device and on an annual basis thereafter.</p> <p>Further, the "Hazardous Material Response Organization and Training" states that all HAZMAT qualified individuals shall have had a medical assessment (baseline) and a follow-up assessment every 12 months unless the attending physician believes a longer interval (not greater than biennially) is appropriate. Procedure TPD-600-FP requires "Hazardous Materials - Technician Level Evolutions" as part of the fire brigade member training, therefore, the members of the fire brigade is HAZMAT qualified and subject to the requirements of the "Hazardous Material Response Organization and Training".</p>	<p>PMP-2281-RES-001, Control and Use of Respiratory Protection</p> <p>SPP-2281-HAZ-001, Hazardous Material Response Organization and Training</p> <p>TPD-600-FP, Fire Protection Training Program Description</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.2 Fire Pre-Plans	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.	Complies	Per Procedure PMI-2270, Fire Pre-Plans that detail all hazardous conditions in certain areas are available to the fire brigade. Refer to Fire Pre-Plans Volumes I, II, and III. These Fire Pre-Plans "describe the facility layout, access, contents, construction, hazards, hazardous materials, types and locations of fire protection systems, and other information pertinent to the formulation, planning, and execution of emergency fire response." The Fire Pre-Plans meet Radioactive Release performance criteria.	CNP Fire Pre-Plans, Volumes I, II, and III, PMI-2270, Fire Protection Program

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.2.1 [Fire Pre-Plan Contents]	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.	Complies	<p>CNP Fire Pre-Plans contain the following information for each Fire Zone:</p> <ul style="list-style-type: none"> • A graphical representation of the area depicting the fire area configuration • Combustibles: A listing of the combustibles in the fire area. • Hazards: A listing of special hazards including: Radiological, Substance (e.g., combustible/flammable gases and liquids), and Physical • Access/Egress: The primary access/egress path (and, where available, the alternate path) is described. • Ventilation System: Installed fixed supply and exhaust ventilation equipment is listed. Routing for manual ventilation of the fire area is described to route smoke products out of the area. • General Notes: The recommended extinguishing agent is listed, based on the primary combustibles in the fire area. Fire brigade training includes choosing the proper extinguishing agent for each type of combustible. Based on the actual combustibles involved, the proper extinguishing agent would be utilized during the fire event; any special tactics appropriate for the fire area are identified (e.g., actuation of fixed suppression systems); Additional 	CNP Fire Pre-Plans, Volumes I, II, and III,

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p>equipment available for fighting fires in the area is identified, including fire hose stations, extinguishers and automatic extinguishing system manual release stations, floor drains, sump pumps.</p> <ul style="list-style-type: none"> • Management of Plant Systems: Potentially damaged safe shutdown equipment is listed. 	
3.4.2.2 [Fire Pre-Plan Updates]	Pre-fire plans shall be reviewed and updated as necessary.	Complies	CNP procedures indicate that the Fire Pre-Plans are maintained and updated by the Fire Marshal.	PMI-2270, Fire Protection Program
3.4.2.3 [Fire Pre-Plan Locations]	Pre-fire plans shall be available in the control room and made available to the plant industrial fire brigade.	Complies	The Fire Response Plan, PMP-2270-FRP-001 states that the PFPs are located in the control room.	PMI-2270, Fire Protection Program PMP-2270-FRP-001, Fire Response Plan

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.2.4 [Fire Pre-Plan Coordination Needs]	Pre-fire plans shall address coordination with other plant groups during fire emergencies.	Complies with Clarification	Site procedure PMP-2270-FRP-001 is not specifically a fire pre-plan, however, it provides specific instructions for actions required from key groups at CNP supporting fire brigade/fire emergency actions. Detailed response coordination actions are 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.	CNP Fire Pre-Plans, Volumes I, II, and III, PMP-2270-FRP-001, Fire Response Plan
3.4.3 Training and Drills	Training and Drills. 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.	Complies	Compliance is demonstrated in the subsections to this element, below.	TPD-600-FP, Fire Protection Training Program Description
3.4.3(a) Training and Drills	Plant Industrial Fire Brigade Training. All of the following requirements shall apply.	Complies	CNP procedures demonstrate compliance in the subsections to this element, below.	TPD-600-FP, Fire Protection Training Program Description

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.3(a)(1) Training and Drills	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.	Complies	<p>CNP program description TPD-600-FP has been developed to assure appropriate CNP personnel are capable of fighting fires. This procedure is also used to plan and implement fire drills.</p> <p>NFPA 1500 is not applicable to CNP per Section K.6 of NEI 04-02, which states, "The NFPA standards divide fire brigades into two types, based on organization and duties: 'Industrial Fire Brigades' and 'Industrial Fire Departments.' Practically, this means that a fire fighting organization at a nuclear power plant must comply with either NFPA 600 (for an Industrial Fire Brigade) or both NFPA 1500 and NFPA 1582 (for an Industrial Fire Department)."</p>	<p>Engineering Equivalency Evaluation 14-1-1, NFPA 600 Code Conformance Review</p> <p>Nuclear Energy Institute (NEI) 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c), Rev. 2 / Section K.6 (FAQ 06-0007)</p> <p>TPD-600-FP, Fire Protection Training Program Description</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.3(a)(2) Training and Drills	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.	Complies	CNP program description TPD-600-FP establishes quarterly classroom training and fire drills for fire brigade members. FP-C-9018, Site Specific Hazards, is included as a requirement in TPD-600-FP to train the brigade on site specific hazards, including fire fighting in a radiologically controlled area.	TPD-600-FP, Fire Protection Training Program Description Training Document FP-C-1006, SITE SPECIFIC HAZARDS
3.4.3(a)(3) Training and Drills	A written program shall detail the industrial fire brigade training program.	Complies	The CNP training program description details the fire brigade training program.	TPD-600-FP, Fire Protection Training Program Description
3.4.3(a)(4) Training and Drills	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.	Complies	Records stored in accordance with CNP's Records Management procedure include but are not limited to fire brigade training and qualification records.	OHI-2270, Fire Drills PMP-2030-REC-001, Records Management TPD-600-FP, Fire Protection Training Program Description

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.3(b) Training and Drills	Training for Non-Industrial Fire Brigade Personnel. 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.	Complies	CNP has a dedicated fire brigade and does not have personnel responding who are not active fire brigade members. One SRO who responds is trained with the fire brigade.	PMP-2270-FRP-001, Fire Response Plan
3.4.3(c) Training and Drills	Drills. All of the following requirements shall apply.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements.	N/A
3.4.3(c)(1) Training and Drills	Drills shall be conducted quarterly for each shift to test the response capability of the industrial fire brigade.	Complies	Per CNP program description TPD-600-FP, at least one fire drill per quarter shall be held for each shift of the fire brigade. Further, per OHI-2270, one drill is required for each fire brigade shift per quarter.	OHI-2270, Fire Drills TPD-600-FP, Fire Protection Training Program Description

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.3(c)(2) Training and Drills	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.	Complies	TPD-600-FP establishes drill instructions. These drills are designed to test and challenge industrial fire brigade response. Drill procedures are also established in OHI-2270.	OHI-2270, Fire Drills TPD-600-FP, Fire Protection Training Program Description
3.4.3(c)(3) Training and Drills	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.	Complies	CNP procedures indicate that the location of the drills is varied and some of the drills are conducted in safety significant areas.	OHI-2270, Fire Drills
3.4.3(c)(4) Training and Drills	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.	Complies	Per OHI-2270, drill records, which includes all data sheets listed in the table of contents, are maintained in accordance with PMP-2030-REC-001.	OHI-2270, Fire Drills PMP-2030-REC-001, Records Management

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.3(c)(5) Training and Drills	A critique shall be held and documented after each drill.	Complies	A critique is held after each fire drill per CNP procedures TPD-600-FP and TRP-2070-TAP-400-FPP. This critique is part of Data Sheet 10 in OHI-2270 and is maintained and documented in accordance with PMP-2030-REC-001.	OHI-2270, Fire Drills PMP-2030-REC-001, Records Management TPD-600-FP, Fire Protection Training Program Description
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	The clothing and fire fighting tools supplied are discussed in 12-FPP-2270-066-023 and 12-FPP-2270-066-005. These supplies conform to NFPA standards.	Engineering Equivalency Evaluation 14-1-1, NFPA 600 Code Conformance Review 12-FPP-2270-066-005, Fire Truck Inventory and Operability Test 12-FPP-2270-066-023, Inventory of Fire Brigade Personal Protective Equipment
3.4.5 Off-Site Fire Department Interface	Off-Site Fire Department Interface.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements.	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
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	Offsite resources are available through local municipal paid on call and full time fire departments. Resource planning is available in the Fire Pre-Plans, Volume III. Drills are conducted at least once per year with offsite resources. Mutual aid agreements have been established with the offsite fire departments.	CNP Fire Pre-Plans, Volumes I, II, and III, TPD-600-FP, Fire Protection Training Program Description
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	CNP procedures state that the offsite fire departments shall be included in at least one fire drill per calendar year. In addition, formalized yearly radiation protection training is provided for the local fire department.	TPD-600-FP, Fire Protection Training Program Description

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.4.5.3 Security and Radiation Protection	Plant security and radiation protection plans shall address off-site fire authority response.	Complies	Per Plant Procedure PMP-2270-FRP-001, off-site fire authority response is covered by security plans, and by Radiation Protection plans (by reference to RMT-2080-OSC-001). In addition, per plant procedure TPD-600-FP, firefighters from the off-site fire authorities who are expected to respond to a fire at the plant are offered site-specific training and invited to participate in a drill at least annually.	CNP Fire Pre-Plans, Volume III TPD-600-FP, Fire Protection Training Program Description Procedure PMP-2270-FRP-001, FIRE RESPONSE PLAN Procedure RMT-2080-OSC-001, ACTIVATION AND OPERATION OF THE OSC Procedure SPP-2060-SFI-203, SECURITY ACTIONS DURING EMERGENCY CONDITIONS. Procedure SPP-2060-SFI-209, PROTECTED AREA ACCESS/EXIT REQUIREMENTS
3.4.6 Communications	An effective emergency communications capability shall be provided for the industrial fire brigade.	Complies	A fire and emergency radio system is provided. Details of the system design are provided in Technical Evaluation R1900-0026-001, “Technical Evaluation for Recovery Action Transition in Support of NFPA 805”, Attachment 5, “Supplemental Communications System Overview”.	Report R1900-0026-001, Technical Evaluation for Recovery Action Transition in Support of NFPA 805

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.5 Water Supply	Water Supply.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements.	N/A
3.5.1 [Water Supply Flow Code Requirements]	A fire protection water supply of adequate reliability, quantity, and duration shall be provided by one of the two following methods.	Complies	Section Heading, see compliance bases below for compliance statements for specific subsections.	Refer to basis documentation in the sub-sections of this element.
3.5.1(a) [Water Supply Flow Code Requirements]	Provide a fire protection water supply of not less than two separate 300,000-gal (1,135,500-L) supplies.	Complies	The fire protection system includes two tanks nominally sized at 685,000 gallons. The normal tank water level for each tank is between 612,000 gallons and 621,000 gallons. The minimum tank water level in each tank is set at 565,000 gallons.	12-FPP-2270-066-031, Fire Protection Water Supply System Fill and Vent OP-12-5152S, Fire Protection Water Piping at N & S Storage Tanks Units 1 & 2

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.5.1(b) [Water Supply Flow Code Requirements]	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.	N/A	This section is not applicable because CNP utilizes the method allowed in subsection (a) to comply with Section 3.5.1.	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.5.2 [Water Supply Tank Code Requirements]	<p>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	<p>The primary fire pumps can take suction from either of the tanks. The two tanks are isolated by valves so that the failure of one tank will not affect the other tank.</p> <p>The tanks have been designed in accordance with NFPA 22, as specified in DCC-CE-185-QCF.</p>	<p>DCC-CE-185-QCF, Design, Fabrication, and Erection of the Dedicated Fire Protection Water Supply Storage Tanks</p> <p>OP-12-5152S, Fire Protection Water Piping at N & S Storage Tanks Units 1 & 2</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEEs	Non-listed valves are installed in some portions of the fire protection system. These valves have been evaluated to be equivalent to NFPA requirements by Engineering Equivalency Evaluation 12.24.	Engineering Equivalency Evaluation 12-24, NFPA 24 - Listed Valve Deviation 12-ZMO-400 & 401
3.5.3 [Water Supply Pump Code Requirements]	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.	Complies	CNP is provided with three fire pumps. Any two fire pumps can supply enough water to extinguish a fire on the largest demand system. I&M has committed to NFPA 20 for the installation of fire pumps at CNP. The fire pumps have been reviewed against the requirements of NFPA 20, 1990 Edition, as evaluated in CNP "NFPA Code Deviations and Justifications".	Calculation No. MD-12-FIRE-008-S CNP "NFPA Code Deviations and Justifications" SD-DCC-FP106, Fire Protection System - Water Supply System Report R2527-001-001, Fire Protection Water Main Loop and Fire Pump Set Point Adequacy Determination

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.5.4 [Water Supply Pump Diversity and Redundancy]	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.	Complies	Three fire pumps, two of which are diesel engine-driven, each of 2,500 gpm capacity are provided as the primary pumps for fire protection of both units. The water supply pumps are installed in accordance with NFPA 20, 1990 Edition, as evaluated in CNP "NFPA Code Deviations and Justifications". Any two fire pumps can supply enough water to extinguish a fire on the largest demand system.	Calculation No. MD-12-FIRE-008-S CNP "NFPA Code Deviations and Justifications" SD-DCC-FP106, Fire Protection System - Water Supply System Report R2527-001-001, Fire Protection Water Main Loop and Fire Pump Set Point Adequacy Determination
3.5.5 [Water Supply Pump Separation Requirements]	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 with Use of EEEEs	Each fire pump and its driver and controls is provided in its own room with rated fire barriers. The fire barriers have been evaluated in accordance with NFPA 805, section 3.11.2, and by Engineering Equivalency Evaluation 11.38.	Engineering Equivalency Evaluation 11-38, Fire Protection Pump House (Fire Area YD) RFC-12-3065, Installation of Dedicated Water Supply

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.5.6 [Water Supply Pump Start/Stop Requirements]	Fire pumps shall be provided with automatic start and manual stop only.	Complies	All primary pumps are arranged for (1) automatic starting by operation of pressure sensing devices, (2) remote manual start of the fire pumps from switches in either control room and (3) local starting at each pump. They cannot be shutdown until extinguishment of a fire is verified by the control room operators. Shutdown must be performed at the local fire pump control panels.	12-OHP-4021-066-001, Fire Protection System (Water) Operation 1-OHP-4024-101, Annunciator #101 Response: Plant Fire System / Drop 34, 44, and 54 2-OHP-4024-201, Annunciator #201 Response: Plant Fire System / Drop 34, 44, and 54
3.5.7 [Water Supply Pump Connection Requirements]	Individual fire pump connections to the yard fire main loop shall be provided and separated with sectionalizing valves between connections.	Complies	Fire pump connections to the yard main fire loop are provided with sectionalizing valves between connections. The three sectionalizing valves shown on the drawing are FP-636, FP-644, and FP-656. Isolating valves with post indicators or curb boxes are installed in the outdoor loop header so that the entire loop is not disabled should maintenance be required on a small section.	Plant Drawing OP-12-5152T

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.5.8 [Water Supply Pressure Maintenance Limitations]	A method of automatic pressure maintenance of the fire protection water system shall be provided independent of the fire pumps.	Complies	One 50 gpm electric motor driven pegging pump is provided and located within the fire pump house. Its sole purpose is to maintain pressure in the fire protection piping system.	OP-12-5152A, Fire Protection - Water Piping at Pumps Unit 1 & 2 OP-12-98962, Dedicated Fire Protection Water Supply Electric & Pegging Pump Controlers Elementry Diagram
3.5.9 [Water Supply Pump Operation Notification]	Means shall be provided to immediately notify the control room, or other suitable constantly attended location, of operation of fire pumps.	Complies	Control room signals will alarm when fire pumps are operated.	1-OHP-4024-101, Annunciator #101 Response: Plant Fire System / Drops 34, 44, and 54 2-OHP-4024-201, Annunciator #201 Response: Plant Fire System / Drops 34, 44, and 54 Plant Procedure 12-PPP-4030-066-006, Three Year Fire Protection Water System Unobstructed Flow Test
3.5.10 [Water Supply Yard Main Code Requirements]	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	An underground yard fire main loop is installed in accordance with NFPA 24.	Flow Diagram 12-5152 Series DCC-PV-108-QCS, Installation of Underground Piping RFC-12-3065, Installation of Dedicated Water Supply

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEEs	Non-listed valves are installed in some portion of the fire protection system. These valves have been evaluated to meet the NFPA requirements by Engineering Equivalency Evaluation 12.24.	Engineering Equivalency Evaluation 12-24, NFPA 24 - Listed Valve Deviation 12-ZMO-400 & 401
3.5.11 [Water Supply Yard Main Maintenance Issues]	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	Isolating valves with post indicators or curb boxes are installed in the fire protection header so that the entire loop is not disabled should maintenance be required on a small section.	RFC-12-3003 Flow Diagram 12-5152 Series

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Clarification	<p>A single pipe break can cause loss of primary (sprinkler) and secondary (hose station) suppression in Fire Zones 28, 30, and 32. However, a yard hydrant and/or a more remote hose station can be used to place a hose stream in service.</p> <p>A single pipe break can cause loss of primary (manual charcoal filter deluge system) and secondary (hose station) suppression in Fire Zones 49 and 50 at elevation 633'. However, a sectionalizing valve in the 6" auxiliary building header allows FHC 64 at elevation 633' to be available for backup.</p> <p>A single pipe break can cause loss of sprinkler protection as well as loss of one or more of the hose stations in Fire Zones 79, 80, 84, 85, 90, 91, and 97. However, one or more of the remaining hose stations in each zone will remain in service despite the worst case pipe break.</p>	RFC-12-3003 Flow Diagram 12-5152 Series

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEs	<p>Approved valves are not provided at the main riser to branches of hose outlets or at each riser controlling more than two hose stations. Isolation valves are not provided for the Turbine Building hose systems risers and supplies. A review of the system design in "CNP NFPA Code Deviations and Justifications" verified that adequate isolation valves are provided for a majority of the hose risers without adversely impacting the operation of sprinklers protecting safety related equipment.</p> <p>Sectionalizing valves have not been provided for isolating hose station risers from the fire main loop contained within the Turbine and Screen House Buildings. The areas affected include Fire Zones 80, 84, and 142. Justifications for these deviations are found in Calculation No. 0120-164-007, "NFPA Code Deviation Evaluation D.C. Cook Units 1 and 2".</p>	<p>CNP "NFPA Code Deviations and Justifications"</p> <p>0120-164-007, NFPA Code Evaluation Deviation Evaluation D.C. Cook Units 1 and 2</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.5.12 [Water Supply Compatible Thread Connections]	<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	Threads which are compatible with those used by local fire departments are provided on all hydrants, hose couplings and standpipe risers.	CNP Fire Pre-Plans, Volumes I, II, and III, OHI-2270, Fire Drills
3.5.13 [Water Supply Header Options]	<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	Turbine and Auxiliary Building headers are double-end fed. These headers are fed from both ends and piping is CNP type A-31 or S-31. A-31 and S-31 piping is ASME SA-106 Grade B seamless carbon steel or ASME SA-134 welded plate. Each system is equipped with a shutoff valve.	12-5152 System Drawings ES-PIPE-1000-QCS, Pipe Material Specification

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by Previous NRC Approval	<p>The hose stations and standpipes provided for CNP are in accordance with the requirements of BTP 9.5-1, Appendix A for plants which received a construction permit before July 1, 1976. Section E.3.(d) of Appendix A to Branch Technical Position APCSB 9.5-1 on interior manual hose stations does not contain any requirements for hose station operability in the event of an SSE.</p> <p>By the response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977, item E.3.(d) I&M stated:</p> <p><i>"All hose standpipes at Cook Plant are spaced at approximate 75 foot intervals in the turbine, office, and auxiliary buildings. Each hose station is provided with a 1-1/2-inch water spray nozzle, a minimum of 75 feet of 1-1/2-inch hose, a 1-1/2-inch angle hose valve, a spanner wrench, a backup 2-1/2-inch angle hose valve, 2-1/2 to 1-1/2-inch reducer and a 1-1/2-inch hose cap.</i></p> <p><i>We are proposing to install additional hose station capability at access areas to the control room cable spreading room, the auxiliary cable vault, the switchgear room cable vault, and the containment penetration cable</i></p>	<p>RFCs 12-2229, 12-2621, 12-2740, 12-2983</p> <p>NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 / pages 6-7</p> <p>I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977 / item E.3.(d)</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p>tunnels."</p> <p>The NRC Safety Evaluation, dated July 31, 1979 states:</p> <p><i>"The standpipe system provides water to hose stations at various locations throughout the facility. The licensees have committed to install additional hose stations and, where necessary, standpipes to satisfy the guidelines of Appendix A to BTP 9.5-1. We have reviewed the proposed additions and find them acceptable.</i></p> <p><i>We have reviewed the design criteria and the basis for the water fire protection system. In certain areas we have required additional protection systems to be installed. We find that the water fire protection system, as modified, meets the guidelines of Appendix A to Branch Technical Position APCSB 9.5-1 and applicable National Fire Protection Association standards and is, therefore, acceptable."</i></p> <p>The additional protection systems have been installed per the RFCs. The hose station and standpipe configuration, as approved by the SE Report, is still used at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. This feature remains</p>	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis unchanged.	Reference Document
3.5.14 [Water Supply Control Valve Supervision]	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.	N/A	N/A - Section Heading, see compliance bases below for compliance statements for specific subsections.	N/A
3.5.14(a) [Water Supply Control Valve Supervision]	Electrical supervision with audible and visual signals in the main control room or other suitable constantly attended location.	Complies	Per the Annunciator Plant Procedures, valve positions are inspected on a monthly basis. These procedures also confirm that valves are properly supervised during inspection.	1-OHP-4024-101, Annunciator #101 Response: Plant Fire System 1-OHP-4024-102, Annunciator #102 Response: Miscellaneous Areas Fire System 2-OHP-4024-201, Annunciator #201 Response: Plant Fire System 2-OHP-4024-202, Annunciator #202 Response: Miscellaneous Areas Fire System

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.5.14(b) [Water Supply Control Valve Supervision]	Locking valves in their normal position. Keys shall be made available only to authorized personnel.	N/A	N/A - The requirements of NFPA 805, Section 3.5.14 are met by the option discussed in Section 3.5.14(a).	N/A
3.5.14(c) [Water Supply Control Valve Supervision]	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.	N/A	N/A - The requirements of NFPA 805, Section 3.5.14 are met by the option discussed in Section 3.5.14(a).	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.5.15 [Water Supply Hydrant Code Requirements]	<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	<p>Fire hydrants have been provided at the recommended 250-foot approximate spacing connected to the yard loop header with two exceptions. Hydrants 1 and 14 are located 350' apart in straight line distance and 422' apart in actual travel distance. Hydrants 4 and 7 are located 320' apart in straight line distance and 406' apart in actual travel distance. This configuration is considered adequate given the strength of the water supply and the availability of sufficient hose from a mobile vehicle in the yard.</p> <p>A mobile means of providing hose and associated equipment is provided for the fire brigade's use. Equipment is equivalent to three hose houses and is based on NFPA 24-1987 Chapter 5 requirements and the NEIL Loss Control Standard 4.2.16.1.1 (FPCE-2017-0017).</p> <p>Procedure 12-FPP-2270-066-003 specifies the mobile equipment inventory and confirms that all items required by NFPA 24-1984 are contained within.</p>	<p>Plant Drawing 12-5260</p> <p>NFPA 24-1984</p> <p>Flow Diagram 12-5152 Series</p> <p>Plant Procedure 12-FPP-2270-066-003, Monthly Inventory of Fire Response Vehicle</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.5.16 [Water Supply Dedicated Limits]	<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 by NRC Approval	<p>Per OP-12-5152 series flow diagrams, the fire protection water supply system is normally dedicated for fire protection use only. Periodically, the fire water supply system is used for non-fire related purposes, and in these cases, the fire protection water supply system is designed and maintained to deliver the combined fire and non-fire flow demands. Justification is documented in Engineering Equivalency Evaluation 11.61, and in accordance with 10CFR50.48(c)(2) (vii) is provided in Attachment L of the Transition Report submitted to the NRC as part of the license amendment request dated July 1, 2011.</p> <p>The NRC approved this license request in the Safety Evaluation (SE) dated October 24, 2013.</p>	<p>Engineering Equivalency Evaluation 11-61, Use of Fire Water for Other Than Fire-Related Purposes</p> <p>Letter from Thomas J. Wengert (NRC) to Lawrence J. Weber (AEP), Donald C. Cook Nuclear Plant, Units 1 and 2 - Request for Additional Information on the Application for Amendment to Transition the Fire Protection Program to National Fire Protection Standard NFPA 805, dated October 11, 2012 / Enclosure 1, RAI-11 Fire Protection</p> <p>Letter from Peter S. Tam (NRC) to Lawrence J. Weber (AEP), Donald C. Cook Nuclear Plant, Units 1 and 2 - Request for Additional Information on the Application for Amendment to Transition the Fire Protection Program to National Fire Protection Association Standard 805, dated January 27, 2012 / Enclosure 1, RAI-11 (Fire Protection)</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Letter from Thomas J. Wengert (NRC) to Lawrence J. Weber (AEP), "Donald C. Cook Nuclear Plant, Units and 2 - Issuance of Amendments Regarding Transition to a Risk-Informed, Performance-Based Fire Protection Program in accordance with 10 CFR 50.48(c) (TAC NOS. ME6629 and ME6630), dated October 24, 2013 / Enclosure 3, Section 3.1.4.1
				Letter AEP-NRC-2011-1 from Michael H. Carlson (AEP) to U. S. Nuclear Regulatory Commission, Donald C. Cook Nuclear Plant Unit 1 and Unit 2 Docket Nos. 50-315 and 50-316 Request for License Amendment to Adopt National Fire Protection Association (NFPA) 805 Performance-Based Standard for Fire Protection for Light Water Reactor Generating Plants (2001 Edition), dated July 1, 2011 / Enclosure 2, Attachment L

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Letter AEP-NRC-2012-29 from Michael H. Carlson (AEP) to U. S. Nuclear Regulatory Commission Donald C. Cook Nuclear Plant Units 1 and 2 Response to Request for Additional Information Regarding the Application for Amendment to Transition the Fire Protection Program to National Fire Protection Association Standard 805, dated April 27, 2012 / Enclosure 2, RAI-11 (Fire Protection)
				Letter AEP-NRC-2012-92 from Michael H. Carlson (AEP) to U. S. Nuclear Regulatory Commission Donald C. Cook Nuclear Plant Units 1 and 2 Response to Second Round Request for Additional Information Regarding the Application for Amendment to Transition the Fire Protection Program to National Fire Protection Association Standard 805, dated October 15, 2012 / Enclosure 3, RAI-11 (Fire Protection)
				OP-12-5152 series Flow Diagrams

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.6 Standpipe and Hose Stations	Standpipe and Hose Stations.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.6.1 [Standpipe and Hose Station Code Requirements]	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 by Previous NRC Approval	<p>Hose stations designed for Class II service are not in direct compliance with this section. However, the standpipe system was previously found to be acceptable by the NRC.</p> <p>By the response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977, item E.3.(d) I&M stated:</p> <p><i>"All hose standpipes at Cook Plant are spaced at approximate 75 foot intervals in the turbine, office, and auxiliary buildings. Each hose station is provided with a 1-1/2-inch water spray nozzle, a minimum of 75 feet of 1-1/2-inch hose, a 1-1/2-inch angle hose valve, a spanner wrench, a backup 2-1/2-inch angle hose valve, 2-1/2 to 1-1/2-inch reducer and a 1-1/2-inch hose cap.</i></p> <p><i>We are proposing to install additional hose station capability at access areas to the control room cable spreading room, the auxiliary cable vault, the switchgear room cable vault, and the containment penetration cable tunnels."</i></p> <p>The NRC Safety Evaluation, dated July 31, 1979 states:</p> <p><i>"The standpipe system provides</i></p>	<p>RFCs 12-2229, 12-2621, 12-2740, 12-2983</p> <p>NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 / pages 6-7</p> <p>I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977 / item E.3.(d)</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p><i>water to hose stations at various locations throughout the facility. The licensees have committed to install additional hose stations and, where necessary, standpipes to satisfy the guidelines of Appendix A to BTP 9.5-1. We have reviewed the proposed additions and find them acceptable.</i></p> <p><i>We have reviewed the design criteria and the basis for the water fire protection system. In certain areas we have required additional protection systems to be installed. We find that the water fire protection system, as modified, meets the guidelines of Appendix A to Branch Technical Position APCSB 9.5-1 and applicable National Fire Protection Association standards and is, therefore, acceptable."</i></p> <p>The additional protection systems have been installed per the RFCs. The hose station and standpipe configuration, as approved by the SE Report, is still used at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. This feature remains unchanged.</p>	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEEs	Manual hose stations are located throughout the plant and are designed for either NFPA 14 Class II or Class III service. The hose stations are capable of directing an effective stream to any safety-related area of the plant. The standpipe and hose systems comply with NFPA 14, 1971, 1978, and 1986 Editions, as evaluated in the CNP NFPA 14 Code Compliance Evaluations.	CNP "NFPA Code Deviations and Justifications" 0120-108-005, NFPA 14 - Code Compliance Verification Checklist D.C. Cook Units 1 and 0120-164-003, NFPA 14 - Code Compliance Verification Checklist D.C. Cook Units 1 and 0120-164-007, NFPA Code Evaluation Deviation Evaluation D.C. Cook Units 1 and 2 09-0120-0123, NFPA Code Compliance Evaluation Donald C. Cook Nuclear Plant 09-0120-0381, Extended NFPA Code Compliance Evaluation for the Donald C. Cook Nuclear Plant
3.6.2 [Standpipe and Hose Station Capability Limitations]	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 with Use of EEEEEs	Hydraulic calculations have been performed to provide verification of the ability of the existing standpipe system to deliver adequate flow for all hose stations to supply water for fighting fires in accordance with the guidance of NFPA 14.	Calculation No. MD-12-FIRE-008-S CNP "NFPA Code Deviations and Justifications"

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.6.3 [Standpipe and Hose Station Nozzle Restrictions]	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 with Clarification	<p>The appropriate type of hose nozzle is provided to each power block area. All hose nozzles have shutoff capability and are able to control water flow from full open to full closed.</p> <p>CNP complies with NFPA 14 with exception to size, location and spacing, including hose length, of selected hose stations as documented in CNP report “NFPA Code Deviations and Justifications,” Revision 2.</p> <p>Fire Pre-Plans re-enforce the use of electrically safe fixed fog nozzles in high voltage settings and use of straight stream nozzles for hydrogen fires.</p>	<p>Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications</p> <p>12-FPP-4030-066-023, Test and Inspection of the Plant Fire Hose Standpipe Stations</p> <p>CNP Fire Pre-Plans, Volumes I, II, and III,</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.6.4 [Standpipe and Hose Station Earthquake Provisions]	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 SSE.	Complies by Previous NRC Approval	<p>By the response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977, item E.3.(d) I&M stated:</p> <p><i>"All hose standpipes at Cook Plant are spaced at approximate 75 foot intervals in the turbine, office, and auxiliary buildings. Each hose station is provided with a 1-1/2-inch water spray nozzle, a minimum of 75 feet of 1-1/2-inch hose, a 1-1/2-inch angle hose valve, a spanner wrench, a backup 2-1/2-inch angle hose valve, 2-1/2 to 1-1/2-inch reducer and a 1-1/2-inch hose cap.</i></p> <p><i>We are proposing to install additional hose station capability at access areas to the control room cable spreading room, the auxiliary cable vault, the switchgear room cable vault, and the containment penetration cable tunnels."</i></p> <p>The NRC Safety Evaluation, dated July 31, 1979 states:</p> <p><i>"The standpipe system provides water to hose stations at various locations throughout the facility. The licensees have committed to install additional hose stations and, where necessary, standpipes to satisfy the guidelines of Appendix A to BTP 9.5-1. We have</i></p>	<p>RFCs 12-2229, 12-2621, 12-2740, 12-2983</p> <p>NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 / pages 6-7</p> <p>I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977 / item E.3.(d)</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<i>reviewed the proposed additions and find them acceptable.</i>	
			<i>We have reviewed the design criteria and the basis for the water fire protection system. In certain areas we have required additional protection systems to be installed. We find that the water fire protection system, as modified, meets the guidelines of Appendix A to Branch Technical Position APCS 9.5-1 and applicable National Fire Protection Association standards and is, therefore, acceptable."</i>	
			The additional hose station capability has been installed per the RFCs. The hose station and standpipe configuration, as approved by the SE Report, is still used at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. This feature remains unchanged.	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.6.5 [Standpipe and Hose Station Seismic Connection Limitations]	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.	N/A	Hose stations are not cross-connected to non-fire protection water supply systems.	OP-12-5152 series Flow Diagrams
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.	Complies with Use of EEEEs	<p>The fire extinguishers comply with the requirements of NFPA 10, 1984 Edition, as evaluated in CNP NFPA 10 Code Compliance Evaluations.</p> <p>Fire extinguishers are not provided inside containment due to radiological reasons, however, water mist fire extinguishers have been made available outside of containment for use inside containment.</p>	<p>Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications</p> <p>0120-108-001, NFPA 10 Code Compliance Verification Checklist</p> <p>0120-164-001, NFPA 10 Code Compliance Verification Checklist</p> <p>09-0120-0123, NFPA Code Compliance Evaluation Donald C. Cook Nuclear Plant</p> <p>09-0120-0381, Extended NFPA Code Compliance Evaluation for the Donald C. Cook Nuclear Plant</p>
3.8 Fire Alarm and Detection systems	Fire Alarm and Detection Systems.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements.	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
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:	Complies with Use of EEEEs	<p>CNP complies with NFPA 72 as evaluated in the CNP NFPA 72D and NFPA 72E Code Compliance Evaluations. Refer to I&M "NFPA Deviations and Recommendations" for NFPA 72D-1967 and NFPA 72E-1974 deviations and justifications.</p> <p>Fire protection functions are displayed on a comprehensive annunciator panel in the control rooms to alert the operator in case of fire, primary fire pump operation, or fire system malfunction. Pressure gauges on the panel also tell the operator the pressure conditions in the fire protection water piping headers.</p>	<p>Engineering Equivalency Evaluation 11-41, Raised Floors in Control Rooms</p> <p>CNP "NFPA Code Deviations and Justifications"</p> <p>0120-164-005, NFPA 72D Code Compliance Verification Checklist</p> <p>0120-164-005, NFPA 72D Code Compliance Verification Checklist - Extended</p> <p>0120-164-006, NFPA 72E Code Compliance Verification Checklist</p> <p>0120-164-006, NFPA 72E Code Compliance Verification Checklist - Extended</p> <p>09-0120-0123, NFPA Code Compliance Evaluation Donald C. Cook Nuclear Plant</p> <p>09-0120-0381, Extended NFPA Code Compliance Evaluation for the Donald C. Cook Nuclear Plant</p> <p>1-OHP-4024-101, Annunciator #101 Response: Plant Fire System</p> <p>1-OHP-4024-102, Annunciator #102 Response: Miscellaneous Areas Fire System</p> <p>2-OHP-4024-201, Annunciator #201 Response: Plant Fire System</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				2-OHP-4024-202, Annunciator #202 Response: Miscellaneous Areas Fire System
3.8.1(1) Fire Alarm	Actuation of any fire detection device	Complies	<p>Automatic detection actuation signals are transmitted to the control room. Automatic fire alarm systems are actuated by detectors that sense fire conditions. Fire alarm detection devices generally transmit signals to the local fire alarm panels and then to the control room annunciators, or, they transmit signals directly to the control room annunciators.</p> <p>All CNP fire detection system alarms sound and are visually displayed on the emergency fire panel in the respective control room.</p>	<p>1-OHP-4024-101, Annunciator #101 Response: Plant Fire System</p> <p>1-OHP-4024-102, Annunciator #102 Response: Miscellaneous Areas Fire System</p> <p>2-OHP-4024-201, Annunciator #201 Response: Plant Fire System</p> <p>2-OHP-4024-202, Annunciator #202 Response: Miscellaneous Areas Fire System</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.8.1(2) Fire Alarm	Actuation of any fixed fire suppression system	Complies	<p>The fire suppression system alarm signaling capabilities that may be used involve automatic sprinkler waterflow, CO2 system monitoring and Halon system monitoring. These systems alarm in the control room upon actuation.</p> <p>All CNP water-using systems; sprinklers, deluge, and standpipes, are instrumented to provide flow indication and to provide audible and visual annunciation in the respective control rooms.</p>	<p>1-OHP-4024-101, Annunciator #101 Response: Plant Fire System</p> <p>1-OHP-4024-102, Annunciator #102 Response: Miscellaneous Areas Fire System</p> <p>2-OHP-4024-201, Annunciator #201 Response: Plant Fire System</p> <p>2-OHP-4024-202, Annunciator #202 Response: Miscellaneous Areas Fire System</p>
3.8.1(3) Fire Alarm	Actuation of any manual fire alarm station	Complies	Automatic fire alarm systems are actuated through manual pull stations. The systems alarm in the control room upon actuation.	<p>1-OHP-4024-101, Annunciator #101 Response: Plant Fire System</p> <p>1-OHP-4024-102, Annunciator #102 Response: Miscellaneous Areas Fire System</p> <p>2-OHP-4024-201, Annunciator #201 Response: Plant Fire System</p> <p>2-OHP-4024-202, Annunciator #202 Response: Miscellaneous Areas Fire System</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.8.1(4) Fire Alarm	Starting of any fire pump	Complies	Fire suppression system alarm signaling capabilities include fire pump monitoring. The signals are displayed on a comprehensive annunciator panel in the control rooms to alert the operator in case of fire, primary fire pump operation or fire system malfunction.	1-OHP-4024-101, Annunciator #101 Response: Plant Fire System 1-OHP-4024-102, Annunciator #102 Response: Miscellaneous Areas Fire System 2-OHP-4024-201, Annunciator #201 Response: Plant Fire System 2-OHP-4024-202, Annunciator #202 Response: Miscellaneous Areas Fire System
3.8.1(5) Fire Alarm	Actuation of any fire protection supervisory device	Complies	The fire suppression system alarm signaling capabilities include supervisory alarms.	1-OHP-4024-101, Annunciator #101 Response: Plant Fire System 1-OHP-4024-102, Annunciator #102 Response: Miscellaneous Areas Fire System 2-OHP-4024-201, Annunciator #201 Response: Plant Fire System 2-OHP-4024-202, Annunciator #202 Response: Miscellaneous Areas Fire System

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by Previous NRC Approval	<p>Per letter by I&M to NRC dated December 2, 1991:</p> <p><i>"There actually are more than two circuits that are not electronically supervised. These include some water flow, sprinkler alarms, fire detection, and suppression actuation/initiating systems that are not electronically supervised in accordance with NFPA 72D. Justifications for each are outlined in Attachment 3 to this letter."</i></p> <p>The NRC Safety Evaluation dated 1/24/95, Section 3.0 states:</p> <p><i>"Based on the regular testing to confirm operability, the daily monitoring of the alarm panels, the fact the circuits have not experienced integrity problems, and the circuits only provide secondary annunciation of local fire alarms in the control room, the staff finds these additional unsupervised circuits acceptable."</i></p> <p>The unsupervised circuits, as approved by the SE Report, are still used at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. This approved justification for the unsupervised circuits remains unchanged.</p>	<p>Letter from I&M (Fitzpatrick) to the NRC (Murley), dated December 2, 1991 / Body of letter and Attachment 3</p> <p>NRC Safety Evaluation, Donald C. Cook Nuclear Plant, Unit Nos. 1 and 2 - NFPA Code Review and Related Appendix R SER Clarifications (TAC Nos. M82265 AND M82266), dated January 24, 1995 / Section 3.0</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.8.1(6) Fire Alarm	Indication of alarm system trouble condition	Complies	The emergency fire panel provides annunciation in the associated control room in the event of a trouble signal.	1-OHP-4024-101, Annunciator #101 Response: Plant Fire System 1-OHP-4024-102, Annunciator #102 Response: Miscellaneous Areas Fire System 2-OHP-4024-201, Annunciator #201 Response: Plant Fire System 2-OHP-4024-202, Annunciator #202 Response: Miscellaneous Areas Fire System
3.8.1.1 [Fire Alarm Communications Requirements]	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	Per Plant Procedure PMP-2270-FRP-001, personnel observing a fire or explosion at any location in the plant are able to communicate quickly with the control room by telephone, PA system, or radio.	PMP-2270-FRP-001, Fire Response Plan
3.8.1.2 [Fire Alarm Prompt Notification Limits]	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:	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements.	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.8.1.2(1) [Fire Alarm Prompt Notification Limits]	General site population in all occupied areas	Complies	Per procedure PMP-2270-FRP-001, the general site population can be notified of a fire by making PA announcements, sounding the fire siren, and initiating a "Fire Page Out" to site personnel.	PMP-2270-FRP-001, Fire Response Plan
3.8.1.2(2) [Fire Alarm Prompt Notification Limits]	Members of the industrial fire brigade and other groups supporting fire emergency response	Complies	Per Plant Procedure PMP-2270-FRP-001, the fire brigade is immediately notified during a fire or other emergency. Fire brigade notification of a fire is provided by a site announcement over the Plant Public Address System and through personal electronic pagers.	PMP-2270-FRP-001, Fire Response Plan

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.8.1.2(3) [Fire Alarm Prompt Notification Limits]	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	<p>Per PMP-2270-FRP-001, when requested, the security department will contact the Berrien County Dispatch Center.</p> <p>Per the Fire Pre-Plans, Volume III, Radio communications shall be established between Bridgman and Lake Township Fire Departments and the CNP Fire Brigade Leader immediately upon manning fire stations. Portable radios equipped with CNP Fire Brigade frequencies have been provided to the Lake Township and Bridgman Fire Departments. The CNP Fire Brigade has access to an 800 MHz radio to allow for communications with Berrien County Emergency Response Agencies.</p>	<p>CNP Fire Pre-Plans, Volume III</p> <p>PMP-2270-FRP-001, Fire Response Plan</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
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 appendixes.	Complies with Use of EEEEs	<p>Automatic fire detection systems credited to meet the requirements of NFPA 805 Chapter 4 are identified in the D. C. Cook Fire Safety Analysis (FSA).</p> <p>CNP complies with NFPA 72 as evaluated in the CNP NFPA 72D and NFPA 72E Code Compliance Evaluations. Refer to I&M "NFPA Deviations and Recommendations" for NFPA 72D-1967 and NFPA 72E-1974 deviations and justifications.</p>	<p>CNP NFPA Code Deviations and Justifications</p> <p>0120-164-005, NFPA 72D Code Compliance Verification Checklist - Extended</p> <p>0120-164-006, NFPA 72E Code Compliance Verification Checklist - Extended</p> <p>09-0120-0123, NFPA Code Compliance Evaluation Donald C. Cook Nuclear Plant</p> <p>09-0120-0381, Extended NFPA Code Compliance Evaluation for the Donald C. Cook Nuclear Plant</p> <p>FSA, D. C. Cook Fire Safety Analysis</p>
3.9 Automatic and Manual Water-Based Fire Suppression Systems	Automatic and Manual Water-Based Fire Suppression Systems.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements.	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.9.1 [Fire Suppression System Code Requirements]	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:	N/A	N/A - Section Heading, see compliance bases below for compliance statements for specific subsections.	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.9.1(1) [Fire Suppression System Code Requirements]	(1) NFPA 13, "Standard for the Installation of Sprinkler Systems"	Complies with Use of EEEEs	<p>Suppression systems credited to meet the requirements of NFPA 805 Chapter 4 are identified in the D. C. Cook Fire Safety Analysis (FSA).</p> <p>The sprinkler systems comply with the requirements of NFPA 13, 1971 and 1983 editions, as evaluated in the CNP NFPA 13 Code Compliance Evaluations.</p>	<p>Engineering Equivalency Evaluation 11-41, Unit 1 Fire Zone 53 (AA46) and Unit 2 Fire Zone 54 (AA47) Boundary Evaluation</p> <p>Engineering Equivalency Evaluation 12-20, Unit 1 Turbine Oil Tank Room Fire Zone 95 (AA2A)</p> <p>Engineering Equivalency Evaluation 12-22, Units 1 & 2 Auxiliary Building North and South Elevations 609' Fire Zones 44N (AA36) and 44S (AA42) Analysis of Sprinkler System</p> <p>CNP "NFPA Code Deviations and Justifications"</p> <p>0120-108-004, NFPA 13 - Code Compliance Verification Checklist D.C. Cook Units 1 & 2</p> <p>0120-164-002, NFPA 13 - Code Compliance Verification Checklist D.C. Cook Units 1 & 2</p> <p>0120-164-007, NFPA Code Evaluation Deviation Evaluation D.C. Cook Units 1 and 2</p> <p>09-0120-0123, NFPA Code Compliance Evaluation Donald C. Cook Nuclear Plant</p> <p>09-0120-0381, Extended NFPA Code Compliance Evaluation for the Donald C. Cook Nuclear Plant</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				FSA, D. C. Cook Fire Safety Analysis

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.9.1(2) [Fire Suppression System Code Requirements]	(2) NFPA 15, "Standard for Water Spray Fixed Systems for Fire Protection"	Complies with Use of EEEEs	<p>Suppression systems credited to meet the requirements of NFPA 805 Chapter 4 are identified in the D. C. Cook Fire Safety Analysis (FSA).</p> <p>CNP complies with NFPA 15, 1973 edition, as evaluated in the CNP NFPA 15 Code Compliance Evaluations.</p>	<p>Engineering Equivalency Evaluation 11-41, Unit 1 Fire Zone 53 (AA46) and Unit 2 Fire Zone 54 (AA47) Boundary Evaluation</p> <p>Engineering Equivalency Evaluation 12-20, Unit 1 Turbine Oil Tank Room Fire Zone 95 (AA2A)</p> <p>Engineering Equivalency Evaluation 12-22, Units 1 & 2 Auxiliary Building North and South Elevations 609' Fire Zones 44N (AA36) and 44S (AA42) Analysis of Sprinkler System</p> <p>CNP "NFPA Code Deviations and Justifications"</p> <p>0120-108-1375, NFPA 15 - Code Compliance Verification Checklist D.C. Cook Units 1 & 2</p> <p>0120-164-004, NFPA 15 - Code Compliance Verification Checklist D.C. Cook Units 1 & 2</p> <p>0120-164-007, NFPA Code Evaluation Deviation Evaluation D.C. Cook Units 1 and 2</p> <p>09-0120-0123, NFPA Code Compliance Evaluation Donald C. Cook Nuclear Plant</p> <p>09-0120-0381, Extended NFPA Code Compliance Evaluation for the Donald C. Cook Nuclear Plant</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
FSA, D. C. Cook Fire Safety Analysis				
3.9.1(3) [Fire Suppression System Code Requirements]	(3) NFPA 750, "Standard on Water Mist Fire Protection Systems"	N/A	Water mist systems are not installed at Cook Nuclear Plant.	FSA, D. C. Cook Fire Safety Analysis
3.9.1(4) [Fire Suppression System Code Requirements]	(4) NFPA 16, "Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems"	N/A	Foam-water and foam-water spray systems are not installed at Cook Nuclear Plant.	FSA, D. C. Cook Fire Safety Analysis

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.9.2 [Fire Suppression System Flow Alarm]	Each system shall be equipped with a water flow alarm.	Complies	Fire protection functions are displayed on a comprehensive annunciator panel in the control rooms to alert the operator in case of fire, primary fire pump operation, sprinkler waterflow supervisory alarms, or fire system malfunction. Pressure gauges on the panel also tell the operator the pressure conditions in the fire protection water piping headers.	12-5152 System Drawings 2-OHP-4024-201, Annunciator #201 Response: Plant Fire System 1-OHP-4024-101, Annunciator #101 Response: Plant Fire System 1-OHP-4024-102, Annunciator #102 Response: Miscellaneous Areas Fire System 2-OHP-4024-202, Annunciator #202 Response: Miscellaneous Areas Fire System
		Complies with Use of EEEEs	Refer to CNP "NFPA Code Deviations and Justifications" for NFPA 72D-1967 and NFPA 14-1971 for justifications to deviations related to this requirement.	CNP "NFPA Code Deviations and Justifications"

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.9.3 [Fire Suppression system Alarm Locations]	All alarms from fire suppression systems shall annunciate in the control room or other suitable constantly attended location.	Complies	Fire protection functions are displayed on a comprehensive annunciator panel in the control rooms to alert the operator in case of fire, primary fire pump operation, sprinkler waterflow supervisory alarms, or fire system malfunction. Pressure gauges on the panel also tell the operator the pressure conditions in the fire protection water piping headers.	UFSAR / Section 9.8.1, "Miscellaneous Protective Features", Item g) 1-OHP-4024-101, Annunciator #101 Response: Plant Fire System 1-OHP-4024-102, Annunciator #102 Response: Miscellaneous Areas Fire System 2-OHP-4024-201, Annunciator #201 Response: Plant Fire System 2-OHP-4024-202, Annunciator #202 Response: Miscellaneous Areas Fire System
		Complies with Use of EEEEs	Refer to CNP "NFPA Code Deviations and Justifications" for NFPA 72D-1967 and NFPA 14-1971 for justifications to deviations related to this requirement.	CNP "NFPA Code Deviations and Justifications"

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.9.4 [Fire Suppression System Diesel Pump Sprinkler Protection]	Diesel-driven fire pumps shall be protected by automatic sprinklers.	Complies	The fire pump house structure is protected by a dry pilot preaction sprinkler system. Sprinklers are provided in each primary fire pump room.	FSA, D. C. Cook Fire Safety Analysis
3.9.5 [Fire Suppression System Shutoff Controls]	Each system shall be equipped with an OS&Y gate valve or other approved shutoff valve.	Complies	All sprinkler systems are equipped with isolation valves.	Flow Diagrams 5152 Series
		Complies with Use of EEEEs	Non-listed valves are installed in some portion of the fire protection system. These valves have been evaluated to meet the intent of the NFPA requirements by Engineering Equivalency Evaluation 12.26.	Engineering Equivalency Evaluation 12-24, NFPA 24 - Listed Valve Deviation 12-ZMO-400 & 401 Engineering Equivalency Evaluation 12-26, NFPA 13 - "NON-LISTED" & "NON-RISING STEM" VALVE DEVIATION 12-FP-389, 12-FP-493 AND 12-FP-494

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.9.6 [Fire Suppression System Valve Supervision]	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 with Clarification	Valves are supervised as required. Valve positions are inspected on a monthly basis.	1-OHP-4024-101, Annunciator #101 Response: Plant Fire System 1-OHP-4024-102, Annunciator #102 Response: Miscellaneous Areas Fire System 2-OHP-4024-201, Annunciator #201 Response: Plant Fire System 2-OHP-4024-202, Annunciator #202 Response: Miscellaneous Areas Fire System Procedure 12-FPP-4030-066-011, FIRE PROTECTION VALVE LINEUP VERIFICATION
3.10 Gaseous Fire Suppression Systems	Gaseous Fire Suppression Systems.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements.	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.10.1 [Gaseous Suppression System Code Requirements]	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:	Complies	Gaseous fire suppression systems credited to meet the requirements of NFPA 805 Chapter 4 are identified in the D. C. Cook Fire Safety Analysis (FSA). These systems are designed and installed in accordance with the applicable NFPA codes, as reviewed in the sub-sections of this element.	FSA, D. C. Cook Fire Safety Analysis

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.10.1(1) [Gaseous Suppression System Code Requirements]	NFPA 12, "Standard on Carbon Dioxide Extinguishing Systems"	Complies with Use of EEEEs	CO2 extinguishing systems credited to meet the requirements of NFPA 805 Chapter 4 comply with NFPA 12-1968, as evaluated in CNP NFPA Code Compliance Evaluations, and Engineering Equivalency Evaluations.	<p>Engineering Equivalency Evaluation 12-19, CO2 Fire Suppression Systems in Fire Zones Containing Concentrations of Cable Insulation (Fire Areas AA7, AA8, AA9, AA10, AA29, AA30, AA31, AA37, AA38, AA39, AA40 AA41, AA43, AA44, AA45, AA48, AA49, AA50, AA51, AA52 and AA53)</p> <p>Engineering Equivalency Evaluation 12-21, Analysis of Fire Zones 13, 21, 57, 58, and 59 Lack of CO2 Suppression System Calculations</p> <p>Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications</p> <p>0120-108-002, NFPA 12 Code Compliance Verification Checklist</p> <p>09-0120-0123, NFPA Code Compliance Evaluation Donald C. Cook Nuclear Plant</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.10.1(2) [Gaseous Suppression System Code Requirements]	NFPA 12A, "Standard on Halon 1301 Fire Extinguishing Systems"	Complies with Use of EEEEs	Halon 1301 Fire Extinguishing Systems credited to meet the requirements of NFPA 805 Chapter 4 comply with NFPA 12A-1977, as evaluated in CNP NFPA Code Compliance Evaluations and Engineering Equivalency Evaluations.	Engineering Equivalency Evaluation 12-23, Analysis of Fire Zones 57 and 58 Lack of Halon Suppression System Calculations Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications 0120-108-003, FPA 12A Code Compliance Verification Checklist 09-0120-0123, NFPA Code Compliance Evaluation Donald C. Cook Nuclear Plant
3.10.1(3) [Gaseous Suppression System Code Requirements]	NFPA 2001, "Standard on Clean Agent Fire Extinguishing Systems"	N/A	There are no clean agent fire extinguishing systems required to meet the performance or deterministic requirements of Chapter 4.	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.10.2 [Gaseous Suppression System Alarm Location]	Operation of gaseous fire suppression systems shall annunciate and alarm in the control room or other constantly attended location identified.	Complies	Operation of all gaseous fire suppression systems annunciate and alarm in the control room.	1-OHP-4024-101, Annunciator #101 Response: Plant Fire System 1-OHP-4024-102, Annunciator #102 Response: Miscellaneous Areas Fire System 2-OHP-4024-201, Annunciator #201 Response: Plant Fire System 2-OHP-4024-202, Annunciator #202 Response: Miscellaneous Areas Fire System SD-12-COAUX-100, System Description for Low Pressure Carbon Dioxide Fire Fighting System SD-12-HALON-100, System Description Fire Protection - Halon Systems

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.10.3 [Gaseous Suppression System Ventilation Limitations]	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.	Complies with Clarification	<p>Per Section E.5.(d) of FPPM Design Basis Table 5.1, the Cardox (Cheme-tron) design calculations and pre-op tests have confirmed that offsetting requirements to prevent over-pressurization are satisfied.</p> <p>Fire areas and fire zones that are protected by CO2 systems have boundary penetrations (i.e., dampers, seismic gaps and openings around cables, conduits and pipes) sealed to ensure retention of the CO2 concentrations. In some fire areas, however, dampers have not been provided for duct work that communicates directly with the plant exterior or that pass through other areas within rated construction boundaries to the plant exterior. For the CO2 systems in these fire areas, concentration tests have been performed that demonstrate that the required concentration levels can be maintained without dampers. The affected fire zones in which this situation exists are 40A, 40B, 42A, 45, 46A, 47A and 47B.</p>	<p>Fire Protection Program Manual (FPPM) / Table 5.1, Section E.5(d)</p> <p>FL-15771, Cardox Design Calculations "Low Pressure Carbon Dioxide Flow Calculations"</p> <p>FSA, D. C. Cook Fire Safety Analysis</p> <p>NFPPM, NFPA 805 Fire Protection Program Manual (NFPPM) / 4.1.3, 4.1.4</p> <p>PO-050-506, LOW PRESSURE CARBON DIOXIDE FIRE SYSTEMS, PROCEDURE, STATUS REPORTS, TEMP SHEETS, LOG, REVIEW/APPROVAL SHEET, DATA SHEETS, INSTRUCTIONS, REVISIONS</p> <p>SD-12-COAUX-100, System Description for Low Pressure Carbon Dioxide Fire Fighting System</p> <p>SD-12-HALON-100, System Description Fire Protection - Halon Systems</p> <p>Technical Evaluation-12-21, ANALYSIS OF FIRE ZONES 13, 21, 57, 58, AND 59 LACK OF CO2 SUPPRESSION SYSTEM CALCULATIONS</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.10.4 [Gaseous Suppression System Single Failure Limits]	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	Not Applicable. CNP does not have any areas required to be protected by both primary and backup gaseous fire suppression systems.	N/A
3.10.5 [Gaseous Suppression System Disarming Controls]	Provisions for locally disarming automatic gaseous suppression systems shall be secured and under strict administrative control.	Complies	Plant documents ensure that disarming automatic gaseous systems is secured and under strict administrative control.	12-OHP-4021-030-003, Operation of the CO2 System 1-OHP-4021-066-004, Isolation and Restoration of the Control Room Cable Vault Halon System 2-OHP-4021-066-004, Isolation and Restoration of the Control Room Cable Vault Halon System SD-12-COAUX-100, System Description for Low Pressure Carbon Dioxide Fire Fighting System SD-12-HALON-100, System Description Fire Protection - Halon Systems

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.10.6 [Gaseous Suppression System CO2 Limitations]	Total flooding carbon dioxide systems shall not be used in normally occupied areas.	Complies with Clarification	The normally occupied areas of the plant are considered to be the general floor areas of the auxiliary and turbine buildings, as well as the control rooms. Total flooding CO2 systems are not used in these areas.	FSA, D. C. Cook Fire Safety Analysis
3.10.7 [Gaseous Suppression system CO2 Warnings]	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.	Complies	A discharge delay time with audible alarm is incorporated into each automatic system design to allow personnel time to leave the area. CO2 systems are provided with an odorizer.	SD-12-COAUX-100, System Description for Low Pressure Carbon Dioxide Fire Fighting System

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.10.8 [Gaseous Suppression System CO2 Required Disarming]	Positive mechanical means shall be provided to lock out total flooding carbon dioxide systems during work in the protected space.	Complies	<p>CO2 systems can be isolated by five different methods. These are:</p> <ul style="list-style-type: none">• Individual hazard "Detection Isolating Key-Lock Switches.• Grouped hazard "Main Detection Isolating Key-Lock Switches (Master Isolation Switches).• Automatic Isolation (Control Room Cable Vault only).• Header Shutoff Valves.• Tank Shutoff Valves. <p>When entering a CO2 protected area, to assure safety, one of the above methods must be employed to isolate and block an operation of the CO2 system. The method selected is dependent on the length of time the work in the area is expected to take and the nature of the work.</p>	SD-12-COAUX-100, System Description for Low Pressure Carbon Dioxide Fire Fighting System

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.10.9 [Gaseous Suppression System Cooling Considerations]	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.	Complies	I&M performed a study that took into account suppression effects concerns related to CO2 systems at CNP including the consideration of "electrical shorting due to condensation formation and the failure of sensitive electronic equipment due to electrostatic buildup."	Technical Evaluation 12.1, Fire Suppression Effects Study
3.10.10 [Gaseous Suppression System Decomposition Issues]	Particular attention shall be given to corrosive characteristics of agent decomposition products on safety systems.	Complies	Corrosive characteristics of agent decomposition products has been considered.	SD-12-HALON-100, System Description Fire Protection - Halon Systems
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.	N/A

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.11.1 Building Separation	<p>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."</p> <p>Exception: Where a performance-based analysis determines the adequacy of building separation, the requirements of 3.11.1 shall not apply.</p>	Complies	<p>The Auxiliary Building, Containment Buildings, Service Building, and Turbine Building are separated from other buildings by 3-hour barriers or by greater than 50ft of open space.</p> <p>The Auxiliary Building is adjacent to the Containment Buildings and Turbine Building. The Auxiliary Building is separated from the Containment Buildings and Turbine Building by a reinforced concrete wall with a 3 hour rated design. Openings are rated or have been evaluated as equivalent or adequate for the hazard.</p> <p>The Containment Buildings are adjacent to the Auxiliary Building. The Containment Buildings are separated from the Auxiliary Building by a reinforced concrete wall with a 3 hour rated design. Openings are rated or discussed within the D. C. Cook Fire Safety Analysis (FSA).</p> <p>The Service Building is adjacent to the Turbine Building. The Service Building is separated from the Turbine Building by a reinforced concrete wall with a 3 hour rated design. Openings are rated or discussed with individual Fire Safety Analyses Reports.</p> <p>The Turbine Building is adjacent to the Auxiliary Building and the</p>	FSA, D. C. Cook Fire Safety Analysis

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			Service Building. The Turbine Building is separated from the Auxiliary Building and Service Building by a reinforced concrete wall with a 3 hour rated design. Openings are rated or discussed with individual Fire Safety Analyses Reports.	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEs	A seismic gap exists around the Containment Buildings that provides an opening of approximately 6 in. between the Containment Buildings and the walls, ceilings and floors of the structures immediately adjacent to containment. This opening has been determined adequate by an engineering evaluation. CNP currently utilizes the exception to Section 3.11.1, which is endorsed.	<p>Engineering Equivalency Evaluation 11-46, Seismic Gaps Between the Containment and Auxiliary Buildings Boundary Evaluation (Fire Areas AA2A, AA2B, AA3, AA7, AA8, AA9, AA10, AA11, AA27, AA29, AA30, AA31, AA34, AA35, AA37 and AA38)</p> <p>Engineering Equivalency Evaluation 11-54, Unit 1 Main Control Room Cable Vault Penetration Seal W5111 Fire Zone 57 and 91 (Fire Areas AA50 and AA2A)</p> <p>Engineering Equivalency Evaluation 11-65, Fire Door Closure Evaluation (Fire Areas AA2, AA7, AA8, AA14, AA15, AA23, AA24, AA30, AA31, AA34, AA35, AA36/42, AA37, AA38, AA39, AA41, AA43, AA44, AA45, AA48, and AA53)</p> <p>Engineering Equivalency Evaluation 9-39, Fire Zone 70 (AA57A) to Fire Zone 129 (AA2A) Boundary Evaluation</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
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."	Complies	<p>Fire barriers required by Chapter 4 are identified in the D. C. Cook Fire Safety Analysis (FSA). A specific fire-resistance rating for all fire barriers is included</p> <p>All walls, floors, and ceilings separating fire areas are either reinforced concrete construction which exceed a 3 hour fire rating, or are of concrete block construction with a 3 hour fire resistance rating or have been evaluated as equivalent or adequate for the hazard. The design and installation of fire barriers meets the requirements of ASTM E 119. All openings for cable, pipe, and ductwork in walls, floor, and ceilings separating fire areas have been sealed with foamed in place silicone which was tested for up to five hours fire exposure in an ASTM E 119 wall fire test. Cable tray openings have been sealed and verified by ASTM E 119 tests.</p>	<p>Engineering Equivalency Evaluation 11-67, Technical Evaluation for Embedded Conduit Evaluation</p> <p>12-FPP-4030-066-025, Inspection of Fire Rated Assemblies</p> <p>FSA, D. C. Cook Fire Safety Analysis</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEs	Each barrier which contained a feature with an unrated component was analyzed with respect to its fire suppression and detection systems, proximity to safe-shutdown equipment, and the impact that the unrated portion of the fire barrier could have on safe-shutdown capability. These barriers which contained unrated components have been evaluated as equivalent or adequate for the hazard.	<p>Engineering Equivalency Evaluation 11-11, Storage of Flammable Gases in Fire Areas AA2 and YD</p> <p>Engineering Equivalency Evaluation 11-12, Stairwells and Elevator Construction Boundary Evaluations (Fire Areas AA1, AA2A, AA2B, AA3, AA5/6, AA36 and AA42</p> <p>Engineering Equivalency Evaluation 11-18, Fire Zones 3, 31, 32 and 35 (AA3) Boundary Evaluation</p> <p>Engineering Equivalency Evaluation 11-36, Unit 1 and 2 Hot Shutdown Panel Enclosure: Unit 1 Fire Zone 144 (AA50) and Unit Fire Zone 145 (AA51)</p> <p>Engineering Equivalency Evaluation 11-38, Fire Protection Pump House (Fire Area YD)</p> <p>Engineering Equivalency Evaluation 11-39, Fireproofing for the West Motor Driven Auxiliary Feedwater Pump Enclosures Fire Zones 17A (AA16), 17B (AA17), 80 (AA2A) and 84 (AA2B)</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-41, Unit 1 Fire Zone 53 (AA46) and Unit 2 Fire Zone 54 (AA47) Boundary Evaluation
				Engineering Equivalency Evaluation 11-44, Unrated Fire Doors (361 and 362) and Unrated Personnel Walkways (AA3, AA34, AA35, and AAYD)
				Engineering Equivalency Evaluation 11-51, Screenhouse and Water Intake System Boundary Evaluation Fire Zone 142 (AA2A) to Fire Zone 143 (YD)
				Engineering Equivalency Evaluation 11-66, Yard (YD) to Fire Zone 19 (AA24) Boundary Evaluation
				Engineering Equivalency Evaluation 11-67, Technical Evaluation for Embedded Conduit Evaluation
				Engineering Equivalency Evaluation 11-7, Fire Zone 5 (AA5/6) to Unit 1 Fire Zones 62A, 62B and 62C (AA54) and Unit 2 Fire Zones 63A, 63B and 63C (AA5) Removable Block Walls

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-9, Turbine, Auxiliary and Containment Buildings Boundary Evaluation
				Engineering Equivalency Evaluation 12-11, Structural Steel Evaluations in Fire Areas AA2A, AA2B, AA3, AA34, AA35, AA56 and AA58
				Engineering Equivalency Evaluation 12-16, Radiant Heat Shields for Fire Area AA58

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.11.3 Fire Barrier Penetrations	<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 [3.11.4] for penetration seals for through penetration fire stops.)</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>	Complies	In general, fire-rated door assemblies or listed rated fire dampers having the fire resistance rating consistent with the fire resistance rating of the fire barrier are provided. Fire-rated assemblies which include fire-rated doors and fire dampers required by Chapter 4 are outlined in the D. C. Cook Fire Safety Analysis (FSA).	FSA, D. C. Cook Fire Safety Analysis

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEs	Where fire-rated door assemblies or listed rated fire dampers are not provided with the fire resistance rating consistent with the fire resistance rating of the fire barrier (e.g. hatches, water curtains, manways, etc.), the assemblies have been evaluated to be equivalent or adequate for the hazard.	Equivalency Evaluations is listed in 3.11.3(1) through 3.11.3(3), Rev. 0

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.11.3(1) [NFPA 80 - Fire Door and Window Requirements]	<p>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"</p>	Complies with Clarification	<p>All doors are UL Class A (3 hour) fire rating or a UL Class B (1-1/2 hour) rating to be commensurate with the severity of the hazard as determined by the performance requirements established by Chapter 4 of NFPA 805. I&M has committed CNP to comply with NFPA 80. Modifications to rated fire doors are made in accordance with NFPA 80 in order to ensure that the fire protection features of the door are not degraded.</p> <p>Fire rated doors that are designed to be left in the open position, if desired, are provided with self-closing hardware which, when activated by exposure to the heat of a fire, allows the door to close.</p>	<p>Engineering Equivalency Evaluation 11-71, Emergency Power Systems Area & EPS Control Rod Drive Room Fire Door Closure Evaluation, dated April 6, 2017</p> <p>Engineering Equivalency Evaluation 11-72, Fire Door Automatic Release Device Evaluation (12-DR-TUR224, 12-DR-TUR242, 1-DR-AUX313, and 2-DR-AUX314), dated March 13, 2017</p> <p>Procedure 12-FPE-2270-FPCE-001, Fire Protection Program Change Evaluation</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by Previous NRC Approval	<p>During the review for compliance with Appendix A to BTP 9.5-1, the NRC identified concerns relating to the installation placement and rating of fire doors at CNP. I&M committed to upgrading affected fire doors and per the NRC Safety Evaluation, dated July 31, 1979, which states:</p> <p><i>"We conclude that fire doors and dampers are provided or committed where necessary in accordance with the provisions of Appendix A to Branch Technical Position APCSB 9.5-1 and are, therefore, acceptable."</i></p> <p>These commitments to remedy any deficiencies listed in the aforementioned Safety Evaluation Report have been fulfilled per the FPPM, which states:</p> <p><i>"The noted deficiencies were corrected or appropriate justifications have been prepared."</i></p> <p>The fire doors where deficiencies were corrected or justifications prepared, as approved by the SE Report, are still used at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. The corrected doors remain unchanged. The justification for the any deficiencies remains valid and</p>	<p>NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 / Page 13, Other Items relating to the Station Fire Protection Program, item B</p> <p>I&M Letter, Request for Approval and Exemptions, dated March 31, 1983 / Section 7.2.6</p> <p>NRC Safety Evaluation, Donald C. Cook Nuclear Power Plant, Unit Nos. 1 and 2 Fire Protection - Request for Exemption from requirements of Appendix R to 10 CFR 50, Sections III.G and III.O, dated December 23, 1983 / page 5, Section 4.0, Conclusion</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			unchanged.	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEs	<p>Where any unrated doors are located in fire area boundaries, an evaluation has been performed to determine the doors are equivalent or adequate for the hazard.</p> <p>Where non-UL/FM approved electromagnetic door latches are used in doors located in fire area boundaries, an evaluation has been performed to determine that the fire rating of the door is not</p>	<p>Engineering Equivalency Evaluation 11-1, Auxiliary Building El. 587' to Spent Fuel Heat Exchanger Pit Pump Room Hatch Boundary Evaluation Fire Zone 5 (AA5/6) and Fire Zone 36 (AA3) Hatch Evaluation</p> <p>Engineering Equivalency Evaluation 11-15, Switchgear Room Construction Boundary Room Evaluation Unit 1 Fire Zones 14, 40A, 40B, 41 and 42A (AA13, AA39A, AA39B, AA40 and AA41) & Unit 2 Fire Zones 20, 45, 46A, 47A and 47B (AA25, AA43, AA44, AA45A and AA45B)</p> <p>Engineering Equivalency Evaluation 11-37, Fire Zones 52 and Fire Zone 44N Hatch Evaluation</p> <p>Engineering Equivalency Evaluation 11-39, Fireproofing for the West Motor Driven Auxiliary Feedwater Pump Enclosures Fire Zones 17A (AA16), 17B (AA17), 80 (AA2A) and 84 (AA2B)</p> <p>Engineering Equivalency Evaluation 11-44, Unrated Fire Doors (361 and 362) and Unrated Personnel Walkways (AA3, AA34, AA35, and AAYD)</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-56, Turbine Building Main Steam Access Way Fire Zones 110 to 114, Fire Zones 111 to 115, Fire Zones 112 to 2N, Fire Zones 113 to 2S (Fire Areas AA2A, AA2B, AA2C)
				Engineering Equivalency Evaluation 11-65, Fire Door Closure Evaluation (Fire Areas AA2, AA7, AA8, AA14, AA15, AA23, AA24, AA30, AA31, AA34, AA35, AA36/42, AA37, AA38, AA39, AA41, AA43, AA44, AA45, AA48, and AA53)
				Engineering Equivalency Evaluation 11-69, Technical Evaluation for NFPA 80 1970 ED Code Deviation Electromagnetic Fire/Security Door Locks
			Fire Door Automatic Release Device Evaluation (12-DR- TUR224, 12-DR-TUR242, 1- DR-AUX313, and 2-DR- AUX314)	Engineering Equivalency Evaluation 11-9, Turbine, Auxiliary and Containment Buildings Boundary Evaluation
				Engineering Equivalency Evaluation 9-13, Fire Zone 53 (AA46) and Fire Zone 57 (AA50) Hatch Evaluation
				Engineering Equivalency Evaluation 9-14, Fire Zone 43 (AA36) and Fire Zone 56 (AA48) Hatch Evaluation

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 9-15, Fire Zone 40B (AA39B) and Fire Zone 55 (AA48) Hatch Evaluation
				Engineering Equivalency Evaluation 9-16, Fire Zone 41 (AA40) and Fire Zone 55 (AA48) Hatch Evaluation
				Engineering Equivalency Evaluation 9-17, Fire Zone 54 (AA47) and Fire Zone 58 (AA51) Hatch Evaluation
				Engineering Equivalency Evaluation 9-18, Fire Zone 52 (AA3) and Fire Zone 59 (AA52) Hatch Evaluation
				Engineering Equivalency Evaluation 9-19, Fire Zone 45 (AA43) and Fire Zone 60 (AA52) Hatch Evaluation
				Engineering Equivalency Evaluation 9-21, Fire Zone 110 (AA2A) and Fire Zone 43 (AA36) Door Evaluation
				Engineering Equivalency Evaluation 9-22, Fire Zone 111 (AA2B) and Fire Zone 44S (AA42) Door Evaluation
				Engineering Equivalency Evaluation 9-23, Fire Zone 116 (AA9) Boundary Evaluation

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 9-24, Fire Zone 117 (AA29) Boundary Evaluation
				Engineering Equivalency Evaluation 9-25, Essential Service Water Pump House Hatch and Fire Damper Evaluation (Fire Areas AA2, AA32 and AA33)
				Engineering Equivalency Evaluation 9-31, Fire Zones 62A, 62B and 62C (AA54) Boundary Evaluation
				Engineering Equivalency Evaluation 9-32, Fire Zones 63A, 63B and 63C (AA56) Boundary Evaluations
				Engineering Equivalency Evaluation 9-37, Fire Zones 5 (AA5/6) and 32 (AA3) Boundary Evaluations
				Engineering Equivalency Evaluation 9-39, Fire Zone 70 (AA57A) to Fire Zone 129 (AA2A) Boundary Evaluation
				Engineering Equivalency Evaluation 9-5, Fire Zones 70 (AA57A) and 73 (AA57B) Hatch Evaluations
				Procedure 12-FPE-2270-FPCE- 001, Fire Protection Program Change Evaluation

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.11.3(2) [NFPA 90A - Fire Damper Requirements]	<p>Passive fire protection devices such as doors and dampers shall conform with the following NFPA standards, as applicable:</p> <p>(2) NFPA 90A, "Standard for the Installation of Air-Conditioning and Ventilating Systems"</p>	Complies	<p>All ventilation dampers carry UL Class A (3 hour) fire rating or a UL Class B (1-1/2 hour) rating to be commensurate with the severity of the hazard as determined by the performance requirements established by Chapter 4 of NFPA 805. I&M has committed CNP to comply with NFPA 90A.</p> <p>Modifications to rated fire dampers are made in accordance with NFPA 90A in order to ensure that the fire protection features of the damper are not degraded.</p>	Procedure 12-FPE-2270-FPCE-001, Fire Protection Program Change Evaluation

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by Previous NRC Approval	<p>Technical specification-related fire dampers and HVAC system designs have been reviewed by the NRC for damper placement and ratings. These dampers have also been reviewed by I&M for rating and installation.</p> <p>Per letter from I&M to the NRC dated June 15, 1984:</p> <p><i>"In the area of HVAC ductwork, we have recently discovered that technical exemptions are required for 17 ducts which penetrate fire barriers. These areas are typified by low combustible loading, and duct outlets being located in an area sufficiently removed from equipment important to the safe shutdown of the facility. Sound engineering evaluations can be used to justify our request for technical exemption of the requirements for fire dampers."</i></p> <p>Per letter from I&M to the NRC dated August 13, 1984:</p> <p><i>"The evaluation concludes that, because of a low combustible loading of less than 15 minutes in all applicable fire areas/zones, the location of safe shutdown components/circuits and the detection and suppression systems available in the subject fire area/zones, adequate protection from duct related fire damage is</i></p>	<p>NRC Safety Evaluation of Fire Protection Requests, dated August 27, 1985 / Section 3.4</p> <p>I&M Letter 0692R, Request for Additional Technical Exemptions to Certain Fire dampers and "Seismic Gaps", dated June 15, 1984</p> <p>I&M Letter 0692U, Appendix R Technical Exemption for Seismic Gaps and HVAC Duct Penetrations, dated August 13, 1994</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p><i>provided and safe shutdown capability is ensured. As discussed with your staff, the evaluation includes five additional ventilation duct penetrations without fire dampers, that also require technical exemptions. These duct penetrations listed below were not identified in the June 15, 1984 letter.”</i></p> <p>The NRC Safety Evaluation, dated August 27, 1985 states:</p> <p><i>“Based on our evaluation, we conclude that we have reasonable assurance that the 22 Auxiliary Building undampered ventilation duct penetrations will not affect safe-shutdown in the event of a fire in Fire Area A, B, C, D or E. The lack of fire dampers in these 22 ventilation duct penetrations is, therefore, an acceptable deviation from the guidelines of Section D.1.(j) of Appendix A to BTP APCS 9.5-1.”</i></p> <p>The 22 undampered ventilation duct penetrations, as approved by the SE Report, still exist at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. The justification for the ventilation ducts remains valid and unchanged.</p>	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
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NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEs	Engineering equivalency evaluations have been performed for any unrated dampers located in fire area boundaries. These engineering equivalency evaluations determined the dampers are equivalent or adequate for the hazard.	<p>Engineering Equivalency Evaluation 11-14, Cable Spreading Room Construction Boundary Evaluation (Fire Areas AA3,AA7, AA8, AA9, AA10, AA29, AA30, AA31, AA34, AA35, AA36, AA37, AA38, AA42, AA48, AA50, AA51 and AA52)</p> <p>Engineering Equivalency Evaluation 11-15, Switchgear Room Construction Boundary Room Evaluation Unit 1 Fire Zones 14, 40A, 40B, 41 and 42A (AA13, AA39A, AA39B, AA40 and AA41) & Unit 2 Fire Zones 20, 45, 46A, 47A and 47B (AA25, AA43, AA44, AA45A and AA45B)</p> <p>Engineering Equivalency Evaluation 11-16, ENGINEERING EQUIVALENCY EVALUATION FOR LUBE OIL STORAGE ROOMS FIRE ZONES 83, 88, 95 AND 100 (AA2), BOUNDARY EVALUATION</p> <p>Engineering Equivalency Evaluation 11-45, Auxiliary Building HVAC Duct Penetrations Boundary Evaluation Fire Areas AA1, AA3, AA5/6, AA36 and AA42</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-56, Turbine Building Main Steam Access Way Fire Zones 110 to 114, Fire Zones 111 to 115, Fire Zones 112 to 2N, Fire Zones 113 to 2S (Fire Areas AA2A, AA2B, AA2C)
				Engineering Equivalency Evaluation 12-13, Fire Damper Closure Review
				Engineering Equivalency Evaluation 9-1, Fire Zone 43 (AA36) and 91 (AA2A) Duct Evaluation
				Engineering Equivalency Evaluation 9-2, Fire Zone 54 (AA47) and Fire Zone 73 (AA57B) Duct Evaluation
				Engineering Equivalency Evaluation 9-3, CCW Pump Air Supply Duct Evaluation: Fire Zone 44S (AA42)
				Engineering Equivalency Evaluation 9-33, Fire Zone 6A (AA5/6) to 138B (AA1) Boundary Evaluations
				Engineering Equivalency Evaluation 9-34, Fire Zone 36 (AA3) to Fire Zone 5 (AA5/6) Boundary Evaluation

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 9-35, Fire Zone 108 (AA2A) to Fire Zone 33A (AA34) Boundary Evaluation
				Engineering Equivalency Evaluation 9-36, Fire Zone 109 (AA2B) to 34A (AA35) Boundary Evaluation
				Engineering Equivalency Evaluation 9-37, Fire Zones 5 (AA5/6) and 32 (AA3) Boundary Evaluations
				Engineering Equivalency Evaluation 9-38, Fire Zone 69 (AA3) to Fire Zones 108 (AA2A) and 109 (AA2B) Boundary Evaluations
				Engineering Equivalency Evaluation 9-4, Auxiliary Building Vertical Air Shafts Evaluation: Fire Zones 12 (AA11) and 22 (AA27)
				Engineering Equivalency Evaluation 9-40, Fire Zone 7 (AA7) to Fire Zone 61 (AA5/6) Boundary Elevation
				Engineering Equivalency Evaluation 9-41, Fire Zones 37 (AA36) and 51(AA3) HVAC Duct Penetrations

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 9-7, Fire Zone 13 (AA12) and Fire Zone 14 (AA13) Boundary Evaluation Engineering Equivalency Evaluation 9-8, Fire Zone 20 (AA25) and Fire Zone 21 (AA26) Boundary Evaluatio
3.11.3(3) [NFPA 101 - Life Safety Code Requirements]	Passive fire protection devices such as doors and dampers shall conform with the following NFPA standards, as applicable: (3) NFPA 101, "Life Safety Code"	Complies with Clarification	CNP complies with clarification with regards to NFPA 101, 2000 Edition. NFPA 101 compliance is achieved through NFPA 80 and NFPA 90A. NFPA 101, 2000 Edition, Section 8.2.3.2.1(a) with regards to rated fire door assemblies refers to NFPA 80. NFPA 101, 2000 Edition, Section 9.2.1 with regards to rated fire dampers refers to NFPA 90A. Table B-1, Section 3.11.3(1) and 3.11.3(2) discuss compliance of NFPA 80 and NFPA 90A.	NFPA 101, Life Safety Code, 2000 Edition / Sections 8.2.3.2.1(a) and 9.2.1

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.11.4 Through Penetration Fire Stops	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.	Complies	<p>CNP specification ES-FIRE-0601-QCF details the requirements for the installation and maintenance of fire rated seals and fire stops at CNP. The scope of this specification is for penetration seals that are installed or are being installed at CNP that will function to prevent the spread of fire.</p> <p>Additionally, per specification ES-FIRE-0601-QCF, CNP allows the use of additional test standards ASTM E-814, MEEB 634 and NFPA 251 for development of standard fire test, and qualification of fire rated penetration seals.</p>	Plant Specification ES-FIRE-0601-QCF, Fire Rated Seals

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by Previous NRC Approval	<p>By the response to Appendix A to Branch Technical Position APCSB 9.5-1, dated January 31, 1977, item D.1.(j) I&M stated:</p> <p><i>"all openings for cable, pipe, and ductwork in these walls, floors, and ceilings have been sealed with foamed in place silicone which was tested in march 1975 for up to five hours fire exposure in an ASTM E 119 wall fire test."</i></p> <p>The NRC Safety Evaluation, dated July 31, 1979 states:</p> <p><i>"The test report shows that the penetration seal passed a 3-hour E-119 type fire exposure test. However, the test included only the Unit 2 penetration design. The licensees have provided a comparison between Unit 1 and Unit 2 penetration seal designs to justify that the Unit 2 design is the "worst case" for fire testing. We agree with this evaluation and conclude that the Unit 2 seal tests are acceptable for the Unit 1 seals. We conclude that the penetration fire stops which are in place provide sufficient protection from the unbounded spread of fire along electrical cables. We base this conclusion on our knowledge of ASTM E-119 fire tests including those cited by the licensees which substantiate the fire resistive ability of penetration fire stops</i></p>	<p>NRC Safety Evaluation, dated July 31, 1979 / Page 13, Other Items Relating to the Station Fire Prtotection Program, Section A</p> <p>I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977 / Section D.1.(j)</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<i>constructed with silicone foam."</i>	
			The foamed in place silicone design, as approved by the SE Report, is still in use at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. The foamed in place silicone design and the justification of the worst case configuration has not changed.	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEEs	Where through penetration fire stops are not protected in accordance with Section 3.11.4, these assemblies have been evaluated to be equivalent or adequate for the hazard.	<p>Engineering Equivalency Evaluation 11-15, Switchgear Room Construction Boundary Room Evaluation Unit 1 Fire Zones 14, 40A, 40B, 41 and 42A (AA13, AA39A, AA39B, AA40 and AA41) & Unit 2 Fire Zones 20, 45, 46A, 47A and 47B (AA25, AA43, AA44, AA45A and AA45B)</p> <p>Engineering Equivalency Evaluation 11-16, ENGINEERING EQUIVALENCY EVALUATION FOR LUBE OIL STORAGE ROOMS FIRE ZONES 83, 88, 95 AND 100 (AA2), BOUNDARY EVALUATION</p> <p>Engineering Equivalency Evaluation 11-17, Diesel Generator Fuel oil Day Tank Rooms Fire Zones 15 (AA14), 16 (AA15), 18 (AA23) and 19 (AA24) Boundary Evaluation</p> <p>Engineering Equivalency Evaluation 11-2, Fire Zone 7 (AA7) to Fire Zone 38 (AA37) Boundary Evaluation</p> <p>Engineering Equivalency Evaluation 11-24, Fire Retention Capability of Nonconforming Fire Seals in Fire Zones having a Low Fire Severity</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-26, Fire Retention Capability of a HELB 3 Pressure Boundary Seal (Fire Areas AA19, AA20, AA21 and AA22)
				Engineering Equivalency Evaluation 11-27, Generic Fire Seal Design 1
				Engineering Equivalency Evaluation 11-28, Generic Fire Seal Design 2 (Fire Areas AA7, AA8, AA39A, AA40, AA43, AA45A, AA45B, AA48 and AA52)
				Engineering Equivalency Evaluation 11-29, Generic Fire Seal Design 3 in Fire Areas AA2A, AA2B, and AA15
				Engineering Equivalency Evaluation 11-3, Fire Zone 27 (AA31) to Fire Zone 39 (AA38)
				Engineering Equivalency Evaluation 11-30, Generic Fire Seal Design 4 (AA2)
				Engineering Equivalency Evaluation 11-31, Generic Fire Seal Design 5 (Fire Areas AA31 and AA38)
				Engineering Equivalency Evaluation 11-32, Generic Fire Seal Design 6 (AA2)

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-33, Generic Fire Seal Design 7 (Fire Areas AA7 and AA37)
				Engineering Equivalency Evaluation 11-34, Generic Fire Seal Design 8
				Engineering Equivalency Evaluation 11-35, Generic Fire Seal Design 9
				Engineering Equivalency Evaluation 11-4, Unit 1 Auxiliary Building Elevation 620 ft.-6 in. to Auxiliary Cable Vault Fire Zone 44n to Fire Zone 56
				Engineering Equivalency Evaluation 11-47, Fire Zones 44N (AA36), 44S (AA42) and 52 (AA3) Penetration Seals
				Engineering Equivalency Evaluation 11-48, Fire Zones 15 (AA14), 16 (AA15) 18 (AA23) and 19 (AA24) Penetration Seals
				Engineering Equivalency Evaluation 11-5, Unit 1 EPS/4 KV Switchgear Complex Ventilation Shaft Boundary Evaluation (Fire Areas AA39A, AA39B, AA40, AA41 and AA48)
				Engineering Equivalency Evaluation 11-50, Embedded Conduit Fire Wrap Protection (Fire Areas AA14 and AA24)

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-51, Screenhouse and Water Intake System Boundary Evaluation Fire Zone 142 (AA2A) to Fire Zone 143 (YD)
				Engineering Equivalency Evaluation 11-54, Unit 1 Main Control Room Cable Vault Penetration Seal W5111 Fire Zone 57 and 91 (Fire Areas AA50 and AA2A)
				Engineering Equivalency Evaluation 11-56, Turbine Building Main Steam Access Way Fire Zones 110 to 114, Fire Zones 111 to 115, Fire Zones 112 to 2N, Fire Zones 113 to 2S (Fire Areas AA2A, AA2B, AA2C)
				Engineering Equivalency Evaluation 11-6, Fire Zones 45 (AA43), 46A through 46D (AA44), 47A (AA45A), 47B (AA45B) to Fire Zone 60 (AA52) Shaft Boundary Evaluation
				Engineering Equivalency Evaluation 11-7, Fire Zone 5 (AA5/6) to Unit 1 Fire Zones 62A, 62B and 62C (AA54) and Unit 2 Fire Zones 63A, 63B and 63C (AA5) Removable Block Walls

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-79, Fire Zone 53 (AA46) And Fire Zone 57 (AA50) Fire Barrier Penetration Seals
				Engineering Equivalency Evaluation 11-80, Fire Zone 54 (AA47) And Fire Zone 58 (AA51) Fire Barrier Penetration Seals
				Engineering Equivalency Evaluation 9-35, Fire Zone 108 (AA2A) to Fire Zone 33A (AA34) Boundary Evaluation
				Engineering Equivalency Evaluation 9-36, Fire Zone 109 (AA2B) to 34A (AA35) Boundary Evaluation
				Engineering Equivalency Evaluation 9-37, Fire Zones 5 (AA5/6) and 32 (AA3) Boundary Evaluations
				Technical Evaluation-11-20, Narrow Space Openings between Penetrating Items and the Barrier or Between Penetrating Items Boundary Evaluation

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.11.4(a) [Annular Space Requirements]	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.	Complies	<p>CNP specification ES-FIRE-0601-QCF details the requirements for the installation and maintenance of fire rated seals and fire stops at CNP. The scope of this specification is for penetration seals that are installed or will be installed at CNP that will function to prevent the spread of fire. Per this specification, the contractor installing the fire seals must furnish documentation that the configurations have passed ASTM E-119 fire and hose stream tests that have been performed and documented by an independent laboratory.</p> <p>Additionally, per specification ES-FIRE-0601-QCF, the standards which can be used for development of standard fire test and qualification of fire rated penetration seals are ASTM E-814, MEEB 634 and NFPA 251.</p>	Plant Specification ES-FIRE-0601-QCF, Fire Rated Seals / Attachment 1, Typical Details

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by Previous NRC Approval	<p>By the response to Appendix A to Branch Technical Position APCSB 9.5-1, dated January 31, 1977, item D.1.(j) I&M stated:</p> <p><i>"all openings for cable, pipe, and ductwork in these walls, floors, and ceilings have been sealed with foamed in place silicone which was tested in march 1975 for up to five hours fire exposure in an ASTM E 119 wall fire test."</i></p> <p>The NRC Safety Evaluation, dated July 31, 1979 states:</p> <p><i>"The test report shows that the penetration seal passed a 3-hour E-119 type fire exposure test. However, the test included only the Unit 2 penetration design. The licensees have provided a comparison between Unit 1 and Unit 2 penetration seal designs to justify that the Unit 2 design is the "worst case" for fire testing. We agree with this evaluation and conclude that the Unit 2 seal tests are acceptable for the Unit 1 seals. We conclude that the penetration fire stops which are in place provide sufficient protection from the unbounded spread of fire along electrical cables. We base this conclusion on our knowledge of ASTM E-119 fire tests including those cited by the licensees which substantiate the fire resistive ability of penetration fire stops</i></p>	<p>NRC Safety Evaluation, dated July 31, 1979 / Other Items Related to the Station Fire Protection Program, Section A</p> <p>I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977 / Section D.1.(j)</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<i>constructed with silicone foam."</i>	
			The foamed in place silicone design, as approved by the SE Report, is still in use at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. The foamed in place silicone design and the justification of the worst case configuration has not changed.	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEs	Engineering equivalency evaluations have been performed for any penetrations that do not provide a fire resistance rating at least equal to that of the fire area barrier itself. These engineering equivalency evaluations determined the penetrations are equivalent or adequate for the hazard.	<p>Engineering Equivalency Evaluation 11-15, Switchgear Room Construction Boundary Room Evaluation Unit 1 Fire Zones 14, 40A, 40B, 41 and 42A (AA13, AA39A, AA39B, AA40 and AA41) & Unit 2 Fire Zones 20, 45, 46A, 47A and 47B (AA25, AA43, AA44, AA45A and AA45B)</p> <p>Engineering Equivalency Evaluation 11-16, ENGINEERING EQUIVALENCY EVALUATION FOR LUBE OIL STORAGE ROOMS FIRE ZONES 83, 88, 95 AND 100 (AA2), BOUNDARY EVALUATION</p> <p>Engineering Equivalency Evaluation 11-17, Diesel Generator Fuel oil Day Tank Rooms Fire Zones 15 (AA14), 16 (AA15), 18 (AA23) and 19 (AA24) Boundary Evaluation</p> <p>Engineering Equivalency Evaluation 11-2, Fire Zone 7 (AA7) to Fire Zone 38 (AA37) Boundary Evaluation</p> <p>Engineering Equivalency Evaluation 11-24, Fire Retention Capability of Nonconforming Fire Seals in Fire Zones having a Low Fire Severity</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-26, Fire Retention Capability of a HELB 3 Pressure Boundary Seal (Fire Areas AA19, AA20, AA21 and AA22)
				Engineering Equivalency Evaluation 11-27, Generic Fire Seal Design 1
				Engineering Equivalency Evaluation 11-28, Generic Fire Seal Design 2 (Fire Areas AA7, AA8, AA39A, AA40, AA43, AA45A, AA45B, AA48 and AA52)
				Engineering Equivalency Evaluation 11-29, Generic Fire Seal Design 3 in Fire Areas AA2A, AA2B, and AA15
				Engineering Equivalency Evaluation 11-3, Fire Zone 27 (AA31) to Fire Zone 39 (AA38)
				Engineering Equivalency Evaluation 11-30, Generic Fire Seal Design 4 (AA2)
				Engineering Equivalency Evaluation 11-31, Generic Fire Seal Design 5 (Fire Areas AA31 and AA38)
				Engineering Equivalency Evaluation 11-32, Generic Fire Seal Design 6 (AA2)

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-33, Generic Fire Seal Design 7 (Fire Areas AA7 and AA37)
				Engineering Equivalency Evaluation 11-34, Generic Fire Seal Design 8
				Engineering Equivalency Evaluation 11-35, Generic Fire Seal Design 9
				Engineering Equivalency Evaluation 11-4, Unit 1 Auxiliary Building Elevation 620 ft.-6 in. to Auxiliary Cable Vault Fire Zone 44n to Fire Zone 56
				Engineering Equivalency Evaluation 11-47, Fire Zones 44N (AA36), 44S (AA42) and 52 (AA3) Penetration Seals
				Engineering Equivalency Evaluation 11-48, Fire Zones 15 (AA14), 16 (AA15) 18 (AA23) and 19 (AA24) Penetration Seals
				Engineering Equivalency Evaluation 11-5, Unit 1 EPS/4 KV Switchgear Complex Ventilation Shaft Boundary Evaluation (Fire Areas AA39A, AA39B, AA40, AA41 and AA48)
				Engineering Equivalency Evaluation 11-50, Embedded Conduit Fire Wrap Protection (Fire Areas AA14 and AA24)

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-51, Screenhouse and Water Intake System Boundary Evaluation Fire Zone 142 (AA2A) to Fire Zone 143 (YD)
				Engineering Equivalency Evaluation 11-54, Unit 1 Main Control Room Cable Vault Penetration Seal W5111 Fire Zone 57 and 91 (Fire Areas AA50 and AA2A)
				Engineering Equivalency Evaluation 11-56, Turbine Building Main Steam Access Way Fire Zones 110 to 114, Fire Zones 111 to 115, Fire Zones 112 to 2N, Fire Zones 113 to 2S (Fire Areas AA2A, AA2B, AA2C)
				Engineering Equivalency Evaluation 11-6, Fire Zones 45 (AA43), 46A through 46D (AA44), 47A (AA45A), 47B (AA45B) to Fire Zone 60 (AA52) Shaft Boundary Evaluation
				Engineering Equivalency Evaluation 11-7, Fire Zone 5 (AA5/6) to Unit 1 Fire Zones 62A, 62B and 62C (AA54) and Unit 2 Fire Zones 63A, 63B and 63C (AA5) Removable Block Walls

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 9-35, Fire Zone 108 (AA2A) to Fire Zone 33A (AA34) Boundary Evaluation
				Engineering Equivalency Evaluation 9-36, Fire Zone 109 (AA2B) to 34A (AA35) Boundary Evaluation
				Engineering Equivalency Evaluation 9-37, Fire Zones 5 (AA5/6) and 32 (AA3) Boundary Evaluations
				Technical Evaluation-11-20, Narrow Space Openings between Penetrating Items and the Barrier or Between Penetrating Items Boundary Evaluation

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.11.4(b) [Conduit Internal Fire Seals]	<p>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>	Complies	CNP specification ES-FIRE-0601-QCF details the requirements for the installation and maintenance of fire rated seals and fire stops at CNP.	Plant Specification ES-FIRE-0601-QCF, Fire Rated Seals / Attachment 1, Typical Details.

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies by Previous NRC Approval	<p>By I&M submittal, dated October 20, 1988, Pg. 2 stated:</p> <p><i>"In consonance with our policy to maintain a safe as possible plant, we plan to seal conduits that meet the following criteria:</i></p> <p><i>1) An open-ended conduit is one in which the contained cables exit the conduit into a non-enclosed air space and do not directly enter into a metal enclosure such as a junction box or other similar noncombustible closure.</i></p> <p><i>2) When both ends of a double open-ended conduit terminate at the wall, it will be treated as a sleeve and sealed.</i></p> <p><i>3) For double open-ended conduits smaller than 2 inches in diameter:</i></p> <p><i>a. When both ends of the conduit terminate less than one foot from the barrier, at least one end will be sealed.</i></p> <p><i>b. When only one end of the conduit terminates less than one foot from the barrier, only that end of the conduit will be sealed.</i></p> <p><i>4) For double open-ended conduits 2 inches in diameter:</i></p> <p><i>a. When both ends of the conduit terminate less than 3 feet from the barrier, at least one end will be sealed.</i></p> <p><i>b. When only one end of the conduit terminates less than 3 feet from the barrier, only that end of the conduit will be sealed.</i></p> <p><i>5) Double open-ended conduits</i></p>	<p>NRC Safety Evaluation Report, dated April 26, 1990 / Evaluation of I&M response to Unresolved Issue Related to Post-Fire Safe Shutdown Methodology, Page 10, Section 2.18.2</p> <p>I&M Letter, Status of Internal Conduit Fire Seal Program and NRC Inspection Report 85013, Item 2.R, dated October 20, 1988 / Pg. 2</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
			<p><i>greater than 2 inches in diameter will be sealed on at least one end."</i></p> <p>The NRC Safety Evaluation, dated April 26, 1990 states:</p> <p><i>"Internal conduit seals are provided as delineated in a letter to the staff dated October 20, 1988. The internal seal program is consistent with the guidance provided in Appendix A to BTP APCS 9.5-1 and is, therefore, acceptable."</i></p> <p>The internal conduit sealing criteria, as approved by the SE Report, is still in use at CNP. There have been no plant modifications or other changes that would invalidate the basis for approval. The criteria for internally sealing conduit has not changed.</p>	

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
		Complies with Use of EEEEs	Engineering equivalency evaluations have been performed for any penetrations that do not provide a fire resistance rating at least equal to that of the fire area barrier itself. These engineering equivalency evaluations determined the penetrations are equivalent or adequate for the hazard.	<p>Engineering Equivalency Evaluation 11-15, Switchgear Room Construction Boundary Room Evaluation Unit 1 Fire Zones 14, 40A, 40B, 41 and 42A (AA13, AA39A, AA39B, AA40 and AA41) & Unit 2 Fire Zones 20, 45, 46A, 47A and 47B (AA25, AA43, AA44, AA45A and AA45B)</p> <p>Engineering Equivalency Evaluation 11-16, ENGINEERING EQUIVALENCY EVALUATION FOR LUBE OIL STORAGE ROOMS FIRE ZONES 83, 88, 95 AND 100 (AA2), BOUNDARY EVALUATION</p> <p>Engineering Equivalency Evaluation 11-17, Diesel Generator Fuel oil Day Tank Rooms Fire Zones 15 (AA14), 16 (AA15), 18 (AA23) and 19 (AA24) Boundary Evaluation</p> <p>Engineering Equivalency Evaluation 11-2, Fire Zone 7 (AA7) to Fire Zone 38 (AA37) Boundary Evaluation</p> <p>Engineering Equivalency Evaluation 11-24, Fire Retention Capability of Nonconforming Fire Seals in Fire Zones having a Low Fire Severity</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-26, Fire Retention Capability of a HELB 3 Pressure Boundary Seal (Fire Areas AA19, AA20, AA21 and AA22)
				Engineering Equivalency Evaluation 11-27, Generic Fire Seal Design 1
				Engineering Equivalency Evaluation 11-28, Generic Fire Seal Design 2 (Fire Areas AA7, AA8, AA39A, AA40, AA43, AA45A, AA45B, AA48 and AA52)
				Engineering Equivalency Evaluation 11-29, Generic Fire Seal Design 3 in Fire Areas AA2A, AA2B, and AA15
				Engineering Equivalency Evaluation 11-3, Fire Zone 27 (AA31) to Fire Zone 39 (AA38)
				Engineering Equivalency Evaluation 11-30, Generic Fire Seal Design 4 (AA2)
				Engineering Equivalency Evaluation 11-31, Generic Fire Seal Design 5 (Fire Areas AA31 and AA38)
				Engineering Equivalency Evaluation 11-32, Generic Fire Seal Design 6 (AA2)

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-33, Generic Fire Seal Design 7 (Fire Areas AA7 and AA37)
				Engineering Equivalency Evaluation 11-34, Generic Fire Seal Design 8
				Engineering Equivalency Evaluation 11-35, Generic Fire Seal Design 9
				Engineering Equivalency Evaluation 11-4, Unit 1 Auxiliary Building Elevation 620 ft.-6 in. to Auxiliary Cable Vault Fire Zone 44n to Fire Zone 56
				Engineering Equivalency Evaluation 11-47, Fire Zones 44N (AA36), 44S (AA42) and 52 (AA3) Penetration Seals
				Engineering Equivalency Evaluation 11-48, Fire Zones 15 (AA14), 16 (AA15) 18 (AA23) and 19 (AA24) Penetration Seals
				Engineering Equivalency Evaluation 11-5, Unit 1 EPS/4 KV Switchgear Complex Ventilation Shaft Boundary Evaluation (Fire Areas AA39A, AA39B, AA40, AA41 and AA48)
				Engineering Equivalency Evaluation 11-50, Embedded Conduit Fire Wrap Protection (Fire Areas AA14 and AA24)

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 11-51, Screenhouse and Water Intake System Boundary Evaluation Fire Zone 142 (AA2A) to Fire Zone 143 (YD)
				Engineering Equivalency Evaluation 11-54, Unit 1 Main Control Room Cable Vault Penetration Seal W5111 Fire Zone 57 and 91 (Fire Areas AA50 and AA2A)
				Engineering Equivalency Evaluation 11-56, Turbine Building Main Steam Access Way Fire Zones 110 to 114, Fire Zones 111 to 115, Fire Zones 112 to 2N, Fire Zones 113 to 2S (Fire Areas AA2A, AA2B, AA2C)
				Engineering Equivalency Evaluation 11-6, Fire Zones 45 (AA43), 46A through 46D (AA44), 47A (AA45A), 47B (AA45B) to Fire Zone 60 (AA52) Shaft Boundary Evaluation
				Engineering Equivalency Evaluation 11-7, Fire Zone 5 (AA5/6) to Unit 1 Fire Zones 62A, 62B and 62C (AA54) and Unit 2 Fire Zones 63A, 63B and 63C (AA5) Removable Block Walls

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
				Engineering Equivalency Evaluation 9-35, Fire Zone 108 (AA2A) to Fire Zone 33A (AA34) Boundary Evaluation
				Engineering Equivalency Evaluation 9-36, Fire Zone 109 (AA2B) to 34A (AA35) Boundary Evaluation
				Engineering Equivalency Evaluation 9-37, Fire Zones 5 (AA5/6) and 32 (AA3) Boundary Evaluations
				Technical Evaluation-11-20, Narrow Space Openings between Penetrating Items and the Barrier or Between Penetrating Items Boundary Evaluation

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.11.5 Electrical Raceway Fire Barrier Systems (ERFBS)	<p>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</p>	Complies	ERFBS that are credited to meet the requirements of NFPA 805 Chapter 4 are identified in the D. C. Cook Fire Safety Analysis (FSA). ERFBS are installed to meet the requirements of GL 86-10, Supplement 1.	<p>12-FPP-4030-066-016, Inspection of Thermo-Lag, Darmatt and Mecatiss wrapped enclosures</p> <p>FSA, D. C. Cook Fire Safety Analysis</p> <p>NFPPM, NFPA 805 Fire Protection Program Manual (NFPPM) / Attachment 6</p>

NFPA 805 Ch. 3 Ref	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
	<p>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>	<p>Complies with Use of EEEEs</p>	<p>Engineering Equivalency Evaluation 11.57 evaluates unprotected supports as adequate for the hazard.</p>	<p>Engineering Equivalency Evaluation 11-50, Embedded Conduit Fire Wrap Protection (Fire Areas AA14 and AA24)</p> <p>Engineering Equivalency Evaluation 11-57, Fire-Wrapped Cable Trays and Conduit Evaluations (Fire Areas AA14, AA24, AA32, AA39A, AA45A, AA2A and AA2B)</p>

Code	Year	Title	Applicable Evaluation(s)/Documents
NFPA 10	1984	<i>Standard for Portable Fire Extinguishers</i>	<ul style="list-style-type: none"> Report 09-0120-0123 Report 09-0120-0381 Report 0120-108-001 Report 0120-164-001 Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications
NFPA 12	1968	<i>Standard on Carbon Dioxide Extinguishing Systems</i>	<ul style="list-style-type: none"> Report 09-0120-0123 Report 0120-108-002 EEE-12-19 Technical Evaluation 12.21 Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications
NFPA 12A	1977	<i>Standard on Halon 1301 Fire Extinguishing Systems</i>	<ul style="list-style-type: none"> Report 09-0120-0123 Report 0120-108-003 EEE-12-23 Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications
NFPA 13	1971, 1983	<i>Standard for the Installation of Sprinkler Systems</i>	<ul style="list-style-type: none"> Report 09-0120-0123 Report 09-0120-0381 Report 0120-108-004 Report 0120-164-002 Report 0120-164-007 EEE-11-41 EEE-12-20 EEE-12-22Donald C Cook Nuclear Plant NFPA Code Deviations and Justifications Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications
NFPA 14	1971, 1978, 1986	<i>Standard for the Installation of Standpipe, Private Hydrant and Hose Systems</i>	<ul style="list-style-type: none"> Report 09-0120-0123 Report 09-0120-0381 Report 0120-108-005 Report 0120-164-003 Report 0120-164-007 Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 I&M response to Appendix A to Branch Technical Position APCSB 9.5-1 for Units No. 1 and 2, dated January 31, 1977

Code	Year	Title	Applicable Evaluation(s)/Documents
NFPA 15	1973	<i>Standard for Water Spray Fixed Systems for Fire Protection</i>	<ul style="list-style-type: none"> Report 09-0120-0123 Report 09-0120-0381 Report 0120-108-1375 Report 0120-164-004 Report 0120-164-007 EEE-11-41 EEE-12-20 EEE-12-22 Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications
NFPA 16	N/A	<i>Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems</i>	N/A – No such systems at CNP
NFPA 20	1990	<i>Standard for the Installation of Stationary Pumps for Fire Protection</i>	<ul style="list-style-type: none"> EEE-11-62Donald C Cook Nuclear Plant NFPA Code Deviations and Justifications
NFPA 22	1987	<i>Standard for Water Tanks for Private Fire Protection</i>	<ul style="list-style-type: none"> EEE-11-77DCC-CE-185-QCF
NFPA 24	1987	<i>Standard for the Installation of Private Fire Service Mains and their Appurtenances</i>	<ul style="list-style-type: none"> EEE-11-78 EEE-12-24 DCC-PM-108-QCS RFC-12-3065
NFPA 27	1986	<i>Private Fire Brigades</i>	N/A - NFPA 600 reviewed
NFPA 30	1987	<i>Flammable and Combustible Liquids Code</i>	<ul style="list-style-type: none"> NFPA 30 Code Compliance Evaluation for Donald C. Cook Nuclear Plant Unit 1 and 2 Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications
NFPA 50A	1999	<i>Standard for Gaseous Hydrogen Systems at Consumer Sites</i>	<ul style="list-style-type: none"> EEE-14-1-1
NFPA 51B	1999	<i>Standard for Fire Prevention During Welding, Cutting, and Other Hot Work</i>	<ul style="list-style-type: none"> EEE-14-1-1
NFPA 72D	1967, 1979	<i>Installation, Maintenance, and Use of Proprietary Protective Signaling Systems</i>	<ul style="list-style-type: none"> Report 09-0120-0123 Report 09-0120-0381 Report 0120-164-005 EEE-11-41 Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications

Code	Year	Title	Applicable Evaluation(s)/Documents
NFPA 72E	1974, 1978, 1982, 1984	<i>Automatic Fire Detectors</i>	<ul style="list-style-type: none"> • Report 09-0120-0123 • Report 09-0120-0381 • Report 0120-164-006 • EEE-11-41 • Donald C. Cook Nuclear Plant NFPA Code Deviations and Justifications
NFPA 80	1970	<i>Standard for Fire Doors and Fire Windows</i>	<ul style="list-style-type: none"> • NRC Safety Evaluation supporting Amendment Nos. 31 and 12 to License No. DPR-58 and DPR-74, dated July 31, 1979 • I&M Letter, Request for Approval and Exemptions, dated March 31, 1983 • NRC Safety Evaluation, Donald C. Cook Nuclear Power Plant, Unit Nos. 1 and 2 Fire Protection - Request for Exemption from requirements of Appendix R to 10 CFR 50, Sections III.G and III.O, dated December 23, 1983 • EEE-9-5 • EEE-9-13 • EEE-9-14 • EEE-9-15 • EEE-9-16 • EEE-9-17 • EEE-9-18 • EEE-9-19 • EEE-9-21 • EEE-9-22 • EEE-9-23 • EEE-9-24 • EEE-9-25 • EEE-9-31 • EEE-9-32 • EEE-9-37 • EEE-9-39 • EEE-11-1 • EEE-11-9 • EEE-11-15 • EEE-11-37 • EEE-11-39 • EEE-11-44 • EEE-11-56

Code	Year	Title	Applicable Evaluation(s)/Documents
			<ul style="list-style-type: none"> • EEE-11-65 • EEE-11-69 • EEE-11-71 • EEE-11-72
NFPA 80A	1996	<i>Recommended Practice for Protection of Buildings from Exterior Fire Exposures</i>	Refer to Chapter 3 Section 3.11.1, “Building Separation” in NFPPM, Appendix A.
NFPA 90A	1978	<i>Standard for the Installation of air-Conditioning and Ventilating Systems</i>	<ul style="list-style-type: none"> • NRC Safety Evaluation of Fire Protection Requests, dated August 27, 1985 • I&M Letter 0692R, Request for Additional Technical Exemptions to Certain Fire dampers and "Seismic Gaps", dated June 15, 1984 • I&M Letter 0692U, Appendix R Technical Exemption for Seismic Gaps and HVAC Duct Penetrations, dated August 13, 1994 • EEE-9-1 • EEE-9-2 • EEE-9-3 • EEE-9-4 • EEE-9-7 • EEE-9-8 • EEE-9-33 • EEE-9-34 • EEE-9-35 • EEE-9-36 • EEE-9-37 • EEE-9-38 • EEE-9-40 • EEE-9-41 • EEE-11-14 • EEE-11-15 • EEE-11-16 • EEE-11-45 • EEE-11-56 • EEE-12-13
NFPA 101	Current	<i>Life Safety Code</i>	Current edition will apply at the time of material purchase
NFPA 220	1999	<i>Standard on Types of Building Construction</i>	Refer to Chapter 3 Section 3.3.2, “Structural” in NFPPM, Appendix A.
NFPA 241	2000	<i>Standard for Safeguarding Construction, Alteration, and Demolition Operations</i>	<ul style="list-style-type: none"> • EEE-14-1-1

Code	Year	Title	Applicable Evaluation(s)/Documents
NFPA 251	1999	<i>Methods of Tests of Fire Endurance of Building Construction and Materials</i>	Refer to Chapter 3 Section 3.11.2, “Fire Barriers” in NFPPM, Appendix A.
NFPA 256	1998	<i>Standard Methods of Fire Tests of Roof Coverings</i>	Refer to Chapter 3 Section 3.3.6, “Roofs” in NFPPM, Appendix A.
NFPA 600	2000	<i>Standard on Industrial Fire Brigades</i>	<ul style="list-style-type: none"> • EEE-14-1-1
NFPA 701	1999	<i>Standard Methods of Fire Tests for Flame Propagation of Textiles and Films</i>	Refer to Chapter 3 Section 3.3.1.2(2), “Control of Combustible Materials” in NFPPM, Appendix A.
NFPA 750	N/A	<i>Standard on Water Mist Fire Protection Systems</i>	N/A - No such systems at CNP
NFPA 2001	N/A	<i>Standard on Clean Agent Fire Extinguishing Systems</i>	N/A - Systems at CNP are not required for NFPA Chapter 4 compliance

Attachment 3
Radioactive Release Review
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1.0 INTRODUCTION

1.1 Objective

The radioactive release review is intended to demonstrate that the fire protection goals, objectives, and criteria for addressing the possibility of radioactive release due to potential fuel damage and firefighting activities are met for Cook Nuclear Plant (CNP).

1.2 Overview

As discussed in Nuclear Energy Institute (NEI) 04-02, *Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program Under 10 CFR 50.48(c)*, Appendix G, “Considerations for Radioactive Release,” the treatment of radiological release to any unrestricted area due to fire is focused on potential radioactive release due to potential fuel damage and firefighting activities. The nuclear safety goal, nuclear safety objectives, and nuclear safety performance criteria specified in NFPA 805 require the prevention of fuel cladding damage. As such, radiological release due to fuel damage should not require a separate examination since no such damage is assumed to occur without violating the basic requirements of NFPA 805. This effectively limits the source of radiation (release source term). Therefore, containment integrity should not require specific examination. This means the scope of the fire protection analyses does not need to be expanded to include all containment isolation valves. No additional analyses are needed for radioactive release due to potential fuel damage.

Therefore, the focus of this report is to address the potential for radiological release due to firefighting activities. The objective is to address the potential for the loss of boundary control for contaminated spaces and to identify whether radiation release during transient conditions exceeds the limits designated in the plant’s Technical Specifications. The analysis focuses on the review of the fire emergency plans, fire brigade training materials, engineering controls, Technical Specification radiation limits, plant radiological procedures and calculations that are necessary to ensure that potential radioactive release is addressed.

1.3 Scope

The following buildings contain zones that have the potential for radioactive release due to fire suppression activities, and are included in this review:

- Auxiliary Building (Units 1 and 2)
- Containment Building (Units 1 and 2)
- Radioactive Materials Storage Building
- Outdoor Containers
- Vehicles Transporting Radioactive Materials

1.4 Summary of Revisions

Technical Evaluation 12.31, Revision 0 – Represents the initial issue of the document; includes incorporation of guidance provided by NFPA 805 FAQ 09-0056

NFPPM, Revision 1, Attachment 3 – Represents updates made due to completion of NFPA 805 implementation items. Appendices C and D are no longer required since the suggested document

markups have been incorporated into current plant documentation. While this entire attachment is new to the NFPPM, changes from Technical Evaluation 12.31, Revision 0 are marked with revision bars. Fire Zones 131 and 147 have been removed from this report to match the updated Power Block definition, as contained in the UFSAR. These fire zones do not contain any radioactive release potential.

2.0 ASSUMPTIONS

The following assumptions are provided for this Radioactive Release Review:

- Sea van containers are of sealed, non-combustible construction. Normal practices do not allow multiple containers to be open and unsecured. Therefore, when considering the potential for radioactive release from locations containing sea van containers, combustion of only one container is assumed. Other metal containers may be used to store combustible contaminated materials provided that the volume is not greater than that of a 40' sea van container as discussed in Technical Evaluation 11.76 (Ref. 5.24).
- Technical Evaluation 11.76, *NFPA 805 Airborne and Liquid Effluents Offsite Dose Analysis*, Revision 0 (Ref. 5.24) considers the worst-case (i.e., most conservative) locations with regard to complete combustion of one sea van container and its corresponding potential for radioactive exposure to the public.
- Drainage retention volume and/or drainage flow rate calculations are not provided or reviewed as part of this analysis. However, discussion regarding waste collection tank overflow implications is provided in the analysis below.

3.0 METHODOLOGY

3.1 Determine Radioactive Release Compartmentation

All fire zones and outbuildings have been “mapped” to the corresponding Fire Pre-Plan that covers them. The results of the mapping are identified in Table B-1 (Appendix B).

Those areas that do not have fire zone numbers (e.g., the Radioactive Material Storage Building) are also identified in NEI 04-02 Table E-1 (Appendix A) as they are considered to be “screened in” in some cases.

Based on input from Plant Radiation Protection (RP) personnel, each fire zone is determined to be “screened in” or “screened out” of the radioactive release review. Those areas in which there is no potential for radioactive release exists are considered “screened out.” The results of the screening process are documented in NEI 04-02 Table E-1 (Appendix A) and Appendix B.

3.2 Review and Update Fire Pre-Plans for “Screened In” Fire Areas

Fire Pre-Plans have been reviewed to ensure that, for locations with a potential for radioactive release due to fire suppression activities, specific steps are included for the containment and monitoring of potential gaseous and liquid effluents involving:

- fire suppression agents (e.g., water, foam, dry chemical, halon, CO₂), with particular attention given to drainage paths and contaminated liquid drainage systems;
- smoke and combustion products;
- post-fire salvage, overhaul, cleanup and recovery activities; and
- tools and gear used by the fire brigade and offsite fire responders

The review has been completed in accordance with EPM Division Procedure EPM-DP-FP-010, “Radioactive Release Review,” (Ref. 5.23) and with NRC FAQ 09-0056 which is intended to provide further guidance to Appendix G of NEI 04-02, Rev. 1. FAQ 09-0056, states, in part, “Ensure for locations that have the potential for contamination that specific steps are included for containment and monitoring of potentially contaminated gaseous and liquid effluents (typically smoke and fire suppression water). Update fire pre-plans as necessary.” This review included the following steps:

- Identification of applicable documentation, including the plant FSAR, fire pre-plans, procedures, and support drawings;
- Identification of contaminated plant areas, or areas that have the potential for contamination due to the effects of fire;
- Review of applicable documentation to identify whether the containment and monitoring of potential contamination involving fire suppression activities is discussed;
- Revision of documents to require the monitoring and containment of fire suppression agents, products of combustion, and fire brigade tools and gear where the potential for contamination exists

Refer to Section 4.1 for results of the fire pre-plan review.

3.3 Review Fire Brigade Training Materials

In accordance with NRC FAQ 09-0056, fire brigade training materials have been reviewed to verify whether they specifically address the containment and monitoring of potential contamination due to fire suppression activities. As necessary, the fire brigade training materials have been revised to address such containment and monitoring in potentially contaminated areas.

Refer to Section 3.2 for results of the Fire Brigade Training Materials review.

3.4 Review Engineering Controls for Gaseous and Liquid Effluents

In accordance with NRC FAQ 09-0056, engineering controls have been reviewed to ensure that, for locations with a potential for radioactive release due to fire suppression activities (i.e. “screened in” locations), gaseous and liquid effluents are contained and monitored within the plant boundaries. All plant operating modes, including full power and non-power conditions, were reviewed to confirm that radioactive dose limits found in PMP-6010-OSD-001, “Off-Site Dose Calculation Manual” are not exceeded.

Examples of engineering controls reviewed include:

- Automatic ventilation systems which monitor, filter, and control release of gaseous effluents;
- Drainage systems which monitor, filter, and control release of liquid effluents;

- Review of plant procedures/safeguards and documentation which address available engineering controls for non-power operations (NPO). Examples of NPO conditions include presence of openings such as doors and equipment hatches which could, if not addressed, provide a path for unmonitored and uncontrolled gaseous and liquid effluents

This review included the following steps:

- Identification of applicable documentation, including the plant UFSAR, fire pre-plans, design basis documents, procedures, and support drawings;
- Identification of contaminated plant areas, or areas that have the potential for contamination due to the effects of fire;
- Review of applicable documentation to identify whether the containment and monitoring of potential contamination involving fire suppression activities is discussed

Refer to Section 3.3 for results of the Plant Engineering Controls review.

4.0 ANALYSIS

4.1 Review of Fire Pre-Plans

Based on review of the CNP fire pre-plans and an assessment by CNP Radiation Protection, the plant areas containing the potential for radioactive release due to fire suppression activities and where the fire itself could cause a radioactive release (e.g., locations where fire could melt a non-metallic vessel containing a radioactive material) have been determined. The plant areas that do contain the potential for radioactive release due to fire suppression activities are listed in Appendix B of this report.

Per plant Procedure ENVI-8914, *Coordination of the Operational Aspects of the Radioactive Effluents Program at Cook Nuclear Plant*, a system is in place to monitor and contain radioactive effluents. Dose from gaseous effluents is maintained as low as reasonably achievable (ALARA) through operational processes and procedures. The Operations Department maintains a standard decay time for waste gas decay tanks as defined in the Updated Final Safety Analysis Report (UFSAR) (Chapter 11) and plant procedures. Waste gas in the tanks is released only if the required decay time has been met, if operational focus requires it, or if any explosive mixture of gases exists in a tank. In the event of a discharge, radioactive gaseous releases are potentially discharged and monitored from five discharge points: the unit vent, the condenser evacuation system, the gland seal exhaust, the plant heating boiler, and the steam generator blow-down start-up flask tank vent. Procedure ENVI-8914 states that all options shall be exhausted before determining that the release of a gas volume to the environment is required, and Attachment 1 to the procedure details the monitoring and release points of gaseous effluents.

Per Procedure ENVI-8914, liquid waste effluents are maintained ALARA by generation monitoring, work control/procedure input, and use of enhanced technologies. The Operations Department maintains a standard decay time for liquid waste containments as defined in the UFSAR (Chapter 11) and plant procedures. In the event of a discharge, radioactive liquid effluents are potentially discharged and monitored from four discharge points: the Liquid Radwaste Line, Steam Generator Blowdown and Blowdown Treatment, Turbine Building Sump, and the Service Water System, as further discussed in Attachment 1 of Procedure ENVI-8914, "Effluent Release Points and Monitoring."

Actions to contain potentially contaminated fire suppression water should follow guidance similar to that found in ENVI-8914 and Chapter 11 of the UFSAR to the extent that potentially contaminated water be isolated and monitored prior to discharge.

Based on this analysis, the fire pre-plans have been revised to reflect that, in locations where the potential for radioactive release due to fire suppression activities exists, communication with Radiation Protection must be established; the contaminated liquid or gaseous substance(s) must be contained within the radiologically controlled area or drained / exhausted to monitored locations; and that contained substances, including tools and gear, must be monitored and then discharged only when the limits specified in PMP-6010-OSD-001 are not exceeded. Fire Pre-Plans have also been revised to include required precautions to be undertaken for manual ventilation and smoke monitoring when normal ventilation is not available. The results of the fire pre-plan review are included in NEI 04-02 Table E-1 (Appendix A).

4.2 Review of Fire Brigade Training Materials

Appendix G of NEI 04-02 states, in part, “Ensure that training materials deal specifically with the containment and monitoring of potentially contaminated fire suppression water. Update training materials as necessary.” Fire brigade training materials have been revised to address the containment of potentially contaminated smoke, fire suppression agents, and fire brigade tools and gear. The revised training materials reinforce the use of fire pre-plans which, as discussed above, detail the steps and precautions necessary to contain radioactive release in potentially contaminated areas. The results of the Fire Brigade training materials review are included in NEI 04-02 Table E-1 (Appendix A).

4.3 Review of Engineering Controls for Gaseous and Liquid Effluents

In accordance with NRC FAQ 09-0056, engineering controls have been reviewed to ensure that, for locations with a potential for radioactive release due to fire suppression activities (i.e. “screened in”), gaseous and liquid effluents (i.e. contaminated smoke and fire-fighting water) are contained and monitored within the plant boundaries. All plant operating modes, including full power and non-power conditions, were reviewed. Per review of plant documentation described in Section 2.4 (Methodology) and discussion with Plant Engineers, engineering controls are capable of containing and monitoring radioactive gaseous and liquid effluents prior to safe discharge to atmosphere. The plant’s approach is deemed acceptable to meet NFPA 805 radioactive release performance criteria. Refer to NEI 04-02 Table E-1 (Appendix A) for system specifics regarding engineering controls present in specific “screened in” fire zones. NEI 04-02 Table E-1 is provided in the format recommended in NRC FAQ 09-0056.

Except as noted below, the Fire Areas where liquid effluents are collected in sumps or floor drains and routed to holdup tanks) are located in the Auxiliary building. All drainage in the Auxiliary Building above the elevation of 587 ft is routed to one of two Waste Holdup Tanks. Each of these tanks has a capacity of approximately 25,000 gallons. Drainage below the elevation of 587 ft is routed to either the Dirty Station Drain Sump Tank or the Clean Sump Tank, which have capacities of 600 gallons and 525 gallons, respectively. Liquid entering either of these sump tanks is then pumped to the Waste Holdup Tanks. The capacity of these tanks provides reasonable assurance that they will hold firefighting hose stream runoff or fixed suppression system discharge for fires within all of the permanent RCA Fire Areas. However, if these tanks were to overflow, additional

water would travel to the Chemical and Volume Control System (CVCS) Hold Up Tank Room, which has no overflow or outlet and is capable of holding a large amount of water (two 21,000 gallon tanks per unit).

Drainage in containment Fire Areas AA56 and AA58 is collected in the Reactor Coolant Drain Tank, which has a capacity of 350 gallons. Water can then be pumped to the eves Holdup Tanks for reuse, or transferred to the Waste Holdup Tanks for processing. Fire Area AA22, “U2 East MDAFWP Room” was screened out.

Liquid wastes in the Waste Holdup Tanks are processed using the Radioactive Waste Demineralization System (RWDS). The RWDS decontaminates the waste using filtration and ion exchange. The processed waste is routed to the waste evaporator condensate tanks and then pumped to one of two CVCS Monitor Tanks. The discharge from these tanks is monitored by the Radiation Monitoring System.

In addition, Fire Pre-Plans and training materials describe the presence and potential use of monitored drainage systems to drain firefighting liquid effluents if the systems are deemed operational and capable of supporting manual removal efforts.

There are screened-in fire zones which do not have fixed engineering controls, and therefore have the potential for unmitigated release beyond the plant boundaries. Potential releases of contaminated gaseous effluents and liquid effluents resulting from a fire in these areas are bounded by the results documented in Technical Evaluation 11.76 (Ref. 5.24). This calculation demonstrates that releases are within Technical Specifications limits.

5.0 REFERENCES

- 5.1 National Fire Protection Association (NFPA) 805, *Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants*, 2001 Edition
- 5.2 NFPA 805 FAQ 09-0056, “Radioactive Release Transition”
- 5.3 Nuclear Energy Institute (NEI) 04-02, *Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program Under 10 CFR 50.48(c)*, Rev. 2
- 5.4 Nuclear Regulatory Commission (NRC) Regulatory Guide 1.205, *Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants*, Rev. 1, 12/2009
- 5.5 10 CFR 20, *Standards for Protection against Radiation*
- 5.6 *Donald C. Cook Nuclear Plant Updated Final Safety Analysis Report (UFSAR)*, Chapter 5, Rev. 20.2
- 5.7 *Donald C. Cook Nuclear Plant Updated Final Safety Analysis Report (UFSAR)*, Chapter 9, Rev. 20
- 5.8 *Donald C. Cook Nuclear Plant Updated Final Safety Analysis Report (UFSAR)*, Chapter 11, Rev. 20.2

- 5.9 *Donald C. Cook Nuclear Plant Fire Pre-Plans Units 1 & 2, Volume 1, Rev. 17*
- 5.10 *Donald C. Cook Nuclear Plant Fire Pre-Plans Units 1 & 2, Volume 2, Rev. 14*
- 5.11 Flow Diagram OP-12-5148K-4, “Auxiliary Building ‘West’ Ventilation,” Rev. 4
- 5.12 Lesson Plan FW-C-9004, *Operation of Fire Extinguishers*, Rev. 6
- 5.13 Lesson Plan FW-C-9027, *Ventilation*
- 5.14 Lesson Plan FW-C-9033, *Fire Control*
- 5.15 Lesson Plan RP-L-0509, *Respond to a fire in the Restricted Area*, Rev. 1
- 5.16 Lesson Plan FW-L-9044, *Fire Brigade Annual Training*, Rev. 4
- 5.17 Procedure ENVI-8914, *Coordination of the Operational Aspects of the Radioactive Effluents Program at Cook Nuclear Plant*, Rev. 4
- 5.18 Procedure PMP-2270-FRP-001, *Fire Response Plan*, Rev. 23
- 5.19 Procedure PMP-6010-OSD-001, *Off-Site Dose Calculation Manual*, Rev. 25
- 5.20 Program Description TPD-600-FP, *Fire Protection Training Program Description*, Rev. 10
- 5.21 E-mail from R. Gray (AEP) to P. Ouellette (EPM) dated 8/13/2008 Re: Potential for Radioactive Release (EPM File Access Number 20080819-10)
- 5.22 E-mail from R. Gray (AEP) to J. LeMaire (EPM) dated 8/14/2008 Re: Potential for radioactive Release (EPM File Access Number 20080819-10)
- 5.23 EPM Division Procedure EPM-DP-FP-010, *Radioactive Release Review*, Rev. 0
- 5.24 Technical Evaluation 11.76, NFPA 805 Airborne Effluents Offsite Does Analysis, Rev. 0
- 5.25 Enclosure 2 to Letter AEP-NRC-2012-47, dated 06/29/2012
- 5.26 Lesson Plan RP-L-EP01, *RP Section Emergency Plan Response*, Rev. 2

APPENDIX A: RADIOACTIVE RELEASE REVIEW

Note: Attachment 3, Appendix A was updated to incorporate the closure of NFPA 805 implementation items. Revision bars are not used on this Appendix.

(38 pages attached)

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls Water	Engineering Controls Smoke	Training and Fire Pre-Plan Review Results	Conclusions
AA1	1, 1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 136, 137, 138A, 138B, 138C	U1 & U2 RHR & CTS Pump Area (El. 573')	Volume I: Fire Area AA1	9	No	Liquid effluents are collected in sumps which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	<p>All exhaust air from the Auxiliary Building is directed to the unit vents. Each vent has radiation detectors for continuous monitoring of the exhaust air during release to atmosphere. Exhaust air is filtered in high efficiency particulate air filter cells [UFSAR Section 9.9.2, 11.3.2.1].</p> <p>If normal ventilation is not available, smoke will be removed using manual ventilation to the outside or to an area where normal ventilation will remove the smoke. Prior to any release, plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated gaseous effluents.</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas.</p> <p>Training material and fire pre-plans describe the presence and potential use of monitored HVAC and drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	Based on the availability of engineered controls for both smoke and fire suppression water runoff and use of fire pre-plans and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls Water	Engineering Controls Smoke	Training and Fire Pre-Plan Review Results	Conclusions
AA2	2N, 28, 77, 78, 79, 80, 81, 82, 83, 90, 91, 92, 93, 94, 95, 108, 110, 127, 129, 139, 140, 141, 142, 2S, 100, 109, 111, 126, 130, 30, 84, 85, 86, 87, 88, 89, 96, 97, 98, 99	U1 & U2 Turbine Bldg., Screenhouse, U1 & U2 West Main Steam Enclosures & Pipe Tunnels	Volume I: Fire Area AA2	9	Yes	N/A	N/A	N/A	Not Required
AA2C	112, 113, 114, 115	U1 & U2 Sub-basement & ESW Pipe Tunnels	Volume I: Fire Area AA2C	9	Yes	N/A	N/A	N/A	Not Required

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls Water	Engineering Controls Smoke	Training and Fire Pre-Plan Review Results	Conclusions
AA3	3, 31, 32, 35, 36, 48, 49, 50, 51, 52, 69, 106, 107	Drumming/Drum Storage - El. 587', 609' U1 & U2 Aux. Bldg. & Fuel Handling Areas El. 633'	Volume I: Fire Area AA3	9	No	Liquid effluents are collected in floor drains and sumps which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	<p>All exhaust air from the Auxiliary Building is directed to the unit vents. Each vent has radiation detectors for continuous monitoring of the exhaust air during release to atmosphere. Exhaust air is filtered in high efficiency particulate air filter cells [UFSAR Section 9.9.2, 11.3.2.1].</p> <p>If normal ventilation is not available, smoke will be removed using manual ventilation to the outside or to an area where normal ventilation will remove the smoke. Prior to any release, plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated gaseous effluents.</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas.</p> <p>Training material and fire pre-plans describe the presence and potential use of monitored HVAC and drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	Based on the availability of engineered controls for both smoke and fire suppression water runoff and use of fire pre-plans and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA5/6	4, 5, 6A, 6M, 6N, 6S, 61, 64A, 65A, 64B, 65B	Aux. Bldg. (El. 587')	Volume I: Fire Area AA5/6	9	No	Liquid effluents are collected in floor drains which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	<p>All exhaust air from the Auxiliary Building is directed to the unit vents. Each vent has radiation detectors for continuous monitoring of the exhaust air during release to atmosphere. Exhaust air is filtered in high efficiency particulate air filter cells [UFSAR Section 9.9.2, 11.3.2.1].</p> <p>If normal ventilation is not available, smoke will be removed using manual ventilation to the outside or to an area where normal ventilation will remove the smoke. Prior to any release, plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated gaseous effluents.</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas.</p> <p>Training material and fire pre-plans describe the presence and potential use of monitored HVAC and drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	Based on the availability of engineered controls for both smoke and fire suppression water runoff and use of fire pre-plans and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA7	7	U1 Quadrant 1 Cable Tunnel (El. 596')	Volume I: Fire Area AA7	9	Yes	N/A	N/A	N/A	Not Required
AA8	8	U1 Quadrant 4 Cable Tunnel (El. 596')	Volume I: Fire Area AA8	9	Yes	N/A	N/A	N/A	Not Required
AA9	9, 10, 116	U1 Quadrant 1 Cable Tunnel (El. 596')	Volume I: Fire Area AA9	9	Yes	N/A	N/A	N/A	Not Required
AA10	11	U1 Quadrant 3S Cable Tunnel (El. 596')	Volume I: Fire Area AA10	9	Yes	N/A	N/A	N/A	Not Required

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA11	12	U1 Quadrant 2 Cable Tunnel (El. 596')	Volume I: Fire Area AA11	9	No	Liquid effluents are collected in floor drains which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	<p>All exhaust air from the Auxiliary Building is directed to the unit vents. Each vent has radiation detectors for continuous monitoring of the exhaust air during release to atmosphere. Exhaust air is filtered in high efficiency particulate air filter cells [UFSAR Section 9.9.2, 11.3.2.1].</p> <p>If normal ventilation is not available, smoke will be removed using manual ventilation to the outside or to an area where normal ventilation will remove the smoke. Prior to any release, plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated gaseous effluents.</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas.</p> <p>Training material and fire pre-plans describe the presence and potential use of monitored HVAC and drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	Based on the availability of engineered controls for both smoke and fire suppression water runoff and use of fire pre-plans and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.
AA12	13	U1 DG Oil Pump Room (el. 587')	Volume I: Fire Area AA12	9	Yes	N/A	N/A	N/A	Not Required

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Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA21	17F	U2 TDAFP Room (El. 591')	Volume I: Fire Area AA21	9	Yes	N/A	N/A	N/A	Not Required
AA22	17G	U2 East MDAFP Room (El. 591')	Volume I: Fire Area AA22	9	Yes	N/A	N/A	N/A	Not Required
AA23	18	U2 CD DG Room (El. 587')	Volume I: Fire Area AA23	9	Yes	N/A	N/A	N/A	Not Required
AA24	19	U2 AB DG Room (El. 587')	Volume I: Fire Area AA24	9	Yes	N/A	N/A	N/A	Not Required
AA25	20	U2 Transformer Room Elec. (El. 591')	Volume I: Fire Area AA25	9	Yes	N/A	N/A	N/A	Not Required
AA26	21	U2 DG Oil Pump Room (El. 587')	Volume I: Fire Area AA26	9	Yes	N/A	N/A	N/A	Not Required

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA27	22	U2 Quadrant 2 Piping Tunnel (El. 596')	Volume I: Fire Area AA27	9	No	Liquid effluents are collected in floor drains which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	<p>All exhaust air from the Auxiliary Building is directed to the unit vents. Each vent has radiation detectors for continuous monitoring of the exhaust air during release to atmosphere. Exhaust air is filtered in high efficiency particulate air filter cells [UFSAR Section 9.9.2, 11.3.2.1].</p> <p>If normal ventilation is not available, smoke will be removed using manual ventilation to the outside or to an area where normal ventilation will remove the smoke. Prior to any release, plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated gaseous effluents.</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas.</p> <p>Training material and fire pre-plans describe the presence and potential use of monitored HVAC and drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	Based on the availability of engineered controls for both smoke and fire suppression water runoff and use of fire pre-plans and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results		Conclusions
						Water	Smoke			
AA29	23, 24, 25, 117	U2 Quadrant 3M & 3S Cable Tunnel (El. 596')	Volume I: Fire Area AA29	9	Yes	N/A	N/A	N/A	N/A	Not Required
AA30	26	U2 Quadrant 4 Cable Tunnel (El. 596')	Volume I: Fire Area AA30	9	Yes	N/A	N/A	N/A	N/A	Not Required
AA31	27	U2 Quadrant 1 Cable Tunnel (El. 596')	Volume I: Fire Area AA31	9	Yes	N/A	N/A	N/A	N/A	Not Required
AA32	29A, 29B, 29E	U1 ESW Pump Area & U1 & U2 Basement MCC Room El. 591'	Volume I: Fire Area AA32	9	Yes	N/A	N/A	N/A	N/A	Not Required
AA32	29G	U1 ESW Pump Area & U1 & U2 Basement MCC Room El. 575'	Volume I: Fire Area AA32	9	Yes	N/A	N/A	N/A	N/A	Not Required
AA33	29C, 29D, 29F	U2 ESW Pump Area (El. 591')	Volume I: Fire Area AA33	9	Yes	N/A	N/A	N/A	N/A	Not Required

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA34	33, 33A, 33B, 105	U1 East MS Valve Encl., MS Line NESW Valve Areas & Contractor Acc Control Area (EL. 612')	Volume I: Fire Area AA34	9	No	Liquid effluents are collected in floor drains which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	This fire zone does not have a monitored ventilation system, however, the CNP “Emergency Plan” includes provisions for evaluating radiological emergencies, including exterior fire events that could lead to the release of gaseous radioactivity (e.g., fire damage affecting a loaded cask confinement boundary). A fire event will be classified in accordance with PMP-2080-EPP-101 “Emergency Classification” as either an Alert or Unusual Event (UE), and appropriate actions are taken. These actions include Activation and Operation of the Emergency Operations Facility (EOF), as specified in RMT-2080-EOF-001, which will initiate coordination between CNP departments to designate and dispatch plant-knowledgeable individual(s) in affected discipline(s) as the emergency warrants. Radiation release is	Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas. Training material and fire pre-plans describe the presence and potential use of monitored HVAC systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.	Based on the results documented in Technical Evaluation 11.76; the availability of engineered controls for fire suppression water runoff; and the use of radiation protection procedures, fire pre-plans, and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls Water	Smoke	Training and Fire Pre-Plan Review Results	Conclusions
							monitored and calculated using the methods specified in the offsite dose calculation manual (ODCM) [PMP-2080-EPP-101, Attachment 3]. The Off-Site Dose Calculation Manual (ODCM) is the top tier document for the Radiological Environmental Monitoring Program (REMP), the Radioactive Effluent Controls Program (RECP), contains criteria pertaining to the previous Radiological Effluent Technical Specifications (RETS) as defined in NUREG-0472, and fully implements the requirements of Technical Specification 5.5.3, Radioactive Effluent Controls Program. The ODCM contains the methodology and parameters to be used in the calculation of off-site doses due to radioactive liquid and gaseous effluents and in the calculation of liquid and gaseous monitoring instrumentation alarm/trip setpoints.		

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls Water	Smoke	Training and Fire Pre-Plan Review Results	Conclusions
							The potential release of contaminated gaseous effluents is bound by a fire involving a single worst-case sea van as described in Technical Evaluation 11.76, Revision 0. This Technical Evaluation demonstrates that a release will not exceed Technical Specification limits.		

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA35	34, 34A, 34B	U2 East MS Valve Encl., MS Line NESW Valve Areas (EL. 612')	Volume I: Fire Area AA35	9	No	Liquid effluents are collected in floor drains which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	This fire zone does not have a monitored ventilation system, however, the CNP “Emergency Plan” includes provisions for evaluating radiological emergencies, including exterior fire events that could lead to the release of gaseous radioactivity (e.g., fire damage affecting a loaded cask confinement boundary). A fire event will be classified in accordance with PMP-2080-EPP-101 “Emergency Classification” as either an Alert or Unusual Event (UE), and appropriate actions are taken. These actions include Activation and Operation of the Emergency Operations Facility (EOF), as specified in RMT-2080-EOF-001, which will initiate coordination between CNP departments to designate and dispatch plant-knowledgeable individual(s) in affected discipline(s) as the emergency warrants. Radiation release is	Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas. Training material and fire pre-plans describe the presence and potential use of monitored HVAC systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.	Based on the results documented in Technical Evaluation 11.76; the availability of engineered controls for fire suppression water runoff; and the use of radiation protection procedures, fire pre-plans, and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls Water	Smoke	Training and Fire Pre-Plan Review Results	Conclusions
							monitored and calculated using the methods specified in the offsite dose calculation manual (ODCM) [PMP-2080-EPP-101, Attachment 3]. The Off-Site Dose Calculation Manual (ODCM) is the top tier document for the Radiological Environmental Monitoring Program (REMP), the Radioactive Effluent Controls Program (RECP), contains criteria pertaining to the previous Radiological Effluent Technical Specifications (RETS) as defined in NUREG-0472, and fully implements the requirements of Technical Specification 5.5.3, Radioactive Effluent Controls Program. The ODCM contains the methodology and parameters to be used in the calculation of off-site doses due to radioactive liquid and gaseous effluents and in the calculation of liquid and gaseous monitoring instrumentation alarm/trip setpoints.		

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls Water	Smoke	Training and Fire Pre-Plan Review Results	Conclusions
							The potential release of contaminated gaseous effluents is bound by a fire involving a single worst-case sea van as described in Technical Evaluation 11.76, Revision 0. This Technical Evaluation demonstrates that a release will not exceed Technical Specification limits.		

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls Water	Smoke	Training and Fire Pre-Plan Review Results	Conclusions
AA36/42 37, 43, 44A, 44B, 44C, 44D, 44E, 44F, 44G, 44H, 44N, 44S		Aux. Bldg. (El. 609')	Volume I: Fire Area AA36/42	9	No	Liquid effluents are collected in sumps which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	<p>All exhaust air from the Auxiliary Building is directed to the unit vents. Each vent has radiation detectors for continuous monitoring of the exhaust air during release to atmosphere. Exhaust air is filtered in high efficiency particulate air filter cells [UFSAR Section 9.9.2, 11.3.2.1].</p> <p>If normal ventilation is not available, smoke will be removed using manual ventilation to the outside or to an area where normal ventilation will remove the smoke. Prior to any release, plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated gaseous effluents.</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas.</p> <p>Training material and fire pre-plans describe the presence and potential use of monitored HVAC and drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	Based on the availability of engineered controls for both smoke and fire suppression water runoff and use of fire pre-plans and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA37	38	U1 Quadrant 2 Cable Tunnel (El. 612')	Volume I: Fire Area AA37	9	No	Liquid effluents are collected in floor drains which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	<p>All exhaust air from the Auxiliary Building is directed to the unit vents. Each vent has radiation detectors for continuous monitoring of the exhaust air during release to atmosphere. Exhaust air is filtered in high efficiency particulate air filter cells [UFSAR Section 9.9.2, 11.3.2.1].</p> <p>If normal ventilation is not available, smoke will be removed using manual ventilation to the outside or to an area where normal ventilation will remove the smoke. Prior to any release, plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated gaseous effluents.</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas.</p> <p>Training material and fire pre-plans describe the presence and potential use of monitored HVAC and drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	Based on the availability of engineered controls for both smoke and fire suppression water runoff and use of fire pre-plans and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA38	39	U2 Quadrant 2 Cable Tunnel (El. 612')	Volume I: Fire Area AA38	9	No	Liquid effluents are collected in floor drains which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	<p>All exhaust air from the Auxiliary Building is directed to the unit vents. Each vent has radiation detectors for continuous monitoring of the exhaust air during release to atmosphere. Exhaust air is filtered in high efficiency particulate air filter cells [UFSAR Section 9.9.2, 11.3.2.1].</p> <p>If normal ventilation is not available, smoke will be removed using manual ventilation to the outside or to an area where normal ventilation will remove the smoke. Prior to any release, plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated gaseous effluents.</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas.</p> <p>Training material and fire pre-plans describe the presence and potential use of monitored HVAC and drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	Based on the availability of engineered controls for both smoke and fire suppression water runoff and use of fire pre-plans and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.
AA39A	40A	U1 AB Swgr. Room (El. 609'-6")	Volume I: Fire Area AA39A	9	Yes	N/A	N/A	N/A	Not Required
AA39B	40B	U1 CD Swgr. Room (El. 609'-6")	Volume I: Fire Area AA39B	9	Yes	N/A	N/A	N/A	Not Required

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA40	41	U1 ESS and MCC Room (El. 609'-6")	Volume I: Fire Area AA40	9	Yes	N/A	N/A	N/A	Not Required
AA41	42A, 42B, 42C, 42D	U1 Emerg. Power Systems Area (El. 609'-6")	Volume I: Fire Area AA41	9	Yes	N/A	N/A	N/A	Not Required
AA43	45	U2 ESS and MCC Room (El. 609'-6")	Volume I: Fire Area AA43	9	Yes	N/A	N/A	N/A	Not Required
AA44	46A, 46B, 46C, 46D	U2 Emerg. Power Systems Area (El. 609'-6")	Volume I: Fire Area AA44	9	Yes	N/A	N/A	N/A	Not Required
AA45A	47A	U2 Swgr. Room (El. 609'-6")	Volume I: Fire Area AA45A	9	Yes	N/A	N/A	N/A	Not Required
AA45B	47B	U2 Swgr. Room (El. 609'-6")	Volume I: Fire Area AA45B	9	Yes	N/A	N/A	N/A	Not Required
AA46	53	U1 Control Room (El. 633')	Volume I: Fire Area AA46	9	Yes	N/A	N/A	N/A	Not Required
AA47	54	U2 Control Room (El. 633')	Volume I: Fire Area AA47	9	Yes	N/A	N/A	N/A	Not Required

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA48	55, 56	U1 Swgr. Rooms Cable Vault & Aux. Cable Vault (El. 625'-10") & 620'-6")	Volume I: Fire Area AA48	9	No	<p>This Fire Area does not contain a monitored drainage system. Plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated liquid effluents.</p> <p>The potential release of contaminated liquid effluents is bound by a fire involving a single worst-case sea van as described in Technical Evaluation 11.76, Revision 0. This Technical Evaluation demonstrates that a release will not exceed Technical Specification limits.</p>	<p>Fire Zone 56 is located within the radiologically-controlled area (RCA). Ventilation in this zone is part of the Auxiliary Building system, in which all exhaust air is directed to the unit vents. Each vent has radiation detectors for continuous monitoring of the exhaust air during release to atmosphere. Exhaust air is filtered in high efficiency particulate air filter cells [UFSAR Section 9.9.2, 11.3.2.1].</p> <p>If normal ventilation is not available, smoke will be removed using manual ventilation to the outside or to an area where normal ventilation will remove the smoke. Prior to any release, plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated gaseous effluents.</p> <p>Fire Zone 55 is not located in the RCA and is screened</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas. Training material and fire pre-plans describe the presence and potential use of monitored drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	<p>Based on the results documented in Technical Evaluation 11.76; the availability of engineered controls for smoke; and the use of radiation protection procedures, fire pre-plans, and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.</p>

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results		Conclusions
						Water	Smoke			
out of this analysis.										
AA50	57, 144	U1 Control Room Cable Vault & HSD Panel Area (El. 624' & 633')	Volume I: Fire Area AA50	9	Yes	N/A		N/A	N/A	Not Required
AA51	58, 145	U2 Control Room Cable Vault & HSD Panel Area (El. 624' & 633')	Volume I: Fire Area AA51	9	Yes	N/A		N/A	N/A	Not Required

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA52	59, 60	U2 Swgr. Room Cable Vault & Aux. Cable Vault (El. . 625'-10" & 620'-6")	Volume I: Fire Area AA52	9	No	<p>This Fire Area does not contain a monitored drainage system. Plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated liquid effluents.</p> <p>The potential release of contaminated liquid effluents is bound by a fire involving a single worst-case sea van as described in Technical Evaluation 11.76, Revision 0. This Technical Evaluation demonstrates that a release will not exceed Technical Specification limits.</p>	<p>Fire Zone 59 is located within the radiologically-controlled area (RCA). Ventilation in this zone is part of the Auxiliary Building system, in which all exhaust air is directed to the unit vents. Each vent has radiation detectors for continuous monitoring of the exhaust air during release to atmosphere. Exhaust air is filtered in high efficiency particulate air filter cells [UFSAR Section 9.9.2, 11.3.2.1].</p> <p>If normal ventilation is not available, smoke will be removed using manual ventilation to the outside or to an area where normal ventilation will remove the smoke. Prior to any release, plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated gaseous effluents.</p> <p>Fire Zone 60 is not located in the RCA and is screened</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas. Training material and fire pre-plans describe the presence and potential use of monitored drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	<p>Based on the results documented in Technical Evaluation 11.76; the availability of engineered controls for smoke; and the use of radiation protection procedures, fire pre-plans, and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.</p>

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
						out of this analysis.			
AA54	62A, 62B, 62C	U1 Charging Pumps Area (El. 587')	Volume I: Fire Area AA54	9	No	Liquid effluents are collected in floor drains which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	<p>All exhaust air from the Auxiliary Building is directed to the unit vents. Each vent has radiation detectors for continuous monitoring of the exhaust air during release to atmosphere. Exhaust air is filtered in high efficiency particulate air filter cells [UFSAR Section 9.9.2, 11.3.2.1].</p> <p>If normal ventilation is not available, smoke will be removed using manual ventilation to the outside or to an area where normal ventilation will remove the smoke. Prior to any release, plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated gaseous effluents.</p>	Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas. Training material and fire pre-plans describe the presence and potential use of monitored HVAC and drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.	Based on the availability of engineered controls for both smoke and fire suppression water runoff and use of fire pre-plans and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA55	63A, 63B, 63C	U2 Charging Pumps Area (El. 587')	Volume I: Fire Area AA55	9	No	Liquid effluents are collected in floor drains which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	<p>All exhaust air from the Auxiliary Building is directed to the unit vents. Each vent has radiation detectors for continuous monitoring of the exhaust air during release to atmosphere. Exhaust air is filtered in high efficiency particulate air filter cells [UFSAR Section 9.9.2, 11.3.2.1].</p> <p>If normal ventilation is not available, smoke will be removed using manual ventilation to the outside or to an area where normal ventilation will remove the smoke. Prior to any release, plant fire pre-plans provide instructions to establish communications with Radiation Protection personnel and also provide precautions for containing, monitoring, and releasing contaminated gaseous effluents.</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas.</p> <p>Training material and fire pre-plans describe the presence and potential use of monitored HVAC and drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	Based on the availability of engineered controls for both smoke and fire suppression water runoff and use of fire pre-plans and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA56	66, 67, 68, 101, 103, 118, 120, 122, 132, 134	U1 Containment	Volume I: Fire Area AA56	9	No	Liquid effluents are collected in floor drains and sumps which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	<p>During Plant Operation: All containment ventilation systems except for the purge and pressure relief systems are of the recirculating type. The containment purge exhaust and the containment pressure relief systems discharge to the unit vent where they are monitored before release to the environment [UFSAR Section 5.5.1].</p> <p>During NPO: The containment ventilation system is designed to operate during outages [UFSAR Section 5.5.2]. In addition, the release of radioactive materials due to smoke migration is not expected to be significant as plant personnel monitor the containment structure during non-power operations, thereby reducing the potential for a fire large enough to have radiological consequences. In addition, the volume of containment is expected to be sufficiently large enough to ensure that smoke from any credible</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas. Training material and fire pre-plans describe the presence and potential use of monitored HVAC and drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	Based on the availability of engineered controls for both smoke and fire suppression water runoff and use of fire pre-plans and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
							ignition source will be contained within the structure.		
AA57A	70, 71	U1 Control Room HVAC Equip. & Computer Areas (El. 650')	Volume I: Fire Area AA57A	9	Yes	N/A	N/A	N/A	Not Required
AA57B	72, 73, 74	U2 Control Room HVAC Equip. & Computer Areas (El. 650')	Volume I: Fire Area AA57B	9	Yes	N/A	N/A	N/A	Not Required

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
AA58	75, 76, 102, 104, 119, 121, 123, 133, 135	U2 Containment	Volume I: Fire Area AA58	9	No	Liquid effluents are collected in floor drains and sumps which are routed to monitored waste holdup tanks [UFSAR Section 11.1.2.1.1].	<p>During Plant Operation: All containment ventilation systems except for the purge and pressure relief systems are of the recirculating type. The containment purge exhaust and the containment pressure relief systems discharge to the unit vent where they are monitored before release to the environment [UFSAR Section 5.5.1].</p> <p>During NPO: The containment ventilation system is designed to operate during outages [UFSAR Section 5.5.2]. In addition, the release of radioactive materials due to smoke migration is not expected to be significant as plant personnel monitor the containment structure during non-power operations, thereby reducing the potential for a fire large enough to have radiological consequences. In addition, the volume of containment is expected to be sufficiently large enough to ensure that smoke from any credible</p>	<p>Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas. Training material and fire pre-plans describe the presence and potential use of monitored HVAC and drainage systems. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.</p>	Based on the availability of engineered controls for both smoke and fire suppression water runoff and use of fire pre-plans and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
							ignition source will be contained within the structure.		
YD	143	Yard - Water Intake and Discharge System	Volume I: Fire Area AAYD	9	Yes	N/A	N/A	N/A	Not Required

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
YD	146	Yard - Trash Loading Area Fire Area AAYD	Volume I:	9	No	This fire zone does not have a monitored drainage system, however, the CNP “Emergency Plan” includes provisions for evaluating radiological emergencies, including exterior fire events that could lead to the release of liquid radioactivity (e.g., fire damage affecting a loaded cask confinement boundary). A fire event will be classified in accordance with PMP-2080-EPP-101 “Emergency Classification” as either an Alert or Unusual Event (UE), and appropriate actions are taken. These actions include Activation and Operation of the Emergency Operations Facility (EOF), as specified in RMT-2080-EOF-001, which will initiate coordination between CNP departments to designate and dispatch plant-knowledgeable individual(s) in affected discipline(s) as the emergency warrants. Radiation release is monitored and calculated	This fire zone does not have a monitored ventilation system, however, the CNP “Emergency Plan” includes provisions for evaluating radiological emergencies, including exterior fire events that could lead to the release of gaseous radioactivity (e.g., fire damage affecting a loaded cask confinement boundary). A fire event will be classified in accordance with PMP-2080-EPP-101 “Emergency Classification” as either an Alert or Unusual Event (UE), and appropriate actions are taken. These actions include Activation and Operation of the Emergency Operations Facility (EOF), as specified in RMT-2080-EOF-001, which will initiate coordination between CNP departments to designate and dispatch plant-knowledgeable individual(s) in affected discipline(s) as the emergency warrants. Radiation release is	Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.	Based on the results documented in Technical Evaluation 11.76 and the use of radiation protection procedures, fire pre-plans, and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls Water	Engineering Controls Smoke	Training and Fire Pre-Plan Review Results	Conclusions
						using the methods specified in the offsite dose calculation manual (ODCM) [PMP-2080-EPP-101, Attachment 3]. The Off-Site Dose Calculation Manual (ODCM) is the top tier document for the Radiological Environmental Monitoring Program (REMP), the Radioactive Effluent Controls Program (RECP), contains criteria pertaining to the previous Radiological Effluent Technical Specifications (RETS) as defined in NUREG-0472, and fully implements the requirements of Technical Specification 5.5.3, Radioactive Effluent Controls Program. The ODCM contains the methodology and parameters to be used in the calculation of off-site doses due to radioactive liquid and gaseous effluents and in the calculation of liquid and gaseous monitoring instrumentation alarm/trip setpoints.	monitored and calculated using the methods specified in the offsite dose calculation manual (ODCM) [PMP-2080-EPP-101, Attachment 3]. The Off-Site Dose Calculation Manual (ODCM) is the top tier document for the Radiological Environmental Monitoring Program (REMP), the Radioactive Effluent Controls Program (RECP), contains criteria pertaining to the previous Radiological Effluent Technical Specifications (RETS) as defined in NUREG-0472, and fully implements the requirements of Technical Specification 5.5.3, Radioactive Effluent Controls Program. The ODCM contains the methodology and parameters to be used in the calculation of off-site doses due to radioactive liquid and gaseous effluents and in the calculation of liquid and gaseous monitoring instrumentation alarm/trip setpoints.		
						The potential release of			

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
						contaminated liquid effluents is bound by a fire involving a single worst-case sea van as described in Technical Evaluation 11.76, Revision 0. This Technical Evaluation demonstrates that a release will not exceed Technical Specification limits.	The potential release of contaminated gaseous effluents is bound by a fire involving a single worst-case sea van as described in Technical Evaluation 11.76, Revision 0. This Technical Evaluation demonstrates that a release will not exceed Technical Specification limits.		

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
YD	Yard	Yard	Volume II: Support Buildings and Yard Areas	7	No	This fire zone does not have a monitored drainage system, however, the CNP “Emergency Plan” includes provisions for evaluating radiological emergencies, including exterior fire events that could lead to the release of liquid radioactivity (e.g., fire damage affecting a loaded cask confinement boundary). A fire event will be classified in accordance with PMP-2080-EPP-101 “Emergency Classification” as either an Alert or Unusual Event (UE), and appropriate actions are taken. These actions include Activation and Operation of the Emergency Operations Facility (EOF), as specified in RMT-2080-EOF-001, which will initiate coordination between CNP departments to designate and dispatch plant-knowledgeable individual(s) in affected discipline(s) as the emergency warrants. Radiation release is monitored and calculated	This fire zone does not have a monitored ventilation system, however, the CNP “Emergency Plan” includes provisions for evaluating radiological emergencies, including exterior fire events that could lead to the release of gaseous radioactivity (e.g., fire damage affecting a loaded cask confinement boundary). A fire event will be classified in accordance with PMP-2080-EPP-101 “Emergency Classification” as either an Alert or Unusual Event (UE), and appropriate actions are taken. These actions include Activation and Operation of the Emergency Operations Facility (EOF), as specified in RMT-2080-EOF-001, which will initiate coordination between CNP departments to designate and dispatch plant-knowledgeable individual(s) in affected discipline(s) as the emergency warrants. Radiation release is	Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.	Based on the results documented in Technical Evaluation 11.76 and the use of radiation protection procedures, fire pre-plans, and training materials, CNP’s approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls Water	Engineering Controls Smoke	Training and Fire Pre-Plan Review Results	Conclusions
						using the methods specified in the offsite dose calculation manual (ODCM) [PMP-2080-EPP-101, Attachment 3]. The Off-Site Dose Calculation Manual (ODCM) is the top tier document for the Radiological Environmental Monitoring Program (REMP), the Radioactive Effluent Controls Program (RECP), contains criteria pertaining to the previous Radiological Effluent Technical Specifications (RETS) as defined in NUREG-0472, and fully implements the requirements of Technical Specification 5.5.3, Radioactive Effluent Controls Program. The ODCM contains the methodology and parameters to be used in the calculation of off-site doses due to radioactive liquid and gaseous effluents and in the calculation of liquid and gaseous monitoring instrumentation alarm/trip setpoints.	monitored and calculated using the methods specified in the offsite dose calculation manual (ODCM) [PMP-2080-EPP-101, Attachment 3]. The Off-Site Dose Calculation Manual (ODCM) is the top tier document for the Radiological Environmental Monitoring Program (REMP), the Radioactive Effluent Controls Program (RECP), contains criteria pertaining to the previous Radiological Effluent Technical Specifications (RETS) as defined in NUREG-0472, and fully implements the requirements of Technical Specification 5.5.3, Radioactive Effluent Controls Program. The ODCM contains the methodology and parameters to be used in the calculation of off-site doses due to radioactive liquid and gaseous effluents and in the calculation of liquid and gaseous monitoring instrumentation alarm/trip setpoints.		
						The potential release of			

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
						contaminated liquid effluents is bound by a fire involving a single worst-case sea van as described in Technical Evaluation 11.76, Revision 0. This Technical Evaluation demonstrates that a release will not exceed Technical Specification limits.	The potential release of contaminated gaseous effluents is bound by a fire involving a single worst-case sea van as described in Technical Evaluation 11.76, Revision 0. This Technical Evaluation demonstrates that a release will not exceed Technical Specification limits.		

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
YD	Yard	Radioactive Material Building (RMB)	Volume II: Support Buildings and Yard Areas	7	No	This building does not contain a monitored drainage system. CNP “Emergency Plan” includes provisions for evaluating radiological emergencies, including fire events outside the protected area that could lead to the release of liquid radioactivity. A fire event in the RMB that could result in an offsite radioactive release is classified in accordance with PMP-2080-EPP-101 “Emergency Classification” as either an Alert or Unusual Event (UE), and appropriate actions are taken. These actions include Activation and Operation of the Emergency Operations Facility (EOF), as specified in RMT-2080-EOF-001, which will initiate coordination between CNP departments to designate and dispatch plant-knowledgeable individual(s) in affected discipline(s) as the emergency warrants. Radiation release is monitored and calculated	This building does not contain an automatic ventilation system. CNP “Emergency Plan” includes provisions for evaluating radiological emergencies, including fire events outside the protected area that could lead to the release of gaseous radioactivity. A fire event in the RMB that could result in an offsite radioactive release is classified in accordance with PMP-2080-EPP-101 “Emergency Classification” as either an Alert or Unusual Event (UE), and appropriate actions are taken. These actions include Activation and Operation of the Emergency Operations Facility (EOF), as specified in RMT-2080-EOF-001, which will initiate coordination between CNP departments to designate and dispatch plant-knowledgeable individual(s) in affected discipline(s) as the emergency warrants. Radiation release is monitored and calculated	Training materials reinforce use of fire pre-plans. Fire Pre-Plans identify potentially contaminated areas, provide instruction for communication with Radiation Protection, and describe precautions to be undertaken for safe removal of contaminated smoke and water runoff in these potentially contaminated areas. The level of detail provided in the training materials and fire pre-plans meets NFPA 805 radioactive release performance criteria.	Based on the results documented in Technical Evaluation 11.76 and the use of radiation protection procedures, fire pre-plans, and training materials, CNP's approach meets NFPA 805 radioactive release performance criteria.

Fire Area	Fire Zone	Fire Zone Description	Fire Pre-Plan	Fire Pre-Plan Rev	Screened Out?	Engineering Controls		Training and Fire Pre-Plan Review Results	Conclusions
						Water	Smoke		
						using the methods specified in the offsite dose calculation manual (ODCM) [PMP-2080-EPP-101, Attachment 3]. The Off-Site Dose Calculation Manual (ODCM) is the top tier document for the Radiological Environmental Monitoring Program (REMP), the Radioactive Effluent Controls Program (RECP), contains criteria pertaining to the previous Radiological Effluent Technical Specifications (RETS) as defined in NUREG-0472, and fully implements the requirements of Technical Specification 5.5.3, Radioactive Effluent Controls Program. The ODCM contains the methodology and parameters to be used in the calculation of off-site doses due to radioactive liquid and gaseous effluents and in the calculation of liquid and gaseous monitoring instrumentation alarm/trip setpoints.	using the methods specified in the offsite dose calculation manual (ODCM) [PMP-2080-EPP-101, Attachment 3]. The Off-Site Dose Calculation Manual (ODCM) is the top tier document for the Radiological Environmental Monitoring Program (REMP), the Radioactive Effluent Controls Program (RECP), contains criteria pertaining to the previous Radiological Effluent Technical Specifications (RETS) as defined in NUREG-0472, and fully implements the requirements of Technical Specification 5.5.3, Radioactive Effluent Controls Program. The ODCM contains the methodology and parameters to be used in the calculation of off-site doses due to radioactive liquid and gaseous effluents and in the calculation of liquid and gaseous monitoring instrumentation alarm/trip setpoints.		
						The potential release of	The potential release of		

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**APPENDIX B: FIRE ZONES WITH POTENTIAL FOR RADIOACTIVE RELEASE
(Due to fire suppression activities at CNP)**

The following is a list of fire zones at CNP in which fire suppression activities have the potential to contribute to a radioactive release. For fire zones that have been “screened out”, it has been determined that there is no potential for radioactive release from fire suppression activities.

NOTE: Applicable fire zones are sorted in the order in which their pre-plans appear in the pre-plan document.

Fire Area	Fire Zone	Fire Pre-Plan	Screened Out?
AA1	1, 1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 136, 137, 138A, 138B, 138C	Volume I: Fire Area AA1	No
AA2	2N, 28, 77, 78, 79, 80, 81, 82, 83, 90, 91, 92, 93, 94, 95, 108, 110, 127, 129, 139, 140, 141, 142, 2S, 100, 109, 111, 126, 130, 30, 84, 85, 86, 87, 88, 89, 96, 97, 98, 99	Volume I: Fire Area AA2	Yes
AA2C	112, 113, 114, 115	Volume I: Fire Area AA2C	Yes
AA3	3, 31, 32, 35, 36, 48, 49, 50, 51, 52, 69, 106, 107	Volume I: Fire Area AA3	No
AA5/6	4, 5, 6A, 6M, 6N, 6S, 61, 64A, 65A, 64B, 65B	Volume I: Fire Area AA5/6	No
AA7	7	Volume I: Fire Area AA7	Yes
AA8	8	Volume I: Fire Area AA8	Yes
AA9	9, 10, 116	Volume I: Fire Area AA9	Yes
AA10	11	Volume I: Fire Area AA10	Yes
AA11	12	Volume I: Fire Area AA11	No
AA12	13	Volume I: Fire Area AA12	Yes
AA13	14	Volume I: Fire Area AA13	Yes
AA14	15	Volume I: Fire Area AA14	Yes
AA15	16	Volume I: Fire Area AA15	Yes
AA16	17A	Volume I: Fire Area AA16	Yes
AA17	17B	Volume I: Fire Area AA17	Yes
AA18	17C	Volume I: Fire Area AA18	Yes
AA19	17D	Volume I: Fire Area AA19	Yes
AA20	17E	Volume I: Fire Area AA20	Yes
AA21	17F	Volume I: Fire Area AA21	Yes
AA22	17G	Volume I: Fire Area AA22	Yes
AA23	18	Volume I: Fire Area AA23	Yes
AA24	19	Volume I: Fire Area AA24	Yes
AA25	20	Volume I: Fire Area AA25	Yes
AA26	21	Volume I: Fire Area AA26	Yes
AA27	22	Volume I: Fire Area AA27	No
AA29	23, 24, 25, 117	Volume I: Fire Area AA29	Yes
AA30	26	Volume I: Fire Area AA30	Yes
AA31	27	Volume I: Fire Area AA31	Yes
AA32	29A, 29B, 29E, 29G	Volume I: Fire Area AA32	Yes
AA33	29C, 29D, 29F	Volume I: Fire Area AA33	Yes

Fire Area	Fire Zone	Fire Pre-Plan	Screened Out?
AA34	33, 33A, 33B, 105	Volume I: Fire Area AA34	No
AA35	34, 34A, 34B	Volume I: Fire Area AA35	No
AA36/42	37, 43, 44A, 44B, 44C, 44D, 44E, 44F, 44G, 44H, 44N, 44S	Volume I: Fire Area AA36/42	No
AA37	38	Volume I: Fire Area AA37	No
AA38	39	Volume I: Fire Area AA38	No
AA39A	40A	Volume I: Fire Area AA39A	Yes
AA39B	40B	Volume I: Fire Area AA39B	Yes
AA40	41	Volume I: Fire Area AA40	Yes
AA41	42A, 42B, 42C, 42D	Volume I: Fire Area AA41	Yes
AA43	45	Volume I: Fire Area AA43	Yes
AA44	46A, 46B, 46C, 46D	Volume I: Fire Area AA44	Yes
AA45A	47A	Volume I: Fire Area AA45A	Yes
AA45B	47B	Volume I: Fire Area AA45B	Yes
AA46	53	Volume I: Fire Area AA46	Yes
AA47	54	Volume I: Fire Area AA47	Yes
AA48	55, 56	Volume I: Fire Area AA48	No
AA50	57, 144	Volume I: Fire Area AA50	Yes
AA51	58, 145	Volume I: Fire Area AA51	Yes
AA52	59, 60	Volume I: Fire Area AA52	No
AA54	62A, 62B, 62C	Volume I: Fire Area AA54	No
AA55	63A, 63B, 63C	Volume I: Fire Area AA55	No
AA56	66, 67, 68, 101, 103, 118, 120, 122, 132, 134	Volume I: Fire Area AA56	No
AA57A	70, 71	Volume I: Fire Area AA57A	Yes
AA57B	72, 73, 74	Volume I: Fire Area AA57B	Yes
AA58	75, 76, 102, 104, 119, 121, 123, 133, 135	Volume I: Fire Area AA58	No
YD	131	Volume I: Fire Area AAYD	Yes
YD	143	Volume I: Fire Area AAYD	Yes
YD	146	Volume I: Fire Area AAYD	No
YD	147	Volume I: Fire Area AAYD	Yes
YD	Yard	Volume II: Support Buildings and Yard Areas	No
YD	Radioactive Material Storage Building	Volume II: Support Buildings and Yard Areas	No

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
EEE-9-1	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 43 (AA36/42) AND 91 (AA2) DUCT EVALUATION	
EEE-9-2	EEE	FIRE ZONE 54 (AA47) AND FIRE ZONE 73 (AA57B) DUCT EVALUATION	
EEE-9-3	EEE	CCW PUMP AIR SUPPLY DUCT EVALUATION: FIRE ZONE 44S (AA42)	
EEE-9-4	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR AUXILIARY BUILDING VERTICAL AIR SHAFTS EVALUATION: FIRE ZONES 12 (AA11) AND 22 (AA27)	
EEE-9-5	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONES 70 (AA57A) AND 73 (AA57B) HATCH EVALUATIONS	
TECHNICAL EVALUATION 9-6		601 FT. PIPE TUNNEL EVALUATION (FIRE ZONE 6A)	Cancelled
EEE-9-7	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 13 (AA12) AND FIRE ZONE 14 (AA13) BOUNDARY EVALUATION	
EEE-9-8	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 20 (AA25) AND FIRE ZONE 21 (AA26) BOUNDARY EVALUATION	
TECHNICAL EVALUATION 9-9		FIRE AREA CONTAINING FIRE ZONES 3, 32, 36, 48 AND 69 AND FIRE AREA CONTAINING FIRE ZONES 49, 50, 51 AND 52 BOUNDARY EVALUATION	Cancelled
TECHNICAL EVALUATION 9-10		FIRE ZONE 43 AND FIRE ZONE 44N BOUNDARY EVALUATION	Cancelled
TECHNICAL EVALUATION 9-11		UNITS 1 AND 2 TURBINE BUILDING, MAIN STEAM PIPE TUNNELS AND SERVICE/OFFICE BUILDING EVALUATION	Cancelled
TECHNICAL EVALUATION 9-12		TURBINE BUILDING AND SCREEN HOUSE BOUNDARY EVALUATION	Cancelled
EEE-9-13	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 53 (AA46) AND FIRE ZONE 57 (AA50) HATCH EVALUATION	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
EEE-9-14	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 43 (AA36/42) AND FIRE ZONE 56 (AA48) HATCH EVALUATION	
EEE-9-15	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 40B (AA39B) AND FIRE ZONE 55 (AA48) HATCH EVALUATION	
EEE-9-16	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 41 (AA40) AND FIRE ZONE 55 (AA48) HATCH EVALUATION	
EEE-9-17	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 54 (AA47) AND FIRE ZONE 58 (AA51) HATCH EVALUATION	
EEE-9-18	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 52 (AA3) AND FIRE ZONE 59 (AA52) HATCH EVALUATION	
EEE-9-19	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 45 (AA43) AND FIRE ZONE 60 (AA52) HATCH EVALUATION	
EEE-9-20	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 47B (AA45B) AND FIRE ZONE 60 (AA52) HATCH EVALUATION	
EEE-9-21	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 110 (AA2) AND FIRE ZONE 43 (AA36/42) DOOR EVALUATION	
EEE-9-22	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 111 (AA2) AND FIRE ZONE 44S (AA36/42) DOOR EVALUATION	
EEE-9-23	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 116 (AA9) BOUNDARY EVALUATION	
EEE-9-24	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 117 (AA29) BOUNDARY EVALUATION	
EEE-9-25	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR ESSENTIAL SERVICE WATER PUMP HOUSE HATCH AND FIRE DAMPER EVALUATION (FIRE AREAS AA2, AA32 AND AA33)	
TECHNICAL EVALUATION 9-26		FIRE ZONE 9 AND FIRE ZONE 10 BOUNDARY EVALUATION	Cancelled

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
TECHNICAL EVALUATION 9-27		FIRE ZONE 24 AND FIRE ZONE 25 BOUNDARY EVALUATION	Cancelled
TECHNICAL EVALUATION 9-28		FIRE ZONE 61 AND FIRE ZONE 5 BOUNDARY EVALUATION	Cancelled
TECHNICAL EVALUATION 9-29		FIRE ZONE 105 AND FIRE ZONES 33, 33A, 33B BOUNDARY EVALUATION	Cancelled
TECHNICAL EVALUATION 9-30		FIRE AREA CONTAINING FIRE ZONES 3, 32, 36, 48, 49, 50, 51, 52, 69 AND THE FIRE AREA CONTAINING FIRE ZONES 106, 107, 31 AND 35 BOUNDARY EVALUATIONS 9-151	Cancelled
EEE-9-31	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONES 62A, 62B AND 62C (AA54) BOUNDARY EVALUATION	
EEE-9-32	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONES 63A, 63B AND 63C (AA56) BOUNDARY EVALUATIONS	
EEE-9-33	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 6A (AA5/6) TO 138B (AA1) BOUNDARY EVALUATIONS	
EEE-9-34	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 36 (AA3) TO FIRE ZONE 5 (AA5/6) BOUNDARY EVALUATION	
EEE-9-35	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 108 (AA2A) TO FIRE ZONE 33A (AA34) BOUNDARY EVALUATION	
EEE-9-36	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 109 (AA2) TO 34A (AA35) BOUNDARY EVALUATION	
EEE-9-37	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONES 5 (AA5/6) AND 32 (AA3) BOUNDARY EVALUATION	
EEE-9-38	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 69 (AA3) TO FIRE ZONES 108 (AA2) AND 109 (AA2) BOUNDARY EVALUATIONS	
EEE-9-39	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 70 (AA57A) TO FIRE ZONE 129 (AA2) BOUNDARY EVALUATION	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
EEE-9-40	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 7 (AA7) TO FIRE ZONE 61 (AA5/6) BOUNDARY ELEVATION	
EEE-9-41	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONES 37 (AA36/42) AND 51 (AA3) HVAC DUCT PENETRATIONS	
EEE-11-1	EEE	AUXILIARY BUILDING EL. 587 FT. TO SPENT FUEL HEAT EXCHANGER PIT PUMP ROOM HATCH BOUNDARY EVALUATION FIRE ZONE 5 TO FIRE ZONE 36	
EEE-11-2	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 7 (AA7) AND FIRE ZONE 38 (AA37) BOUNDARY EVALUATION	
EEE-11-3	EEE	UNIT 2 REACTOR CABLE TUNNELS QUADRANT 1 TO QUADRANT 2 BOUNDARY EVALUATION FIRE ZONE 27 TO ZONE 39	
EEE-11-4	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR UNIT 1 AUXILIARY BUILDING EVALUATION 620 FT - 6 IN TO AUXILIARY CABLE VAULT FIRE ZONE 44N TO FIRE ZONE 56	
EEE-11-5	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR UNIT 1 EPS/4 KV SWITCHGEAR COMPLEX VENTILATION SHAFT BOUNDARY EVALUATION (FIRE AREAS AA39A, AA39B, AA40, AA41 AND AA48)	
EEE-11-6	EEE	UNIT 2 EPS/4KV SWITCHGEAR COMPLEX VENTILATION SHAFT BOUNDARY EVALUATION FIRE ZONES 45, 46A THROUGH 46D, 47A AND 47B TO FIRE ZONE 60	
EEE-11-7	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONE 5 (AA5/6) TO UNIT 1 FIRE ZONES 62A, 62B AND 62C (AA54) AND UNIT 2 FIRE ZONES 63A, 63B AND 63C (AA5) REMOVABLE BLOCK WALLS	
EEE-11-8	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR YARD TO FIRE ZONES 34 (AA35), 34A (AA35), 90 (AA2), 97 (AA2), 129 (AA2) AND 130 (AA2) BOUNDARY EVALUATIONS	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
EEE-11-9	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR TURBINE, AUXILIARY AND CONTAINMENT BUILDINGS BOUNDARY EVALUATION	
TECHNICAL EVALUATION-11-10		APPENDIX A TO BTP APCSB 9.5-1, SECTION D.2(A) ISOLATION/SEPARATION OF COMBUSTIBLE MATERIALS FROM SAFETY RELATED SYSTEMS	
EEE-11-11	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR STORAGE OF FLAMMABLE GASES IN FIRE AREAS AA2, AA3, AA34 AND YD	
EEE-11-12	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR STAIRWELLS AND ELEVATOR CONSTRUCTION BOUNDARY EVALUATION (FIRE ANALYSIS AREAS AA1, AA2, AA3, AA5/6, AA36 AND AA42)	
TECHNICAL EVALUATION 11-13		APPENDIX A TO BTP APCSB 9.5-1, SECTION E.2(C) FIRE PUMP ROOMS (FIRE ZONES 2, 28 AND 30)	Cancelled
EEE-11-14	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR CABLE SPREADING ROOM CONSTRUCTION BOUNDARY EVALUATION (FIRE AREAS AA7, AA8, AA9, AA10, AA29, AA30, AA31, AA34, AA35, AA36/42, AA37, AA38, AA48, AA50, AA51 AND AA52)	
EEE-11-15	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR SWITCHGEAR ROOM CONSTRUCTION BOUNDARY ROOM EVALUATION UNIT 1 FIRE ZONES 40A, 40B, 41 AND 42A (AA39A, AA39B, AA40 AND AA41) & UNIT 2 FIRE ZONES 45, 46A, 47A AND 47B (AA43, AA44, AA45A AND AA45B)	
EEE-11-16	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR LUBE OIL STORAGE ROOMS FIRE ZONES 83, 88, 95 AND 100 (AA2), BOUNDARY EVALUATION	
EEE-11-17	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR DIESEL GENERATOR FUEL OIL DAY TANK ROOMS FIRE ZONES 15 (AA14), 16 (AA15), 18 (AA23) AND 19 (AA24) BOUNDARY EVALUATION	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
EEE-11-18	EEE	FIRE ZONES 3, 31, 32 AND 35 (AA3) BOUNDARY EVALUATION	
EEE-11-19	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR MISCELLANEOUS AREAS - FIRE BARRIER EVALUATION BETWEEN THE UNIT 1 TURBINE BUILDING AND BOTH THE SERVICE/OFFICE BUILDING AND THE HEATER BOILER ROOM (AA2) AND THE EVALUATION OF CONTAINMENT COOLING CHILLER EQUIPMENT ROOM	
TECHNICAL EVALUATION-11-20	EEE	NARROW SPACE OPENINGS BETWEEN PENETRATING ITEMS AND THE BARRIER OR BETWEEN PENETRATING ITEMS BOUNDARY EVALUATION	
TECHNICAL EVALUATION-11-21		USE OF SILICONE CAULKING IN SEISMIC/EXPANSION GAP FIRE SEALS INSTALLED IN THE FLOORS OF HIGH TRAFFIC AREAS	
TECHNICAL EVALUATION-11-22		UNIT 1 AUXILIARY FEEDWATER (N-TRAIN) BATTERY ROOM BOUNDARY EVALUATION - FIRE ZONE 106 TO FIRE ZONE 52	
TECHNICAL EVALUATION 11-23		STORAGE OF DRY ACTIVE WASTE IN THE AUXILIARY BUILDING 609 FT. CRANE BAY FIRE ZONE 32 OR UNIT 2 TURBINE BUILDING 609 FT. CRANE BAY FIRE ZONES 97 AND 98	Cancelled
EEE-11-24	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE RETENTION CAPABILITY OF NONCONFORMING FIRE SEALS IN FIRE ZONES HAVING A LOW FIRE SEVERITY	
TECHNICAL EVALUATION-11-25		PRSSURE RETENTION CAPABILITY OF CONTROL ROOM PRESSURE BOUNDARY FIRE SEALS	
EEE-11-26	EEE	FIRE RETENTION CAPABILITY OF A HELB PRESSURE BOUNDARY SEAL	
EEE-11-27	EEE	GENERIC FIRE SEAL DESIGN 1	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
EEE-11-28	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR GENERIC FIRE SEAL DESIGN 2 (FIRE AREAS AA7, AA8, AA39A, AA40, AA43, AA45A, AA45B, AA48 AND AA52)	
EEE-11-29	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR GENERIC FIRE SEAL DESIGN 3 IN FIRE AREAS AA2 AND AA15	
EEE-11-30	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR GENERIC FIRE SEAL DESIGN 4 (AA2)	
TECHNICAL EVALUATION-11-31	EEE	GENERIC FIRE SEAL DESIGN 5	
EEE-11-32	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR GENERIC FIRE SEAL DESIGN 6 (AA2)	
EEE-11-33	EEE	GENERIC FIRE SEAL DESIGN 7	
EEE-11-34	EEE	GENERIC FIRE SEAL DESIGN 8	
EEE-11-35	EEE	GENERIC FIRE SEAL DESIGN 9	
EEE-11-36	EEE	UNITS 1 AND 2 HOT SHUTDOWN PANEL ENCLOSURE UNIT 1 FIRE ZONE 144 AND UNIT 2 FIRE ZONE 145	
EEE-11-37	EEE	UNRATED FLOOR MATCH AT ELEVATION 633 FT. IN THE AUXILIARY BUILDING FIRE ZONES 52 AND 44N	
EEE-11-38	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE PROTECTION FOR THE PUMP HOUSE (FIRE AREA YD)	
EEE-11-39	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIREPROOFING FOR THE WEST MOTOR DRIVEN AUXILIARY FEEDWATER PUMP ENCLOSURES FIRE ZONES 17A (AA16), 17B (AA17), 80 (AA2), AND 84 (AA2)	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
TECHNICAL EVALUATION-11-40		APPENDIX A TO ETP APCSB 9.5-1 SECTION D.1(J) FIRE DOOR CLOSURES WITH HOLD OPEN DEVICES FIRE ZONES 17C, 17E AND 17F	
EEE-11-41	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR UNIT 1 FIRE ZONE 53 (AA46) AND UNIT 2 FIRE ZONE 54 (AA47) BOUNDARY EVALUATION	
TECHNICAL EVALUATION 11-42		APPENDIX R SECTION III.G.2(b) TWENTY FT. SEPARATION BETWEEN REDUNDANT COMPONENTS WITH NO INTERVENING COMBUSTIBLES FIRE ZONES 6M AND 6S	Archived, Info Only
TECHNICAL EVALUATION-11-43		SPATIAL FIRE SEPARATION BETWEEN ALTERNATE SHUTDOWN COMPONENTS WITH NO INTERVENING COMBUSTIBLES FIRE ZONE 44N AND 44S	
EEE-11-44	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR UNRATED FIRE DOORS (361 AND 362) AND UNRATED PERSONNEL WALKWAYS (AA3, AA34, AA35 AND AAYD)	
EEE-11-45	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR AUXILIARY BUILDING HVAC DUCT PENETRATIONS BOUNDARY EVALUATION FIRE ANALYSIS AREAS AA1, AA3, AA5/6 AND AA36/42	
EEE-11-46	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR SEISMIC GAPS BETWEEN THE CONTAINMENT AND AUXILIARY BUILDINGS BOUNDARY EVALUATION (FIRE AREAS AA2, AA3, AA7, AA8, AA9, AA10, AA11, AA27, AA29, AA30, AA31, AA34, AA35, AA37 AND AA38)	
EEE-11-47	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE ZONES 44N (AA36), 44S (AA42) AND 52 (AA3) PENETRATION SEALS	
EEE-11-48	EEE	UNIT 1 & 2 EMERGENCY DIESEL GENERATOR ROOM AB/CD LARGE BORE PIPE PENETRATION SEALS FIRE ZONES 15, 16, 18 & 19	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
EEE-11-49		PENETRATION SEAL F6124 UNIT 1 CONTROL ROOM ELEVATION 633' -0" FIRE ZONES 53 & 57	Superseded
EEE-11-50	EEE	CONCRETE EMBEDDED CONDUITS PROTECTED BY EXTERNAL FIRE WRAP MATERIAL UNIT 1 CD DIESEL GENERATOR ROOM AND UNIT 2 AB DIESEL GENERATOR ROOM	
EEE-11-51	EEE	COOK NUCLEAR PLANT TECHNICAL EVALUATION 11.51 SCREENHOUSE AND WATER INTAKE SYSTEM BOUNDARY EVALUATION FIRE ZONE 142 TO FIRE ZONE 143	
EEE-11-52	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR ACCEPTABILITY OF SELECTED PANEL REMOVAL FOR UNIT 1 MAIN TRANSFORMER RADIANT FIRE WALL	
TECHNICAL EVALUATION-11-53		TECHNICAL EVALUATION FOR PARTIAL AREA FIRE SUPPRESSION APPENDIX R SAFE SHUTDOWN ANALYSIS AREAS 57A AND 57B	
EEE-11-54	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR UNIT 1 MAIN CONTROL ROOM CABLE VAULT PENETRATION SEAL W5111 FIRE ZONE 57 AND 91 (FIRE AREAS AA50 AND AA2)	
EEE-11-55	EEE	FLAMMABILITY OF FLOOR COATING SYSTEMS	
EEE-11-56	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR TURBINE BUILDING MAIN STEAM ACCESS WAY FIRE ZONES 110 TO 114, FIRE ZONES 111 TO 115, FIRE ZONES 112 TO 2N, FIRE ZONES 113 TO 2S (FIRE AREA AA2, AA2C)	
EEE-11-57	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE-WRAPPED CABLE TRAYS AND CONDUIT EVALUATIONS (FIRE AREAS AA2, AA32, AA39A, AND AA45A)	
EEE-11-58	EEE	UNIT 2 CONTROL ROOM FIRE RATED FLOOR PENETRATION SEALS FIRE ZONES 54 & 58	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
EEE-11-59	EEE	UNIT 1 TURBINE BUILDING BELOW ELEVATION 633' -0" WATER FIRE SUPPRESSION SYSTEM SPRINKLER HEAD DEVIATIONS FIRE ZONES 90, 91, 92 & 93	
EEE-11-60	EEE	FIRE ZONE 80/114 AND 84/115 BOUNDARY EVALUATION	
EEE-11-61	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR USE OF FIRE PROTECTION WATER SUPPLY SYSTEM FOR OTHER THAN FIRE PROTECTION RELATED PURPOSES	
EEE-11-62		FIRE WATER SUPPLY NFPA 20 CODE CONFORMANCE REVIEW	
TECHNICAL EVALUATION 11-63		Not Used	
TECHNICAL EVALUATION-11-64		CABLE MATERIAL IMPACT REVIEW	
TECHNICAL EVALUATION-11-64-1		TECHNICAL EVALUATION FOR SELF IGNITED CABLE FIRES WITHIN THE UNIT 1 AND UNIT 2 CONTROL ROOM CABLE VAULTS	Active, Info Only
EEE-11-65	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR FIRE DOOR CLOSURE EVALUATION (FIRE AREAS AA2, AA7, AA8, AA14, AA15, AA23, AA24, AA30, AA31, AA34, AA35, AA36/42, AA37, AA38, AA39, AA41, AA43, AA44, AA45, AA48, AND AA53)	
EEE-11-66	EEE	YARD (YD) TO FIRE ZONE 19 (AA24) BOUNDARY EVALUATION	
TECHNICAL EVALUATION-11-67		TECHNICAL EVALUATION FOR EMBEDDED CONDUIT EVALUATION	
TECHNICAL EVALUATION-11-68		TECHNICAL EVALUATION FOR CLOSED HEAD SPRINKLER SAMPLING / TESTING / REPLACEMENT PROGRAM PLAN BASIS DOCUMENT AND PROPOSED CLOSED SPRAY HEAD SAMPLING PLAN	
EEE-11-69	EEE	TECHNICAL EVALUATION FOR NFPA 80 1970 ED CODE DEVIATION ELECTROMAGNETIC FIRE/SECURITY DOOR LOCKS	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
TECHNICAL EVALUATION-11-70		TECHNICAL EVALUATION FOR NUCLEAR ELECTRIC INSURANCE LIMITED (NEIL) TEMPORARY STRUCTURE VARIANCE UNIT 1 TURBINE ELEV 633 FT - 0 IN CRAFT STAGING AREA	
EEE 11-71		Emergency Power Systems Area & EPS Control Rod Drive Room Fire Door Closure Evaluation	
TECHNICAL EVALUATION-11-72		BASIS DOCUMENT FIRE WATER SYSTEM PIPING INTERNAL INSPECTION PROGRAM	
TECHNICAL EVALUATION 11-73		Not Used	
TECHNICAL EVALUATION 11-74		Not Used	
TECHNICAL EVALUATION 11-75		EVALUATION OF FIRE PROTECTION SYSTEM UNAVAILABILITY	
TECHNICAL EVALUATION-11-76		NFPA 805 AIRBORNE AND LIQUID EFFLUENTS OFFSITE DOSE ANALYSIS	
EEE 11-79	EEE	FIRE ZONE 53 (AA46) AND FIRE ZONE 57 (AA50) FIRE BARRIER PENETRATION SEALS	
EEE 11-80	EEE	FIRE ZONE 54 (AA47) AND FIRE ZONE 58 (AA51) FIRE BARRIER PENETRATION SEALS	
TECHNICAL EVALUATION-12-1		FIRE SUPPRESSION EFFECTS STUDY	
TECHNICAL EVALUATION-12-1		SUPPLEMENTAL INFORMATION TO FIRE SUPPRESSION EFFECTS STUDY - SUPPLEMENT 1	
TECHNICAL EVALUATION 12-2		PENETRATION SEALING PROGRAM SUMMARY; INFORMATION NOTICE 88-04	Cancelled
TECHNICAL EVALUATION 12-3		TIME AND MANPOWER STUDY FOR THE ALTERNATE SHUTDOWN METHOD	Cancelled
TECHNICAL EVALUATION 12-4		COMMUNICATIONS AVAILABILITY EVALUATION	Cancelled

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
TECHNICAL EVALUATION-12-5		ASSOCIATED CIRCUITS BY COMMON POWER SUPPLY AND COMMON ENCLOSURE	
TECHNICAL EVALUATION-12-5-1		SECONDARY FIRE EVALUATION	
TECHNICAL EVALUATION-12-6		TECHNICAL EVALUATION FOR CURRENT TRANSFORMER OPEN CIRCUITING CONCERN	
TECHNICAL EVALUATION-12-7		SAFE SHUTDOWN MANUAL ACTION FEASIBILITY STUDY (Superseded by R1900-0026-001per FPPR-2014-0009)	Superseded
TECHNICAL EVALUATION 12-8		RCP LUBE OIL COLLECTION SYSTEM	Cancelled
TECHNICAL EVALUATION 12-9		RCP TYGON TUBING SEISMIC QUALIFICATION EVALUATION	Cancelled
TECHNICAL EVALUATION 12-10		EVALUATION OF CO2 SYSTEM ACTUATION IMPACT ON THE EPS	Cancelled
EEE-12-11	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR STRUCTURAL STEEL EVALUATIONS IN FIRE AREAS AA2, AA3, AA34, AA35, AA56 AND AA58	
TECHNICAL EVALUATION 12-12		HIGH IMPEDANCE ARC FAULTS ON ASSOCIATED CIRCUITS	Cancelled
EEE-12-13	EEE	FIRE DAMPER CLOSURE REVIEW	
TECHNICAL EVALUATION 12-14		BUILDING EXPANSION/SEISMIC GAP PENETRATION SEALING SUMMARY	Cancelled
TECHNICAL EVALUATION 12-15		EMERGENCY LIGHTING	Cancelled
EEE-12-16-1 (SUPPLEMENT 1)	EEE	RADIANT HEAT SHIELDS FOR FIRE AREA 58	
TECHNICAL EVALUATION-12-16	EEE	TECHNICAL EVALUATION 12.16 APPENDIX R REVALIDATION PROJECT SUPPLEMENTAL ANALYSES AND POSITION PAPERS	
TECHNICAL EVALUATION-12-16-8		TECHNICAL EVALUATION FOR FIRE AREA 56 AND 58 - UNIT 1 AND UNIT 2 CONTAINMENTS	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
TECHNICAL EVALUATION 12-17		Not Used	
TECHNICAL EVALUATION 12-18		Not Used	
EEE-12-19	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR CO2 FIRE SUPPRESSION SYSTEMS IN FIRE ZONES CONTAINING CONCENTRATIONS OF CABLE INSULATION (FIRE AREAS AA7, AA8, AA9, AA10, AA29, AA30, AA31, AA37, AA38, AA39, AA40, AA41, AA43, AA44, AA45, AA48, AA50, AA51, AND AA52)	
EEE-12-20	EEE	ENGINEERING EQUIVALENCY EVALUATION FOR UNIT 1 TURBINE OIL TANK ROOM FIRE ZONE 95 (AA2)	
TECHNICAL EVALUATION-12-21		ANALYSIS OF FIRE ZONES 13, 21, 57, 58, AND 59 LACK OF CO2 SUPPRESSION SYSTEM CALCULATIONS	
EEE-12-22	EEE	UNITS 1 & 2 AUXILIARY BUILDING NORTH AND SOUTH ELEVATION 609' FIRE ZONES 44N AND 44S	
EEE-12-23	EEE	ANALYSIS OF FIRE ZONES 57 AND 58 LACK OF HALON SUPPRESSION SYSTEM CALCULATIONS	
EEE-12-24	EEE	NFPA 24 - 'LISTED' VALVE DEVIATION 12-ZMO-400 & 401	
TECHNICAL EVALUATION-12-25		TECHNICAL EVALUATION 12.25 FIRE RATED PENETRATION SEALS	
EEE-12-26	EEE	NFPA 13 - "NON-LISTED" & "NON-RISING STEM" VALVE DEVIATION 12-FP-389, 12-FP-493 & 12-FP-494	
TECHNICAL EVALUATION-12-27		INSTRUMENT SENSING LINE EVALUATION	
TECHNICAL EVALUATION-12-28		TECHNICAL EVALUATION FOR NFPA 805 CHAPTER 3 FUNDAMENTAL FIRE PROTECTION PROGRAM AND DESIGN ELEMENTS REVIEW	Superseded by NFPPM Attachment 1
TECHNICAL EVALUATION-12-29		TECHNICAL EVALUATION FOR NUCLEAR SAFETY CAPABILITY ANALYSIS METHODOLOGY REVIEW	Active, Info Only

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
TECHNICAL EVALUATION-12-30		TECHNICAL EVALUATION FOR FIRE AREA TRANSITION REVIEW	Superseded by FSA
TECHNICAL EVALUATION-12-31		TECHNICAL EVALUATION FOR RADIOACTIVE RELEASE REVIEW	Superseded by NFPPM Attachment 3
TECHNICAL EVALUATION-12-32		TECHNICAL EVALUATION FOR PROCUREMENT AND INSTALLATION OF NON-UL/FM APPROVED FIRE PROTECTION FEATURES	
EEE-14-1-1		ENGINEERING EQUIVALENCY EVALUATION FOR NFPA CODE CONFORMANCE REVIEW REPORT	
TECHNICAL EVALUATION-A		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH 10CFR50 APPENDIX R SECTION III.G.3 FIRE AREA E CONTAINING FIRE ZONES 4,5,6A,6N,6M,6S,6I,64A,64B,65A AND 65B APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 5/6	
TECHNICAL EVALUATION-B		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH 10CFR50 APPENDIX R SECTION III.G.3 SAFE SHUTDOWN ANALYSIS AREAS 36 AND 42	
TECHNICAL EVALUATION-C		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.3 FIRE AREA C CONTAINING FIRE ZONES 3,31,32,35,36,48-52,69,106 AND 107 APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 3	
TECHNICAL EVALUATION-D		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.2 FIRE AREA A CONTAINING FIRE ZONES 1,1A-1H, 136, 137 AND 138A-138C APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 1	
TECHNICAL EVALUATION-E		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.3 FIRE AREA MM CONTAINING FIRE ZONES 42A-42D APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 41	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
TECHNICAL EVALUATION-F		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.3 FIRE AREA OO CONTAINING FIRE ZONES 46A, 46B, 46C AND 46D APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 44	
TECHNICAL EVALUATION-G		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH 10CFR50 APPENDIX R SECTION III.G.3 SAFE SHUTDOWN ANALYSIS AREA 48	
TECHNICAL EVALUATION-H		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEM FOR COMPLIANCE WITH 10CFR50 APPENDIX R SECTION III.G.3 SAFE SHUTDOWN ANALYSIS AREA 52 CONTAINING FIRE ZONE 59 & 60	
TECHNICAL EVALUATION-I		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.3 FIRE AREA UU CONTAINING FIRE ZONES 57 AND 144 APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 50	
TECHNICAL EVALUATION-J		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.3 FIRE AREA VV CONTAINING FIRE ZONES 58 AND 145 APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 51	
TECHNICAL EVALUATION-K		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.3 FIRE AREA QQ CONTAINING FIRE ZONE 53 APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 46	
TECHNICAL EVALUATION-L		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.3 FIRE AREA RR CONTAINING FIRE ZONE 54 APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 47	
TECHNICAL EVALUATION-M		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.2 FIRE AREA G CONTAINING FIRE ZONE 8	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
TECHNICAL EVALUATION-N		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.1 FIRE AREA CC CONTAINING FIRE ZONE 26 APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 30	
TECHNICAL EVALUATION-O		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.1 FIRE AREA I CONTAINING FIRE ZONE 11 APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 10	
TECHNICAL EVALUATION-P		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.1 FIRE AREA AA CONTAINING FIRE ZONE 23 APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 28	
TECHNICAL EVALUATION-Q		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.3 FIRE AREA II CONTAINING FIRE ZONE 38 APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 37	
TECHNICAL EVALUATION-R		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.3 FIRE AREA JJ CONTAINING FIRE ZONE 39 APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 38	
TECHNICAL EVALUATION-S		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS AND BOUNDARY EVALUATION APPENDIX R SAFE SHUTDOWN ANALYSIS AREAS 2A AND 2B	
TECHNICAL EVALUATION-T		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.3 FIRE AREA FF CONTAINING FIRE ZONES 33, 33A, 33B AND 105 APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 34	
TECHNICAL EVALUATION-U		PARTIAL AREA FIRE DETECTION AND SUPPRESSION SYSTEMS FOR COMPLIANCE WITH III.G.3 FIRE AREA GG CONTAINING FIRE ZONES 34, 34A AND 34B APPENDIX R SAFE SHUTDOWN ANALYSIS AREA 35	
TECHNICAL EVALUATION-V		WATER-BASED FIRE SUPPRESSION SYSTEM DRAWINGS AND CALCULATIONS EVALUATION	

EEE / TECHNICAL EVALUATION NUMBER	CREDITED AS EEE	TITLE	NOTES
AEPDCC- 11-001		UNIT 1 & 2 COORDINATION STUDY	
TECHNICAL EVALUATION R1900- 0026-001		RECOVERY ACTION TRANSITION IN SUPPORT OF NFPA 805	SUPERSEDED TECHNICAL EVALUATION-12- 7

Licensing Action

Appendix R Exemption, Screenhouse Auxiliary MCC Room Lack of Automatic Suppression (Criteria III.G.2.c) - Exemption 7.7

Basis Date: December 23, 1983

To Be Transitioned?: Yes

Basis: Exemption approval per the NRC SER dated December 23, 1983 provides the following justification for the lack of automatic suppression as required by Section III.G.2.c of Appendix R, which was submitted by I&M Letter No. AEP:NRC:0692E dated March 31, 1983.

- Ceilings and walls are 3 hour fire rated.
- Arrangement of stairway and exhaust ventilation provide adequate ventilation to preclude the buildup of a hot gas layer where the ESW cables penetrate the fire zone.
- ESW cables have 1 hour fire barriers.
- Combustible loading is low.
- 3 hour fire rated dampers installed in the Unit 2 ESW pump cubicle HVAC supply ducts.

The bases for previous acceptance have been verified and are still valid.

The compliance strategy for Fire Zone 29G is in accordance with III.G.2.c. This area has a lack of automatic suppression therefore an exemption was required. Fire Zones 29A, 29B, 29E have been regrouped with Fire Zone 29G and they now form Fire Area AA32. The NFPA 805 transition compliance strategy for AA32 is in accordance with 4.2.3.3.c, a deterministic approach that credits the use of 1-hour rated ERFBS with automatic detection and automatic suppression. This exemption is required for transition to the NFPA 805 licensing basis because of the lack of automatic suppression within Fire Area AA32.

Applicable Fire Areas:

AA32 – Unit 1 Essential Service Water Pump Area and Unit 1 and Unit 2 Basement Motor Control Center Room (El. 591 ft. and 575 ft.)

Licensing Action Documentation:

Initial Exemption Request - I&M Letter No. AEP:NRC:0692E dated March 31, 1983

“Fire Zone 29G Circulating Water Pump Motor Control Room below Unit 1 and Unit 2 ESW Pump Rooms

EXEMPTION REQUEST

Area Description

Fire Zone 29G is the basement level below the essential service water pumps of both Units 1 and 2 and contains two non-safe shutdown motor control centers. The fire zone has a hatch with a ladder up to the Unit 2 ESW southeast pump cubicle and a stairway to the northwest Unit 1 pump cubicle.

Licensing Action

Appendix R Exemption, Screenhouse Auxiliary MCC Room Lack of Automatic Suppression (Criteria III.G.2.c) - Exemption 7.7

The ceiling and walls are all three-hour rated. Conduit for all four ESW pumps, their valves and strainers, enters the east wall via embedded conduit from the Turbine Room. With the exception of the four ESW pump power cable and a conduit for WMO-701 (the Unit 1 east pump discharge valve), all the conduit comes through the wall in pull boxes at near ceiling height and immediately exits up into the ceiling slab. The cabling into the ceiling runs in embedded conduit to its respective pump cubicle. All ceiling and wall penetrations are sealed with three-hour rated fire seals.

Pertinent room dimensional data is contained in Fire Zone 29G Summary Evaluation Table 7.7-1, and Figure 7.7.1.

Safe Shutdown Equipment

Fire Zone 29G contains no safe shutdown equipment except cables in conduit for the components of both Units 1 and 2 Essential Service Water Systems. The cables for the four pump strainers and discharge valves are located in conduit and in pull boxes at ceiling height. The conduits enter the zone from the Turbine Room floor slab and immediately exit through the ceiling slab to respective pump cubicles. Except for one conduit, the zone exit points are all within the pull boxes. One ESW discharge valve (WMO-701) conduit is run from the pull box near the ceiling to the cubicle area for the Unit 1 east pump and exits through the ceiling. The four pump power cables enter the zone through the east wall at about ceiling height (being run into the zone in the floor slab of the "u.ine Building) and area routed near the ceiling to the respective jump cubicle area where they exit Fire Zone 29G through the ceiling.

Fire Protection Systems

Fire Zone 29G has no automatic suppression or detection systems installed and is provided with the manual suppression systems available to 29(A, B, E) and 29(C, D, F).

Fire Hazards Analysis

Fire Zone 29G is a common zone for both Unit 1 and Unit 2. The only safe shutdown equipment in the area is conduit containing cables for the ESW systems of both units. The combustible loading, due entirely to cable insulation, is approximately 4,750,000 Btu which, when distributed over the fire zone surface area, results in approximately 3560 Btu/ft². The calculated fire severity is approximately three minutes.

The pump power cables are in four inch conduit entering the fire zone through the east wall. The valves and strainers for all four pumps likewise enter the fire zone through the east wall and immediately exit up through the ceiling. No protection presently exists for the conduits of all four pumps. The fire zone provides no path for transient combustibles; however, protection to all cabling associated with both units' ESW systems will be provided. There are no specific sections of the fire zone which contain high densities of combustible materials.

A stairway entering from the Unit 1 west pump cubicle and a ladder in a hatch from Unit 2 east pump cubicle, approximately 40 ft apart, provide a common connection between Units 1 and 2. Hot combustible gases from a fire in Fire Zone 29G could affect the ESW pumps in both units. To protect the unlikely occurrence of all four pumps being affected, a fire-rated hatch cover will be provided in the ladder way to the Unit 2 west cubicle.

Licensing Action

Appendix R Exemption, Screenhouse Auxiliary MCC Room Lack of Automatic Suppression (Criteria III.G.2.c) - Exemption 7.7

Proposed Modifications

The fire hazards analysis performed revealed that Fire Zone 29G is not in compliance with Appendix R and as a result the zone will be upgraded with fire protection modifications.

Fire Detection

The fire zone will be provided with an automatic fire detection system.

Hatch

The hatch exiting the fire zone to the east pump cubicle of Unit 2 will be provided with at least a one-hour-rated fire hatch door to isolate the Unit 2 pump rooms from the Unit 1 pump rooms (via 29G).

Conduits

The following conduits will be provided with one-hour fire protection (grouped in four pull boxes) from the entry to exit point in the fire zone:

Pull Box: 8626G-1, 8627G-1, 8628G-1, 8629G-1

Pull Box: 8624R-1, 8624R-2, 8618R-1, 8619R-1, 8620R-1

Pull Box: 8618R-2, 8619R-2, 8620R-2, 8996R-2

Pull Box: 8977G-1, 9987G-2, 8929G-2, 8626G-2

Pump Power and Discharge Valve Conduits

The following pump power and discharge valve conduits will be provided with one-hour protection from the entry to the exit point of the fire zone:

8004R-1 (PP-1W Unit-2)

8004G-2 (PP-2E Unit-2)

8004G-1 (PP-1E Unit-1)

8004R-2 (PP-2W Unit-2)

9232G-1 (WMO-701 Unit-1 East)

Conclusion

Licensing Action

Appendix R Exemption, Screenhouse Auxiliary MCC Room Lack of Automatic Suppression (Criteria III.G.2.c) - Exemption 7.7

Based on the previous analysis, exemption is requested from an automatic suppression system as prescribed in Section III.G.2 of Appendix R. The bases which justify the exemption are summarized as follows:

1. An automatic fire detection system is to be provided for the fire zone.
2. The conduits of both divisions (all four pumps and associated components) are to be provided with one-hour fire protection.
3. The hatch connecting the Unit 2 pump room to the Unit 1 pump room, via Fire Zone 29G, is to be provided with a one-hour-rated hatch cover.
4. The combustible loading of Fire Zone 29G is extremely low with a fire severity of less than five minutes.
5. The fire zone is not in a normal path for transporting transient combustibles.
6. Modifications required to meet Section III.G.2 would not significantly enhance fire protection safety above that provided by present commitments."

Exemption Correspondence - I&M Letter No. AEP:NRC:0692H dated August 22, 1983

"SUPPLEMENTAL INFORMATION TO SUPPORT EXEMPTION REQUEST 7.7 FOR FIRE ZONE 29G

This section provides supplemental information concerning the proposed hatch construction and other fire hazards analysis considerations which support the III.G.2 suppression exemption request in the D. C. Cook Appendix R. Report, Section 7.7

An open stairway entering from the Unit 1 West ESW pump cubicle, Fire Zone 29B, and a ladder and a hatch opening from the Unit 2 East ESW pump cubicle, Fire Zone 29C, provide a common connection between the Unit 1 and 2 ESW pumps via Fire Zone 29G. As stated in the D. C. Cook Appendix R. Report, Section 8.11.3, the hatch opening from the Unit 2 East Pump cubicle will be provided with a hinged hatch for emergency egress from Fire Zone 29G which will prevent propagation of fire effects into the pump area. The hatch will be coated with materials to provide an equivalent three-hour fire rating. The hatch will ensure that hot combustible gases resulting from a fire in Fire Zone 29G will not affect the Unit 2 ESW pumps.

The Unit 1 West pump cubicle is provided with 10,000 cfm of ducted supply air. All cabling for the supply fans is embedded in concrete from the MCC in Fire Zone 29E to the fan motors, with none of the cabling existing in Fire Zone 29G. Two supply fans are provided, with only one required as each provides 100% of the required air flow for the cubicle. Air is exhausted from this cubicle through the screen mesh security gate in the north wall.

Due to the low combustible loading in Fire Zone 29G and these natural exhaust air flow paths out of the Unit 1 West pump cubicle, hot gases or other products of combustion from a fire in Fire Zone 29G which would flow up the stairway will flow directly out of the cubicle and prevent the formation of a stratified layer of hot gases with sufficient depth to damage the Unit 1 ESW pumps.

At the NRC Staff's request, we have reviewed the Fire Hazard Analysis to determine if three-hour raceway

Licensing Action

Appendix R Exemption, Screenhouse Auxiliary MCC Room Lack of Automatic Suppression (Criteria III.G.2.c) - Exemption 7.7

barriers for two of the four ESW pump trains would be preferable to one-hour barriers for all four ESW trains. Based on the low in-situ combustible loadings and a lack of major activity in the zone, Indiana and Michigan Electric Company believes that the previously proposed one-hour barriers for all four trains achieves an equivalent or superior level of fire protection for the zone configuration. In addition, the design and installation issues associated with the three-hour raceway barriers suggest that implementation of that alternative is not preferred.

Based on these considerations, both the east and west trains of ESW for both Units 1 and 2 will be protected from the effects of fires in Fire Zone 29G. In the highly unlikely event that a fire in Fire Zone 29G should cause failure of both Unit 1 ESW pumps, alternate shutdown capability for Unit 1 is available through the use of the Unit 2 ESW pumps.

The alternative shutdown capability is described in the D. C. Cook Appendix R. Report, Section 5.2.3.

Manual hose stations are provided in the Screen House for fighting fires in Fire Zone 29G. The hose stations are located such that all portions of Fire Zone 29G can be covered with 75 feet of hose and 30 feet of water stream. Figures 6.1 and 6.2 indicate the locations of manual hose stations and portable extinguishers for fighting fires in Fire Zone 29G.

Based on this supplemental information and the analysis contained within the March 1983 Appendix R submittal for D. C. Cook, the exemption from providing an automatic suppression system in Fire Zone 29F should be granted.”

Exemption SER - NRC SER dated December 23, 1983 12/23/1983

"Circulating Water Pump Motor Control Room (Fire Zone 29G)

Exemption Requested

An exemption is requested from Section III.G to the extent it requires 3-hour barriers for the boundaries of fire areas, and the installation of automatic suppression in areas where redundant trains of safe shutdown cables are routed.

Discussion

Fire zone 29G is the basement level below the essential service water pump rooms of both units and contains two non-safe shutdown motor control centers. The fire zone has an open hatch with a ladder up to the Unit 2 ESW southeast pump cubicle and a stairway which opens to the northwest Unit 1 pump cubicle.

The ceiling and walls are all three-hour rated. With the exception of the four ESW pump power cables and conduit for the Unit 1 east pump discharge valve, all the conduit comes through the wall in pull boxes near the ceiling and immediately exits up into the ceiling slab. The cabling into the ceiling runs in embedded conduit to its respective pump cubicle. All ceiling and wall penetrations are sealed with three-hour rated fire seals.

The licensee now proposes a different modification involving the open hatchway. Previously, a one-hour rated

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Appendix R Exemption, Screenhouse Auxiliary MCC Room Lack of Automatic Suppression (Criteria III.G.2.c) - Exemption 7.7

hatch was proposed. Now a 3-hour rated hatch is proposed. The Unit 1 and Unit 2 ESW pumps will therefore be separated by a complete 3-hour barrier in compliance with Section III.G. In addition, the arrangement of the stairway and exhaust ventilation system provides a means for high-level venting of smoke, heat, and combustion products emanating from the fire zone 29G. This will preclude a buildup of a hot gas layer at the ceiling level in the fire zone 29G where ESW pump cables are located. Additional protection is provided by one-hour rated fire barriers on all four trains of ESW pump cables. We agree that the proposed modifications in conjunction with the low fuel load-in the area provides reasonable assurance that one train of ESW pumps will be maintained free of fire damage.

Conclusion

Based on the above evaluation, the level of protection provided for the ESW pumps (Fire Zone 29G) provide a level of fire protection equivalent to the technical requirements of Section III.G. The exemption should be granted."

Additional SER: NRC SER dated June 17, 1988

"ESSENTIAL SERVICE WATER PUMP HOUSE

DEVIATION REQUESTED

A deviation was requested from Section D.1.j of Appendix A to BTP APCSB 9.5-1 to the extent that floors, walls and ceilings enclosing separate fire areas should have minimum fire ratings of three hours. Specifically, the licensee has identified an unrated steel hatch, an undampened ventilation duct and screen mesh access gates in fire area boundaries surrounding Essential Service Water Pumps and Circulating Water Pump Motor Control Room.

DISCUSSION

Fire Zones 29A and 29B are the Unit 1 Essential Service Water (ESW) Pump Cubicles while Zones 29C and 29D house the Unit 2 ESW Pumps. The Circulating Water Pump Motor Control Room, Zone 29G, is located directly below all four pump cubicles. Zones 29A and 29B are separated from Zones 29C and 29D by a 3-hour rated barrier. Undampened HVAC supply air openings exist in the ceiling of each of the ESW Pump Cubicles, although, by letter dated May 30, 1987, the licensee committed to install 3-hour rated dampers in the Unit 2 cubicle air openings. Unsealed piping penetrations are present in the Unit 1 cubicles while the piping penetrations in the Unit 2 ceiling area sealed. Access to Zone 29G is provided from an open curbed stairway from Zone 29B. Access to Zone 29C is provided by an unrated steel hatch in the ceiling of Zone 29G. Access to the screen house area from the pump rooms is provided through steel mesh gates.

The Unit 1 ESW Pumps provide alternate shutdown capabilities for Unit 2 and the Unit 2 pumps provide alternate shutdown capability to Unit 1. Zone 29G contains ESW Pump power cables for both Units, however, the cables are in conduits which are protected with 1-hour rated material.

Early warning fire detection has been installed in the Unit 1 and Unit 2 pump cubicles and Zone 29G. The early warning detection alarms in the control room. Fire suppression consists of extinguishers and manual hose

Licensing Action

Appendix R Exemption, Screenhouse Auxiliary MCC Room Lack of Automatic Suppression (Criteria III.G.2.c) - Exemption 7.7

stations provided throughout the zones. By letter dated June 14, 1983, an exemption from Section III.G of Appendix R to 10 CFR 50 was granted for Zones 28A, B, C and D to the extent that a fixed suppression system is not provided in an area where alternate shutdown is provided.

The combustible loading for the ESW Pump Cubicles, Fire Zones 29A, B, C and D is approximately 7,000 Btu/ft(2) each. The loading for Zone 29G is less than 13,000 Btu/ft(2). These loadings correspond to an equivalent fire severity per ASTM E119 of less than 10 minutes.

EVALUATION

The fire boundaries of the ESW Pump Cubicles and Circulating Water Pump Motor Control Room deviate from the requirements of Section D.1.j of Appendix A to BTP APCSB 9.5-1 to the extent that they contain openings and an unrated hatch thereby making the fire area boundaries not 3-hour rated. The concern is that a fire could propagate from one of the pump cubicles in one unit to the pump cubicles of the other unit and affect the ability of the plant to safely shut down.

However, the combustible loading in all of the areas of concern is low with an equivalent fire severity of under 10 minutes for each zone. The one zone which would have been a concern was the roof area which is used for the storage of wood and other combustibles. This would have allowed for the possibility for a fire to spread up through one of the air openings and then across and down through other openings in the other unit's pump cubicles. However, the licensee has committed to provide 3-hour rated dampers in the Unit 2 openings which would prevent this scenario from occurring. Another concern would be the possibility that a fire in either Zone 29B, 29G or 29C could propagate to the other two zones via the stairway and the unrated steel hatch. Since the combustible loading in each of the three areas is low, it is not probable that a single fire could travel the stairway in either direction and also cause the steel hatch to fail and spread to the zone on the opposite side. Flammable liquids would be prevented from traveling down the stairway due to a six inch curb at the top. For a fire to affect pumps from both units through the mesh access gates, it would have to travel 175 feet through an area with a combustible loading of under 10 minutes. The lack of combustibles provides reasonable assurance that this scenario is not probable. If a fire were to occur in any of the zones of concern, it would be expected that the early warning detection would alert Control Room personnel who in turn would notify the fire brigade. Due to the low combustible loading, it would also be expected that the brigade could control the fire prior to it spreading out of the zone of origin. Therefore, there is reasonable assurance that the lack of complete 3-hour boundaries of the Essential Service Water Pump Cubicles and the Circulating Water Pump Motor Control Room does not adversely affect plant fire safety or the ability of the plant to safely shutdown.

CONCLUSION

Based on the above evaluation, it is concluded that the existing fire protection features of the ESW Pump Cubicles and the Motor Control Room, combined with the licensee's commitment to install 3-hour dampers, provide an acceptable level of protection in accordance with the guidelines of Section D.1.j of Appendix A to BTP APCSB 9.5-1. Therefore, the deviation for the unrated hatch, undampened air openings and screen mesh access gates is acceptable."

Licensing Action

Appendix R Exemption, RCP Lube Oil Collection System (Criteria III.O) - Exemption 7.15

Basis Date: December 23, 1983

To Be Transitioned?: Yes

Basis: Exemption approval per the NRC SER dated December 23, 1983 provides the following justification for RCP lube oil collection system as required by Section III.O of Appendix R, which was submitted by I&M Letter No. AEP:NRC:0692D dated December 30, 1982.

- No ignition sources at the floor level of the lower containment.
- Oil system is capable of withstanding a safe shutdown earthquake.
- Tank has the capacity to hold the total lube oil inventory for one pump.

Section III.O of Appendix R requires that the oil collection system be large enough to handle the largest potential oil leak without overflowing. The oil collection tanks have a capacity to collect the oil from 1 RCP therefore an exemption was required. This requirement is applicable to section 3.3.12.2 of NFPA 805. This exemption will be transitioned to the NFPA licensing basis.

Applicable Fire Areas:

AA56 – Unit 1 Containment

AA58 – Unit 2 Containment

Licensing Action Documentation:

Initial Exemption Request - I&M Letter No. AEP:NRC:0692D dated December 30, 1982

I&M Letter No. AEP:NRC:0692D dated December 30, 1982 stated:

“In our July 19, 1982 letter (AEP:NRC:0692C), we committed to re-evaluate the seismic characteristics of the existing oil drainage piping and collection tank installed in Units 1 and 2 of the Cook Plant and also to undertake an evaluation of the seismic capability of the RCP motor lube oil system. In the former evaluation, we committed to inspect the oil drainage piping during the next refueling outages of each unit and to undertake modifications to the oil drainage system as necessary. Both-the-re-evaluation of the seismic characteristics of the oil drainage piping and collection tank and the evaluation of the seismic capability of the motor lube oil system have been completed. Based on the results of these evaluations and with the exception of the exemptions we are requesting, we have concluded that the oil collection system installed at the Cook Plant meets the requirements of Section III.O of Appendix R. A general summary of the results of our evaluations, the subsequent modifications we have taken on Unit 1 and are currently taking on Unit 2, and the areas where we are requesting exemptions from the specific requirements of Section III.O of Appendix R is presented below.

Based on our evaluation of the oil drainage piping and collection tank, utilizing inputs from EDS Nuclear with respect to the seismic capability of the oil collection tank and inputs from Stevenson & Associates with respect to the oil drainage piping, it was decided that certain modifications were desirable to insure the adequacy of the system. The modifications included the addition of pipe supports (generally in the area of the RCPs), reinforcement of the lube oil collection tank, removal of the sight glass on the tank, sealing of the oil lift enclosures, and seal welding or socket welding of threaded piping connections.

Licensing Action

Appendix R Exemption, RCP Lube Oil Collection System (Criteria III.O) - Exemption 7.15

The above modifications were incorporated into Unit 1 during the recent refueling outage (July—September, 1982). These same modifications, excluding seal welding, are being incorporated into Unit 2 during its current refueling outage. Consultation with Stevenson & Associates since the Unit 1 outage indicated that threaded connections which are not subject to vibration are seismically acceptable provided that the joint efficiency is reduced by a predetermined factor. The analysis was performed incorporating this criterion and the threaded joints were determined to be adequate. In addition, the threaded joints subject to vibration from the RCPs are being seal welded or replaced with socket welds.

To insure continued integrity of these systems, they will be inspected during each refueling outage in accordance with Plant Procedure 12 MHP 5030.001.003 (“Maintenance Procedure for Inspection of Reactor Coolant Pump Motor Oil Levels and Oil Spill Protection Integrity”).

The oil collection system installed at the Cook Plant preceded the issuance of the Appendix R requirements. As such, there are aspects of our design which do not meet the specific requirements of Appendix R but which we believe will not prevent the system from fulfilling its intended safety function. Specifically:

A. The presently installed system incorporates an oil collection tank sized to hold the inventory of only one RCP motor. It is our contention that such a system is adequate based on the following:

1. A credible event which could cause simultaneous failure of two- or more RCP motor lube oil systems is a seismic event. The results of our analysis indicate that the components of the RCP motor lube oil system are capable of withstanding a safe shutdown earthquake (SSE). In addition, Westinghouse’s analysis of the RCP lube oil system has confirmed that the RCP motor was conservatively designed and the stresses under design basis earthquake (DBE) conditions are well within the allowable stresses giving reasonable assurance that the RCP motor oil system (lift pump, oil coolers, etc.) can withstand a DBE and maintain its integrity.

2. Should a failure of more than one RCP motor lube oil system occur, the oil collection tank would overflow to the lower containment floor. The system uses a synthetic oil (Mobil SHC 824) which has a flash point of 480 F and an ignition temperature of about 700 F. There is no source of heat at the floor of the lower containment capable of igniting the oil.

B. Portions of the lube oil collection system are not designed to withstand a design basis accident (LOCA and Steamline Break) however, it is our contention that the system is adequate based on the following:

1. During normal operation, the lube oil collection system will function to collect drips and drains and route these to the oil collection tank. In addition, the RCP motor areas are protected by a fire sprinkler system.

2. As described previously, the lube oil collection system is adequate to perform its function during and after a SSE.

3. In the unlikely event of a design basis accident, some portions of the lube oil collection piping may be susceptible to failure. However, such failure would not result in a fire hazard because of the characteristics of the synthetic oil and the operation of the containment spray system, a safety grade system, acting as an effective fire suppression system.

Although the lube oil collection system, as described above, does not meet all the requirements of 10 CFR 50

Licensing Action

Appendix R Exemption, RCP Lube Oil Collection System (Criteria III.O) - Exemption 7.15

Appendix R, Section III.O, we believe that the containment area is adequately protected from a fire which may initiate from a RCP lube oil collection system failure. We therefore request that, pursuant to the provisions of 10 CFR 50.48(c)(6), an exemption from the requirements of Section III.O of Appendix R to 10 CFR 50 be granted to us, such that it be acknowledged that the oil collection system for the RCPs installed at the Cook Plant and modified as described in this Attachment is adequate and sufficient to meet its intended safety function."

Exemption SER - NRC SER dated December 23, 1983

NRC SER dated December 23 1983 stated:

"Oil Collection System for Reactor Coolant Pumps

Exemption Requested

An exemption is requested from Section III.0 to the extent it requires an oil collection tank sized to hold the lube oil inventory of all four-RCP motors.

Discussion

Each unit has four reactor coolant pumps with an oil collection system which drains to a vented closed collection tank. The quantity of lubricating oil in each pump is 265 gallons. The capacity of the oil collection tank is 275 gallons. The components have been designed so that they are capable of withstanding a safe shutdown earthquake (SSE).

The collection tank is arranged such that if a failure of more than one RCP motor lube system occurred, the oil collection tank would overflow onto the lower containment floor. The lubricating oil used in the RCP motors has a flash point of approximately 480 degrees F. There are no ignition sources at the floor level of the lower containment.

Evaluation

The RCP motor lube oil system does not comply with Section III.D because the oil collection tank is not sized to contain the entire lube oil system inventory.

The RCP motor lube oil system is capable of withstanding the safe shutdown earthquake. The oil collection tank is provided with sufficient capacity to hold the total lube oil inventory of one reactor coolant pump with margin and is designed so that any overflow will be drained to a safe location. We agree with the licensee that the combination of features is acceptable.

Conclusion

Based on the above evaluation, the existing RCP motor lube oil collection system provides a level of safety equivalent to the technical requirements of Section III.O and, therefore, the exemption should be granted.

Additional Exemption SER - NRC SER dated January 19, 2001

Licensing Action

Appendix R Exemption, RCP Lube Oil Collection System (Criteria III.O) - Exemption 7.15

NRC SER dated January 19, 2001 states

"INTRODUCTION

By letter dated February 29, 2000, Indiana Michigan Power Company (I&M) provided corrected information related to a previous exemption from a 10 CFR Part 50, Appendix R, Section III.O requirement dealing with the reactor coolant pumps (RCPs) motor lube oil collection system. Incorrect data regarding flash point for the RCPs oil was provided by the licensee in the exemption request dated May 4, 1982, as supplemented December 30, 1982. The RCP oil flash point was used in the exemption request to help justify the smaller tank size by showing that oil spill on the piping insulation or overflow on the containment floor would not present a fire hazard. In addition, no ignition sources were reported in proximity to the RCP lube oil tanks and no potential oil leakage sites were detected in the RCP oil collection system. The staff approved the requested exemption with the incorrect flash point (480 F) for the RCP oil by letter dated December 23, 1983.

A telephone conversation was held on July 26, 2000, between members of I&M and the Nuclear Regulatory Commission (NRC) staff related to February 29, 2000, submittal to discuss the information provided by the licensee. At the close of the phone call, the NRC staff indicated that additional information would be required to complete the evaluation of the I&M February 29, 2000, submittal. Additional information was requested by the staff regarding the description of electrical ignition sources present, and where the oil collection tank overflows in the containment. I&M responded to the NRC request for additional information (RAI) by letter dated October 6, 2000, which provided the information requested by the staff.

DISCUSSION

Cook Nuclear Plant (CNP), Units 1 and 2, are each 4-loop Westinghouse Nuclear Steam Supply Systems (NSSS). Each reactor is equipped with four RCPs with an oil collection system which drains to a vented closed collection tank. The quantity of lubricating oil in each pump is approximately 265 gallons and the capacity of the oil collection tank is approximately 257 gallons. The collection tank is arranged such that if a failure of more than one RCP motor lubricating oil system occurred, the oil collection tank would overflow onto the lower containment floor in the containment building. The normal operating temperature of RCP lube oil is 140 F, and a bearing temperature alarm is set at 185 F to indicate when the oil exceeds the normal operating temperature. I&M has determined that the flash point for the RCP lube oil is approximately 425 F. This value is 55 F lower than the previously stated value (480 F). The licensee stated that should the lube oil come in contact with the surface of the hottest insulation in the proximity of the RCP motors it will not result in the ignition of the lube oil. The maximum design outside surface temperature for the mirror insulation is approximately 140 F. Only noncombustible, non-oil absorbent, metal-jacketed mirror insulation is used in the potential oil spill area.

Additionally, potential electrical ignition sources were identified by the licensee in the area of the oil collection tank system which were not described in the original exemption. Potential electrical ignition sources include: energized 480 volts ac (vac) welding transformer and associated welding outlets, open power take-off box, energized temporary extension cords, and improperly sealed junction boxes at the RCP lube oil collection tank level. The licensee has implemented plant administrative procedures and inspections under corrective maintenance program to control these ignition sources. The operating and surveillance procedures that administratively control these electrical circuits have been revised to ensure that these potential electrical ignition sources are de-energized whenever an RCP is running.

EVALUATION

Licensing Action

Appendix R Exemption, RCP Lube Oil Collection System (Criteria III.O) - Exemption 7.15

The RCP oil collection system is required to prevent a major lube oil fire from occurring inside of the reactor containment building, as a result of a lube oil leak from the RCPs. CNP Unit 1 and 2 collects lube oil leakage from each of the four RCP motors into a single collection tank for each unit. The oil collection tank is sized to collect approximately 265 gallons of lube oil the amount contained in one RCP motor, without overflowing. In the event of a single RCP lube oil leak occurring under normal operating conditions, the oil collection system will function to contain the oil and drain it to the oil retention tank. The oil collection system will prevent the lube oil from making contact with hot RCP piping and other external ignition sources. The combined loss of lube oil from all four RCPs motors failing simultaneously would be an overflow of approximately 785 gallons. Any overflow oil would be discharged out of the RCP lube oil collecting tank vent piping tee, located approximately 6.5 feet above the lower containment floor. This oil would flow onto the tank exterior, then onto the lower containment flooring around the tank. There are no floor drains in the RCP lube oil collecting tank area. The lower containment floor does not have a significant slope in any direction, and there is no berm surrounding the RCP lube oil collection tank. There are no physical barriers to prevent overflowing oil from migrating toward the lower containment sump and containment recirculation sump. These two sumps are located in the lower containment, approximately 180 from the RCP oil collection tank. Oil reaching the sump area would flow directly from the lower containment floor evaluation into the lower containment sump.

The identified combustible materials in the area around RCP lube oil collection tank include cable insulation and lube oil. Both the migrating and pooling of oil from an overflow of the RCP lube oil collecting tank should not represent a fire hazard in the area. Also, the oil collecting sumps in the lower containment present no fire hazard to safe shutdown equipment. The temperature in the area is expected to remain below the auto ignition temperature of the lube oil. In addition, the licensee has implemented operating and surveillance procedures in order to control potential electrical ignition sources such that these ignition sources are de-energized whenever a RCP is running. The CNP has administrative controls to ensure that there are no ignition sources in the lower containment when RCPs are required to be operable. An automatic fire detection system and manual fire suppression system are available in the vicinity of the lube oil collecting system to control a postulated fire. In the event of a fire, it is expected that the detector will alarm in the main control room (MCR). The alarm will alert the MCR operators of a fire condition, allowing fire brigade personnel to be dispatched to the fire zone to extinguish the fire. This provides further assurance that a worst-case postulated fire would not damage safe shutdown equipment.

CONCLUSION

Based on the above evaluation, the staff finds that the change in the flash point of the RCP lubrication oil flash point does not alter the conclusions reached by the staff in granting the original exemption from Section III.O of Appendix R to 10 CFR Part 50. Therefore, the exemption granted by the NRC remains valid."

Fire Zone	Analysis Area	Unit	Raceway	System	Cable(s) of Concern	Component	Fire Rating	Comments
6M	5/6	2	2-8154G & pull box	EPS	2-8154G	2-QT-106-CD1	1 hour	
15	14	1	1-8002R	ECCS	1-8002R	T11A, T11A3, (PP-9W)	1 hour	1-8002R is wrapped in the same pilaster as protected cable 1-8003R (reference drawing 1-1411).
15	14	1	1-8003R	RHR	1-8003R	PP-35W	1 hour	
15	14	1	1-8004R	ESW	1-8004R	PP-7W	1 hour	
15	14	1	1-8007R	CVCS	1-8007R	PP-50W	1 hour	
15	14	1	1-8048R	EPS	1-8048R	AB-A	1 hour	
15	14	1	1-8503R	EPS	1-8503R	ABD-A	1 hour	
15	14	1	1-8504R	EPS	1-8504R	ABD-B	1 hour	
19	24	2	2-8001G	AFW	2-8001G	2PP3E	1 hour	
19	24	2	2-8002G	ECCS	2-8002G	T21D, T21D4, (PP-9E)	1 hour	2-8002G is wrapped in the same pilaster as protected cable 2-8003G (reference drawing 2-1411).
19	24	2	2-8003G	RHR	2-8003G	2PP35E	1 hour	
19	24	2	2-8004G	ESW	2-8004G	2PP7E	1 hour	
19	24	2	2-8007G	CVCS	2-8007G	2PP50E	1 hour	
19	24	2	2-8048G	EPS	2-8048G	AB-D	1 hour	
19	24	2	2-8544G	EPS	2-8544G	ABD-C	1 hour	
19	24	2	2-8545G	EPS	2-8545G	ABD-D	1 hour	
29G	32	2	2-8618R	ESW	2-8618R	2-OME-34W	1 hour	Pullbox PB-3 also protected.
29G	32	2	2-8979R	ESW	2-8979R	2-WMO-704	1 hour	Pullbox PB-3 also protected.
29G	32	2	2-8996R	ESW	2-8996R	2-WMO-704	1 hour	Pullbox PB-3 also protected.
29G	32	2	2-8627G	ESW	2-8627G	2-OME-34E	1 hour	Pullbox PB-4 also protected.
29G	32	2	2-8644G	ESW	2-8644G	2-WMO-703	1 hour	Pullbox PB-4 also protected.
29G	32	2	2-8977G	ESW	2-8977G	2-WMO-703	1 hour	Pullbox PB-4 also protected.
29G	32	2	2-8004R	ESW	2-8004R	2-PP-7W	1 hour	
29G	32	2	2-8004G	ESW	2-8004G	2-PP-7E	1 hour	
29G	32	2	2-8036R	EPS	2-8036R	2-PS-A	1 hour	Pullbox also protected.

Fire Zone	Analysis Area	Unit	Raceway	System	Cable(s) of Concern	Component	Fire Rating	Comments
29G	32	2	2-9993G	EPS	2-9993G	2-PS-D	1 hour	Pullbox also protected.
40A	39A	1	conduit	1-250D	1-8353G	TDCD	1 hour	
44S	42	2	2-8344G	EPS	2-8344G	2-OME-150-CD	1 hour	
44S	42	2	2-8333G	EPS	2-8333G	2-OME-150-CD	1 hour	Component ID corrected to 1-OME-150-CD
47A	45A		conduit	2-250D	2-8353G	TDCD	1 hour	
79	2	1	1AZ-C34	EPS	1-8095G	1-QT-106-CD1	1 hour	
				EPS	1-8098G	1-QT-106-CD2		
				EPS	1-8333G	1-OME-150-CD		
				EPS	1-8338G	1-OME-150-CD		
				EPS	1-8339G	1-OME-150-CD		
				EPS	1-8340G	1-OME-150-CD		
				EPS	1-8343G	1-OME-150-CD		
				EPS	1-8344G	1-OME-150-CD		
				EPS	1-8345G	1-OME-150-CD		
				EPS	1-8346G	1-OME-150-CD		
				EPS	1-8347G	1-OME-150-CD		
				EPS	1-8348G	1-OME-150-CD		
				EPS	1-8349G	1-OME-150-CD,		
						1-T11C, 1-T11D		
				EPS	1-8400G	1-OME-150-CD		
				EPS	1-8409G	1-OME-150-CD		
				EPS	1-8410G	1-OME-150-CD		
				ESW	1-8466G	1-WMO-726		
				EPS	1-8592G	1-OME-150-CD		
				EPS	1-8639G	1-OME-150-CD		
				EPS	1-8526G	1-QT-106-CD1		
				EPS	1-8527G	1-QT-106-CD2		
				CVCS	1-8874G	1-PP-50E		
				RHR	1-8889G	1-PP-35E		
				ESW	1-8789G	1-PP-7E		
				CCW	1-8862G	1-PP-10E		
				AFW	1-9290G	1-PP-3E		

Fire Zone	Analysis Area	Unit	Raceway	System	Cable(s) of Concern	Component	Fire Rating	Comments
79	2	1	1-80009PR-1	DIS	1-80009PR-1	1-COMBO-UDISB	1 hour	FPRA Only
			1-80046PR-1	DIS	1-80046PR-1	1-COMBO-LDISB	1 hour	FPRA Only
85	2B	2	2AZ-C55	RHR	2-8889G	2-PP-35E	1 hour	85
				ESW	2-8789G	2-PP-7E		
				CCW	2-8862G	2-PP-10E		
				AFW	2-9290G	2-PP-3E		
				EPS	2-8095G	2-QT-106-CD1		
				EPS	2-8098G	2-QT-106-CD2		
				EPS	2-9231G	2-OME-150-CD		
85	2B	2	2AZ-C99	CVCS	2-8874G	2-PP-50E		
				EPS	2-8338G	2-OME-150-CD		
				EPS	2-8339G	2-OME-150-CD		
				EPS	2-8340G	2-OME-150-CD		
				EPS	2-8343G	2-OME-150-CD		
				EPS	2-8345G	2-OME-150-CD		AR 2016-14631
				EPS	2-8347G	2-OME-150-CD		
				EPS	2-8348G	2-OME-150-CD		
				EPS	2-8349G	2-OME-150-CD, 2-T21C, 2-T21D		
				EPS	2-8400G	2-OME-150-CD		
				EPS	2-8409G	2-OME-150-CD		
				EPS	2-8410G	2-OME-150-CD		
				ESW	2-8466G	2-WMO-726		AR 2016-14631
				EPS	2-8346G	2-OME-150-CD		AR 2016-14631
				EPS	2-8874G	2-OME-150-CD		AR 2016-14631
				EPS	2-8339G	2-OME-150-CD		AR 2016-14631
				ESW	2-8946G	2-WMO-708		AR 2016-14631
				EPS	2-8592G	2-OME-150-CD		
				EPS	2-8639G	2-OME-150-CD		

Fire Zone	Analysis Area	Unit	Raceway	System	Cable(s) of Concern	Component	Fire Rating	Comments
85	2B	2	2E-C9	EPS	2-9921G	2-OME-150-CD		
				EPS	2-8526G	2-QT-106-CD1		
				EPS	2-8527G	2-QT-106-CD2		
				RHR	2-8889G	2-PP-35E		
				ESW	2-8789G	2-PP-7E		
				CCW	2-8862G	2-PP-10E		
				AFW	2-9290G	2-PP-3E		
				EPS	2-8095G	2-QT-106-CD1		
85	2B	2	2E-C10	EPS	2-8098G	2-QT-106-CD2		
				EPS	2-9231G	2-OME-150-CD		
				CVCS	2-8874G	2-PP-50E		
				EPS	2-8340G	2-OME-150-CD		
				EPS	2-8343G	2-OME-150-CD		
				EPS	2-8345G	2-OME-150-CD		
				EPS	2-8346G	2-OME-150-CD		
				EPS	2-8347G	2-OME-150-CD		
				EPS	2-8348G	2-OME-150-CD		
				EPS	2-8349G	2-OME-150-CD, 2-T21C, 2-T21D		
				EPS	2-8400G	2-OME-150-CD		
				EPS	2-8409G	2-OME-150-CD		
				EPS	2-8410G	2-OME-150-CD		
				EPS	2-8592G	2-OME-150-CD		
				EPS	2-8639G	2-OME-150-CD		
				EPS	2-9921G	2-OME-150-CD		
				EPS	2-8526G	2-QT-106-CD1		
				EPS	2-8527G	2-QT-106-CD2		