

Attachments C and S contain security-related information and should be withheld under 10 CFR 2.390. Upon removal of Attachments C and S, this correspondence is de-controlled.



Jamie M. Coleman
Nuclear Licensing Manager

3535 Colonnade Parkway
Birmingham, AL 35243
205 992 6611 tel
205 992 7601 fax

jamiemco@southernco.com

August 9, 2019

Docket Nos.: 50-321
50-366

NL-19-0985

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Edwin I. Hatch Nuclear Plant – Units 1 and 2
Supplemental Response to Request for Additional Information Regarding License Amendment
Request for Transition to 10 CFR 50.48(c) - NFPA 805 Performance Based
Standard for Fire Protection for Light Water Reactor Generating Plants

Ladies and Gentlemen:

By letter dated May 28, 2019, Southern Nuclear Operating Company (SNC) responded to a request for additional information (RAI) from the Nuclear Regulatory Commission (NRC) staff regarding the Hatch Nuclear Plant (HNP) application to transition to 10 CFR 50.48(c) - NFPA 805 Performance Based Standard for Fire Protection for Light Water Reactor Generating Plants. Due to a software print setting, not all of the SNC markups provided in the attachments to this letter were captured in the file mailed to the NRC. The attachments to this letter provide the updated Revisions to Transition Report Attachments A, C, J, and S, and supersede those attachments provided in the May 28, 2019 letter.

The conclusions of the No Significant Hazards Consideration and Environmental Consideration contained in the original License Amendment Request (LAR) have been reviewed and are unaffected by this supplemental response.

This letter contains no NRC commitments. If you have any questions, please contact Jamie Coleman at 205.992.6611.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 9th day of August 2019.

Respectfully submitted,

A handwritten signature in cursive script that reads "Jamie M. Coleman".

Jamie M. Coleman
Nuclear Licensing Manager
Southern Nuclear Operating Company

JMC/RMJ

A006
NRR

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Attachments: A. Revisions to Transition Report Attachment A
C. Revisions to Transition Report Attachment C (Security-related information)
J. Revisions to Transition Report Attachment J
S. Revisions to Transition Report Attachment S (Security-related information)

cc: Regional Administrator, Region II
NRR Project Manager – Hatch
Senior Resident Inspector – Hatch
Director, Environmental Protection Division – State of Georgia
RType: CHA02.004

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**Attachment A
Revisions to Transition Report Attachment A
NEI 04-02 Table B-1 – Transition of Fundamental
FP Program and Design Elements**

NFPA 805 Ch. 3 Ref.	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.3.5.2	Only metal tray and metal conduits shall be used for electrical raceways. Thin wall metallic tubing shall not be used for power, instrumentation, or control cables. Flexible metallic conduits shall only be used in short lengths to connect components.	Complies	Except as identified below, HNP complies with no additional clarification.	<p>Drawing A29500, Conduit and Conduit Support, Ver. 3.0 / Section 3.1</p> <p>Drawing A29501, General Design Document and Details for the Installation of Nonsafety-Related Electrical Work, Ver. 2.0 / Section 6.0</p> <p>Drawing B13000, Conduit & Grounding Installation Notes, Ver. 5.0</p> <p>E-1-03, SNC Raceway Design Standard, Rev. 6</p> <p>Specification SS-2123-009, Technical Specification for Cable Trays and Cable Tray Accessories for the Edwin I. Hatch Nuclear Plant - Unit 2, Rev. A / All</p>
		Submit for NRC Approval	<p>FAQ 06-0021 defines "short lengths" as approximately three feet of flexible metallic conduit.</p> <p>NRC approval of the use of PVC coated flexible conduit in lengths up to 6 feet and embedded non-metallic conduit is being requested in Attachment L, Approval Request 4.</p>	FAQ 06-0021, Cable Air Drops, Rev. 0 / All

Complies, with Required Action Implementation items are identified below. None

IMPLEMENTATION ITEMS (See Attachment S, Table S-3):
 IMP-20 Current cable/raceway installation procedures allow for flexible metallic conduit installations up to 6-feet, or greater if approved by the Architectural Engineer. Cable/raceway procedures will be revised to ensure that installation guidance is limited to a maximum of 6 feet for future flexible metallic conduit installations.

NFPA 805 Ch. 3 Ref.	Requirements/Guidance	Compliance Statement	Compliance Basis	Reference Document
3.5.7	Individual fire pump connections to the yard fire main loop shall be provided and separated with sectionalizing valves between connections.	Complies	No Additional Clarification	Drawing H-11033 Sheet 1, Fire Protection- P&ID Pumphouse Layout, Ver. 51.0 / All
3.5.8	A method of automatic pressure maintenance of the fire protection water system shall be provided independent of the fire pumps.	Complies	No Additional Clarification	Drawing H-11033 Sheet 1, Fire Protection- P&ID Pumphouse Layout, Ver. 51.0 / All
3.5.9	Means shall be provided to immediately notify the control room, or other suitable constantly attended location, of operation of fire pumps.	Complies	No Additional Clarification	A-42162, Unit No. 1 / 2 Fire Protection Detection/Annunciation Multiplex Database, Rev. 10 / All Procedure 34SV-X43-001-1, Fire Pump Test, Ver. 3.5 / Section 7.0
3.5.10	An underground yard fire main loop, designed and installed in accordance with NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, shall be installed to furnish anticipated water requirements.	Complies with Use of EEEE's	The underground yard fire main loop is designed in accordance with NFPA 24 as identified in Calculation SMNH-16-031, NFPA 24 Code Compliance Review.	Calculation SMNH-16-031, NFPA 24 Code Compliance Review, Ver. 1 / All Drawing H-11033 Sheet 1, Fire Protection- P&ID Pumphouse Layout, Ver. 51.0 / All NFPA 24, Standard for Outside Protection, 1973 Edition / All


 Insert "A"

3.5.10

Complies, with Required
Action

Implementation items are
identified below.

None

IMPLEMENTATION ITEMS (See Attachment S, Table S-3):

IMP-21 Bollards or other appropriate protection will be provided for yard post indicator valves 1Y43-F308P and 1Y43-F316P in accordance with approved plant design.

A

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**Attachment J
Revisions to Transition Report Attachment J
Fire Modeling V&V**

Table J-1 V & V Basis for Fire Models / Model Correlations Used

Calculation	Application	V & V Basis	Discussion
<p>Smoke Detection Actuation Correlation</p> <p>(Method of Heskestad and Delichatsios)</p> <p>(Smoke optical density method)</p>	<p>Alpert Ceiling Jet correlation is used to determine temperature and the Heskestad and Delichatsios temperature to smoke density correlation for smoke detection timing estimates</p> <p>An optical density method, developed from Alpert's ceiling jet temperature correlation, is used to determine the time to automatic smoke detection.</p>	<p>Technical Reference:</p> <ul style="list-style-type: none"> NUREG-1805, Chapter 11, 2004 NUREG-1824, Volume 4, 2007 NUREG-1934, Chapter 2, 2012 SFPE Handbook of Fire Protection Engineering, 5th Edition, Chapter 40, Custer R., Meacham B., and Schifiliti, R., 2016 SFPE Handbook of Fire Protection Engineering, 5th Edition, Chapter 14, Alpert, R., 2016 	<ul style="list-style-type: none"> The smoke detection correlation is contained in NUREG-1805. Alpert's ceiling jet correlation V&V is documented in NUREG-1824. The correlation has been applied within its limits of applicability and the validated range reported in NUREG-1824 or, if applied outside the validated range, the model has been justified as acceptable, either by qualitative analysis, or by quantitative sensitivity analysis. The methodology for justifying application of the fire model outside the range is in accordance with methods documented in NUREG-1934. The temperature to smoke density correlation is documented in an authoritative publication of the "SFPE Handbook of Fire Protection Engineering." <p>The applicability of the V&V basis to the model implementation in the HNP FPRA is described in the following HNP Calculations:</p> <ul style="list-style-type: none"> H-RIE-FIREPRA-U00-008A, "Hatch Fire PRA Task 8/11a, Fire Scenario Development and Detailed Fire Modeling", Version 2, Attachment A, Fire Modeling Workbook Methodology for HNP
<p>Heat Detection Actuation Correlation</p>	<p>Estimates heat detector timing based on the Alpert ceiling jet temperature, velocity, and thermal response of sprinkler.</p>	<p>Technical Reference:</p> <ul style="list-style-type: none"> NUREG-1805, Chapter 11, 2004 NFPA Fire Protection Handbook, 19th Edition, Chapter 3-9, Budnick, E., Evans, D., and Nelson, H., 2003 NUREG-1824, Volume 4, 2007 NUREG-1934, Chapter 2, 2012 	<ul style="list-style-type: none"> The heat detection correlation is contained in NUREG-1805. The correlation is documented in an authoritative publication of the NFPA Fire Protection Handbook. Alpert's ceiling jet correlation V&V is documented in NUREG-1824. The correlation has been applied within its limits of applicability and the validated range reported in NUREG-1824 or, if applied outside the validated range, the model has been justified as acceptable, either by qualitative analysis, or by quantitative sensitivity analysis. The methodology for justifying application of the fire model outside the range is in accordance with methods documented in NUREG-1934. <p>The applicability of the V&V basis to the model implementation in the HNP FPRA is described in the following HNP Calculations:</p> <ul style="list-style-type: none"> H-RIE-FIREPRA-U00-008A, "Hatch Fire PRA Task 8/11a, Fire Scenario Development and Detailed Fire Modeling", Version 2, Attachment A, Fire Modeling Workbook Methodology for HNP

The Alpert's ceiling jet correlation temperature is transformed to a soot optical density by application of basic laws of thermodynamics and fluid mechanics.