Kevin P. Riley
Nuclear Support Services Manager
Harris Nuclear Plant
5413 Shearon Harris Road
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10 CFR 50.4(b)(5)(ii)
10 CFR 50.54(q)(5)

December 8, 2020
Serial: RA-20-0381

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

Shearon Harris Nuclear Power Plant, Unit 1
Docket No. 50-400/Renewed License No. NPF-63

Subject: 10 CFR 50.54(q) Evaluation

Ladies and Gentlemen:

In accordance with 10 CFR 50.4(b)(5)(ii) and 10 CFR 50.54(q)(5), Duke Energy Progress, LLC, is submitting the 10 CFR 50.54(q) Screening Evaluation Form and the 10 CFR 50.54(q) Effectiveness Evaluation Form for revisions to the Shearon Harris Nuclear Power Plant, Unit 1, Emergency Action Level (EAL) Technical Basis Document and the EAL Wallchart Document. CSD-EP-HNP-0101-01, EAL Technical Basis Document, Revision 2, and CSD-EP-HNP-0101-02, EAL Wallchart (Both Hot and Cold), Revision 1, were issued on November 19, 2020.

This submittal contains no regulatory commitments. Please refer any questions regarding this submittal to Sarah McDaniel at (984) 229-2002.

Sincerely,

Kevin P. Riley

Enclosure: 10 CFR 50.54(q) Screening Evaluation Form and 10 CFR 50.54(q) Effectiveness Evaluation Form for CSD-EP-HNP-0101-01, Revision 2, and CSD-EP-HNP-0101-02, Revision 1

cc: J. Zeiler, NRC Senior Resident Inspector, HNP
M. Mahoney, NRC Project Manager, HNP
NRC Regional Administrator, Region II

ENCLOSURE

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-400/RENEWED LICENSE NUMBER NPF-63

10 CFR 50.54(Q) SCREENING EVALUATION FORM AND 10 CFR 50.54(Q) EFFECTIVENESS EVALUATION FORM FOR

CSD-EP-HNP-0101-01, REVISION 2, AND CSD-EP-HNP-0101-02, REVISION 1

(19 PAGES PLUS COVER)

<< 10 CFR 50.54(q) Screening Evaluation Form >>

Screening and Evaluation Number		Applicable Sites	
EREG #: 2345490		BNP	☐
		CNS	☐
		HNP	■
5AD #: 2345489		MNS	☐
		ONS	☐
		RNP	☐
		GO	☐
Document and Revision	CSD-EP-HNP-0101-01, EAL Technical Basis Document, Rev 002 CSD-EP-HNP-0101-02, EAL Wallchart (Both Hot and Cold), Rev 001		

Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):

CSD-EP-HNP-0101-01 is the EAL technical basis document for Harris and CSD-EP-HNP-0101-02 is the EAL Wallchart for Harris. This change adds clarification to the technical basis document for EALs CA 6.1, and SA9.1. In addition, EALs RS2.1 and RG2.1 are revised to incorporate Spent Fuel Pool Level Instrument level adjustment based on EC 418052. EC 418052 changes Spent Fuel Pool level 3 values that take into account variables in the fuel pool for instrument uncertainty.

Change #	Section or Step	Change From	Change To
1	Throughout	Revision number 001, and page numbers	Revision number 002, and page numbers
2	CA6.1 Basis	Added to Document	This EAL is applicable when: • A single event is significant enough to cause damage to 2 trains of the same safety system, **OR** • The event causes damage to a common component that supports 2 trains of the same safety system.

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3	CA6.1 Basis	This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS needed for the current operating mode. In order to provide the appropriate context for consideration of an ALERT classification, the hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues.	This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS needed for the current operating mode. In order to provide the appropriate context for consideration of an ALERT classification, the **hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues.**
4	CA6.1 Basis	Added to Document	*Continued on next page*
5	CA6.1 Basis	Indications of degraded performance address damage to a SAFETY SYSTEM train that is in service/operation since indications for it will be readily available. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.	**Indications of degraded performance address damage to a SAFETY SYSTEM train that is in service/operation since indications for it will be readily available**. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.
6	CA6.1 Basis	Added to Document	New table with 7 scenarios (See Enclosure 1 below with table contents)
7	CA6.1 Basis	An event affecting equipment common to two or more safety systems or safety system trains (i.e., there are indications of degraded performance and/or VISIBLE DAMAGE affecting the common equipment) should be classified as an Alert under CA6, as appropriate to the plant mode. By affecting the operability or reliability of multiple system trains, the loss of the common equipment effectively meets the two-train impact criteria that underlie the EALs and Bases.	**An event affecting equipment common to two or more safety systems or safety system trains (i.e., there are indications of degraded performance and/or VISIBLE DAMAGE affecting the common equipment) should be classified as an Alert under CA6, as appropriate to the plant mode**. By affecting the operability or reliability of multiple system trains, the loss of the common equipment effectively meets the two-train impact criteria that underlie the EALs and Bases.
8	SA9.1 Basis	Added to Document	This EAL is applicable when: • A single event is significant enough to cause damage to 2 trains of the same safety system, **OR**

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Enclosure 1

			• The event causes damage to a common component that supports 2 trains of the same safety system.
9	SA9.1 Basis	This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS needed for the current operating mode. In order to provide the appropriate context for consideration of an ALERT classification, the hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues.	This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS needed for the current operating mode. In order to provide the appropriate context for consideration of an ALERT classification, the **hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues.**
10	SA9.1 Basis	Added to document	*Continued on next page*
11	SA9.1 Basis	Indications of degraded performance address damage to a SAFETY SYSTEM train that is in service/operation since indications for it will be readily available. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.	**Indications of degraded performance address damage to a SAFETY SYSTEM train that is in service/operation since indications for it will be readily available**. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.
12	SA9.1 Basis	Added to Document	New table with 7 scenarios (See Enclosure 1 below with table contents)
13	SA9.1 Basis	An event affecting equipment common to two or more safety systems or safety system trains (i.e., there are indications of degraded performance and/or VISIBLE DAMAGE affecting the common equipment) should be classified as an Alert under CA6, as appropriate to the plant mode. By affecting the operability or reliability of multiple system trains, the loss of the common equipment effectively meets the two-train impact criteria that underlie the EALs and Bases.	**An event affecting equipment common to two or more safety systems or safety system trains (i.e., there are indications of degraded performance and/or VISIBLE DAMAGE affecting the common equipment) should be classified as an Alert under SA9.1, as appropriate to the plant mode**. By affecting the operability or reliability of multiple system trains, the loss of the common equipment effectively meets the two-train impact criteria that underlie the EALs and Bases.
14	SA9.1 References	3. CA6	SA9
15	CA6.1	6-Cold Shut Down	5- Cold Shut Down

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16	RS2.1	Lowering of spent fuel pool level ≤ 260.7 ft. (Level 3) (DRR 2345116)	Lowering of spent fuel pool level ≤ 262.5 ft. (Level 3)
17	RS2.1 Basis	Level 3 corresponds to an indicated SFP level of 260.7 ft. which is the top of the SFP racks (ref. 2). (DRR 2345116)	Level 3 corresponds to an indicated SFP level of 262.5 ft. which is the top of the SFP racks (ref. 4).
18	RS2.1 References	Added to Document (DRR 2345116)	4. EC 418052
19	RG2.1	Spent fuel pool level cannot be restored to at least 260.7 ft. (Level 3) for ≥ 60 min. (DRR 2345116)	Spent fuel pool level cannot be restored to at least 262.5 ft. (Level 3) for ≥ 60 min.
20	RG2.1 Basis	Level 3 corresponds to an indicated SFP level of 260.7 ft. which is the top of the SFP racks (ref. 2). (DRR 2345116)	Level 3 corresponds to an indicated SFP level of 262.5 ft. which is the top of the SFP racks (ref. 4).
21	RG2.1 References	Added to Document (DRR 2345116)	4. EC 418052

Attachment 6, 10 CFR 50.54(q) Initiating Condition (IC) and Emergency Action Level (EAL) and EAL Bases Validation and Verification (V&V) Form is attached (required for IC or EAL change)	Yes ■ No ☐

Part II. Activity Previously Reviewed?	Yes ☐	No ■
Is this activity Fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report? If yes, identify bounding source document number or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below: Justification:	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.	Continue to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part III
Bounding document attached (optional)		☐

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Enclosure 1

Part III. Editorial Change Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent? Justification: The changes below are editorial in accordance with AD-EP-ALL-0602 and therefore require no further evaluation. Changes 1, 4, 10, 14, and 15	Yes	☐	No or Partially	■
	10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V.		Continue to Attachment 4, Part IV and address non editorial changes	

Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria)

Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.

1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)	
1a	Responsibility for emergency response is assigned.	☐
1b	The response organization has the staff to respond and to augment staff on a continuing basis (24-7 staffing) in accordance with the emergency plan.	☐
2	10 CFR 50.47(b)(2) Onsite Emergency Organization	
2a	Process ensures that onshift emergency response responsibilities are staffed and assigned	☐
2b	The process for timely augmentation of onshift staff is established and maintained.	☐
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources	
3a	Arrangements for requesting and using off site assistance have been made.	☐
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan.	☐
4	10 CFR 50.47(b)(4) Emergency Classification System	
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)	■
5	10 CFR 50.47(b)(5) Notification Methods and Procedures	
5a	Procedures for notification of State and local governmental agencies are capable of alerting them of the declared emergency within 15 minutes after declaration of an emergency and providing follow-up notification.	☐
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway.	☐
5c	The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter.	☐

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Enclosure 1

Part IV. Emergency Planning Element and Function Screen (cont.)		
6	10 CFR 50.47(b)(6) Emergency Communications	
6a	Systems are established for prompt communication among principal emergency response organizations.	☐
6b	Systems are established for prompt communication to emergency response personnel.	☐
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ).	☐
7b	Coordinated dissemination of public information during emergencies is established.	☐
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	☐
8b	Adequate equipment is maintained to support emergency response.	☐
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	☐
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies.	☐
10b	Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities.	☐
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	☐
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	☐
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	☐
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	☐
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	☐
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	☐
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	☐
14c	Identified weaknesses are corrected.	☐
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	☐

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Enclosure 1

Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	☐
16b	Planners responsible for emergency plan development and maintenance are properly trained.	☐
PART IV. Conclusion If no Part IV criteria are checked, then provide Justification and complete Part V below. Justification: Changes 4, and 10 add information for the user that more information for the same EAL basis is continued on the next page. No change to intent of the EAL scheme was made by this addition and this change does not reduce the effectiveness of the site's emergency plan. NO further evaluation required.		☐
If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Program Element 4a requires final approval of Screen and Evaluation by EP CFAM.		■
Part V. Signatures: EP CFAM Final Approval is required for changes affecting Program Element 4a. If CFAM approval is **NOT** required, then mark the EP CFAM signature block as not applicable (N/A) to indicate that signature is not required.		
Preparer Name (Print): Jamey Sharlow	Preparer Signature: See CAS	Date: See CAS
Reviewer Name (Print): Sarah McDaniel	Reviewer Signature: See CAS	Date: See CAS
Approver Name (Print): See CAS	Approver Signature: See CAS	Date: See CAS
Approver (EP CFAM, as required) Name (Print) David Thompson	Approver Signature: See CAS	Date: See CAS
If the proposed activity is a change to the E-Plan, then initiate PRRs.		PRR Number(s): n/a
If required by Section 5.6, Submitting Reports of Changes to the NRC, then create two EREG General Assignments. • One for EP to provide the 10 CFR 50.54(q) summary of the analysis, or the completed 10 CFR 50.54(q), to Licensing.		EREG Due Date: 12/12/2020
• One for Licensing to submit the 10 CFR 50.54(q) information to the NRC in accordance with 10 CFR 50.4(b)(5)(ii) within 30 days after the change is put in effect.		EREG Due Date: 12/12/2020

QA RECORD

Enclosure 1

The examples in the following table can assist in determining the threshold meeting the two train criteria.

Scenario	Train A	Train B	Extent of damage	Classify Y/N?	Reason
1	OOS/Under Clearance (Visible Damage)	In Service (**NO** degraded performance)	Event caused damage to Train A only	No	Train A was OOS prior to the event and the event impacted only 1 train
2	OOS/Under Clearance (No damage)	In Service (degraded performance)	Event caused damage to Train B only	No	Train A was OOS prior to the event and the event impacted only 1 train
3	OOS/Under Clearance (Visible Damage)	In Service (Degraded Performance)	Event causes damage to both trains	**Yes**	The event was significant enough to impact two trains.
4	In Stby (Visible Damage)	In Stby (Visible Damage)	Event caused damage to both trains	No	Cannot classify on Visible Damage only
5	In Service (Degraded Performance)	In Stby (Visible Damage)	Event caused damage to both trains	**Yes**	The event was significant enough to impact two trains
6	In Service (Degraded Performance)	In Service (Degraded Performance)	Event causes damage to both trains	**Yes**	The event was significant enough to impact two trains
7	In service **OR** in Stby	In service **OR** in Stby	Event caused damage to a common component to both trains (i.e CST, RWST, BAT)	**Yes**	The event impacted equipment common to two or more trains

<< 10 CFR 50.54(q) Effectiveness Evaluation Form >>

Screening and Evaluation Number	Applicable Sites	
EREG #: 2345490	BNP	☐
	CNS	☐
	HNP	■
5AD #: 2345489	MNS	☐
	ONS	☐
	RNP	☐
	GO	☐

Document and Revision	CSD-EP-HNP-0101-01, EAL Technical Basis Document, Rev 002 CSD-EP-HNP-0101-02, EAL Wallchart (Both Hot and Cold), Rev 001

Part I. Description of Proposed Change:

CSD-EP-HNP-0101-01 is the EAL technical basis document for Harris This change adds clarification to the technical basis document for EALs CA 6.1, and SA9.1. In addition, EALs RS2.1 and RG2.1 are revised to incorporate Spent Fuel Pool Level Instrument level adjustment based on EC 418052. EC 418052 changes Spent Fuel Pool level 3 values that take into account variables in the fuel pool for instrument uncertainty.

Change #	Section or Step	Change From	Change To
2	CA6.1 Basis	Added to Document	This EAL is applicable when: • A single event is significant enough to cause damage to 2 trains of the same safety system, **OR** • The event causes damage to a common component that supports 2 trains of the same safety system.
3	CA6.1 Basis	This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS needed for the current operating mode. In order to provide the appropriate context for consideration of an ALERT classification, the hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues.	This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS needed for the current operating mode. In order to provide the appropriate context for consideration of an ALERT classification, the **hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues.**

5	CA6.1 Basis	Indications of degraded performance address damage to a SAFETY SYSTEM train that is in service/operation since indications for it will be readily available. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.	**Indications of degraded performance address damage to a SAFETY SYSTEM train that is in service/operation since indications for it will be readily available**. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.
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11	SA9.1 Basis	Indications of degraded performance address damage to a SAFETY SYSTEM train that is in service/operation since indications for it	**Indications of degraded performance address damage to a SAFETY SYSTEM train that is in service/operation since indications**

		will be readily available. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.	**for it will be readily available**. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.
12	SA9.1 Basis	Added to Document	New table with 7 scenarios (See Enclosure 1 below with table contents)
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16	RS2.1	Lowering of spent fuel pool level ≤ 260.7 ft. (Level 3) (DRR 2345116)	Lowering of spent fuel pool level ≤ 262.5 ft. (Level 3)
17	RS2.1 Basis	Level 3 corresponds to an indicated SFP level of 260.7 ft. which is the top of the SFP racks (ref. 2). (DRR 2345116)	Level 3 corresponds to an indicated SFP level of 262.5 ft. which is the top of the SFP racks (ref. 4).
18	RS2.1 References	Added to Document (DRR 2345116)	4. EC 418052
19	RG2.1	Spent fuel pool level cannot be restored to at least 260.7 ft. (Level 3) for ≥ 60 min. (DRR 2345116)	Spent fuel pool level cannot be restored to at least 262.5 ft. (Level 3) for ≥ 60 min.
20	RG2.1 Basis	Level 3 corresponds to an indicated SFP level of 260.7 ft. which is the top of the SFP racks (ref. 2). (DRR 2345116)	Level 3 corresponds to an indicated SFP level of 262.5 ft. which is the top of the SFP racks (ref. 4).
21	RG2.1 References	Added to Document (DRR 2345116)	4. EC 418052

Part II. Description and Review of Licensing Basis Affected by the Proposed Change:

Licensing Basis for NEI 99-01 Rev 6 EALS

HNP: ML16057A838 Letter dated April 13, 2016. Subject: Shearon Harris nuclear power plant, Unit 1 - Issuance of amendment to adopt Emergency Action Level scheme pursuant to NEI 99-01, revision 6, "Development of Emergency Action Levels for non-passive reactors" (CAC no. Mf6196).

Amendment No. 149 to Renewed Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1.

Additional Licensing basis to implement FAQs

ML19058A632 Letter dated July 1, 2019. Subject: Catawba Nuclear Station, Units 1 And 2; McGuire Nuclear Station, Units 1 And 2; Oconee Nuclear Station, Units 1, 2, And 3; Brunswick Steam Electric Plant, Units 1 And 2; Shearon Harris Nuclear Power Plant, Unit 1; And H. B. Robinson Steam Electric Plant, Unit No. 2 – Issuance of Amendments To Revise Emergency Action Level Schemes To Incorporate Clarifications Provided By Emergency Preparedness Frequently Asked Questions 2015-013, 2015-014, And 2016-002 (EPID L-2018-LLA-0174)

Amendment Nos. 303 and 299 to Renewed Facility Operating License Nos. NPF-35 and NPF-52 for the Catawba Nuclear Station, Units 1 and 2 (Catawba), respectively; Amendment Nos. 315 and 294 to Renewed Facility Operating License Nos. NPF-9 and NPF-17 for the McGuire Nuclear Station, Units 1 and 2 (McGuire), respectively; Amendment Nos. 412, 414, and 413 to Renewed Facility Operating License Nos. DPR-38, DPR-47, and DPR-55 for the Oconee Nuclear Station, Units 1, 2, and 3 (Oconee), respectively; Amendment Nos. 291 and 319 to Renewed Facility Operating License Nos. DPR-71 and DPR-62 for Brunswick Steam Electric Plant, Units 1 and 2 (Brunswick), respectively; Amendment No. 172 to Renewed Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1 (Harris); and Amendment No. 264 to Renewed Facility Operating License No. DPR-23 for the H. B. Robinson Steam Electric Plant, Unit No. 2 (Robinson).

Harris Only

ML19108A173 Letter dated JULY 18, 2019 Subject: Shearon Harris Nuclear Power Plant, Unit 1 - Issuance of Amendment No. 173 Regarding Emergency Plan Emergency Action Level Scheme Change (EPID L-2018-LLA-0216)

Amendment No. 173 to Renewed Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1.

Current EALS

Harris Nuclear Plant Emergency Action Levels, CSD-EP-HNP-0101-01 Revision 001

Current Emergency Plans

- Harris Nuclear Plant - PLP-201, Emergency Plan, Revision 072

The differences in approved revisions and the current revisions of the Emergency Plans have been reviewed, and they have been determined to meet the regulatory requirements required during the course of revisions.

Part III. Description of How the Proposed Change Complies with Regulation and Commitments.

If the emergency plan, modified as proposed, no longer complies with planning standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50, then ensure the change is rejected, modified, or processed as an exemption request under 10 CFR 50.12, Specific Exemptions, rather than under 10 CFR 50.54(q)**:**

Changes 2, and 8 add a sentence to the beginning of the basis section to clarify that the EAL is based off the significance of the event that caused damage. This adds clarification to the reader that the event needs to be of significant size to cause damage to 2 trains of the same safety system or damage to a common component affecting 2 trains of the same safety system the common component supports.

Changes 3, 5, 7, 9, 11 and 13 bold portions of the original technical basis information for emphasis only. No words or intent has changed as a result of the bolding of these sentences. Bolding simply draws additional attention to those portions of the paragraphs that may aid in determining significance of the event.

Changes 6, and 12 add a table of nonspecific equipment scenarios. These table is designed to provide a reference of different examples of event significance to aid in classification. The table adds clarifying examples of what does and what does not meet Alert classifications to ensure predictable, accurate classification.

The proposed changes add clarifying information that is intended to minimize the potential for an under or over-classification of equipment failure. The proposed clarifications will reduce the potential of declaring an Alert when events are in progress that do not involve an actual or potential substantial degradation of the level of safety of the plant, i.e., does not cause significant concern with shutting down or cooling down the plant.

The proposed changes do not reduce the licensee's capability to assess, classify, and declare an emergency condition within 15 minutes of the availability of indications. The classification of the event would NOT be different from that approved by the NRC in a site-specific application or from the endorsed industry EAL scheme that had been approved. The proposed changes can be made because the meaning or intent of the basis of the approved EAL is unchanged.

Adding additional clarification for these EALs is consistent with the NEI submitted FAQ 2016-002 for Visible Damage approved in Duke Energy EALs as referenced in Part II, and NEI Submitted FAQ 2018-04 that adds additional clarification to FAQ 2016-002. As required by 10 CFR 50.47(b)(4), the proposed change complies with the regulations because a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee.

Changes 16, 17, 18, 19, 20, and 21 involve a change to the Spent Fuel Pool Level Indication (SFPLI) level 3 value identified in RS2.1 and RG2.1. The function of the SFPLI measurements are to provide reliable continuous indication of the water level in associated spent fuel storage pools capable of supporting identification of the following water level conditions in compliance with NRC Order EA-12-051, Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation and as described in the latest revision of JLD-ISG-2012-03, Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation and NEI 12-02, Industry Guidance for Compliance with NRC Order EA-12-051, "To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation":

(1) level that is adequate to support operation of the normal fuel pool cooling system,

(2) level that is adequate to provide substantial radiation shielding for a person standing on the spent fuel pool operating deck, and

(3) level where the spent fuel remains covered and actions to implement make-up water addition should no longer be deferred.

The wide range spent fuel pool (SFP) level instrumentation is only required in a Beyond-Design-Basis External Event (BDBEE), therefore, plant conditions, including postulated accidents defined in the Design Basis Accident, Chapter 15 of the UFSAR are not applicable. However, per NEI 12-02, "the level channels shall be reliable at temperature, humidity and radiation levels consistent with the spent fuel pool water at saturation conditions for an extended period." NEI 12-02 further describes conditions that should be considered near the SFP and the area of use considering both normal and post-event conditions for no fewer than seven days post-event or until off-site resources can be deployed.

The Duke development of the SFPLI Levels (1, 2, and 3) in response to the NRC Order EA-12-051 were not developed with EALs in mind but informed by EA-12-051 actions. NEI 12-02, was written to provide guidance to the industry for implementing the order. EA-12-051 and NEI 12-02 predate NEI 99-01 Rev. 6, Development of Emergency Action Levels for Non-Passive Reactors by several months.

NEI developed Rev. 6 of NEI 99-01, which provides guidance to use the values developed in response to the order in establishing SFP level based EALs. The EAL guidance directs developers to "modify the EAL and/or Basis section to reflect any site-specific constraints or limitations associated with the design or operation of instrumentation used to determine the Level 3 value."

A review of the value used in the EAL was conducted. While the Level 3 value in response to the NRC order was accurate and appropriate to meet NEI 12-02 requirements, site-specific constraints or limitations may not have been considered in determining the appropriate threshold value for EALs RS2, and RG2. This new level takes into account site specific constraints and limitations.

The proposed change raises the EALs RS2, and RG2 threshold values to 262.5 ft. The proposed EAL modifications do not alter the intent of any specific EAL described in NEI 99-01, Rev. 6. This level still represents Level 3 value because this is a level "where the spent fuel remains covered and action to implement make-up water addition should no longer be deferred".

The new level does not reduce the licensee's capability to assess, classify, and declare an emergency condition within 15 minutes of the availability of indications. The classification of the event would NOT be different from that approved by the NRC in a site-specific application or from the endorsed industry EAL scheme that had been approved. The proposed change is able to be made because the change to the EAL numeric threshold is based on EC 418052, which evaluated instrument response behavior, SFP configuration, and instrument uncertainty. The meaning or intent of the basis of the approved EAL is unchanged.

As per the bases document, this EAL is not likely to be declared prior to other EAL thresholds being exceeded. Lowering water level in a fuel pool of the magnitude in this EAL would take significant damage to the fuel pool, or an extended loss of offsite power. Damage of this magnitude would likely be caused by either hostile action, where the Site Area Emergency, would be declared upon a hostile action within the protected area, or an earthquake. A postulated earthquake of such magnitude to impact a spent fuel pool would have more consequential impact on safety related components meeting entry into System EALs or Fission Product Barrier EALs before meeting the level threshold of the SFP. Additionally, the Loss of Power for SFP cooling to reach this degree of inventory loss would exceed the time to declare the EAL under LOOP conditions.

The instrumentation and set points derived for this EAL are consistent with the overall EAL scheme development guidance in NEI 99-01 Revision 6 and address the plant-specific implementation strategies provided. As required by 10 CFR 50.47(b)(4), the proposed change complies with the regulations because a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee.

Part IV. Description of Emergency Plan Planning Standards, Functions and Program Elements Affected by the Proposed Change (Address each function identified in Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV of associated Screen):

Planning Standard

10 CFR 50.47(b)(4) states: A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures."

Function

The emergency planning function associated with 10 CFR 50.47(b)(4) states:

- A standard scheme of emergency classification and action levels is in use.

Appendix E

Supporting requirements which are described in 10 CFR 50, Appendix E states:

IV.B:

1. The means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. By June 20, 2012, for nuclear power reactor licensees, these action levels must include hostile action that may adversely affect the nuclear power plant. The initial emergency action levels shall be discussed and agreed on by the applicant or licensee and state and local governmental authorities, and approved by the NRC. Thereafter, emergency action levels shall be reviewed with the State and local governmental authorities on an annual basis.

IV.C:

1. The entire spectrum of emergency conditions that involve the alerting or activating of progressively larger segments of the total emergency organization shall be described. The communication steps to be taken to alert or activate emergency personnel under each class of emergency shall be described. Emergency action levels (based not only on onsite and offsite radiation monitoring information but also on readings from a number of sensors that indicate a potential emergency, such as the pressure in containment and the response of the Emergency Core Cooling System) for notification of offsite agencies shall be described. The existence, but not the details, of a message authentication scheme shall be noted for such agencies. The emergency classes defined shall include: (1) Notification of unusual events, (2) alert, (3) site area emergency, and (4) general emergency. These classes are further discussed in NUREG–0654/FEMA–REP–1.

2. By June 20, 2012, nuclear power reactor licensees shall establish and maintain the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and shall promptly declare the emergency condition as soon as possible following identification of the appropriate emergency classification level. Licensees shall not construe these criteria as a grace period to attempt to restore plant conditions to avoid declaring an emergency action due to an emergency action level that has been exceeded. Licensees shall not construe these criteria as preventing implementation of response actions deemed by the licensee to be necessary to protect public health and safety provided that any delay in declaration does not deny the State and local authorities the opportunity to implement measures necessary to protect the public health and safety.

Informing Criteria from NUREG-0654

The applicable program elements described in NUREG-0654, Section II.D state:

- D.1: An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee. The specific instruments, parameters or equipment status shall be shown for establishing each emergency class, in the in-plant emergency procedures. The plan shall identify the parameter values and equipment status for each emergency class.

- D.2: The initiating conditions shall include the example conditions found in Appendix 1 and all postulated accidents in the Final Safety Analysis Report (FSAR) for the nuclear facility.

Part V. Description of Impact of the Proposed Change on the Effectiveness of Emergency Plan Functions:

Changes 2, and 8 adds a sentence to the beginning of the basis section to clarify that the EAL is based off the significance of the event that caused the damage. This adds clarification to the reader that the event needs to be of significant size to cause damage to 2 trains of the same safety system or damage to a common component affecting the safety train it supports. Changes 3, 5 ,7, 9, 11, and13 bold portions of the original technical basis information for emphasis only. No words or intent has changed as a result of the bolding of these sentences. Bolding simply draws additional attention to those portions of the paragraphs that may aid in determining significance of the event. Changes 6, and 12 add a table of nonspecific equipment scenarios. These table is designed to provide a reference of different examples of event significance to aid in classification. The table adds clarifying examples of what does and what does not meet Alert classifications to ensure predictable accurate classification. The proposed changes add clarifying information that is intended to minimize the potential for an under or over-classification of equipment failure. The proposed clarifications will reduce the potential of declaring an Alert when events are in progress that do not involve an actual or potential substantial degradation of the level of safety of the plant, i.e., does not cause significant concern with shutting down or cooling down the plant.

The proposed changes improve the licensee's capability to assess, classify, and declare an emergency condition within 15 minutes of the availability of indications. The classification of the event would NOT be different from that approved by the NRC in the site-specific application reference in Part II. Implementation of the clarifications will maintain the accuracy and timeliness of a classification following a hazardous event affecting a safety system. The meaning or intent of the basis of the approved EAL is unchanged.

Changes 16, 17, 18, 19, 20, and 21: The function of the SFPLI measurements are to provide reliable continuous indication of the water level in associated spent fuel storage pools capable of supporting identification of the water level conditions in compliance with NRC Order EA-12-051 (as identified in Part III of this evaluation) and as described in the latest revision of JLD-ISG-2012-03 and NEI 12-02. NEI developed Rev. 6 of NEI 99-01, which provides guidance to use the values developed in response to the order in establishing SFP level based EALs. The EAL guidance directs developers to "modify the EAL and/or Basis section to reflect any site-specific constraints or limitations associated with the design or operation of instrumentation used to determine the Level 3 value."

A review of the value used in the EAL was conducted. While the Level 3 value in response to the NRC order was accurate and appropriate for meeting NEI 12-02 level criteria, site-specific constraints or limitations may not have been considered for determining the EA threshold. This new level 3 value, based upon EC 418052, takes into account site specific constraints and limitations.

The proposed change raises the RS2, and RG2 EAL threshold values to 262.5 ft. The proposed EAL modifications do not alter the intent of any specific EAL described in NEI 99-01, Rev. 6. This level still represents Level 3 value because this is a level "where the spent fuel remains covered and action to implement make-up water addition should no longer be deferred".

The new level does not reduce the licensee's capability to assess, classify, and declare an emergency condition within 15 minutes of the availability of indications. The classification of the event would NOT be different from that approved by the NRC in a site-specific application or from the endorsed industry EAL scheme that had been approved. The proposed change is able to be made because the change to the EAL numeric threshold is based on a EC 418052 that evaluated instrument response behavior, SFP configuration, and instrument uncertainty. The meaning or intent of the basis of the approved EAL is unchanged.

The proposed changes do not reduce the effectiveness of the Duke Energy Site's Emergency Plan because a standard scheme of emergency classification and action levels is in use. These changes continue to provide assurance that the Emergency Response Organization has the ability and capability to:

- respond to an emergency;
- perform functions in a timely manner;
- effectively identify and take measures to ensure protection of the public health and safety; and
- effectively use response equipment and emergency response procedures.

These changes continue to meet NRC requirements, as described in 10 CFR 50.47(b) and 10 CFR 50, Appendix E as well as the requirements of the Duke Energy Site's Emergency Plan as written and approved.			
Part VI. Evaluation Conclusion. Answer the following questions about the proposed change.			
1	Does the proposed change comply with 10 CFR 50.47(b) and 10 CFR 50 Appendix E?	Yes ■	No ☐
2	Does the proposed change maintain the effectiveness of the emergency plan (i.e., no reduction in effectiveness)?	Yes ■	No ☐
3	Does the proposed change maintain the current Emergency Action Level (EAL) scheme?	Yes ■	No ☐
4	Choose one of the following conclusions:		
a	The activity does continue to comply with the requirements of 10 CFR 50.47(b) and 10 CFR 50, Appendix E, and the activity does not constitute a reduction in effectiveness or change in the current Emergency Action Level (EAL) scheme. Therefore, the activity can be implemented without prior NRC approval. If Yes, then mark Part VII as not applicable (N/A).		■
b	The activity does not continue to comply with the requirements of 10 CFR 50.47(b) or 10 CFR 50 Appendix E or the activity does constitute a reduction in effectiveness or EAL scheme change. Therefore, the activity cannot be implemented without prior NRC approval.		☐
NOTE: If prior NRC approval required, then complete Part VII.			
Part VII. Disposition of Proposed Change Requiring Prior NRC Approval			
Will the proposed change determined to require prior NRC approval be either revised or rejected?	N/A ■	Yes ☐	No ☐
If No, then initiate a License Amendment Request in accordance 10 CFR 50.90, AD-LS-ALL-0002, Regulatory Correspondence, and AD-LS-ALL-0015, License Amendment Request and Changes to SLC, TRM, and TS Bases, and include the tracking number:_____.			

Part VIII. Signatures: EP CFAM Final Approval is required for changes affecting risk significant planning standard 10 CFR 50.47(b)(4) (i.e., Emergency Action Levels and Emergency Action Level Bases). If CFAM approval is **NOT** required, then mark the CFAM signature block as not applicable (N/A) to indicate that signature is not required.		
Preparer Name (Print): Jamey Sharlow	Preparer Signature: See CAS	Date: See CAS
Reviewer Name (Print): Sarah McDaniel	Reviewer Signature: See CAS	Date: See CAS
Approver Name (Print): See CAS	Approver Signature: See CAS	Date: See CAS
Approver (CFAM, as required) Name (Print): David Thompson	Approver Signature: See CAS	Date: See CAS

If the proposed activity is a change to the E-Plan, then initiate PRRs.	PRR Number(s): N/A
If required by Section 5.6, Submitting Reports of Changes to the NRC, then create two EREG General Assignments. • One for EP to provide the 10 CFR 50.54(q) summary of the analysis, or the completed 10 CFR 50.54(q), to Licensing.	EREG Due Date: 12/12/2020
• One for Licensing to submit the 10 CFR 50.54(q) information to the NRC in accordance with 10 CFR 50.4(b)(5)(ii) within 30 days after the change is put in effect.	EREG Due Date: 12/12/2020

QA RECORD

Enclosure 1

The examples in the following table can assist in determining the threshold meeting the two train criteria.

Scenario	Train A	Train B	Extent of damage	Classify Y/N?	Reason
1	OOS/Under Clearance (Visible Damage)	In Service (**NO** degraded performance)	Event caused damage to Train A only	No	Train A was OOS prior to the event and the event impacted only 1 train
2	OOS/Under Clearance (No damage)	In Service (degraded performance)	Event caused damage to Train B only	No	Train A was OOS prior to the event and the event impacted only 1 train
3	OOS/Under Clearance (Visible Damage)	In Service (Degraded Performance)	Event causes damage to both trains	**Yes**	The event was significant enough to impact two trains.
4	In Stby (Visible Damage)	In Stby (Visible Damage)	Event caused damage to both trains	No	Cannot classify on Visible Damage only
5	In Service (Degraded Performance)	In Stby (Visible Damage)	Event caused damage to both trains	**Yes**	The event was significant enough to impact two trains
6	In Service (Degraded Performance)	In Service (Degraded Performance)	Event causes damage to both trains	**Yes**	The event was significant enough to impact two trains
7	In service **OR** in Stby	In service **OR** in Stby	Event caused damage to a common component to both trains (i.e CST, RWST, BAT)	**Yes**	The event impacted equipment common to two or more trains