



Serial: NPD-NRC-2012-008
April 30, 2012

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

**SHEARON HARRIS NUCLEAR POWER PLANT, UNITS 2 AND 3
DOCKET NOS. 52-022 AND 52-023
ROADMAP OF CHANGES IN COMBINED LICENSE APPLICATION, REVISION 4**

Reference: Letter from John Elnitsky (PEC) to U.S. Nuclear Regulatory Commission, dated April 12, 2012, "Shearon Harris Nuclear Power Plant Units 2 and 3 Submittal of COL Application, Revision 4", Serial: NPD-NRC-2012-007

Ladies and Gentlemen:

The purpose of this letter is to provide information supporting the recent Progress Energy revision of the Combined License Application (COLA) for Shearon Harris Nuclear Power Plant, Units 2 and 3 (see referenced letter). Attached is a "roadmap" of the changes included in the April 12, 2012 submittal along with an enclosure providing an explanation of the information contained in the roadmap.

If you have any questions, or need additional information, please contact me at (919) 546-6992.

Sincerely,

A handwritten signature in black ink, appearing to read 'Robert Kitchen'.

Robert Kitchen
Manager – Nuclear Plant Licensing
New Generation Programs & Projects

Enclosure/Attachment

cc : U.S. NRC Region II, Regional Administrator
U.S. NRC Resident Inspector, SNHPP Unit 1 (w/o Attachment 1)
Mr. Brian Hughes, U.S. NRC Project Manager
Ms. Mallecia Sutton, U. S. NRC Environmental Project Manager

DD84
NRD

**Shearon Harris Nuclear Power Plant Units 2 and 3
Roadmap of Changes in Combined License Application Revision 4
Explanation by Column in Attachment 1**

Column	Explanation
Change ID#	Unique identifier for tracking purposes
COLA	Identifies the change as STD (standard) or HAR specific
COLA Part	Part 1 (PT01) through Part 11 (PT11)
Chapter	FSAR or ER Chapter
Section	Section/Subsection of the Chapter or Part
Basis for Change	The source of the change
Change Summary	Short description of the change

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
PT01						
9355	STD	PT01		01.01.05	VEGP-VOL-Materials 30-40 response to VEGP 12.02 VR1 item 1 SNC Ltr ND-11-0435	1. COLA Part 1, General and Financial Information, Section 1.1.5, Class and Period of License Sought and Authorized Uses, 2nd paragraph, revised to read: In addition, this application is for the necessary licenses issued under 10 CFR Part 30, 10 CFR Part 40, and 10 CFR Part 70 to receive, possess, and use byproduct, source and special nuclear material. Special nuclear material shall be in the form of reactor fuel and spent fuel, in accordance with limitations for storage and amounts required for reactor operation, as described in Part 2 of this application. Byproduct, source, and special nuclear material shall be in the form of sealed neutron sources for reactor startup and sealed sources for reactor instrumentation, radiation monitoring equipment, calibration, and fission detectors in amounts as required. In preparation for the initial fuel loading, limitations on byproduct material and Part 40 specifically licensed source material will be as described in this application. Following the 52.103(g) finding, byproduct, source, and special nuclear material in amounts as required, without restriction to chemical or physical form, shall be for sample analysis, instrument and equipment calibration, or associated with radioactive apparatus or components.
HAR-1042	HAR	PT01		01.01.07	Editorial	In Section 1.1.7, revise Sanford Herald zip code from "27331" to 27330."
HAR-001	HAR	PT01		02.01	Update of the financial information	Part 1, Section 2.1, revise the last bullet to provide a link to the latest Progress Energy annual report and delete all the financial attachments to Part 1 (Appendices B, C, D, and E). In addition, in Section 2.1 revise the last bullet from: "• The published annual financial report for 2006, together with interim financial statements that are pertinent, are enclosed. Current annual reports and Security and Exchange Commission filings are available at https://www.progress-energy.com/company/investor-relations/corporate-profile/index.page ." To read: "• The latest published Progress Energy Annual Report as of 12/31/2010 is available at https://www.progress-energy.com/assets/www/docs/company/2010arpgn.pdf ."
HAR-1043	HAR	PT01		02.01	Editorial	Revise page 2-2 to state "(Proprietary Information - Withheld under 10 CFR 2.390(a)(4) (See COL Application Part 9.1))" only as part of second page of withheld information in Section 2.1 to match Levy Part 1. Revise Section 2.2 revise from: "Proprietary Information - Withheld under 10 CFR 2.390(a)(4) (See COL Application Part 9.1)" To read: "PGN is an electric utility as defined in 10 C.F.R. § 50.2. PGN generates and distributes electricity and recovers the cost of this electricity through cost-of-service based rates established by the North Carolina Public Utility Commission, South Carolina Public Service Commission, Florida Public Service Commission, and FERC. Thus, as addressed in 10 CFR 50.33(f), estimates of operating costs for the first five years of operation are not required to be submitted."
HAR-1044	HAR	PT01		02.02	Editorial	
HAR-1045	HAR	PT01		04.00	Editorial	Add beginning quotation mark before "Facility" in the second to last line.
PT02						
Chapter 1						
HAR-1040	HAR	PT02	FSAR01	01.01	Editorial/Match STD	Delete period at the end of second paragraph in Section 1.1.
9238	STD	PT02	FSAR01	01.01	VEGP-VOL-Ch01 IBR of PI & SGI item 1 SNC Ltr ND-11-0254	1. COLA Part 2, FSAR Chapter 1, Section 1.1, Introduction, revised to read: Unless otherwise specified, reference to the DCD refers to Tier 2 information, including references to the sensitive unclassified non-safeguards information (including proprietary information) and safeguards information, contained in the AP1000 DCD. Such DCD information is included in this combined license application in the same manner as it is included in the AP1000 DCD, i.e., references in the DCD are included as references in the FSAR, and material incorporated by reference into the DCD is incorporated by reference into the FSAR. Appropriate agreements are in place to provide for the licensee's rights to possession (including constructive possession) and use of the withheld sensitive unclassified non-safeguards information (including proprietary information) and safeguards information referenced in the AP1000 DCD for the life of the project.
9190	STD	PT02	FSAR01	01.01	DCD Rev 19	COLA Part 2, FSAR Chapter 1, Section 1.1, Introduction, revised from: Throughout this FSAR, the "referenced DCD" is the AP1000 DCD submitted by Westinghouse as Revision 18 including any supplemental material as identified in Table 1.6-201. To read: Throughout this FSAR, the "referenced DCD" is the AP1000 DCD submitted by Westinghouse as Revision 19 including any supplemental material as identified in Table 1.6-201.
9395	STD	PT02	FSAR01	01.01	DCD Rev 19 and final design certification	COLA Part 2, FSAR Chapter 1, Section 1.1, Introduction, revised to include the following second paragraph under LMA STD SUP 1.1-1: Appendix D to 10 CFR Part 52 is hereby incorporated by reference into the COL application.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-002	HAR	PT02	FSAR01	01.01.05	SUPERCEDED BY 2011 INTEGRATED RESOURCE PLAN: NPD-NRC-2011-030 response to H-0655 Item 2	FSAR Section 1.1.5 revised to read: *HAR 2 Construction Completion/Fuel Load 2nd Quarter 2025 (or later) Commercial Operation 1st Quarter 2026 (or later) HAR 3 Construction Completion/Fuel Load 4th Quarter 2026 (or later) Commercial Operation 3rd Quarter 2027 (or later) The dates assume a COL is issued in 2014. A site-specific construction plan and startup schedule will be provided to the NRC after issuance of the COL.
HAR-003	HAR	PT02	FSAR01	01.01.05	2011 Integrated Resource Plan	Update completion and commercial operation dates in accordance with 2011 Integrated Resource Plan. FSAR Section 1.1.5 revised to read: *HAR 2 Construction Completion/Fuel Load 2nd Quarter 2026 (or later) Commercial Operation 1st Quarter 2027 (or later) HAR 3 Construction Completion/Fuel Load 4th Quarter 2027 (or later) Commercial Operation 3rd Quarter 2028 (or later) The dates assume a COL is issued in 2014. A site-specific construction plan and startup schedule will be provided to the NRC after issuance of the COL.
HAR-004	HAR	PT02	FSAR01	01.01.06.06	editorial	In introductory first line, delete the word "united" from text.
HAR-005	HAR	PT02	FSAR01	01.01.F / F1.1-201,	401/404 enviromental permit consistency Item 13	Revise General Arrangement HAG-0000-P2-001 to show the alignment of the blowdown pipeline, and the U3 switchyard changes. Then Revise the FSAR figure noted (based on latest revisions of GA and grading drainage and temporary construction facilities drawings). The pipeline alignment has been revised and the U3 switchyard relocated to the east.
HAR-006	HAR	PT02	FSAR01	01.01.F / F1.1-201,	404 enviromental permit consistency	Revise dwg to reflect HAR 3 switchyard size and location change.
HAR-007	HAR	PT02	FSAR01	01.01.T / T1.1-202	Editorial/Match STD	In the rows for the Margin Notations STD COL X.Y-# and NPP COL X.Y-#, revise "Table 1.8-201" to "Table 1.8-202" to match Vogtle and reference the correct table.
HAR-008	HAR	PT02	FSAR01	01.05.	Editorial/Match STD	Revise Section 1.5 heading to correct spelling of "Information" and update Table of Contents and Master FSAR Table of Contents.
HAR-009	HAR	PT02	FSAR01	01.06.T / T1.6-201	Editorial/Match STD	Remove the space between "Westinghouse" and "T" to read "Westinghouse/..."
HAR-010	HAR	PT02	FSAR01	01.06.T / T1.6-201	Editorial/Match STD	Revise "that" to "That" in the title of entry NEI 07-08A to match VEGP.
HAR-011	HAR	PT02	FSAR01	01.06.T / T1.6-201	LMA	Revise LMA "HAR SUP 1.6-2" to LMA "HAR SUP 1.6-1" on Sheet 1 and add site-specific LMA "HAR SUP 1.6-1" to Sheet 2 of Table 1.6-201 aligned with entry for Security Plan.
HAR-012	HAR	PT02	FSAR01	01.06.T / T1.6-201	Editorial	Add ADAMS Accession Number for Emergency Plan entry (ML11117A878).
HAR-013	HAR	PT02	FSAR01	01.06.T / T1.6-201	NPD-NRC-2012-006	For Security Plans entry, update Revision number to 3, update document transmittal date to March 2012.
HAR-014	HAR	PT02	FSAR01	01.06.T / T1.6-201	HAR CSP REV 3	Table 1.6-201, revise Cyber Security Plan revision from "2" to "3" and date from "April 2010" to "April 2012"
HAR-015	HAR	PT02	FSAR01	01.06.T / T1.6-201	Editorial Correction	COLA Part 2, FSAR Chapter 1, Section 1.6, Table 1.6-201, under HAR SUP 1.6-2, QAPD Revision and Document Transmittal Date revised to reflect the current QAPD from: Revision 5 December 2010 To read: Revision 4 April 2012
9445	STD	PT02	FSAR01	01.06.T / T1.6-201	DCD Rev 19 and final design certification	COLA Part 2, FSAR Chapter 1, Section 1.6, Table 1.6-201, revised to add a new line item under STD SUP 1.6-1: 10CFR Part 52 Design Certification Rule - 1.1 December 2011 ML113480014 Appendix D for the AP1000 Design
9191	STD	PT02	FSAR01	01.06.T / T1.6-201	DCD Rev 19	COLA Part 2, FSAR Chapter 1, Section 1.6, Table 1.6-201, revised from: Westinghouse/APP-GW-GL-700 AP1000 Design Control Document 18 All December 2010 ML103480572 To read: Westinghouse/APP-GW-GL-702 AP1000 Design Control Document 19 All June 2011 ML11171A500
HAR-017	HAR	PT02	FSAR01	01.06.T / T1.6-201	LMA Placement	Move the LMA "STD SUP 1.6-1" to align with note a.
HAR-018	HAR	PT02	FSAR01	01.06.T / T1.6-201	Editorial	Add LMA of "HAR SUP 1.6-1" to Note b in accordance with HAR COLA Rev 3 Roadmap Change ID HAR-084. Also add separator lines.
HAR-652	HAR	PT02	FSAR01	01.08.T / T1.8-202 11.4-1	Editorial - Consistency in cross references	Add cross reference to FSAR section 11.4.2.4.3.
HAR-713	HAR	PT02	FSAR 01	01.08.T / T1.8-202 11.5-2	DCD Rev 18 and resulting need to change reference in Table 1.8-202 for COL Item 11.5-2	Revise Subsection 11.5.7 COMBINED LICENSE INFORMATION to be numbered 11.5.8. Also change Table of Contents (and master TOC). Change Chapter 1, Table 1.8-202, COLA Item 11.5-2 reference from "11.5-7" to "11.5-8"
HAR-651	HAR	PT02	FSAR01	01.08.T / T1.8-202 2.5-17	Editorial - Consistency in cross references	Add cross reference to FSAR section 14.3.3.1.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
						<p>COLA Part 2, FSAR Chapter 1, Table 1.8-202, revise FSAR cross references so Table 1.8-202 and LMAs are consistent. Revise the following COL item cross references as noted:</p> <p>COL Item #s:</p> <p>2.4-2: Add 2.4.10 2.4-3: Change 2.4.1 to 2.4.1.1 2.4-6: Delete 2.4.10 2.5-6: Add 2.5.4.10.3.7 2.5-13: Delete 2.5.4.10.3.7 3.3-1: Delete 2.2.1 3.5-1: Delete 2.2.1 3.6-1: Change 14.3.3.2 to 14.3.3.3 3.9-4: Add 3.9.6.2.3, 3.9.6.3, 3.9.6.2.5 3.9-5: Add 3.9.8.5 3.9-7: Change 14.3.3.3 to 14.3.3.4 5.3-2: Add 5.3.2.6.3 6.6-1: Add 6.6.3, 6.6.4, 6.6.6 8.2-1: Delete 8.2.1.1 9.2-2: Add 9.2.9.5 9.5-1: Change 13.1.2.1.3.9 to 13.1.2.1.4.9 9.5-2: Change "through 9A.3.3.8" to "through 9A.3.3.9" 10.4-3: Change 10.4.5.2.1 to 10.4.5.2.2 11.2-2: Add 11.2.3.3 11.5-2: Add 11.5.1.2, 11.5.3, 11.5.4 11.5-3: Add 11.2.3.5.1, 11.2.3.5.2, 11.2.3.5.4, 11.3.5.1 12.3-1: Add 12.5.4 13.5-1: Add 13.5.1 13.6-1: Add 13.6 14.4-3: Add 14.2.1, 14.2.1.4, 14.2.1.5, 14.2.3, 14.2.3.1, 14.2.6 14.4-4: Add 14.2.3.3.1</p>
HAR-019	HAR	PT02	FSAR01	01.08.T / T1.8-202 General	Editorial - Consistency in cross references	
HAR-020	HAR	PT02	FSAR01	01.08.T / T1.8-202 a)	Editorial/Match STD	Add "a)" to beginning of the note, replacing "Note a".
						1. COLA Part 2, FSAR Chapter 1, Section 1.9.1, third paragraph revised to read (retain the left margin annotation (LMA) of STD COL 1.9-1):
9256	STD	PT02	FSAR01	01.09.01	VEGP-VOL-CH01 Div 5 RGs in response to VEGP 01 VR2 item 1 SNC Ltr ND-11-0261	Division 5 of the regulatory guides applies to materials and plant protection. As appropriate, the Division 5 regulatory guide topics are addressed in the DCD and plant-specific security plans (i.e., Physical Security Plan, Training and Qualification Plan, Safeguards Contingency Plan, and Cyber Security Plan).
HAR-021	HAR	PT02	FSAR01	01.09.01	Editorial/Match STD	Revise end of first sentence of Subsection 1.9.1 from period to a colon.
HAR-022	HAR	PT02	FSAR01	01.09.01	Editorial/Match STD	Revise end of first sentence of Subsection 1.9.1.1 from period to a colon.
						4. COLA Part 2, FSAR Chapter 1, Section 1.9.1.3, Division 5 Regulatory Guides - Materials and Plant Protection, revised to read (retain the LMA of STD COL 1.9-1):
					VEGP-VOL-CH01 Div 5 RGs in response to VEGP 01 VR2 item 4 SNC Ltr ND-11-0261	Division 5 of the regulatory guides applies to materials and plant protection. Appendix 1AA provides an evaluation of the degree of conformance with Division 5 regulatory guides as applicable to the content of the AP1000 DCD and the plant-specific Cyber Security Plan. The plant-specific physical security plans (i.e., Physical Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan) were developed using the template in NEI 03-12, Revision 6, "Template for the Security Plan, Training and Qualification Plan, Safeguards Contingency Plan [and Independent Spent Fuel Storage Installation Security Program]" which was endorsed for use by NRC letter dated April 9, 2009. The plant-specific physical security plans include no substantive deviations from the NRC-endorsed template in NEI 03-12, Revision 6. Therefore, the degree of conformance with Division 5 regulatory guides for the plant-specific physical security plans is consistent with the degree of conformance of NEI 03-12, Revision 6.
9259	STD	PT02	FSAR01	01.09.01.03		Delete comma after "5".
HAR-023	HAR	PT02	FSAR01	01.09.01.05	Editorial/Match STD	At the end of the first sentence of the second paragraph of Subsection 1.9.4.1 revise "Issues", "to" "Issues.".
HAR-024	HAR	PT02	FSAR01	01.09.04.01	Editorial/Match STD	Change "Supplement" to "supplement in the second paragraph of Subsection 1.9.4.1.
HAR-025	HAR	PT02	FSAR01	01.09.04.01	Editorial/Match STD	In the FSAR Position for Issue 186 of Subsection 1.9.4.2.3, add a space after "maintenance/" such that it reads "maintenance/ repairs)." in the first sentence.
HAR-026	HAR	PT02	FSAR01	01.09.04.02.03	Editorial/Match STD	Delete the word "to" after address in the third sentence of the FSAR Position for Issue 186 of Subsection 1.9.4.2.3.
HAR-027	HAR	PT02	FSAR01	01.09.04.02.03	Editorial/Match STD	Delete comma after "Subsection 1.9.4.2.3" in introductory sentence for Issue 191.
HAR-028	HAR	PT02	FSAR01	01.09.04.02.03	Editorial/Match STD	Delete "in" in the first sentence of the FSAR Position for Issue 191.
HAR-029	HAR	PT02	FSAR01	01.09.04.02.03	Editorial/Match STD	Add separator line after heading 1.9.5.1.5 Station Blackout to match Vogtle.
HAR-030	HAR	PT02	FSAR01	01.09.05.01.05	Editorial/Match STD	Revise "Section" to "Subsection" in the first sentence, first paragraph, to match Vogtle
HAR-031	HAR	PT02	FSAR01	01.09.05.01.05	Editorial/Match STD	Revise the first sentence of the second paragraph to read "Training and procedures to mitigate..."
HAR-032	HAR	PT02	FSAR01	01.09.05.01.05	Editorial/Match STD	Revise "blackout (SBO)" to "blackout (SBO)" in the second paragraph of Subsection 1.9.5.1.5
HAR-033	HAR	PT02	FSAR01	01.09.05.01.05	Editorial/Match STD	Revise "on-site" to "onsite" in the second sentence of the second paragraph of Subsection 1.9.5.1.5 to match Vogtle.
HAR-034	HAR	PT02	FSAR01	01.09.05.01.05	Editorial/Match STD	Revise "rely on off-site or on-site ac sources" to "rely on offsite or onsite ac sources" in the third sentence of the second paragraph of Subsection 1.9.5.1.5.
HAR-035	HAR	PT02	FSAR01	01.09.05.01.05	Editorial/Match STD	Delete the last sentence "In addition, there are no nearby large power sources, such as a gas turbine or black start fossil fuel plant, that can directly connect to the station to mitigate the event." of the second paragraph in Subsection 1.9.5.1.5.
HAR-036	HAR	PT02	FSAR01	01.09.05.01.05	Editorial/Match STD	

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-037	HAR	PT02	FSAR01	01.09.T / T1.9-201	Editorial - Consistency in cross references formatting	COLA FSAR Part 2, Chapter 1, Table 1.9-201, revise cross references and LMAs for consistency. Revise the following Regulatory guide cross references as follows: Regulatory Guide #s: 1.21: Add 11.5.4.2 1.68: Add 14.2.3.2.1 1.78: Delete 6.4.4.2 1.109: Change 12.4.1.9.3 to 12.4.1.9.3.2.2, Delete Table 12.4-201 1.110: Change 11.3.3.4.3 to 11.3.3.4.4 1.114: Change 13.1.2.1.3.6 to 13.1.2.1.4.6, Change 13.1.2.1.4 to 13.1.2.1.5 1.132: Add Table 2.0-201 1.189: Change 13.1.2.1.3.9 to 13.1.2.1.4.9 1.198: Change 2.5.4.8 to 2.5.4.8.1 1.206: Add Table 1.8-201, 1.9.5.5, Table 1.9-202, Add "See Appendix 1AA", Change 2.0 to 2.1, Add 2.2, 2.4, 14.2.1, Delete 14.3.2.3.2 1.208: Add 2.5.1.1.4.2.5.2.2, Change 2.5.1.2.4 to 2.5.1.2.4.1.1, Add 2.5.2.2, 2.5.2.3, 2.5.2.4, 2.5.2.4.1.1.2, 2.5.2.4.3, 2.5.3.5, 2.5.3.8, Delete 2.5.4
9257	STD	PT02	FSAR01	01.09.T / T1.9-201	VEGP-VOL-CH01 Div 5 RGs in response to VEGP 01 VR2 item 2 SNC Ltr ND-11-0261	2. COLA Part 2, FSAR Chapter 1, Section 1.9, Table 1.9-201, Regulatory Guide/FSAR Section Cross-References, revised (retain the LMA of STD COL 1.9-1). (Refer to the final response letter for the complete change)
9258	STD	PT02	FSAR01	01.09.T / T1.9-201	VEGP-VOL-CH01 Div 5 RGs in response to VEGP 01 VR2 item 3 SNC Ltr ND-11-0261	3. COLA Part 2, FSAR Chapter 1, Section 1.9, Table 1.9-201, Regulatory Guide/FSAR Section Cross-References, revised by adding Note # at the end of the table (where # is the next sequential note identifier), with an LMA of STD COL 1.9-1, as follows: #. Division 5 of the regulatory guides applies to materials and plant protection. As appropriate, the Division 5 regulatory guide topics are addressed in the DCD and plant specific security plans (i.e., Physical Security Plan, Training and Qualification Plan, Safeguards Contingency Plan, and Cyber Security Plan).
9595	STD	PT02	FSAR01	01.09.T / T1.9-201 1.197	DCD Rev 17	COLA Part 2, FSAR Chapter 1, Section 1.9, Table 1.9-201, the date for RG 1.197, revised from February 2003 to May 2003.
HAR-049	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.101	Editorial/Match STD	Change RG 1.01 to 1.101 in two locations.
HAR-050	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.101	Separator lines & LMA	Add separator line between Rev 5 and Rev 4 entries of RG 1.101. Delete separator line below RG 1.101 Rev 3 and move LMA HAR COL 1.9-1 to be next to RG 1.101 Rev. 4 entry.
HAR-038	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.11	Editorial/Match STD	Revise "See" to "see" to match Vogtle.
HAR-051	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.135	Editorial/Match STD	Revise from "Not referenced; see Appendix 1AA" to "DCD discussion only; see DCD Table 1.9-1" to match Vogtle.
HAR-052	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.147	Editorial/Match STD	Revise "section" to "Section" to match Vogtle.
HAR-653	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.154	Editorial/Match STD	Delete separator line above RG 1.154 entry.
HAR-053	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.175	Editorial/Match STD	Revise "Decisionmaking" to "Decision making".
HAR-054	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.177	Editorial/Match STD	Revise "Decisionmaking" to "Decision making".
HAR-055	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.178	Editorial/Match STD	Revise "Decisionmaking" to "Decision making".
HAR-056	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.180	Editorial/Match STD	Delete space after "Safety-" to match Vogtle.
HAR-057	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.181	Editorial/Match STD	Fix/delete paragraph return in the title.
HAR-058	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.185	Editorial/Match STD	Revise "Post-Shutdown" to "Post-shutdown" to match Vogtle.
HAR-059	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.198	LMA	Add separator lines and LMA HAR COL 1.9-1 for RG 1.198 entry.
HAR-060	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.200	Separator line	Delete separator line above RG 1.200 entry.
HAR-039	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.23	Editorial/Match STD	Revise "Program" to "Programs".
HAR-040	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.26	Editorial/Match STD	Revise "Radioactive-Waste-Containing" to "Radioactive - Waste - Containing".
HAR-041	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.28	Editorial/Match STD	Change last column to fix order of FSAR Subsections: "14.2.2.2 17.5 (QAPD, II, 17.1) 17.5 (QAPD, IV)"
HAR-042	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.37	Editorial/Match STD	Change last column to fix order of FSAR Subsections: "17.5 (QAPD, II, 13.2) 17.5 (QAPD IV)"

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-043	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.38	Editorial/Match STD	Revise "Water- Cooled" to "Water-Cooled".
6974	STD	PT02	FSAR01	01.09.T / T1.9-201 1.52	Editorial/Match STD DCD Rev. 18	RG 1.52 is STD and is missing. Add RG 1.52 to match Vogtle: "1.52 Design, Inspection and Testing Criteria for Air Filtration and Adsorption Units of Post-Accident Engineered-Safety-Feature Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants (Rev. 3, June 2001)" 16 (TS 3.7.6)"
HAR-044	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.53	Editorial/Match STD	Revise RG 1.53 to match Vogtle: " 1.53 Application of the Single-Failure Criterion to Safety Systems DCD discussion only; (Rev. 2, November 2003) see DCD Table 1.9-1"
HAR-045	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.54	Editorial/Match STD	Add comma after "Service Level I, II".
HAR-046	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.68	Editorial/Match STD	Change last column to fix order of FSAR Subsections to match Vogtle: "14.2.1 14.2.3 14.2.8 14.2.5.2 16 (TS Bases 3.1.8)"
HAR-047	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.78	Editorial	Delete second instance of "6.4.3" as it is a duplicate.
HAR-048	HAR	PT02	FSAR01	01.09.T / T1.9-201 1.97	Editorial/Match STD	For RG 1.97 R3 change "For" to "for".
HAR-061	HAR	PT02	FSAR01	01.09.T / T1.9-201 8.7	Editorial/Match STD	Delete "Exposure" from title and replace with "Dose."
HAR-070	HAR	PT02	FSAR01	01.09.T / T1.9-202 Item 16	Editorial/Match STD	Add ", Rev. 2, 03/2007" after "Specifications".
HAR-066	HAR	PT02	FSAR01	01.09.T / T1.9-202 12.1	Editorial/Match STD	Delete commas after "6.8" and "1.16" in the last paragraph of the comments column for entry 12.1.
HAR-067	HAR	PT02	FSAR01	01.09.T / T1.9-202 13.2.1	Editorial/Match STD	Delete "Technical Report on a" from the comments column.
HAR-068	HAR	PT02	FSAR01	01.09.T / T1.9-202 15	Editorial/Match STD	Revise "Introduction-Transient" to "Introduction –Transient" to match Vogtle.
HAR-069	HAR	PT02	FSAR01	01.09.T / T1.9-202 15.2.7	Editorial/Match STD	Add ", Rev. 2, 03/2007" after "Flow".
HAR-062	HAR	PT02	FSAR01	01.09.T / T1.9-202 3.9.2	Editorial/Match STD	Add comma after "Structures" to match Vogtle.
HAR-063	HAR	PT02	FSAR01	01.09.T / T1.9-202 5.3.2	Editorial/Match STD	Delete commas after "Limits" and "Energy".
HAR-064	HAR	PT02	FSAR01	01.09.T / T1.9-202 6.2.1.1.B	Editorial/Match STD	Add comma after "Containments" to match Vogtle.
HAR-065	HAR	PT02	FSAR01	01.09.T / T1.9-202 7	Editorial/Match STD	Change "- Overview" to "--Overview".
HAR-071	HAR	PT02	FSAR01	01.09.T / T1.9-203	Editorial/Match STD	Capitalize "of" and "and" in the title (also update list of tables) to match VEGP.
HAR-072	HAR	PT02	FSAR01	01.09.T / T1.9-203 185	Match STD	In the Applicable Screening Criteria column revise "h (High)" to "h" to match VEGP.
HAR-073	HAR	PT02	FSAR01	01.09.T / T1.9-203 186	Editorial/Match STD	Delete comma after 9.1.5.3 and flip flop the notes Subsections around to match VEGP and go in order.
HAR-074	HAR	PT02	FSAR01	01.09.T / T1.9-203 191	Editorial/Match STD	Revise "Item" to "item".
HAR-075	HAR	PT02	FSAR01	01.09.T / T1.9-203 193	Editorial/Match STD	Entry 193 is not in VEGP - delete from HAR.
HAR-076	HAR	PT02	FSAR01	01.09.T / T1.9-203 B- 64	Editorial/Match STD	Delete the duplicate entries for items: B-64, B-72, C-4, C-5, and C-6 on Sheet 12.
HAR-077	HAR	PT02	FSAR01	01.09.T / T1.9-203 III.D.3.5(3)	Editorial/Match STD	Delete the duplicate entries for items: III.D.3.5(3) and IV.A.1 on Sheet 8 and entries for items: IV.A.2 and IV.B.1 on Sheet 9.
HAR-078	HAR	PT02	FSAR01	01.09.T / T1.9-204 06- 01	LMA	Delete "Technical Specifications".
HAR-088	HAR	PT02	FSAR01	01.09.T / T1.9-204 06- 02	Editorial/Match STD	Add period after "See Note a" to match Vogtle.
HAR-079	HAR	PT02	FSAR01	01.09.T / T1.9-204 80- 055	Editorial/Match STD	Revise "of" to "Of" and delete period after "80-15".
HAR-080	HAR	PT02	FSAR01	01.09.T / T1.9-204 80- 094	Editorial/Match STD	Delete "Emergency Plan" from the Comment column to match VEGP.
HAR-081	HAR	PT02	FSAR01	01.09.T / T1.9-204 80- 26	Editorial/Match STD	Revise "(3/ 80)" to delete the extra space: "(3/80)".
HAR-082	HAR	PT02	FSAR01	01.09.T / T1.9-204 80- 51	Editorial/Match STD	Revise "of" to "Of".
HAR-083	HAR	PT02	FSAR01	01.09.T / T1.9-204 83- 06	Editorial/Match STD	Revise "for" to "For".
HAR-084	HAR	PT02	FSAR01	01.09.T / T1.9-204 89- 08	Editorial/Match STD	Delete "(5/89)".
HAR-085	HAR	PT02	FSAR01	01.09.T / T1.9-204 89- 12	Editorial/Match STD	Revise "Examinations" to "Examination".
HAR-086	HAR	PT02	FSAR01	01.09.T / T1.9-204 89- 15	Editorial/Match STD	Revise "(8/ 89)" to delete the extra space: "(8/89)" to match Vogtle.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-087	HAR	PT02	FSAR01	01.09.T / T1.9-204 89-15	LMA Note	Add separator lines and LMA HAR COL 1.9-2.
HAR-655	HAR	PT02	FSAR01	01.09.T / T1.9-204 91-14	LMA Note	Add separator lines and LMA HAR COL 1.9-2.
HAR-089	HAR	PT02	FSAR01	01.10.	Editorial/Match STD	Revise first sentence of 1.10 from "Subsection 1.9.6." to "Section 1.9."
HAR-090	HAR	PT02	FSAR01	01.10.03	Editorial/Match STD	Revise the two instances of "off-site" to "offsite" in the fourth paragraph of Subsection 1.10.3.
HAR-091	HAR	PT02	FSAR01	01.10.T / T1.10-201	Editorial/Match STD	Revise two instances of "Etc." to "etc."
HAR-092	HAR	PT02	FSAR01	01.10.T / T1.10-201	Editorial/Match STD	Revise "On-Site" to "Onsite" in sixth bullet.
HAR-093	HAR	PT02	FSAR01	01.10.T / T1.10-201	Editorial/Match STD	Add second bullet for Equipment and Material Laydown, Storage, Warehousing as "• Wind-Generated, Construction-Related Debris and Missiles"
HAR-094	HAR	PT02	FSAR01	01.10.T / T1.10-202	Editorial/Match STD	Revise four instances of "Off-Site" to "Offsite" and two instances of "On-Site" to "Onsite".
HAR-095	HAR	PT02	FSAR01	01.10.T / T1.10-202	Editorial/Match STD	Add period to the end of the Note.
HAR-096	HAR	PT02	FSAR01	01.10.T / T1.10-203	Editorial/Match STD	In the first entry, first column, revise "Off-Site" to "Offsite".
HAR-097	HAR	PT02	FSAR01	01.10.T / T1.10-203	Editorial/Match STD	In the last page, second column, revise "on-site" to "onsite".
9260	STD	PT02	FSAR01	01.AA 5.-	VEGP-VOL-CH01 Div 5 RGs in response to VEGP 01 VR2 item 5 SNC Ltr ND-11-0261	5. COLA Part 2, FSAR Appendix 1AA, Conformance with Regulatory Guides, revised (retain the LMA of STD COL 1.9-1). (Refer to the final response letter for the complete change)
HAR-098	HAR	PT02	FSAR01	01.AA RG 1.012	Editorial/Match STD	Delete period after "Earthquake" to match Vogtle.
HAR-099	HAR	PT02	FSAR01	01.AA RG 1.026	Editorial/Match STD	Revise "Radioactive-Waste-Containment" to "Radioactive-Waste-Containing".
HAR-100	HAR	PT02	FSAR01	01.AA RG 1.045	Editorial/Match STD	Revise "Leakage-Detection" to "Leakage Detection" and add the word "Coolant" to match Vogtle.
HAR-101	HAR	PT02	FSAR01	01.AA RG 1.052	Match STD	Add entry for RG 1.52: "Regulatory Guide 1.52, Rev. 3, 6/01 – Design, Inspection and Testing Criteria for Air Filtration and Adsorption Units of Post-Accident Engineered-Safety-Feature Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants"
HAR-102	HAR	PT02	FSAR01	01.AA RG 1.065	Editorial/Match STD	Conformance with the design and operational aspects is as stated in the DCD. Revise "NB-2545" to "NB 2545" and "NB-2546" to NB 2546"
9085	STD	PT02	FSAR01	01.AA RG 1.082	DCD Rev 19	COLA Part 2, FSAR Chapter 1, Appendix 1AA, Regulatory Guide 1.82 is revised from: Conformance of the design aspects with Revision 2 of this Regulatory Guide is as stated in the DCD. Conformance with Revision 3 of this Regulatory Guide for programmatic and/or operational aspects is documented below. To read: Conformance with the design aspects is as stated in the DCD. Conformance with programmatic and/or operational aspects is documented below. To match Vogtle revise from "Conformance of the design aspects is as stated in the DCD. Conformance of the programmatic and/or operational aspects is documented below." General Exception Steam generator tube surveillance is in accordance with Nuclear Energy Institute (NEI) 97-06. This guidance has been endorsed by NRC as an acceptable program basis." to "Conformance of the design aspects is as stated in the DCD. The programmatic and/or operational aspects are not applicable since this guidance was withdrawn by NRC (74 FR 58324, 11/12/2009)."
HAR-103	HAR	PT02	FSAR01	01.AA RG 1.083	Match STD	Revise "Revision 31" to "Revision 32" to match Vogtle.
HAR-104	HAR	PT02	FSAR01	01.AA RG 1.084	Match STD	Revise "7/06" to "07/06" to match VEGP.
HAR-105	HAR	PT02	FSAR01	01.AA RG 1.092	Editorial/Match STD	Revise "1/77" to "7/77".
HAR-106	HAR	PT02	FSAR01	01.AA RG 1.115	Editorial/Match STD	Revise "2/07" to "02/07".
HAR-107	HAR	PT02	FSAR01	01.AA RG 1.124	Editorial/Match STD	Delete "General" and "Conforms" to match VEGP.
HAR-108	HAR	PT02	FSAR01	01.AA RG 1.135	Editorial/Match STD	Revise "Rev. 14, 8/05" to "Rev. 15, 10/07" and revise "Revision 14" to "Revision 15" to match Vogtle
HAR-109	HAR	PT02	FSAR01	01.AA RG 1.147	Editorial/Match STD	Revise "ANSI/ANS 3.5-1998." to "ANSI/ANS-3.5-1998."
HAR-110	HAR	PT02	FSAR01	01.AA RG 1.149	Editorial/Match STD	Revised "2/83-Ultrasonic" to "2/83 – Ultrasonic" to match Vogtle.
HAR-111	HAR	PT02	FSAR01	01.AA RG 1.150	Editorial/Match STD	Delete extra period after "plant." to match Vogtle.
HAR-112	HAR	PT02	FSAR01	01.AA RG 1.175	Editorial/Match STD	Revise "Conform" to "Conforms" to match Vogtle.
HAR-113	HAR	PT02	FSAR01	01.AA RG 1.180	Editorial/Match STD	Revise "Rev.2" to "Rev. 2".
HAR-114	HAR	PT02	FSAR01	01.AA RG 4.15	Editorial/Match STD	Add separator line after the end RG 8.38 before the Notes.
HAR-115	HAR	PT02	FSAR01	01.AA RG 8.38	Separator line	Revise "ANSI N 13.5-1972 in second column of RG 8.4 to "ANSI N13.5-1972" to delete extra space.
HAR-116	HAR	PT02	FSAR01	01.AA RG 8.4	Editorial/Match STD	
Chapter 2						
HAR-663	HAR	PT02	FSAR02	02.0 (all)	Editorial	Miscellaneous editorial edits throughout Chapter 2.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
						<p>Editorial changes were made to the following references:</p> <p>2.1-201, 2.1-203, 2.1-204, 2.1-205, 2.1-206, 2.1-207, 2.1-210, 2.1-211, 2.1-212, 2.1-213, 2.1-214, 2.1-215, 2.1-216, 2.1-217, 2.1-218, 2.1-219, 2.1-221, 2.1-222, 2.1-223, 2.2-202, 2.2-203, 2.2-204, 2.2-205, 2.2-206, 2.2-207, 2.2-208, 2.2-209, 2.2-210, 2.2-211, 2.2-212, 2.2-213, 2.2-214, 2.2-215, 2.2-218, 2.2-219, 2.2-220, 2.3-201, 2.3-202, 2.3-203, 2.3-204, 2.3-205, 2.3-206, 2.3-207, 2.3-208, 2.3-209, 2.3-210, 2.3-211, 2.3-212, 2.3-213, 2.3-214, 2.3-215, 2.3-217, 2.3-218, 2.3-219, 2.3-220, 2.3-221, 2.3-222, 2.3-224, 2.3-225, 2.3-226, 2.3-228, 2.3-230, 2.3-231, 2.3-232, 2.3-233, 2.3-234, 2.4-201, 2.4-202, 2.4-203, 2.4-204, 2.4-205, 2.4-206, 2.4-208, 2.4-210, 2.4-211, 2.4-212, 2.4-213, 2.4-214, 2.4-215, 2.4-216, 2.4-217, 2.4-218, 2.4-219, 2.4-220, 2.4-221, 2.4-222, 2.4-223, 2.4-225, 2.4-226, 2.4-230, 2.4-234, 2.4-236, 2.4-238, 2.4-239, 2.4-242, 2.4-243, 2.4-244, 2.4-245, 2.4-247, 2.4-249, 2.4-250, 2.4-251, 2.4-252, 2.4-253, 2.4-254, 2.4-255, 2.4-257, 2.4-258, 2.4-261, 2.4-266, 2.4-270, 2.5.1-203, 2.5.1-205, 2.5.1-207, 2.5.1-208, 2.5.1-209, 2.5.1-210, 2.5.1-211, 2.5.1-212, 2.5.1-213, 2.5.1-214, 2.5.1-215, 2.5.1-216, 2.5.1-217, 2.5.1-218, 2.5.1-219, 2.5.1-220, 2.5.1-221, 2.5.1-222, 2.5.1-223, 2.5.1-224, 2.5.1-225, 2.5.1-226, 2.5.1-227, 2.5.1-228, 2.5.1-229, 2.5.1-230, 2.5.1-231, 2.5.1-232, 2.5.1-233, 2.5.1-234, 2.5.1-236, 2.5.1-237, 2.5.1-238, 2.5.1-239, 2.5.1-240, 2.5.1-241, 2.5.1-242, 2.5.1-243, 2.5.1-244, 2.5.1-246, 2.5.1-247, 2.5.1-248, 2.5.1-253, 2.5.1-257, 2.5.1-259, 2.5.1-262, 2.5.1-263, 2.5.1-264, 2.5.1-268, 2.5.1-269, 2.5.1-270, 2.5.1-273, 2.5.1-274, 2.5.1-276, 2.5.1-278, 2.5.1-280, 2.5.1-281, 2.5.1-282, 2.5.1-283, 2.5.1-284, 2.5.1-285, 2.5.1-287, 2.5.1-288, 2.5.1-289, 2.5.1-290, 2.5.1-291, 2.5.1-292, 2.5.1-293, 2.5.1-294, 2.5.1-295, 2.5.1-296, 2.5.1-300, 2.5.1-301, 2.5.1-304, 2.5.1-305, 2.5.1-306, 2.5.1-307, 2.5.1-308, 2.5.1-310, 2.5.1-312, 2.5.1-314, 2.5.1-315, 2.5.1-316, 2.5.1-318, 2.5.1-319, 2.5.1-320, 2.5.1-322, 2.5.1-323, 2.5.1-324, 2.5.1-325, 2.5.1-326, 2.5.1-327, 2.5.1-330, 2.5.1-331, 2.5.1-332, 2.5.1-333, 2.5.1-337, 2.5.1-338, 2.5.1-340, 2.5.1-342, 2.5.1-343, 2.5.1-344, 2.5.1-346, 2.5.1-362, 2.5.1-363, 2.5.1-365,</p>
HAR-666	HAR	PT02	FSAR02	02.0 (all)	Editorial	
HAR-117	HAR	PT02	FSAR02	02 TOC	NPD-NRC-2011-071, H-0646 response FSAR Item 6	Table of Contents, List of Tables for Section 2.4 updated to include the new Table 2.4.3-239.
HAR-118	HAR	PT02	FSAR02	02 TOC	NPD-NRC-2011-071, H-0646 response FSAR Item 7	Table of Contents, List of Figures for Section 2.4 updated to include the new Figures 2.4.3-238 through 2.4.3-243.
HAR-120	HAR	PT02	FSAR02	02.00.T / T2.0-201	Changes to make HAR FSAR consistent with LNP FSAR re ambient temperatures as described in NPD-NRC-2011-056, L-0939 response	The HAR Site Maximum Normal dry bulb/coincident wet bulb temperature revised to read: 94°F dry bulb / 75°F coincident wet bulb (Charlotte). The HAR Site Minimum Normal dry bulb temperature will be revised to read: 14°F dry bulb (Greensboro).
HAR-802	HAR	PT02	FSAR02	02.00.T / T2.0-201	Update for revised WEC loads (Turbine, Radwaste & Annex Bldgs)	Under Limits of Acceptable Settlement Without Additional Evaluation, Differential Between Nuclear Island and Turbine Building and Differential between Nuclear Island and Other Buildings from < 1 inch (projected) to <2.0 inches projected.
HAR-121	HAR	PT02	FSAR02	02.01	errata - conformance to R COLA	For paragraph describing Subsection 2.1 departure, move the LMA STD DEP 1.1-1 to align with the first line of the paragraph
HAR-805	HAR	PT02	FSAR02	02.01.01.F / F2.1.1-203	Update for GA	Update Figure 2.1.1-203 for current GA layout
HAR-807	HAR	PT02	FSAR02	02.01.02.03	Editorial	FSAR Subsection 2.1.2.3, last sentence change "2007" to "2009"
						FSAR Subsection 2.1.5, revise Reference 2.1-204 from:
						KLD Associates, Inc., "Hamis Nuclear Plant Development of Evacuation Time Estimates," Final Report, KLD TR – 409v2, August 2007.
						To read:
HAR-809	HAR	PT02	FSAR02	02.01.05	Editorial	KLD Associates, Inc., "Hamis Nuclear Plant Development of Evacuation Time Estimates," Final Report, KLD TR – 409, Rev 3, February 2009
HAR-803	HAR	PT02	FSAR02	02.02.05	Correction	Revised reference 2.2-201 to accurately reflect the reference document
HAR-804	HAR	PT02	FSAR02	02.02.05	Correction	Revised reference 2.2-216 to accurately reflect the reference document and be consistent with other similar citations in same section.
						The text of FSAR Section 2.3.1.2.7.3 changed from:
						This DCD site parameter is represented by a single data pair consisting of a maximum dry bulb temperature of 101°F, excluding the highest 1 percent of values, in combination with a coincident (same hour) wet bulb temperature of 80.1°F. The Maximum Normal temperatures in Table 2.3.1-209 are well below the Maximum Normal DCD site parameter of 101°F dry bulb/80.1°F coincident wet bulb, with the highest observed values being 91°F dry bulb/75°F wet bulb (Raleigh-Durham).
						to:
						This DCD site parameter is represented by a single data pair consisting of a maximum dry bulb temperature of 101°F in combination with a coincident (same hour) wet bulb temperature of 80.1°F. The Maximum Normal temperatures in Table 2.3.1-209, which are based on 0.4 percent annual exceedance temperatures, are well below the Maximum Normal DCD site parameter of 101°F dry bulb/80.1°F coincident wet bulb, with the highest observed values being 94°F dry bulb/75°F wet bulb (Charlotte).
HAR-122	HAR	PT02	FSAR02	02.03.01.02.07.03	Changes to make HAR FSAR consistent with LNP FSAR re ambient temperatures as described in NPD-NRC-2011-056, L-0939 response	

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
						The text of FSAR Section 2.3.1.2.7.6 changed from: This DCD site parameter is represented by a minimum dry bulb temperature of -10°F, excluding the lowest 1 percent of values. The Minimum Normal temperatures in Table 2.3.1-209 are well above the DCD site parameter of -10°F dry bulb. The lowest Minimum Normal dry bulb temperature shown in the table is only 19°F (Greensboro). to: This DCD site parameter is represented by a minimum dry bulb temperature of -10°F. The Minimum Normal temperatures in Table 2.3.1-209, which are based on 99.6-percent annual exceedance temperatures, are well above the DCD site parameter of -10°F dry bulb. The lowest Minimum Normal dry bulb temperature shown in the table is only 14°F (Greensboro).
HAR-123	HAR	PT02	FSAR02	02.03.01.02.07.06	Changes to make HAR FSAR consistent with LNP FSAR re ambient temperatures as described in NPD-NRC-2011-056, L-0939 response	
HAR-124	HAR	PT02	FSAR02	02.03.01.T / T2.3.1-209	Changes to make HAR FSAR consistent with LNP FSAR re ambient temperatures as described in NPD-NRC-2011-056, L-0939 response	FSAR Table 2.3.1-209 revised for consistency with the L-0939 response. The Maximum Normal temperatures will be revised from: 91, 74, 90, 74, 91 and 75 to read: 94, 75, 93, 75, 93 and 76. The Minimum Normal temperatures will be revised from: 23, NA, 19, NA, 20 and NA to read: 19, 17, 14, 12, 16 and 14. The Notes will be revised to read: b) "Maximum Normal" temperatures are based on the 0.4-percent annual occurrence temperatures from a 24-year POR from Reference 2.3-217. d) "Minimum Normal" temperatures are based on the 99.6-percent annual occurrence temperatures from a 24-year POR from Reference 2.3-217.
HAR-125	HAR	PT02	FSAR02	02.03.03	Consistency with DCD	Revise subheaders as follows: 2.3.3 Onsite Meteorological Measurement Programs
HAR-806	HAR	PT02	FSAR02	02.03.03.F / F2.3.3-201	Update for GA	Update Figure 2.3.3-201 for current GA layout
HAR-126	HAR	PT02	FSAR02	02.03.06.03	Consistency with DCD	Revise subheaders as follows: 2.3.6.3 Onsite Meteorological Measurements Program
HAR-127	HAR	PT02	FSAR02	02.04	errata - conformance to R COLA	For paragraph describing Subsection 2.4 departure, move the LMA STD DEP 1.1-1 to align with the first line of the paragraph
HAR-128	HAR	PT02	FSAR02	02.04.01.01	NPD-NRC-2011-071, H-0646 response FSAR Item 1.1	Subsection 2.4.1.1, Site and Facilities, on page 2.4-4, the paragraph "The Main Dam currently and a pier at midlength" revised in its entirety to read as follows: The Main Dam currently includes a concrete spillway with an ogee-shaped crest on the west abutment to pass floods as the only flow component. The spillway is uncontrolled and has a crest net length of 15.2 m (50 ft.) with a pier at mid-length. The crest of the current spillway is at an elevation of 67.1 m (220 ft.) NGVD29. The proposed spillway design for the Main Reservoir includes raising the crest of the existing spillway from elevation 67.1 m (220 ft.) NGVD29 to elevation 73.2 m (240 ft.) NGVD29 and providing an emergency spillway west of the existing spillway with a crest length of 172.2 m (565 ft.).
HAR-129	HAR	PT02	FSAR02	02.04.01.01	401/404 environmental permit consistency Item 10	P 2.4-3: Third paragraph indicates that the makeup water system will include an intake channel. The intake channel has been replaced with an intake structure and pipe.
HAR-130	HAR	PT02	FSAR02	02.04.01.02.03	NPD-NRC-2011-003, H-0642 response	Subsection 2.4.1.2.3 revised to read: Table 2.4.1-204 presents the mean monthly discharge (January 1924 through September 2004) for the Cape Fear River USGS gauging station 02102500 at Lillington, North Carolina (Reference 2.4-201). The average monthly discharge for the Cape Fear River at Lillington is 95.9 m ³ /s (3387 cfs). March has the highest average monthly discharge of 182.4 m ³ /s (6441 cfs) and August has the lowest average monthly discharge of 55.8 m ³ /s (1970 cfs). A maximum average daily streamflow of 3964.4 m ³ /s (140,000 cfs) was recorded on September 19, 1945 (Table 2.4.1-205). The drainage area at the Cape Fear River at Lillington USGS station is 8971 km ² (3464 mi ²) (Reference 2.4-271).
HAR-812	HAR	PT02	FSAR02	02.04.T / T2.4.1-202	Consistency with NPD-NRC-2011-003, H-0642 response	Revise source reference in FSAR Table 2.4.1-202 from "2.4-248" to "2.4-201"
HAR-813	HAR	PT02	FSAR02	02.04.T / T2.4.1-205	Consistency with NPD-NRC-2011-003, H-0642 response	Revise source reference in FSAR Table 2.4.1-202 from "2.4-259" to "2.4-271"
HAR-131	HAR	PT02	FSAR02	02.04.01.F / F2.4.1-202	401/404 environmental permit consistency Item 11A	The figure shows the alignment of the U2/U3 blowdown pipeline alignment. The pipeline alignment has been revised. This was cancelled as the figure is showing the blowdown pipeline for the HNP site only (which was not changed).
HAR-132	HAR	PT02	FSAR02	02.04.01.F / F2.4.1-203	401/404 environmental permit consistency Item 11B	The figure shows the alignment of the U2/U3 blowdown and makeup pipeline alignment. These pipeline alignments have been revised.
HAR-659	HAR	PT02	FSAR02	02.04.01.F / F2.4.1-205	401/404 environmental permit consistency Item	The figure revised show site drainage map based on latest revisions of GA drawing, grading and drainage drawings and temporary construction facilities drawing.
HAR-133	HAR	PT02	FSAR02	02.04.01.F / F2.4.1-205	NPD-NRC-2011-003, H-0650 response	Figure 2.4.1-205 added as shown in Attachment 02.04.12-5B to NPD-NRC-2011-003.
HAR-134	HAR	PT02	FSAR02	02.04.02.01	NPD-NRC-2011-003, H-0642 response	Subsection 2.4.2.1 will be revised. See NPD-NRC-2011-003 for details of text revision.
HAR-135	HAR	PT02	FSAR02	02.04.02.01.T / T2.4.2-203	NPD-NRC-2011-003, H-0642 response	Table 2.4.2-203 will be added to the FSAR. Table 2.4.2-203 is titled Yearly Peak Streamflow Measurements for Buckhorn Creek, North Carolina
HAR-136	HAR	PT02	FSAR02	02.04.02.01.T / T2.4.2-204	NPD-NRC-2011-003, H-0642 response	Table 2.4.2-204 will be added to the FSAR. Table 2.4.2-204 is titled Yearly Peak Streamflow Measurements for Cape Fear River, North Carolina, at Lillington
HAR-139	HAR	PT02	FSAR02	02.04.02.03	NPD-NRC-2011-003, H-0643 response Item number 3	Subsection 2.4.2.3, "Effects of Local Intense Precipitation," will be revised as described in NPD-NRC-2011-003, response H-0643.
HAR-140	HAR	PT02	FSAR02	02.04.02.03	NPD-NRC-2011-003, H-0644 response	Subsection 2.4.2.3 presented in response to NRC RAI 02.04.02-2 (H-0643 response in NPD-NRC-2011-003) is revised to insert the following paragraph before the last paragraph of the subsection. The storm drainage ditches, which carry normal storm water runoff from the site, are not considered in the PMP analysis. However, the local drainage system will be maintained to provide conveyance as designed throughout the operational life of the HAR units.
HAR-138	HAR	PT02	FSAR02	02.04.02.F / F2.4.2-205	NPD-NRC-2011-003, H-0643 response Item number 1	Figure 2.4.2-205 revised per Attachment 02.04.02-2A to NPD-NRC-2011-003.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-660	HAR	PT02	FSAR02	02.04.02.F / F2.4.2-205	401/404 enviromental permit consistency Item	The figure shows the Local PMP site drainage map. This figure revised as per the latest revision of Local PMP calculation, HAG-0000-X7C-044
HAR-137	HAR	PT02	FSAR02	02.04.02.T / T2.4.2-205	NPD-NRC-2011-003, H-0643 response Item number 2	Table 2.4.2-205 added to the FSAR. Table 2.4.2-205 is titled Zones A and B - Water Levels and Flow Velocities
HAR-661	HAR	PT02	FSAR02	02.04.03	401/404 enviromental permit consistency Item	Paragraph on page 2.4-3 indicates that the makeup water system will include an intake channel. The intake channel has been replaced with an intake structure and pipe.
HAR-141	HAR	PT02	FSAR02	02.04.03	NPD-NRC-2011-071, H-0646 response FSAR Item 1.2	Subsection 2.4.3, Probable Maximum Floods on Streams and Rivers, the paragraph "a. The crest of the uncontrolled ogee spillway Sub-basin X)" will be revised in its entirety to read as follows: a. The crest elevation of the existing uncontrolled ogee spillway on the Main Dam is 67.1 m (220 ft.) NGVD29. It is proposed that this crest will be raised to elevation 73.2 m (240 ft.) NGVD29. In addition an emergency spillway will be provided west of the existing spillway. The first step for determining the PMF is to delineate the sub-basins of the Buckhorn Creek drainage basin above the Main Dam. Considering these proposed modifications in the spillway of the Main Dam, the drainage basin above the dam is 182.1 km2 (70.3 mi.2) (Figure 2.4.3-201), wherein the area inundated is 30.8 km2 (11.9 mi.2) or about 16 percent of the entire basin. The Buckhorn Creek drainage basin above the Main Dam was divided into seven sub-basins (Sub-basin IV through Sub-basin X).
HAR-142	HAR	PT02	FSAR02	02.04.03.01.05	NPD-NRC-2011-003, H-0645 response	FSAR Subsection 2.4.3.1.5 will be revised from: Using the PMP rainfall distribution shown on Figure 2.4.3-205, a design storm was developed. To read: Using the PMP rainfall distribution tabulated in Table 2.4.3-216 and shown on Figure 2.4.3-205, a design storm was developed.
HAR-143	HAR	PT02	FSAR02	02.04.03.03.03	NPD-NRC-2011-071, H-0646 response FSAR Item 1.3	Subsection 2.4.3.3.3, Basin Data, will be revised in its entirety to read as described in Attachment RAI 02.04.03-7-A in NPD-NRC-2011-071 (H-0646).
HAR-144	HAR	PT02	FSAR02	02.04.03.03.04	NPD-NRC-2011-071, H-0646 response FSAR Item 1.4	Subsection 2.4.3.3.4, Backwater Analysis, on page 2.4-30, in the paragraph "PEC performedelevation file for the basin.", first two sentences "PEC performedGIS point coverage.", will be revised to read as follows: PEC performed detailed bathymetric surveys to establish the current geometry of the Main Reservoir. Figure 2.4.3-243 presents the plan view of the bathymetry contours in 5-ft. intervals for the Main Reservoir. The survey data were compiled into a single GIS point coverage.
HAR-145	HAR	PT02	FSAR02	02.04.03.03.04	NPD-NRC-2011-071, H-0646 response FSAR Item 1.5	Subsection 2.4.3.3.4, Backwater Analysis, on page 2.4-31, the paragraph "Following the determination of portion of the Main Reservoir" will be revised in its entirety to read as follows: Following the determination of downstream channel characteristics, data describing hydraulic structures were incorporated. In this case, the hydraulic structures to be defined were the Main Dam spillway and the emergency spillway, which are located at the southwestern-most downstream portion of the Main Reservoir.
HAR-146	HAR	PT02	FSAR02	02.04.03.04.01	NPD-NRC-2011-071, H-0646 response FSAR Item 1.6	Subsection 2.4.3.4.1, Probable Maximum Flood Flow from Drainage Basin above the Auxiliary Dam, will be revised in its entirety to read as follows: The PMP storm corresponding to the Auxiliary Reservoir drainage area of 7.8 km2 (3.0 mi.2), as shown in Figure 2.4.3-208, was used to estimate the PMF flow for the Auxiliary Reservoir. Figure 2.4.3-222 presents the PMF inflow and outflow hydrographs for the Auxiliary Reservoir. The peak inflow and outflow for the Auxiliary Reservoir are 197.1 m3/s (6962 cfs) and 177.3 m3/s (6261 cfs), respectively.
HAR-147	HAR	PT02	FSAR02	02.04.03.04.02	NPD-NRC-2011-071, H-0646 response FSAR Item 1.7	Subsection 2.4.3.4.2, Probable Maximum Flood Flow from Drainage Basin above the Main Dam, on page 2.4-33, last sentence "The peak flow and outflow, respectively." will be revised to read as follows: The peak inflow and outflow for the Main Reservoir are 3545.0 m3/s (125190.5 cfs) and 1410.4 m3/s (49807.1 cfs), respectively.
HAR-148	HAR	PT02	FSAR02	02.04.03.05	NPD-NRC-2011-071, H-0646 response FSAR Item 1.8	Subsection 2.4.3.5, Water Level Determinations, revised in its entirety to read as described in Attachment RAI 02.04.03-7-A to NPD-NRC-2011-071 (H-0646).
HAR-149	HAR	PT02	FSAR02	02.04.03.07	NPD-NRC-2011-071, H-0646 response FSAR Item 1.9	New Subsection 2.4.3.7, Erosion Protection for Emergency Spillway and Downstream Channel, inserted after Subsection 2.4.3.6.8 as described in Attachment RAI 02.04.03-7-A to NPD-NRC-2011-071 (H-0646).
HAR-155	HAR	PT02	FSAR02	02.04.03.F / F2.4.3-205	NPD-NRC-2011-003, H-0645 response	Figure 2.4.3-205 added as shown in Attachment 02.04.03-6A to NPD-NRC-2011-003.
HAR-156	HAR	PT02	FSAR02	02.04.03.F / F2.4.3-206	NPD-NRC-2011-003, H-0645 response	Figure 2.4.3-206 added as shown in Attachment 02.04.03-6C to NPD-NRC-2011-003.
HAR-157	HAR	PT02	FSAR02	02.04.03.F / F2.4.3-207	NPD-NRC-2011-003, H-0645 response	Figure 2.4.3-207 added as shown in Attachment 02.04.03-6D to NPD-NRC-2011-003.
HAR-158	HAR	PT02	FSAR02	02.04.03.F / F2.4.3-208	NPD-NRC-2011-003, H-0645 response	Figure 2.4.3-208 added as shown in Attachment 02.04.03-6E to NPD-NRC-2011-003.
HAR-159	HAR	PT02	FSAR02	02.04.03.F / F2.4.3-209	NPD-NRC-2011-003, H-0645 response	Figure 2.4.3-209 added as shown in Attachment 02.04.03-6F to NPD-NRC-2011-003.
HAR-160	HAR	PT02	FSAR02	02.04.03.F / F2.4.3-210	NPD-NRC-2011-003, H-0645 response	Figure 2.4.3-210 added as shown in Attachment 02.04.03-6G to NPD-NRC-2011-003.
HAR-169	HAR	PT02	FSAR02	02.04.03.F / F2.4.3-211	NPD-NRC-2011-003, H-0645 response	Figure 2.4.3-211 added as shown in Attachment 02.04.03-6H to NPD-NRC-2011-003.
HAR-170	HAR	PT02	FSAR02	02.04.03.F / F2.4.3-218 & 2.4.3-219	NPD-NRC-2011-071, H-0646 response FSAR Item 4	Figures 2.4.3-218 and 2.4.3-219 replaced by the revised Figures 2.4.3-218 and 2.4.3-219 provided in Attachment RAI 02.04.03-7-C in NPD-NRC-2011-071 response to NRC RAI 02.04.03-7 (H-0646).
HAR-171	HAR	PT02	FSAR02	02.04.03.F / F2.4.3-221 through 2.4.3-229	NPD-NRC-2011-071, H-0646 response FSAR Item 4	Figures 2.4.3-221 through 2.4.3-229 replaced by the revised Figures 2.4.3-221 through 2.4.3-229 provided in Attachment RAI 02.04.03-7-C in NPD-NRC-2011-071 response to NRC RAI 02.04.03-7 (H-0646).
HAR-172	HAR	PT02	FSAR02	02.04.03.F / F2.4.3-238 through 2.4.3-243	NPD-NRC-2011-071, H-0646 response FSAR Item 5	New Figures 2.4.3-238 through 2.4.3-243 inserted as shown in Attachment RAI 02.04.03-7-C in NPD-NRC-2011-071 response to NRC RAI 02.04.03-7 (H-0646).

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-150	HAR	PT02	FSAR02	02.04.03.T / T2.4.3-216	NPD-NRC-2011-003, H-0645 response	Table 2.4.3-216 replaced by RAI 02.04.03-6 Table 1 provided in NPD-NRC-2011-003 response to NRC RAI 02.04.03-6 (H-0645).
HAR-151	HAR	PT02	FSAR02	02.04.03.T / T2.4.3-217	NPD-NRC-2011-003, H-0645 response	Table 2.4.3-217 replaced by the revised Table 2.4.3-217 provided in NPD-NRC-2011-003 response to NRC RAI 02.04.03-6 (H-0645).
HAR-152	HAR	PT02	FSAR02	02.04.03.T / T2.4.3-226 & 2.4.3-227	NPD-NRC-2011-071, H-0646 response FSAR Item 2	Tables 2.4.3-226 and 2.4.3-227 replaced by the revised Tables 2.4.3-226 and 2.4.3-227 provided in Attachment RAI 02.04.03-7-B in NPD-NRC-2011-071 response to NRC RAI 02.04.03-7 (H-0646).
HAR-153	HAR	PT02	FSAR02	02.04.03.T / T2.4.3-235 through 2.4.3-238	NPD-NRC-2011-071, H-0646 response FSAR Item 2	Tables 2.4.3-235 through 2.4.3-238 replaced by the revised Tables 2.4.3-235 through 2.4.3-238 provided in Attachment RAI 02.04.03-7-B in NPD-NRC-2011-071 response to NRC RAI 02.04.03-7 (H-0646).
HAR-154	HAR	PT02	FSAR02	02.04.03.T / T2.4.3-239	NPD-NRC-2011-071, H-0646 response FSAR Item 3	New Table 2.4.3-239 inserted as shown in Attachment RAI 02.04.03-7-B in NPD-NRC-2011-071 response to NRC RAI 02.04.03-7 (H-0646).
HAR-173	HAR	PT02	FSAR02	02.04.05.04	NPD-NRC-2011-003, H-0648 response	FSAR Subsection 2.4.5.4 revised as described in NPD-NRC-2011-003 response to NRC RAI 02.04.05-1 (H-0648).
HAR-174	HAR	PT02	FSAR02	02.04.05.T / T2.4.5-206	NPD-NRC-2011-003, H-0648 response	A new Table 2.4.5-206 added as shown in response to NRC RAI 02.04.05-1 (NPD-NRC-2011-003 response H-0648). Table 2.4.5-206 is titled "Oscillation Resonance Modes in the Main and Auxiliary Reservoirs".
HAR-175	HAR	PT02	FSAR02	02.04.05.T / T2.4.5-207	NPD-NRC-2011-003, H-0648 response	A new Table 2.4.5-207 added as shown in response to NRC RAI 02.04.05-1 (NPD-NRC-2011-003 response H-0648). Table 2.4.5-207 is titled "Wave Amplification due to Resonance for the Main and Auxiliary Reservoirs".
HAR-176	HAR	PT02	FSAR02	02.04.06	NPD-NRC-2011-003, H-0649 response	Subsection 2.4.6 revised to add the following text to the end of Subsection 2.4.6: The potential for a slope failure into the Main or Auxiliary Reservoirs causing a tsunami-like wave is negligible based on the extensive site specific investigations associated with topography, geology, seismicity, and groundwater (Subsections 2.5.0.1.2, 2.5.1, 2.5.2, 2.5.4.1, 2.5.3, 2.5.0.3, 2.5.3.6, and 2.4.12.1). In addition, the current landuse is not conducive to landslide activity (Subsection 2.4.3.2) and no observed or recorded land slippage of any kind has occurred along the shore of either the Main or Auxiliary Reservoirs since the reservoirs were filled in late 1980.
HAR-811	HAR	PT02	FSAR02	02.04.12.05	Editorial	Revise stormwater drainage ditch information for consistency.
HAR-177	HAR	PT02	FSAR02	02.04.13.01.01	NPD-NRC-2011-003, H-0642 response	Subsection 2.4.13.1.1 revised to read: Radionuclide concentrations are reduced during transport through the saturated regolith by adsorption, dispersion, and radioactive decay. In addition, hold-up and dilution occurs in the Main Reservoir with its storage capacity of 2.2 x 108 m3 (177,563 ac-ft) at the nominal 73.2-m (240-ft.) water elevation. Flow from the Cape Fear River further dilutes the nuclide concentrations for surface water use at Lillington. Average monthly Cape Fear River flow above Lillington is 95.9 m ³ /s (3387 cfs) (Table 2.4.1-204) (Reference 2.4-271). The minimum downstream release from the Main Dam is expected to be 0.57 m3/s (20 cfs). Average annual flow in the Thomas Creek branch of the Main Reservoir is greater than 0.057 m3/s (2 cfs).
HAR-178	HAR	PT02	FSAR02	02.04.16	NPD-NRC-2011-003, H-0642 response	Subsection 2.4.16 revised as follows: - Reference RAI 02.04.02-101 will be added as FSAR Reference 2.4-271. - FSAR Reference 2.4-201 will be revised to show an accessed date of December 2010. - References 2.4-248 and 2.4-259 are "Not Used" and need to be removed.
HAR-179	HAR	PT02	FSAR02	02.04.16	NPD-NRC-2011-003, H-0643 response Item number 4	Subsection 2.4.16, "References," revised to add: 2.4-275: U.S. Army Corps of Engineers (USACE), Hydrologic Engineering Center, "HECRAS River Analysis System," Version 3.1.3, May 2005.
HAR-180	HAR	PT02	FSAR02	02.04.16	NPD-NRC-2011-003, H-0648 response	Subsection 2.4.16, "References," revised to add References RAI 02.04.05-1 01, RAI 02.04.05-1 02, and RAI 02.04.05-1 03 (from NPD-NRC-2011-003 response to NRC RAI 02.04.05-1 (H-0648)) as follows: • RAI 02.04.05-1 01 (FSAR 2.5-272), Young, H.D., Freedman, R.A., and Sears, F.W. (2007), University Physics, 12th Edition • RAI 02.04.05-1 02 (FSAR 2.5-273), Rueda, F. J., and Schladow, S. G. (2002), Surface Seiche in Lakes of Complex Geometry, Limnol. Oceanogr., 47(3) 906-910 • RAI 02.04.05-1 03 (FSAR 2.5-274), Seiche (2003), McGraw-Hill Encyclopedia of Science & Technology, 9 th Edition, The McGraw-Hill Companies, Inc.
HAR-181	HAR	PT02	FSAR02	02.04.16	NPD-NRC-2011-071, H-0646 response FSAR Item 1.10	Subsection 2.4.16, "References," revised to add: 2.4-276: U.S. Department of Interior, Bureau of Reclamation, Design Standard No. 14, Appurtenants Structures for Dams (Spillway and Outlet Works) Design Standard DS-14(1)-2, Draft: Phase 3, March 2010.
HAR-182	HAR	PT02	FSAR02	02.05.04.10.03.04	Update for revised WEC loads (Turbine, Radwaste & Annex Bldgs)	Revise 2nd paragraph to read: The subgrades and foundations of structures adjacent to the nuclear islands will be constructed to account for differential settlement with the nuclear islands. For adjacent structures founded on rock or concrete fill over rock, the differential settlements with the nuclear islands are not expected to exceed 13 mm (0.5 in.). For adjacent structures founded on granular fill over rock, the differential settlements with the nuclear islands are not expected to exceed 38 mm (1.5 in.). These differential settlements are within the acceptable range for the AP1000 under both HAR 2 and HAR 3.
HAR-183	HAR	PT02	FSAR02	02.05.06.17	Update-Editorial	Change LMA from LNP COL 2.5-17 to HAR COL 2.5-17.
HAR-810	HAR	PT02	FSAR02	02.05.07	Editorial	FSAR Subsection 2.5.7 revise Reference 2.5.1-292 from: Behrendt, J.C., R.M. Hamilton, H.D. Ackermann, V.H. Henry, and K.C. Bayer, "Marine Multichannel Seismic-Reflection Evidence for Cenozoic Faulting and Deep Crustal Structure near Charleston, South Carolina," in G.S. Gohn, ed., "Studies Related to the Charleston, South Carolina, Earthquake of 1886; Tectonics and Seismicity," U.S. Geological Survey Professional Paper 1313-J, pp. J1 – J29, 1983. To read: Howard, C.W., P.M. Derryberry, R.D. Hatcher Jr., J.D. Vaughn, "Detailed Geologic Maps of Two Sites South of Dandridge, Tennessee, Record Evidence of Polyphase Paleoseismic Activity in the East Tennessee Seismic Zone," Geological Society of America, Southeastern Section - 60th Annual Meeting (23-25 March 2011), Paper No. 16-1, Website, gsa.confex.com/gsa/2011SE/finalprogram/abstract_185732.htm , accessed February 1, 2012.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
						FSAR Subsection 2.5.7 revise Reference 2.5.1-392 from: Hatcher, R.D., S.F. Obermeier, J.D. Vaughn, H.H. Mills, S.C. Whisner, C.W. Howard, "Evidence for a Lengthy Late-Quaternary Earthquake History in the East Tennessee Seismic Zone, Tennessee, Georgia, Alabama," abstract, 2010 Geological Society of America (GSA) Denver Annual Meeting, Paper No. 89-8, GSA Abstracts with Programs, Vol. 42, No. 5, p. 218, 2010. To read: Hatcher, R.D., S.F. Obermeier, J.D. Vaughn, H.H. Mills, S.C. Whisner, C.W. Howard, "Evidence for a Lengthy Late-Quaternary Earthquake History in the East Tennessee Seismic Zone, Tennessee, Georgia, Alabama," 2010 GSA Denver Annual Meeting (31 October - 3 November 2010), Paper No. 89-8, Geological Society of America Abstracts with Programs, Vol. 42, No. 5, p. 218, Website, gsa.confex.com/gsa/2010AM/finalprogram/abstract_181638.htm , accessed February 11, 2011
HAR-808	HAR	PT02	FSAR02	02.05.07	Editorial	
Chapter 3						
						Editorial changes were made to the following references: Subsection 3.5.5, revise Reference 202 from: "Department of Energy Standard DOE-STD-3014-96, "Accident Analysis Into Hazardous Facilities", October 1996." To read: "Department of Energy Standard DOE-STD-3014-96, "Accident Analysis for Aircraft Crash Into Hazardous Facilities", October 1996."
HAR-667	HAR	PT02	FSAR03	03.0 (all)	Editorial	
HAR-184	HAR	PT02	FSAR03	03.02.01	Separator Line	Section 3.2.1 – insert horizontal separator line above Section 3.2.1 title.
HAR-185	HAR	PT02	FSAR03	03.02.T / T3.2-2R	errata - conformance with R-COLA	Change the table number for Seismic Classification of Building Structures from 3.2-2R to 3.2-201 (in text and TOC) to match R-COLA. Change the table number for AP1000 Classification of Mechanical and Fluid Systems, Components, and Equipment from 3.2-201 to 3.2-202 (in text and TOC) to match R-COLA.
HAR-186	HAR	PT02	FSAR03	03.02.T / T3.2-2R	errata - conformance with R-COLA	Table 3.2-2R – Delete information with DCD LMA from this table. (Vogtle table only includes VEGP SUP info.) Also, add reference to Note 1 in the table. (Note 1 is not on the Vogtle table.)
HAR-187	HAR	PT02	FSAR03	03.03.01.01	Separator Line	Section 3.3.1.1 – insert horizontal separator line above Section 3.3.1.1 title.
HAR-188	HAR	PT02	FSAR03	03.03.03	errata - conformance with R-COLA	Add "within the applicant's scope" after "failure of structures and components" in the first sentence of this section.
HAR-189	HAR	PT02	FSAR03	03.03.03	Editorial	Subsection 3.3.3, last paragraph, add Subsection 3.5.1.3 to the list of subsections referenced.
HAR-190	HAR	PT02	FSAR03	03.04.01.03	Separator Line	Section 3.4.1.3 – insert horizontal separator line above Section 3.4.1.3 title.
HAR-191	HAR	PT02	FSAR03	03.05.01.03	Separator Line	Section 3.5.1.3 – insert horizontal separator line above Section 3.5.1.3 title.
HAR-192	HAR	PT02	FSAR03	03.05.01.03	errata - conformance with R-COLA	Revise the first LMA STD SUP 3.5-2 to STD SUP 3.5-1.
9314	STD	PT02	FSAR03	03.05.01.03	DCD R18	COLA Part 2, FSAR Chapter 3, Subsection 3.5.1.3 revised To read: In addition, the shield building and auxiliary building walls, roofs, and floors, provide further conservative, inherent protection of the safety-related SSCs from a turbine missile.
HAR-193	HAR	PT02	FSAR03	03.05.01.03	Editorial/Match STD	Revise to add spaces such that the third sentence of Subsection 3.5.1.3 reads "...unfavorable orientation P2 x P3 conservative ...".
HAR-194	HAR	PT02	FSAR03	03.05.04	Editorial	Subsection 3.5.4, last paragraph, add Subsection 3.5.1.3 to the list of subsections referenced.
HAR-195	HAR	PT02	FSAR03	03.05.05	Separator Line	Add a separator line after 3.5.5 title.
						Subsection 3.5.5, add the following statement before the references:
HAR-196	HAR	PT02	FSAR03	03.05.05	Editorial	"Add the following information at the end of DCD Subsection 3.5.5:"
HAR-197	HAR	PT02	FSAR03	03.06.04.01	Separator Line	Section 3.6.4.1 – insert horizontal separator line above Section 3.6.4.1 title.
HAR-198	HAR	PT02	FSAR03	03.06.04.01	errata - conformance with R-COLA	Section 3.6.4.1, second paragraph of STD COL 3.6-1: Delete "s" from "hazards" in the first sentence for consistency with VEGP.
						1. COLA Part 2, FSAR Chapter 3, Subsection 3.7.4.4, revised to read: HAR COL 3.7-2 Post-earthquake operating procedures utilize the guidance of EPRI Reports NP-5930, TR-100082, and NP-6695, as modified and endorsed by the NRC in Regulatory Guides 1.166 and 1.167. A response spectrum check up to 10Hz and the cumulative absolute velocity will be calculated based on the recorded motions at the free field instrument. If the operating basis earthquake ground motion is exceeded or significant plant damage occurs, the plant must be shutdown in an orderly manner. STD COL 3.7-2 In addition, the procedures address measurement of the post-seismic event gaps between the new fuel rack and walls of the new fuel storage pit, between the individual spent fuel racks, and from the spent fuel racks to the spent fuel pool walls, and provide for appropriate corrective actions to be taken if needed (such as repositioning the racks or analysis of the as-found condition).
8015	STD	PT02	FSAR03	03.07.04.04	VEGP-VOL-CH03 Seismic Instrumentation Information response to COL-03.07-002 item 1 SNC Ltr ND-10-2001	
						2. COLA Part 2, FSAR Chapter 3, Subsection 3.7.5.2, revised to read: HAR COL 3.7-2 This COL Item is addressed in Subsection 3.7.4.4. STD COL 3.7-2
8016	STD	PT02	FSAR03	03.07.05.02	VEGP-VOL-CH03 Seismic Instrumentation Information response to COL-03.07-002 item 2 SNC Ltr ND-10-2001	
HAR-200	HAR	PT02	FSAR03	03.07.05.04	Editorial/Match STD	Revise Subsection heading to "Reconciliation of Seismic Analyses of Nuclear Island Structures" and update Table of Contents.
HAR-201	HAR	PT02	FSAR03	03.08.05.07	Separator Line	Insert separator line after 3.8.5.7 title.
HAR-202	HAR	PT02	FSAR03	03.08.06.05	Separator Line	Insert separator line after 3.8.6.5 title.
HAR-203	HAR	PT02	FSAR03	03.09.03.01.02	Separator Line	Section 3.9.3.1.2 – insert horizontal separator line above Section 3.9.3.1.2 title.
HAR-205	HAR	PT02	FSAR03	03.09.03.04.04	Separator Line	Section 3.9.3.4.4 – delete horizontal separator line between Section 3.9.3.4.4 introductory statement and subheading "a. Snubber Design and Testing".
HAR-204	HAR	PT02	FSAR03	03.09.03.04.04.a.2	Editorial/Match STD	Add commas in the last sentence of the first paragraph such that it reads "... ASME Section III Subsection NF, and other applicable codes, standards, and requirements, are as ..."

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-206	HAR	PT02	FSAR03	03.09.03.04.04.c	Editorial/Match STD	Revise "pre-service" to read "preservice" 3 times
HAR-207	HAR	PT02	FSAR03	03.09.03.04.04.c	Editorial/Match STD	In the third paragraph following the numbered list revise "ISTD-5120" to "ISTD 5120" to match VEGP.
HAR-208	HAR	PT02	FSAR03	03.09.03.04.04.d	Editorial/Match STD	In the first paragraph of Subsection 3.9.3.4.4.d spell out percent (two instances) such that the text reads "... attaining 5 percent reactor power..."
HAR-209	HAR	PT02	FSAR03	03.09.03.04.04.d	Editorial/Match STD	Change "with" to "within" in the first paragraph to read "... and is completed within 12 calendar months after..."
HAR-210	HAR	PT02	FSAR03	03.09.03.04.04.d	Editorial/Match STD	In the third paragraph of Subsection 3.9.3.4.4.d revise the second sentence to read "... the snubber in the as-found condition, to the extent practical, either in-place or on a test bench, to verify..."
HAR-211	HAR	PT02	FSAR03	03.09.03.04.04.d	Editorial/Match STD	In forth paragraph, move "each fuel cycle" in first sentence to the end of the sentence.
HAR-212	HAR	PT02	FSAR03	03.09.06	Editorial/Match STD	Revise the first sentence to make the comma black text.
HAR-213	HAR	PT02	FSAR03	03.09.06	errata - conformance with R-COLA	Section 3.9.6 - Editorial or consistency: Delete "the" from the second line of the introductory sentence such that it reads "... and add information between the third and fourth..."
HAR-214	HAR	PT02	FSAR03	03.09.06.02.02	Editorial/Match STD	In the first sentence of the second paragraph of Subsection 3.9.6.2.2, delete "(PST)".
HAR-215	HAR	PT02	FSAR03	03.09.06.02.02	Editorial/Match STD	Revise the eighth paragraph such that it reads "Insert new second sentence of the paragraph containing the subheading "Power-Operated Valve Operability Tests".
HAR-216	HAR	PT02	FSAR03	03.09.06.02.02	Editorial/Match STD	Revise the fifth sentence of the 15th paragraph with the heading "Active MOV Test Frequency Determination" to remove the second instance of "the" and "Code," such that it reads "The initial inservice test frequency is determined as required by ASME OM Code Case OMN-1, Revision 1 (Reference 202)."
HAR-217	HAR	PT02	FSAR03	03.09.06.02.02	Editorial/Match STD	Revise the 15th paragraph to read "...Appropriate justification is provided for any increased test interval, and the maximum test interval shall not exceed 10 years...."
HAR-218	HAR	PT02	FSAR03	03.09.06.02.02	Editorial/Match STD	In paragraph beginning with "Additional testing is performed as part of the..." change "identified" to "identified" in the first sentence.
HAR-219	HAR	PT02	FSAR03	03.09.06.02.02	Editorial/Match STD	In third bullet beginning with "Periodic static testing is performed..." remove the comma after the first "required" in the last sentence
HAR-220	HAR	PT02	FSAR03	03.09.06.02.02	Editorial/Match STD	In first paragraph after the bulleted list, add a "-" in "PowerOperated" such that it reads "Power-Operated" and in the following paragraph revise to add an "a" to item (ii) before "margin for degradation;" to match Vogtle.
HAR-221	HAR	PT02	FSAR03	03.09.06.02.02	Editorial/Match STD	In the fifth paragraph after the bulleted list, revise sentence to add colon at the end.
HAR-222	HAR	PT02	FSAR03	03.09.06.02.02	Editorial/Match STD	In the seventh paragraph after the bulleted list, revise sentence to add colon at the end.
HAR-223	HAR	PT02	FSAR03	03.09.06.02.02	Editorial/Match STD	In the last paragraph of Subsection 3.9.6.2.2 delete the first instance of "the" and revise "incorporate" to "incorporates" such that the paragraph reads: "Industry and regulatory guidance is considered in development of IST program for squib valves. In addition, the IST program for squib valves incorporates lessons learned from the design and qualification ..."
9302	STD	PT02	FSAR03	03.09.06.02.02	Unnecessary duplication of DCD text	Revise the 4th insertion statement to remove the entire inserted restatement of DCD material:
HAR-224	HAR	PT02	FSAR03	03.09.06.02.03	LMA Placement	"Power-Operated Valve Operability Tests - The safety-related, power-operated valves (POVs) are required by the procurement specifications to have the capabilities to perform diagnostic testing to verify the capability of the valves to perform their design basis safety functions."
HAR-225	HAR	PT02	FSAR03	03.09.06.03	Editorial/Match STD	Revise LMA placement to be adjacent to "During the disassembly..."
HAR-226	HAR	PT02	FSAR03	03.09.06.03	Editorial/Match STD	In the second paragraph of Subsection 3.9.6.3, delete the comma before "In lieu of..." such that it reads "motor operated valves in lieu of..."
HAR-228	HAR	PT02	FSAR03	03.09.06.03	Editorial/Match STD	Revise the end of the first sentence in the fourth paragraph to remove "Case" such that it reads "...OM Code Subsection ISTC".
HAR-229	HAR	PT02	FSAR03	03.09.06.03	Editorial/Match STD	Revise a. b. c. d. to read (1) (2) (3) (4) to match Vogtle.
HAR-230	HAR	PT02	FSAR03	03.09.06.03	Editorial/Match STD	In item c (item 3), add "a" before "plant-specific" to match Vogtle.
HAR-231	HAR	PT02	FSAR03	03.09.06.03	Editorial/Match STD	In the last paragraph, last sentence, revise "cause" to be "caused".
HAR-232	HAR	PT02	FSAR03	03.09.08.02	Editorial/Match STD	In the last sentence revise "items" to "item" such that it reads "... (in accordance with DCD Tier 1 Section 2 ITAAC line item for the applicable systems)."
HAR-233	HAR	PT02	FSAR03	03.09.08.04	Editorial/Match STD	Change "Subsection" to "Subsections" and add "3.9.6.2.2, 3.9.6.2.4, 3.9.6.2.5 and 3.9.6.3".
HAR-234	HAR	PT02	FSAR03	03.09.08.07	Separator Line	Add separator line after 3.9.8.7 title.
HAR-234	HAR	PT02	FSAR03	03.09.08.07	LMA Placement	Revise LMA placement to be adjacent to "The as-designed piping analysis..."
HAR-235	HAR	PT02	FSAR03	03.09.08.07	Editorial/Match STD	Add "the" in the second paragraph after "Class 1 piping using" to match Vogtle.
HAR-236	HAR	PT02	FSAR03	03.09.09	Editorial/Match STD	Add a period to the end of each reference missing one. Make "on" lowercase in Reference 204. To match Vogtle move "Revision 1" for Reference 202 such that it reads "ASME Code Case OMN-1, Revision 1, "Alternative ... Power Plants." Make "used" lowercase in Reference 201.
HAR-237	HAR	PT02	FSAR03	03.11.05	Separator Line	Insert horizontal separator line above Section 3.11.5 title.
Chapter 4						
9440	STD	PT02	FSAR04	04.04.07	DCD Rev 17	COLA Part 2, FSAR Chapter 4, Subsection 4.4.7, is revised from: Replace the second paragraph in DCD Subsection 4.4.7 with the following: To read: Replace the paragraph in DCD Subsection 4.4.7.2 with the following:
HAR-238	HAR	PT02	FSAR04	04.04.07	errata-conformance with R-COLA	VEGP R4 Chapter 4 Section 4.4.7, LMA aligns with first sentence of paragraph while HAR LMA is aligned with "Replace" statement - change alignment in HAR COLA to match VEGP
Chapter 5						
HAR-239	HAR	PT02	FSAR05	05.02.01.01	Separator Line	Remove separator line before heading 5.2.1.1 Compliance with 10 CFR 50.55a to match VEGP.
HAR-240	HAR	PT02	FSAR05	05.02.01.01	Editorial/Match STD	Replace " " with " " after "Add the following text..." of DCD Subsection 5.2.1.1" to match VEGP.
HAR-241	HAR	PT02	FSAR05	05.02.03.02.01	Editorial/Match STD	Replace " " with " " after "Add the following text..." of DCD Subsection 5.2.3.2.1" to match VEGP.
HAR-242	HAR	PT02	FSAR05	05.02.03.02.01	Editorial/Match STD	Delete the second "of" in the first sentence in the third paragraph to match VEGP.
HAR-243	HAR	PT02	FSAR05	05.02.04.01	Editorial/Match STD	Delete the space after "120-" in the last paragraph to match VEGP.
HAR-244	HAR	PT02	FSAR05	05.02.04.10	Separator Line	Remove separator line before heading 5.2.4.10 Program Implementation to match VEGP.
HAR-245	HAR	PT02	FSAR05	05.03.02.06	Separator Line	Remove separator line before heading 5.3.2.6 Material Surveillance to match VEGP.
HAR-246	HAR	PT02	FSAR05	05.03.02.06	Editorial/Match STD	Revise the last sentence of the paragraph beginning with "Standard Charpy impact test specimens each of base metal..." from "...These data, together with the drop weight NDTT, are used to establish the..." to read "...These data, together with the drop weight NDTT, are used to establish an..."
HAR-247	HAR	PT02	FSAR05	05.03.06.02	Editorial/Match STD	Revise "Subsection" to "Subsections".
HAR-248	HAR	PT02	FSAR05	05.03.06.04.01	LMA Placement	Move the LMA to align with the paragraph beginning with "The verification of plant-specific ..." to match VEGP.
HAR-249	HAR	PT02	FSAR05	05.03.06.06	LMA Placement	Move the LMA to align with the paragraph beginning with "This item is addressed in Subsection 5.2.4.1." to match VEGP.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-250	HAR	PT02	FSAR05	05.04.02.05	Separator Line	Remove separator line before heading 5.4.2.5 Steam Generator Inservice Inspection to match VEGP.
HAR-251	HAR	PT02	FSAR05	05.04.02.05	Editorial/Match STD	In the last sentence of the second paragraph of Subsection 5.4.2.5 revise "programs" to "Programs" to match VEGP.
HAR-252	HAR	PT02	FSAR05	05.04.02.05	Editorial/Match STD	In the first sentence of the third paragraph of Subsection 5.4.2.5, delete the comma after "NEI 97-06" to match VEGP.
Chapter 6						
HAR-731	HAR	PT02	FSAR 06	06.01	Editorial/Match STD	Insert separator line before 6.1.1.2
HAR-253	HAR	PT02	FSAR06	06.01.02.01.06	errata - conformance to R COLA	Align LMA of STD COL 6.1-2 with second paragraph consistent with R-COLA
HAR-254	HAR	PT02	FSAR06	06.01.03	Separator Line	Add separator line before heading 6.1.3 COMBINED LICENSE INFORMATION ITEMS to match VEGP.
HAR-255	HAR	PT02	FSAR06	06.01.04	Editorial/Match STD	Just before heading 6.1.4 delete the colon at the end of the sentence and replace with a period to match VEGP.
HAR-256	HAR	PT02	FSAR06	06.01.04	errata - conformance to R COLA	Remove LMA of STD SUP 6.1-1 for reference 201, to be consistent with R-COLA
HAR-257	HAR	PT02	FSAR06	06.01.04	Editorial/Match STD	In Reference 201, revise "standards" to "Standards" to match Vogtle and correctly capitalize a title.
HAR-732	HAR	PT02	FSAR 06	06.02	Editorial/Match STD	Insert separator line before 6.2.5.1
HAR-733	HAR	PT02	FSAR06	06.02	Editorial/Match STD	Insert separator line before 6.3.8
HAR-258	HAR	PT02	FSAR06	06.02.05.02.02	errata - conformance to R COLA	Align first LMA of STD COL 6.2-1 with second paragraph consistent with R-COLA
HAR-259	HAR	PT02	FSAR06	06.02.05.02.02	errata - conformance to R COLA	Align last LMA of STD COL 6.2-1 to "Acceptance Criteria" consistent with R-COLA
HAR-260	HAR	PT02	FSAR06	06.02.05.02.02	Editorial/Match STD	Revise to delete the period after "Rev" in second paragraph after the subheading Reporting / the paragraph just before the heading Acceptance Criteria to match VEGP.
HAR-261	HAR	PT02	FSAR06	06.03.08.01	errata - conformance to R COLA	Remove underlines for topic titles (e.g., responsibilities) to be consistent with R-COLA
HAR-262	HAR	PT02	FSAR06	06.03.08.01	Editorial/Match STD	Add comma after "tools" in the first sentence of the eighth bullet item in Subsection 6.3.8.1.
HAR-263	HAR	PT02	FSAR06	06.03.08.01	Editorial/Match STD	In the last paragraph of Subsection 6.3.8.1 revise the second instance of the NEI 04-07 title to have a single beginning quote at the beginning of the title and have a single end quote, then an end quote after a period such that it reads "... Document Number NEI 04-07), 'Pressurized Water Reactor Sump Performance Evaluation Methodology.' Latent debris ..." to match VEGP.
HAR-734	HAR	PT02	FSAR06	06.04	Editorial/Match STD	Insert separator line before 6.4.3
9359	STD	PT02	FSAR06	06.04.04	Consistency with removal of SUP LMA from Table 6.4-201	COLA Part 2, FSAR Chapter 6, Subsection 6.4.4, revised to remove LMA of STD SUP 6.4-# such that LMAs match those associated with Table 6.4-201. [For Vogtle, this is removal of STD SUP 6.4-3.]
HAR-264	HAR	PT02	FSAR06	06.04.04	errata - conformance to R COLA	Add the following statements to the text following LMA HAR SUP 6.4-1: "Insert the following information at the end of the eighth paragraph of DCD Subsection 6.4.4. Table 6.4-201 provides additional details regarding the evaluated onsite chemicals." (add LMA of STD COL 6.4-1)
HAR-265	HAR	PT02	FSAR06	06.04.04.02	errata - conformance to R COLA	Remove the statement, "Table 6.4-201 provides additional details regarding the evaluated onsite chemicals," and associated STD LMAs from Subsection 6.4.4.2 (it was moved to follow eighth paragraph of 6.4.4, per R-COLA)
HAR-266	HAR	PT02	FSAR06	06.04.07	errata - conformance to R COLA	Add LMA of STD COL 6.4-1 to first statement under 6.4.7, and add Subsection 6.4.4 in addition to 6.4.4.2, consistent with R-COLA
HAR-267	HAR	PT02	FSAR06	06.04.T / T6.4-201	Editorial/Match STD	In the first row fifth column on Sheet 1 under the heading "Evaluated Location" revise "Turbine" to "turbine" to match VEGP.
HAR-268	HAR	PT02	FSAR06	06.04.T / T6.4-201	Editorial/Match STD	In the sixth row first column on Sheet 1, revise "addition" to "Addition" to match VEGP.
HAR-269	HAR	PT02	FSAR06	06.04.T / T6.4-201	Editorial/Match STD	In the second row fifth column on Sheet 2 revise ":", to ":" after "DG building" to match VEGP.
HAR-270	HAR	PT02	FSAR06	06.04.T / T6.4-201	Editorial/Match STD	In the second and third rows of the first column on Sheet 3 revise "Algicide" to "Algaecide" to match VEGP.
HAR-271	HAR	PT02	FSAR06	06.04.T / T6.4-201	Editorial/Match STD	On sheet 3 of 4, add a period after second "comp" such that it reads: "Algaecide [Ammonium comp. polyethoxylate]"
HAR-272	HAR	PT02	FSAR06	06.04.T / T6.4-201	Formatting	On sheet 2 of 4, insert a return between rows "Corrosion Inhibitor [Sodium Molybdate]" and "Corrosion Inhibitor [Sodium Molybdate]" to match VEGP.
HAR-273	HAR	PT02	FSAR06	06.04.T / T6.4-201	Formatting	On sheet 2 of 4, insert a return between rows "Corrosion Inhibitor [Sodium Molybdate]" and "Scale Inhibitor [Sodium Hexametaphosphate]" to match VEGP.
HAR-274	HAR	PT02	FSAR06	06.04.T / T6.4-201	Separator Line	Add separator line at bottom of Table on sheet 3 of 4 to match VEGP.
HAR-275	HAR	PT02	FSAR06	06.04.T / T6.4-201	or	Just before "Notes:" add a separator line and add the LMA "STD COL 6.4-1" to align with "1) This table supplements ..." to match VEGP.
9086	STD	PT02	FSAR06	06.04.T / T6.4-201 Sh4	Table notes are standard.	COLA Part 2, FSAR Chapter 6, Table 6.4-201 Notes revised to identify them as Standard by adding a separator bar above "Notes:" and adding STD LMA.
HAR-276	HAR	PT02	FSAR06	06.06.03.01	Editorial/Match STD	In the second paragraph under heading Visual Examination, remove space after "IWA-2210-" such that it reads "IWA-2210-1." to match VEGP.
HAR-277	HAR	PT02	FSAR06	06.06.03.03	Editorial/Match STD	Delete the second instance of "10 CFR" such that it reads "... in accordance with 10 CFR 50.55a(a)(3) or 50.55a(g)(5)." to match VEGP.
HAR-278	HAR	PT02	FSAR06	06.06.06	Separator Line	Add separator line before heading 6.6.9 COMBINED LICENSE INFORMATION ITEMS to match VEGP.
Chapter 7						
HAR-279	HAR	PT02	FSAR07	07.01.06.01	Separator Line	Insert separator line after 7.1.6.1 paragraph
HAR-280	HAR	PT02	FSAR07	07.05.02	Separator Line	Insert separator Line after 7.5.2, 7.5.3.5, and 7.5.5
HAR-281	HAR	PT02	FSAR07	07.05.03.05	Editorial/Match STD	Revise paragraph to match VEGP STD text by changing "Add the following paragraph" to Add the following paragraphs".
HAR-282	HAR	PT02	FSAR07	07.05.T / T7.5-202	errata - conformance to R COLA	Delete the word "remarks" from footnote a) for consistency with R-COLA.
Chapter 8						
HAR-283	HAR	PT02	FSAR08	08.TOC	errata - conformance to R COLA	Change the title of the chapter from "ELECTRICAL POWER" to "ELECTRIC POWER" in the TOC (p. 8-i) and the body of the Chapter (p. 8.1-1). Also change Master FSAR Table of Contents.
HAR-284	HAR	PT02	FSAR08	08.01.01	Separator Line	Delete separator line before heading 8.1.1.
HAR-289	HAR	PT02	FSAR08	08.01.01	errata - conformance to R COLA	Section 8.1.1 – Move LMA "HAR SUP 8.1-1" from the introductory sentence down to the first paragraph.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-290	HAR	PT02	FSAR08	08.01.04.03	errata - conformance to R COLA	Section 8.1.4.3 – Add an "s" after "paragraph" in the introductory sentence such that it reads: "... between the second and third paragraphs of this subsection".
HAR-285	HAR	PT02	FSAR08	08.02.	Editorial/Match STD	Revise heading 8.2 from "OFF-SITE POWER SYSTEM" to "OFFSITE POWER SYSTEM" and update Table of Contents and Master FSAR Table of Contents.
HAR-286	HAR	PT02	FSAR08	08.02.01	Separator Line	Delete separator line before heading 8.2.1.
HAR-1052	HAR	PT02	FSAR08	08.02.01	Editorial	Subsection 8.2.1, 11th paragraph, delete "(Reference 201)" at the end of the paragraph.
HAR-291	HAR	PT02	FSAR08	08.02.01.01	errata - conformance to R COLA	Section 8.2.1.1 – Move LMA "HAR COL 8.2-1" from the introductory sentence down to the Subsection 8.2.1.1.1 title line.
HAR-292	HAR	PT02	FSAR08	08.02.01.02.01	errata - conformance to R COLA	Add a horizontal separator line above the last paragraph of this section and add LMA HAR SUP 8.2-X.
HAR-293	HAR	PT02	FSAR08	08.02.05	Editorial	Subsection 8.2.5, first paragraph, add Subsection 8.2.1.1.1 to the list of references and delete Subsections 8.2.1.1 and 8.2.1.1.3 from the list of references.
HAR-294	HAR	PT02	FSAR08	08.02.05	Editorial	Add an "s" after "Subsection" in the last sentence.
HAR-297	HAR	PT02	FSAR08	08.02.F / F8.2-202	404 environmental permit consistency	Revise dwg to reflect HAR 3 switchyard size and location change; also transmission lines rerouted.
HAR-298	HAR	PT02	FSAR08	08.02.F / F8.2-203	404 environmental permit consistency	Revise dwg to reflect HAR 3 switchyard size and location change; also transmission lines rerouted.
HAR-299	HAR	PT02	FSAR08	08.02.F / F8.2-203	401/404 environmental permit consistency Item 20	Figure revised as needed to show updated transmission line routes.
HAR-300	HAR	PT02	FSAR08	08.02.F / F8.2-204	401/404 environmental permit consistency Item 21	Figure revised as needed to show updated transmission line routes.
HAR-301	HAR	PT02	FSAR08	08.02.F / F8.2-204	404 environmental permit consistency	Revise dwg to reflect HAR 3 switchyard size and location change; also transmission lines rerouted.
HAR-295	HAR	PT02	FSAR08	08.02.T / T8.2-203	errata - conformance to R COLA	Table 8.2-203, add space in note by changing "... inrush = 6.5x FLA" to "... inrush = 6.5 x FLA".
HAR-296	HAR	PT02	FSAR08	08.02.T / T8.2-203	errata - conformance to R COLA	Add a "y" to "stead" on "Allowable voltage regulation" row in middle column such that it reads "steady state".
HAR-287	HAR	PT02	FSAR08	08.03.	Editorial/Match STD	Revise heading 8.3 from "ON-SITE POWER SYSTEM" to "ONSITE POWER SYSTEMS" and update Table of Contents and Master FSAR Table of Contents.
HAR-288	HAR	PT02	FSAR08	08.03.	Editorial/Match STD	Add period to the end of the first sentence in Section 8.3 to match VEGP.
HAR-302	HAR	PT02	FSAR08	08.03.01.01.01	errata - conformance to R COLA	Section 8.3.1.1.1 – Move LMA "HAR SUP 8.3-2" from the introductory sentence down to the next statement.
HAR-303	HAR	PT02	FSAR08	08.03.01.01.02.04	Editorial/Match STD	Revise heading 8.3.1.1.2.4 from "Operations, Inspection, and Maintenance" to "Operation, Inspection, and Maintenance" and update Table of Contents.
HAR-304	HAR	PT02	FSAR08	08.03.01.01.02.04	Editorial/Match STD	Revise first sentence to "Operation, inspection and maintenance..."
HAR-305	HAR	PT02	FSAR08	08.03.01.04	Editorial/Match STD	Revise "On-Site" to Onsite
HAR-306	HAR	PT02	FSAR08	08.03.02.01.01.01	Editorial/Match STD	Revise "non-class" to "non-Class" and "class" to "Class"
HAR-307	HAR	PT02	FSAR08	08.03.02.01.04	Editorial/Match STD	In Subsection 8.3.2.1.4 all words "class" before 1E capitalized (three instances), and remove the commas after IEEE 450 in the second paragraph.
HAR-308	HAR	PT02	FSAR08	08.03.03	Editorial/Match STD	Revise "ON-SITE" to ONSITE in title and TOC
HAR-309	HAR	PT02	FSAR08	08.03.04	Editorial	Following Subsection 8.3.4, add the following statement: "Add the following information at the end of DCD Subsection 8.3.4:"
HAR-310	HAR	PT02	FSAR08	08.03.04	Editorial/Match STD	Reference 201 is not referenced in Section 8.3, therefore delete it and renumber the following references and revise Subsection 8.3.1.1.7 from Reference 202 to 201. Reference 202 to IEEE Std 80-2000 is to be revised to "Institute of Electrical and Electronics Engineers (IEEE), "IEEE Guide for Safety in AC Substation Grounding," IEEE Std 80-2000, August 4, 2000." Reference 203 is referenced in standard text in Subsection 8.3.2.1.4 with no pointer to list of references. Delete this reference to match VEGP. (Note: This will match VEGP.)
Chapter 9						
						Editorial changes were made to the following references: COLA Part 2, FSAR Chapter 9, Subsection 9A.4, revise Reference 202 from: National Fire Protection Association, "Standard Methods of Tests of Fire Endurance of Building Construction and Materials," NFPA 251, 2006. To read: National Fire Protection Association, "Standard Methods of Tests of Fire Resistance of Building Construction and Materials," NFPA 251, 2006. COLA Part 2, FSAR Chapter 9, Subsection 9A.4, revise Reference 203 from: "National Fire Protection Association, "Standard for the Storage, Use, and Handling of Compressed Gasses and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks," NFPA 55, 2005." To read: "National Fire Protection Association, "Standard for the Storage, Use, and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks," NFPA 55, 2005."
HAR-673	HAR	PT02	FSAR09	09.0 (all)	Editorial	
HAR-311	HAR	PT02	FSAR09	09.01.04.04	Editorial/Match STD	Revise last word "on-site" to "onsite".
HAR-1048	HAR	PT02	FSAR09	09.01.05	Editorial/Match STD	Subsection 9.1.5, revise the LMA from "STD COL 9.1-2" to read "STD SUP 9.1-2"
HAR-312	HAR	PT02	FSAR09	09.01.05	Editorial/Match STD	Revise the 5th bullet to change "Subsection 9.1.5.4 and 9.1.5.5" to "Subsections 9.1.5.4 and 9.1.5.5".

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-313	HAR	PT02	FSAR09	09.01.05	Editorial/Match STD	After the first bullet list, add a comma after "testing" such that the paragraph reads "...and implemented for the procurement, design, fabrication, installation, inspection, testing, and operation..."
HAR-314	HAR	PT02	FSAR09	09.01.05	Editorial/Match STD	In the third bullet of the second bulleted list, add "and" after "equipment," to match VEGP.
HAR-315	HAR	PT02	FSAR09	09.01.05.03	errata - conformance with R-COLA	Third line of first paragraph, add comma after i.e. in parenthetical statement
HAR-316	HAR	PT02	FSAR09	09.01.05.04	errata - conformance with R-COLA	In second paragraph, third bullet, "intervals" should be lower case
HAR-317	HAR	PT02	FSAR09	09.01.05.04	Editorial/Match STD	Move last sentence of second paragraph "The overhead heavy load handling program, including system inspections, is implemented prior to receipt of fuel on-site." to separate paragraph after the bullet list and revise "on-site" to "onsite" to match VEGP.
HAR-318	HAR	PT02	FSAR09	09.01.05.05	Editorial/Match STD	Add "fuel" after "irradiated" in the first sentence of Subsection 9.1.5.5 to match VEGP.
						Revise first three sentences of paragraph with LMA STD COL 9.1-7 to change the verb tense and revise "tests" to "testing" in the third sentence: "A spent fuel rack Metamic coupon monitoring program is to be implemented when the plant is placed into commercial operation. This program includes tests to monitor bubbling, blistering, cracking, or flaking; and a test to monitor for corrosion, such as weight loss measurements and / or visual examination. The program will also include tests to monitor changes in physical properties of the absorber material, including neutron attenuation and thickness measurements." to "A spent fuel rack Metamic coupon monitoring program will be implemented when the plant is placed into commercial operation. This program will include tests to monitor bubbling, blistering, cracking, or flaking; and a test to monitor for corrosion, such as weight loss measurements and / or visual examination. The program will also include testing to monitor changes in physical properties of the absorber material, including neutron attenuation and thickness measurements."
HAR-319	HAR	PT02	FSAR09	09.01.06	Editorial/Match STD	COLA Part 2, Chapter 9, Subsection 9.1.6, third paragraph, make the last two sentences of the third paragraph a separate paragraph.
HAR-320	HAR	PT02	FSAR09	09.01.06	Editorial/Match STD	Incorporate the Yard Fire Protection System, YFS, into Section 9.2 and Figure 9.2-201 of the FSAR similar to the reference plant COLA. [Changes to 9.2.11 and 9.2.11.1.2.1.]
HAR-321	HAR	PT02	FSAR09	09.02.	Errata - conformance with R-COLA	In second sentence of first paragraph 9.2.8.2.1 with LMA of HAR COL, delete comma after "one chemical addition tank," to match VEGP text.
HAR-322	CDI	PT02	FSAR09	09.02.08.02.01	Editorial/Match STD	The bolded headings in HAR are not bold in VEGP. Make un-bold to match.
HAR-323	DCD	PT02	FSAR09	09.02.08.02.02	Formatting	The bolded headings in HAR are not bold in VEGP. Make un-bold to match.
HAR-324	DCD	PT02	FSAR09	09.02.08.02.03	Formatting	Add heading 9.2.9 WASTE WATER SYSTEM before separator line for Subsection 9.2.9.2.1 to match VEGP text and add to Table of Contents.
HAR-325	DCD	PT02	FSAR09	09.02.09	Editorial/Match STD	Subsection 9.2.9.2.2 first two paragraphs revised to read: Add the following paragraphs at the end of the text under the heading "Waste Water Retention Basin" in DCD Subsection 9.2.9.2.2. The neutralization and settling basins for the waste water treatment system are located west of the HAR 2 and 3 reactor buildings and east of the railroad tracks, at an equal distance between HAR 2 and 3. There are two neutralization basins, one for each unit. There is one settling basin shared by both units. Waste water is initially transferred to the neutralization basins for sampling and treatment as necessary to obtain a releasable effluent. The waste water is then routed to the settling basin to remove particulates. From there the waste water is pumped to the cooling tower blowdown line where it is ultimately released to the Harris Lake. The neutralization basins can be shared between units. Each neutralization basin is sized to intake the maximum possible flow from two units if one basin is out of service. The neutralization basins and the settling basin are lined and constructed such that the contents, dissolved or suspended, do not penetrate the liner and leach into the ground. The basins are constructed of reinforced concrete walls and continuously poured base mats with no construction joints in the mats or any exterior walls (except a construction joint with a waterstop may be used at the exterior wall/mat junction) and waterstops at all construction joints to further minimize seepage. The size of the settling basin provides retention time for settling of solids larger than 10 microns that may be suspended in the wastewater system.
HAR-326	HAR	PT02	FSAR09	09.02.09.02.02	NPD-NRC-2011-059 response to H-0701	Delete second (duplicate) LMA.
HAR-327	HAR	PT02	FSAR09	09.02.09.02.02	LMA	Revise heading 9.2.9.5 to "Instrumentation Applications" and update Table of Contents.
HAR-328	HAR	PT02	FSAR09	09.02.09.05	Editorial/Match STD	Move LMA next to heading for Subsection 9.2.11 to paragraph above.
HAR-1049	HAR	PT02	FSAR09	09.02.11	Editorial/Match STD	In text of 9.2.13.2, add a reference to Subsection 9.2.9.2.1.
HAR-329	HAR	PT02	FSAR09	09.02.13.02	Editorial/Match STD	Add separator line before and after heading 9.2.13 COMBINED LICENSE INFORMATION to match VEGP.
HAR-330	HAR	PT02	FSAR09	09.02.13	Separator Line	Add separator line before 9.4.1.4 Tests and Inspection
HAR-331	HAR	PT02	FSAR09	09.04.01.04	Separator Line	Revised first sentence of second paragraph from "The main control room / control support area HVAC ..." to "The main control room/control support area HVAC ..."
HAR-332	HAR	PT02	FSAR09	09.04.01.04	Editorial/Match STD	COLA Part 2, FSAR Chapter 9, Subsection 9.4.13, add the following statement before the reference:
HAR-333	HAR	PT02	FSAR09	09.04.13	Editorial	"Add the following information to the end of DCD Subsection 9.4.13:"
HAR-334	HAR	PT02	FSAR09	09.05.01.06	Editorial/Match STD	Revise second paragraph from "Subsections 9.5.1.9.1 and 9.5.1.8.7 summarize ..." to "Subsections 9.5.1.8.2 and 9.5.1.8.7 summarize ...".
HAR-335	HAR	PT02	FSAR09	09.05.01.08.01	errata - conformance with R-COLA	In first paragraph, second line, delete comma between "fuel" and "for"
HAR-336	HAR	PT02	FSAR09	09.05.01.08.01.01	Separator Line	Add separator line before and delete separator line after heading 9.5.1.8.1.1 Fire Protection Program Criteria.
HAR-337	HAR	PT02	FSAR09	09.05.01.08.01.01	Editorial/Match STD	Make the word Guide go on the next line and move the STD COL 9.5-4 LMA down to line up with the word exception. This formatting will match VEGP.
HAR-338	HAR	PT02	FSAR09	09.05.01.08.01.02.a.3.i	Editorial/Match STD	Make "fire fighting" one word: "firefighting".
HAR-339	HAR	PT02	FSAR09	09.05.01.08.01.02.a.3.v	Editorial/Match STD	Make "coatings" singular ("coating") at the end of the first sentence in 09.05.01.08.01.02.a.3.v.
HAR-340	HAR	PT02	FSAR09	09.05.01.08.01.02.b	Editorial/Match STD	Make "fire fighting" one word: "firefighting".
HAR-341	HAR	PT02	FSAR09	09.05.01.08.01.02.e.1	Editorial/Match STD	Add comma after "implementing" in 09.05.01.08.01.02.e.1.
HAR-342	HAR	PT02	FSAR09	09.05.01.08.01.02.i	Editorial/Match STD	Change "assuring" to "ensuring".
HAR-343	HAR	PT02	FSAR09	09.05.01.08.01.02.j	Editorial/Match STD	Change "utilizes" to "uses".
HAR-344	HAR	PT02	FSAR09	09.05.01.08.01.02.l	Editorial/Match STD	Add comma after "impact on the fire protection program".
HAR-345	HAR	PT02	FSAR09	09.05.01.08.01.02.m	Editorial/Match STD	Add comma after "capability".
HAR-346	HAR	PT02	FSAR09	09.05.01.08.01.02.o	Editorial/Match STD	Change "pre-fire" to "prefire".
HAR-347	HAR	PT02	FSAR09	09.05.01.08.02.02	Editorial/Match STD	In first paragraph of 9.5.1.8.2.2 make "fire fighting" one word (two instances) to "firefighting", change "on-site" to "onsite", and delete comma after "plant files for at least three years".
HAR-348	HAR	PT02	FSAR09	09.05.01.08.02.02	Editorial/Match STD	In fourth paragraph of 9.5.1.8.2.2 add comma after "portable ventilation equipment" in first sentence and after "emergency repair" in second sentence and change "on-site" to "onsite" in fifth and sixth sentences.
HAR-349	HAR	PT02	FSAR09	09.05.01.08.02.02	Editorial/Match STD	In fifth paragraph add comma after "notification of emergency personnel".
HAR-350	HAR	PT02	FSAR09	09.05.01.08.02.02.01	Editorial/Match STD	Delete dash ("-") in the words on-site and off-site in this section (5 instances) and make "fire fighting" one word (5 instances).

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-351	HAR	PT02	FSAR09	09.05.01.08.02.02.01.d	Editorial/Match STD	VEGP uses "-" as bullets in 09.05.01.08.02.02.01.d. Replace the bullets with "-" to match VEGP. Add period at the end of the last bullet in the list.
HAR-352	HAR	PT02	FSAR09	09.05.01.08.02.02.01.d	Editorial/Match STD	In the third bullet, add an "s" to make the first occurrence of "cable" plural
HAR-1050	HAR	PT02	FSAR09	09.05.01.08.02.02.01	Editorial/Match STD	The last paragraph of Subsection 9.5.1.8.2.2.1 should be labelled "1."
HAR-353	HAR	PT02	FSAR09	09.05.01.08.02.02.04	Editorial/Match STD	In first paragraph of 9.5.1.8.2.2.4, change "off-site" to "offsite".
HAR-354	HAR	PT02	FSAR09	09.05.01.08.02.02.04.c	Editorial/Match STD	Add comma after "placement".
HAR-355	HAR	PT02	FSAR09	09.05.01.08.02.02.04.d	Editorial/Match STD	Make "fire fighting" one word: "firefighting".
HAR-356	HAR	PT02	FSAR09	09.05.01.08.02.02.04.e	Editorial/Match STD	Add comma after "procedures" and make "fire fighting" one word: "firefighting".
HAR-357	HAR	PT02	FSAR09	09.05.01.08.03.b	Editorial/Match STD	Add comma after "size".
HAR-358	HAR	PT02	FSAR09	09.05.01.08.03.c	Editorial/Match STD	Make "fire fighting" one word: "firefighting".
HAR-359	HAR	PT02	FSAR09	09.05.01.08.03.e	Editorial/Match STD	Make "fire fighting" one word: "firefighting" (two instances: one in #1 and one in #4).
HAR-360	HAR	PT02	FSAR09	09.05.01.08.03.e.1	Editorial/Match STD	Change "pre-fire" to "prefire" (two instances) and change "utilize" to "use" and add period at the end of second sentence.
HAR-361	HAR	PT02	FSAR09	09.05.01.08.03.f	Editorial/Match STD	Change "fire fighting" to "firefighting", add comma after "transporting fire suppression", and change "off-site" to "offsite".
HAR-362	HAR	PT02	FSAR09	09.05.01.08.04	Editorial/Match STD	Add comma after "Hazardous Materials" in the section heading and update the Table of Contents.
HAR-363	HAR	PT02	FSAR09	09.05.01.08.04.d	errata - conformance with R-COLA	In subparagraph d., change "by the use of a flame" to "by use of a flame" in the first line.
HAR-364	HAR	PT02	FSAR09	09.05.01.08.04.e	Editorial/Match STD	Add comma after "progress".
HAR-365	HAR	PT02	FSAR09	09.05.01.08.06	Editorial/Match STD	In the first paragraph of Subsection 9.5.1.8.6, revise "utilize" to "use" in the third sentence such that it reads "... water-based suppression and supply systems, use the guidance of NFPA 72 ...", revise "pre-operational" to "preoperational", and revise "fire retardant" to "fire-retardant", and in the second paragraph of Subsection 9.5.1.8.6, add comma after "seals".
HAR-366	HAR	PT02	FSAR09	09.05.01.08.07	Editorial/Match STD	Delete "FSAR" to match VEGP text, LMA stays HAR COL 9.5-1.
HAR-367	HAR	PT02	FSAR09	09.05.01.08.07	errata - conformance with R-COLA	In second paragraph, delete "the" between "governed by" and "plant qualification"
HAR-368	HAR	PT02	FSAR09	09.05.01.08.08	errata - conformance with R-COLA	In second paragraph, third line, change "assure" to "ensure"
HAR-369	HAR	PT02	FSAR09	09.05.01.08.09	LMA/Separator Line	Remove separator line before 9.5.1.8.9 and delete the LMA "STD COL 9.5-3" to match VEGP.
HAR-370	HAR	PT02	FSAR09	09.05.01.09.01	Editorial/Match STD	Move the horizontal line from below Subsection 9.5.1.9.1 to above 9.5.1.9.1.
HAR-371	HAR	PT02	FSAR09	09.05.01.09.01	Editorial/Match STD	In the third paragraph, add comma after "Training of firefighting personnel is discussed in Subsections 9.5.1.8, 9.5.1.8.2"
HAR-372	HAR	PT02	FSAR09	09.05.01.09.03	Editorial/Match STD	Add comma after "9.5.1.8.8".
HAR-373	HAR	PT02	FSAR09	09.05.04.05.02	errata - conformance with R-COLA	In second paragraph, third line, change "ASTM 4176" to read "ASTM D4176"
HAR-374	HAR	PT02	FSAR09	09.05.05	Editorial/Match STD	Add comma after "and Use of Fire Hose" in Reference 201 and change "Incident" to "incident" in Reference 205.
HAR-375	HAR	PT02	FSAR09	09.05.T / T9.5-201	Formatting	Formatting of table: VEGP has a carriage return in the Remarks column following "Comply."
HAR-376	HAR	PT02	FSAR09	09.05.T / T9.5-201.03	Formatting	Make #3 left aligned.
HAR-377	HAR	PT02	FSAR09	09.05.T / T9.5-201.04.f	Editorial/Match STD	Revise "Pre-fire" to "Prefire" to match VEGP.
HAR-378	HAR	PT02	FSAR09	09.05.T / T9.5-201.14	Editorial/Match STD	Add "Comply." before "The FHA demonstrates..." in Remarks column
HAR-379	HAR	PT02	FSAR09	09.05.T / T9.5-201.15	Editorial/Match STD	Item 15 and 22 Remarks column should point to "Subsection 2.2 and 3.5" not "Subsection 2.2.3 and 3.5".
HAR-380	HAR	PT02	FSAR09	09.05.T / T9.5-201.31	Editorial/Match STD	Item 31 Remarks column should point to "Subsections 9.5.1.8.2.2 and 13.1.2.1.6" not "Subsections 9.5.1.8.1.2 and 13.1.2.1.6".
HAR-381	HAR	PT02	FSAR09	09.05.T / T9.5-201.230	Editorial/Match STD	Delete "Capability is provided." in Remarks column.
HAR-382	HAR	PT02	FSAR09	09.05.T / T9.5-202	Editorial/Match STD	In the AP1000 Exception of Clarification column revise first row to "... identified within DCD Section 9.5.1 and WCAP-15871."
HAR-383	HAR	PT02	FSAR09	09A.03.03	Separator Line	Add separator line before and after 9A.3.3 YARD AREA AND OUTLYING BUILDINGS
HAR-384	HAR	PT02	FSAR09	09A.03.03	Editorial/Match STD	Add comma after "access routes for firefighting" in the first sentence. Revise second sentence to "The two hour fire-resistance rating..."
HAR-385	HAR	PT02	FSAR09	09A.04	Editorial	COLA Part 2, FSAR Chapter 9, Subsection 9A.4, add the following statement before the reference: "Add the following information to the end of DCD Subsection 9A.4:"
Chapter 10						
HAR-386	HAR	PT02	FSAR10	10.01.03	Editorial/Match STD	Revise title in text and TOC to remove an "R" from "EROSION" to read "COMBINED LICENSE INFORMATION ON EROSION-CORROSION MONITORING"
HAR-387	HAR	PT02	FSAR10	10.01.03	Editorial/Match STD	Revise "Add the following subsections after DCD Subsection 10.1.3." to read "Add the following text at the end of DCD Subsection 10.1.3."
HAR-388	HAR	PT02	FSAR10	10.01.03.01	Errata - conformance with R-COLA	10.1.3.1 first paragraph - "EPRI NSAC 202L" in HAR is "EPRI NSAC-202L" in VEGP. (dash between NSAC and 202L)
HAR-389	HAR	PT02	FSAR10	10.01.04	Separator Line	Add a separator line before 10.1.4 REFERENCES
HAR-391	HAR	PT02	FSAR10	10.01.04	Editorial/Match STD	Add "Add the following after DCD Subsection 10.1.3:" after the separator line and before 10.1.4 REFERENCES
HAR-392	HAR	PT02	FSAR10	10.01.04	Editorial/Match STD	In Reference 201, revise "... (NSAC 202L-R3), Electric ... Palo Alto CA, 2006" to "... (NSAC-202L-R3), Electric ... Palo Alto, CA, 2006." to match Vogtle.
HAR-393	HAR	PT02	FSAR10	10.02.02	Separator Line	Add a separator line before 10.2.2 SYSTEM DESCRIPTION
HAR-394	HAR	PT02	FSAR10	10.02.02	Separator Line	Delete separator line preceding the paragraph beginning with "Preoperational and startup tests provide ..." and add a separator line after the paragraph beginning with "Subsection 3.5.1.3 addresses the probability of generation ..." to match VEGP.
HAR-395	HAR	PT02	FSAR10	10.02.06	Editorial/Match STD	Delete "the" in the last sentence before "fabrication of the turbine ..." to match VEGP.
HAR-396	HAR	PT02	FSAR10	10.03.02.02.01	Separator Line	Add separator line before heading 10.3.2.2.1 Main Steam Piping to match VEGP.
HAR-397	HAR	PT02	FSAR10	10.03.02.02.01	Editorial/Match STD	Revise "steam filled" to "steam-filled" in the fifth and seventh bullets under Subsection 10.3.2.2.1.
HAR-401	HAR	PT02	FSAR10	10.04	Correction to ensure consistency with Table 6.4-201	The second paragraph in the section with the LMA marked as HAR COL 10.4-1 HAR COL 10.4-3 deleted from the HAR COLA page 10.4-5: "Ammonium Bisulfite solution may be injected into the blowdown as required to reduce the oxidant level in the blowdown before d i scharge .~ This change will provide consistency between FSAR sections 6.4 and 10.4 with Table 6.4-201 .
HAR-398	HAR	PT02	FSAR10	10.04.02.02.01	Separator Line	Add separator line before heading 10.4.2.2.1 Main Steam Piping to match Vogtle.
HAR-399	HAR	PT02	FSAR10	10.04.05.02.02	Editorial/Match STD	In first sentence after "Circulating Water Chemical Injection" heading, delete "system" after "chemical feed" to match VEGP.
HAR-400	HAR	PT02	FSAR10	10.04.05.02.02	Editorial/Match STD	Revise the misspelling "tower" to "towel" in the second sentence under the subheading Circulating Water Chemical Injection" to match Vogtle.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
						Revise paragraph with DCD LMA to delete "a" after by from: "Addition of biocide and water treatment chemicals is performed by a local chemical feed injection metering pumps and is adjusted as required," to read: "Addition of biocide and water treatment chemicals is performed by local chemical feed injection metering pumps and is adjusted as required."
HAR-402	HAR	PT02	FSAR10	10.04.05.02.02	Editorial/Match STD	In the last paragraph of Subsection 10.4.5.5 with a "DCD" LMA remove "DCD" in front of "Chapter 7."
HAR-403	HAR	PT02	FSAR10	10.04.07.02.01	Separator Line	Remove separator line before the paragraph beginning with "The oxygen scavenger agent is ..." and change the ":" to "." at the end of the preceding paragraph.
HAR-405	HAR	PT02	FSAR10	10.04.07.02.01	Editorial/Match STD	Revise the first sentence of the third paragraph to add the word "Guidelines" and a closing quotation mark between "Program" and "(Reference 201)".
HAR-406	HAR	PT02	FSAR10	10.04.07.02.01	Correction to ensure consistency with Table 6.4-201	In COL Section 10.4.7.2.1, replace the word "Monoethylamine" with "Morpholine" and delete the word "ammonia." This change is recommended to ensure FSAR Chapter 10 is in agreement with Table 6.4-201. Morpholine is the AP1000 standard and Monoethylamine has not been analyzed to be included in Table 6.4-201.
HAR-407	HAR	PT02	FSAR10	10.04.12	Editorial/Match STD	Insert Section 10.4.12 COMBINED LICENSE INFORMATION and line separator lines above and below the heading to match Vogtle and update the Table of Contents.
HAR-408	HAR	PT02	FSAR10	10.04.13	Editorial/Match STD	Revise Reference 201 to add period after "201" and at the end of the reference, and delete comma in the title such that it reads: "201. Nuclear Energy Institute, "Steam Generator Program Guidelines," NEI 97-06, Revision 2, May 2005."
HAR-409	HAR	PT02	FSAR10	10.04.F / F10.4-202	Errata - conformance with R-COLA	Update HAR figure 10.4-202 showing a branch off RWS supplying water to the Yard Fire Protection System, YFS, similar to the reference plant COLA
HAR-410	HAR	PT02	FSAR10	10.04.F / F10.4-201	Additional detail	The HAR FSAR Chapter 10 figure revised to show the SDS and WWS influent paths to the CWS blowdown path. The new connections shown as upstream of the WLS tie-in.
Chapter 11						
HAR-411	HAR	PT02	FSAR11	11.02	Errata - conformance to R-COLA	Revise 11.2 heading title to change "SYSTEM" to "SYSTEMS" and update Table of Contents and FSAR Master Table of Contents.
HAR-423	HAR	PT02	FSAR11	11.02	NPD-NRC-2011-014, H-0653 response, Item #2	Add the following subsection to the end of FSAR Section 11.2: REFERENCES NEI 08-08A, Generic FSAR Template Guidance for Life Cycle Minimization of Contamination, Revision 0, October 2009 (ML093220445).
HAR-424	HAR	PT02	FSAR11	11.02	Editorial	COLA Part 2, FSAR Chapter 11, add new References subsection as Subsection 11.2.6, number the reference 201, and add the following statement before the reference: "Add the following information at the end of DCD Subsection 11.2.6:"
HAR-414	HAR	PT02	FSAR11	11.02.01.02.04	NPD-NRC-2011-014, H-0653 response, Item #1	FSAR Subsection 11.2.1.2.4, second paragraph revised from: "The HAR site WLS effluent discharge release point is where the WLS effluent discharge pipe connects to the cooling tower blowdown pipe." To read: "The Liquid Radwaste System (WLS) discharge piping from the Units 2 and 3 Radwaste Building is connected to the Circulating Water System (CWS) blowdown pipeline within the Exclusion Area Boundary for dilution to meet the release limits of 10 CFR 20 Appendix B, Table II, Column 2. Dilution at this point is supplied primarily from the circulating water blowdown flow. Where the WLS pipe is routed outside the radwaste building to where it connects to the blowdown pipeline, there are no valves, vacuum breakers, or other fittings. The WLS discharge piping is monitored for leakage to comply with 10 CFR 20.1406. The CWS blowdown line is a high density polyethylene single-walled pipe. There are no valves, vacuum breakers, or other fittings in the CWS blowdown pipeline between the point where the WLS connects and the effluent discharge point in the Harris Reservoir. The pipe is buried from the cooling towers to the point where the pipe enters Harris Reservoir except where the pipe crosses over HNP Unit 1 emergency service water intake channel. Monitoring for leakage of the CWS blowdown line downstream of the WLS connection is per NEI 08-08A (Reference 201) as described in Appendix 12AA.
8591	HAR	PT02	FSAR11	11.02.01.02.04	DCD Rev 18	COLA Part 2, FSAR Chapter 11, Subsection 11.2.1.2.4, revised (to remove the DCD info) from: 11.2.1.2.4 Controlled Release of Radioactivity Replace the last paragraph in DCD Subsection 11.2.1.2.4 with the following information: The monitored radwaste discharge pipeline is engineered to preclude leakage to the environment. This pipe is routed from the auxiliary building to the radwaste building (the short section of pipe between the two buildings is fully available for visual inspection as noted above) and then out of the radwaste building to the licensed release point for dilution and discharge. The discharge radiation monitor and isolation valve are located inside the auxiliary building. The exterior piping is designed to preclude inadvertent or unidentified releases to the environment. No valves, vacuum breakers, or other fittings are incorporated outside of buildings. This greatly reduces the potential for undetected leakage from this discharge to the environment at a non-licensed release point, and supports compliance with 10 CFR 20.1406. {current plant specific supplemental information...} To read: 11.2.1.2.4 Controlled Release of Radioactivity Add the following to the end of DCD Subsection 11.2.1.2.4: {current plant specific supplemental information...}
HAR-415	HAR	PT02	FSAR11	11.02.01.02.05.02	Errata - conformance to R-COLA	Revise the last sentence of the second paragraph in Subsection 11.2.1.2.5.2 from "may be processed" to "is processed".
HAR-1055	HAR	PT02	FSAR11	11.02.01.02.05.02	Editorial/Match STD	Revise the last sentence of the second paragraph in Subsection 11.2.1.2.5.2 to remove "the" in front of "liquid."
HAR-416	HAR	PT02	FSAR11	11.02.01.02.05.02	Editorial/Match STD	Revise the first sentence of the third paragraph in Subsection 11.2.1.2.5.2 to add a "s" on "system"
HAR-417	HAR	PT02	FSAR11	11.02.03.05.03	Editorial/Match STD	In the first sentence add a period after "Part 50"
HAR-418	HAR	PT02	FSAR11	11.02.03.05.03	Editorial/Match STD	At the end of the second sentence in the paragraph following the bulleted list in 11.2.3.5.3, revise "dose by 100%," to "dose by 100 percent."

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-419	HAR	PT02	FSAR11	11.02.03.05.03	Editorial/Match STD	Add a return/blank line after the first sentence in the paragraph following the bulleted list in 11.2.3.5.3, such that the next sentence (beginning with "The analysis used . . .") starts a new paragraph.
HAR-420	HAR	PT02	FSAR11	11.02.03.05.03	Editorial/Match STD	In the last paragraph of Subsection 11.2.3.5.3, remove the comma after "Appendix I" to match VEGP.
HAR-421	HAR	PT02	FSAR11	11.02.05	Errata - conformance to R-COLA	11.2.5 – insert horizontal separator line between 11.2.5 and 11.2.5.1
HAR-422	HAR	PT02	FSAR11	11.02.05.02	Separator Line	Insert a separator line between the two paragraphs to match VEGP.
HAR-1054	HAR	PT02	FSAR11	11.02.T / T11.2-206, 11.2-207, 11.2-208	Editorial	Add LMAs "HAR COL 11.2-2" and "HAR COL 11.5-3" to Tables 11.2-206, 11.2-207, and 11.2-208
HAR-412	HAR	PT02	FSAR11	11.03	Misc.	Milk production rate for Table 11.3-201 & Table 11.3-204 should utilize the same units. The units of "l/yr" to be used and Table 11.3-201 revised to reflect this unit (lower case "l").
HAR-425	HAR	PT02	FSAR11	11.03.03.04.03	Editorial/Match STD	Revise title from "Cost Benefit" to "Cost-Benefit" (add hyphen). Also need to update the Table of Contents.
HAR-426	HAR	PT02	FSAR11	11.03.03.04.04	Editorial/Match STD	Revise title from "Cost Benefit" to "Cost-Benefit" (add hyphen). Also need to update the Table of Contents.
HAR-427	HAR	PT02	FSAR11	11.03.05	Separator Line	Add separator line after heading 11.3.5, in between each COL item, and at the end of the Subsection 11.3.5.1.
HAR-428	HAR	PT02	FSAR11	11.03.06	Errata - conformance to R-COLA	11.3.6 – R-COLA shows Reference 201 as "Deleted"
HAR-675	HAR	PT02	FSAR11	11.04.02.04.03	LMA	Change LMA from HAR COL 11.4-2 to HAR COL 11.4-1.
HAR-413	HAR	PT02	FSAR11	11.05	Misc.	In the HAR FSAR, Subsection 11.5.8, the sentence, "This COL item is addressed in Subsection 11.5.3", revise the letter "i" of the word "item" to "I" of the word "Item" to make it upper case to be consistent with the Vogtle FSAR.
HAR-429	HAR	PT02	FSAR11	11.05.01.02	Separator Line	Delete separator line after heading 11.5.1.2.
HAR-430	HAR	PT02	FSAR11	11.05.04.02	Editorial/Match STD	Add a return/blank line after subheading "Analytical Procedures".
HAR-431	HAR	PT02	FSAR11	11.05.04.02	Editorial/Match STD	In the second paragraph after the bulleted list in Subsection 11.5.4.2 under subheading Analytical Procedures revise "sample detector" to "sample-detector".
HAR-713	HAR	Pt 02	FSAR 11	11.05.07	DCD Rev 18	Revise Subsection 11.5.7 COMBINED LICENSE INFORMATION to be numbered 11.5.8. Also change Table of Contents (and master TOC). Change Chapter 1, Table 1.8-202, COLA Item 11.5-2 reference from "11.5-7" to "11.5-8"
HAR-714	HAR	Pt 02	FSAR 11	11.05.08	DCD Rev 18	Revise Subsection 11.5.8 REFERENCES to be numbered 11.5.9. Also change Table of Contents (and master TOC). Introductory paragraph should also be changed accordingly to refer to DCD Subsection 11.5.8 rather than DCD Subsection 11.5.7.
HAR-433	HAR	PT02	FSAR11	11.05.08	Editorial/Match STD	In Reference 203 revise "Continuous" to "Continuously".
HAR-434	HAR	PT02	FSAR11	11.05.T / T11.5-201	Editorial/Match STD	Insert a space between "SR-89" and "and" for a gaseous stream with a filter (particulate) sample medium entry to match VEGP.
Chapter 12						
						Editorial changes were made to the following references: Revise References 205 and 206 in supplemental response to HAR-RAI-LTR-078 (H-0702) in PEC letter dated January 23, 2012 from: 205. Progress Energy Carolinas, Inc. (PEC), "Shearon Harris Nuclear Power Plant Annual Radioactive Effluent Release Report: January 1, 2007 to December 31, 2007". 206. Progress Energy Carolinas, Inc. (PEC), "Shearon Harris Nuclear Power Plant Annual Radioactive Effluent Release Report: January 1, 2010 to December 31, 2010". To read: 205. Progress Energy Carolinas, Inc. (PEC), "Shearon Harris Nuclear Power Plant Annual Radioactive Effluent Release Report: January 1, 2007 through December 31, 2007". 206. Progress Energy Carolinas, Inc. (PEC), "Shearon Harris Nuclear Power Plant Annual Radioactive Effluent Release Report: January 1, 2010 through December 31, 2010"
HAR-678	HAR	PT02	FSAR12	12.0 (all)	Editorial	
HAR-435	HAR	PT02	FSAR12	12.01.02.04.03	Errata - conformance with R-COLA	12.1.2.4.3 – introductory sentence should read, "... DCD Subsection 12.1.2.4"

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary									
						<p>2. COLA Part 2, FSAR, Chapter 12, Section 12.2.1.1.10, Miscellaneous Sources, seventh paragraph, Item b, revised to read:</p> <p>b) No 10 CFR Part 40 specifically licensed source material, including natural uranium, depleted uranium and uranium hexafluoride will be received, possessed, or used during this period.</p> <p>The following radioactive sources will be used for the Radiation Monitoring System and laboratory/portable monitoring instrumentation:¹</p> <table><thead><tr><th>Radioactive Licensee Material (Element and Mass Number)¹</th><th>Chemical and/or Physical Form¹</th><th>Maximum Quantity That Licensee May Possess at Any One Time¹</th></tr></thead><tbody><tr><td>• Any byproduct material with atomic numbers 1 through 93 inclusive</td><td>Sealed Sources ²</td><td>No single source to exceed 100 millicuries 5 Curies total</td></tr><tr><td>• Americium-241</td><td>Sealed Sources ²</td><td>No single source to exceed 300 millicuries 500 millicuries total</td></tr></tbody></table> <p>Notes: 1. This information remains in effect between the issuance of the COL and the Commission's 52.103(g) finding for each unit, and will be designated historical information after that time. 2. Includes calibration and reference sources.</p>	Radioactive Licensee Material (Element and Mass Number) ¹	Chemical and/or Physical Form ¹	Maximum Quantity That Licensee May Possess at Any One Time ¹	• Any byproduct material with atomic numbers 1 through 93 inclusive	Sealed Sources ²	No single source to exceed 100 millicuries 5 Curies total	• Americium-241	Sealed Sources ²	No single source to exceed 300 millicuries 500 millicuries total
Radioactive Licensee Material (Element and Mass Number) ¹	Chemical and/or Physical Form ¹	Maximum Quantity That Licensee May Possess at Any One Time ¹													
• Any byproduct material with atomic numbers 1 through 93 inclusive	Sealed Sources ²	No single source to exceed 100 millicuries 5 Curies total													
• Americium-241	Sealed Sources ²	No single source to exceed 300 millicuries 500 millicuries total													
9310	STD	PT02	FSAR12	12.02.01.01.10	VEGP-VOL-Materials 30-40 response to VEGP 12.02 VR1 Item 2 SNC Ltr ND-11-0435										
HAR-436	HAR	PT02	FSAR12	12.03.04	Editorial/Match STD	In the second to last sentence of the third paragraph delete the word "an" such that it reads "... identifies radiation exposure gradients in area resulting from identified components."									
HAR-437	HAR	PT02	FSAR12	12.03.04	Editorial/Match STD	In the second paragraph after the bulleted list under the heading "Airborne Radioactivity Surveys" in Subsection 12.3.4 revise "off-site" to "offsite".									
HAR-677	HAR	PT02	FSAR12	12.04	Supplemental response to HAR-RAI-LTR-078 (NPD-NRC-2012-001)	Replace FSAR Section 12.4 with the revised text and table presented in the supplemental response to HAR-RAI-LTR-078 (H-0702) in PEC letter dated January 23, 2012, Serial NPD-NRC-2012-001.									
						<p>Add the following paragraphs to the end of Subsection 12.4.1.9.2:</p> <p>In accordance with plant procedures, small amounts of liquid radioactive effluents (below regulatory limits) will be mixed with the cooling water and discharged to Harris Reservoir. Construction workers are assumed to use Harris Lake as a drinking water source. PEC maintains USEPA drinking water standards for water taken from Harris Lake for use as drinking water at the Harris Site. PEC will continue to maintain drinking water standards for use at the site.</p> <p>Exposure of HAR 3 workers to radioactive liquid effluents due to shared systems was not evaluated because the discharge structure and blowdown piping will be completed during HAR 2 construction.</p>									
HAR-438	HAR	PT02	FSAR12	12.04.01.09.02	SUPERCEDED BY NPD-NRC-2012-001 (HAR-677) NPD-NRC-2011-020, H-0662 response, Item #3										
						<p>Revise the first bullet in Subsection 12.4.1.9.3 (to be renumbered Subsection 12.4.1.9.4 per Item 8 in H-0662) from:</p> <p>The estimated maximum individual off-site dose due to radioactivity released in the HNP's liquid effluent release pathway was 1.86 E-02 mrem per year (mrem/yr), total body; and 2.63 E-02 mrem/yr, GI-LLI (Reference 201). Even if doubled for two operating units (HNP and HAR 2) the doses would be negligible contributors.</p> <p>To read:</p> <p>Dose to construction workers from the drinking water pathway from HNP is estimated to be equal to 1.24 E-01 mrem (Reference 203). The estimated maximum construction worker on-site dose due to the drinking water pathway from HAR 2 liquid effluent releases to Harris Lake is 0.7 mrem/yr. Thus, the total estimated construction worker dose due to the drinking water exposure pathway for liquid effluents from both HNP and HAR 2 is approximately 0.8 mrem/yr.</p>									
HAR-439	HAR	PT02	FSAR12	12.04.01.09.03	SUPERCEDED BY NPD-NRC-2012-001 (HAR-677) NPD-NRC-2011-020, H-0662 response, Item #1										
						<p>Revise Subsection 12.4.1.9.3 to delete everything after the first sentence in the third bullet of Subsection 12.4.1.9.3 (to be renumbered Subsection 12.4.1.9.4 per Item 8 in H-0662) and revise the first sentence from:</p> <p>The direct radiation exposure was based on a 2,080-hour work year and an exposure rate of 11.1 µrem/hr or 24 mrem/yr.</p> <p>To read:</p> <p>The direct radiation exposure was based on a 2,080-hour work year and an exposure rate of 14.8 µrem/hr or 31 mrem/yr.</p>									
HAR-440	HAR	PT02	FSAR12	12.04.01.09.03	SUPERCEDED BY NPD-NRC-2012-001 (HAR-677) NPD-NRC-2011-020, H-0662 response, Item #4										
						<p>Revise Subsection 12.4.1.9.3 fourth bullet (to be renumbered Subsection 12.4.1.9.4 per Item 8 in H-0662) from:</p> <p>The annual collective dose to the construction workforce is estimated to be 72.8 person-rem (that is, the maximum individual dose multiplied by the number of people exposed). This estimate assumes 3,150 persons based on 2,080 working hours per year at an exposure rate of 11.1µrem/hr.</p> <p>To read:</p> <p>The annual collective dose to the construction workforce is estimated to be 100.2 personrem (that is, the maximum individual dose multiplied by the number of people exposed). This estimate assumes 3,150 persons based on a construction worker dose of 31.8 mrem/yr.</p>									
HAR-441	HAR	PT02	FSAR12	12.04.01.09.03	SUPERCEDED BY NPD-NRC-2012-001 (HAR-677) NPD-NRC-2011-020, H-0662 response, Item #5										

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-442	HAR	PT02	FSAR12	12.04.01.09.03	SUPERCEDED BY NPD-NRC-2012-001 (HAR-677) NPD-NRC-2011-020, H-0662 response, Item #6	Revise Subsection 12.4.1.9.3 second to last paragraph (the paragraph which immediately follows the bullets) [to be renumbered Subsection 12.4.1.9.4 per Item 8 in H-0662] from: The largest contributor to the (total effective dose equivalent) TEDE would be the external dose assumed from active HNP operations (24 mrem/yr). Doses from the liquid and gaseous pathways are considered negligible contributors (well below those specified in 10 CFR Part 50 Appendix I). It is concluded that annual construction worker doses attributable to HNP operations for the proposed construction areas for HAR 2 and 3 are a small fraction of those limits specified in 10 CFR Part 20 and 10 CFR Part 50 Appendix I. To read: The largest contributor to the (total effective dose equivalent) TEDE would be the external dose assumed from the active HNP operations (31 mrem/yr). Doses contributed by liquid effluents from HNP and HAR 2 provide an additional 0.8 mrem/yr. Doses contributed by gaseous effluents are negligible. It is concluded that annual construction worker doses attributable to HNP operations for the proposed construction areas for HAR 2 and 3 are a small fraction of those limits specified in 10 CFR Part 20 and 10 CFR Part 50 Appendix I.
HAR-443	HAR	PT02	FSAR12	12.04.01.09.03	SUPERCEDED BY NPD-NRC-2012-001 (HAR-677) NPD-NRC-2011-020, H-0663 response, Item #2	Revise Subsection 12.4.1.9.3 to add the following paragraph to the end of the Subsection: It has been assumed that a construction worker exposure time is 40 hours per for 52 weeks. Since construction projects can involve significant overtime for construction workers the annual dose to a construction worker could be higher. The dose would be higher in proportion to the amount of time over 40 hours per week. If the construction worker worked 60 hours per week for 52 weeks the dose presented in Table 12.4-201 would increase by 50%. However, when compared to the dose limits presented in Table 12.4-201, the dose to the construction worker is still be well below the 10 CFR 20.1301 public dose limit. This would be the case for including the most limiting case of 72 or 84 hours.
HAR-444	HAR	PT02	FSAR12	12.04.01.09.03	SUPERCEDED BY NPD-NRC-2012-001 (HAR-677) NPD-NRC-2011-020, H-0662 response, Item number 8	Insert a new subsection 12.4.1.9.3 entitled "Measured Radiation Dose Rates and Liquid/Airborne Concentrations" in between current Subsections 12.4.1.9.2 and 12.4.1.9.3 (current Subsection 12.4.1.9.3 renumbered as Subsection 12.4.1.9.4 and the following subsections renumbering accordingly).
HAR-445	HAR	PT02	FSAR12	12.04.01.09.04	Separator Line	Add Separator Line before subsection heading Operating Unit Radiological Surveys
HAR-446	HAR	PT02	FSAR12	12.04.01.09.05	Editorial/Match STD	Add "d" at the end of "discharge" in FSAR Subsection 12.4.1.9.5 to match VEGP Subsection 12.4.1.9.4.5.
HAR-447	HAR	PT02	FSAR12	12.04.04	Editorial/Match STD/Separator Line	Add introductory sentence before heading 12.4.4 as "Add the following new subsection after DCD Subsection 12.4.3", remove the separator line after heading 12.4.4, and delete the LMA for subsection 12.4.4.
HAR-448	HAR	PT02	FSAR12	12.04.04	SUPERCEDED BY NPD-NRC-2012-001 (HAR-677) NPD-NRC-2011-020, H-0662 response, Item #9	Add new References 202 through 204 to Subsection 12.4.4: 202. Progress Energy Carolinas, Inc., "Shearon Harris Nuclear Power Plant Off-Site Dose Calculation Manual (ODCM)," Revision 17, Docket No. STN-50-400, Progress Energy Carolinas," November 30, 2004. 203. Progress Energy Carolinas, Inc. (PEC), "Shearon Harris Nuclear Power Plant Annual Radioactive Effluent Release Report: January 1, 2008 through December 31, 2008," 2008. 204. Nuclear Generation Group, "Area Thermoluminescent Dosimeter (TLD) Monitoring," DOS-NGGC-0010, Revision 7, 2006, Nuclear Generation Group Standard Procedure Volume 99 Book/Part 99, information obtained from the HNP TLD monitoring group via a request for information.
HAR-451	HAR	PT02	FSAR12	12.04.F / F12.4-202	NPD-NRC-2011-020, H-0662 response, Item #2	Figure 12.4-202 revised to indicate the quarterly dose at Protected Area Fence TLD # 7 and revise the List of Figures
HAR-449	HAR	PT02	FSAR12	12.04.T / T12.4-201	SUPERCEDED BY NPD-NRC-2012-001 (HAR-677) NPD-NRC-2011-020, H-0662 response, Item #7	Revise Table 12.4-201 text under the column heading "Estimated HAR Construction Worker Dose," for total effective dose equivalent from: "Approximately 24 mrem/yr" To read: "Approximately 31.8 mrem/yr"
HAR-450	HAR	PT02	FSAR12	12.04.T / T12.4-201	SUPERCEDED BY NPD-NRC-2012-001 (HAR-677) NPD-NRC-2011-020, H-0663 response, Item #1	Revise Table 12.4-201 to include a footnote. The text under the column heading "Estimated HAR Construction Worker Dose" for total effective dose equivalent will now read as: "Approximately 31.8 mrem/yr(a)" The footnote will read as: a) The largest contribution to the TEDE is from the external dose assumed from active HNP operations (31 mrem/yr). Doses contributed by liquid effluents from HNP and HAR 2 provide an additional 0.8 mrem/yr. Doses contributed by gaseous effluents are negligible.
HAR-452	HAR	PT02	FSAR12	12.05.	Editorial/Match STD	Revise heading 12.5 to "HEALTH PHYSICS FACILITIES DESIGN" and update Table of Contents and FSAR Master Table of Contents.
HAR-453	HAR	PT02	FSAR12	12.05.04	Editorial/Match STD	Revised heading 12.5.4 to "CONTROLLING ACCESS AND STAY TIME" and update Table of Contents.
HAR-454	HAR	PT02	FSAR12	12.05.05	Separator Line	Insert separator line before 12.5.5
HAR-455	HAR	PT02	FSAR12	12AA.5.4.14	Errata - conformance with R-COLA	12AA5.4.14, second line, remove "and as"
HAR-456	HAR	PT02	FSAR12	12AA.5.4.14	Errata - conformance with R-COLA	For added reference 201 to NEI 07-03A, add ML number at end: (ML093220445)
HAR-457	HAR	PT02	FSAR12	12AA.3	Editorial/Match STD	In first sentence of bullet number 3 revise delete the space after "Appendix 12AA" and delete space after "Section" such that it reads "... described in <u>Appendix 12AA</u> Section12.5 will be fully ..." to match Vogtle.
HAR-458	HAR	PT02	FSAR12	12AA.5.4.14	Editorial/Match STD	Delete period at the end of the last bullet in Subsection 12AA.5.4.14.
HAR-459	HAR	PT02	FSAR12	12AA.5.4.14	Editorial/Match STD	Add comma after "(Reference 201)".
HAR-460	HAR	PT02	FSAR12	12AA.5.4.15	Editorial/Match STD	Add comma after "(Reference 201)".
HAR-461	HAR	PT02	FSAR12	12AA.5.4.15	Editorial/Match STD	Revise numbered item 8 to delete the space following "Accident," before "4".
HAR-462	HAR	PT02	FSAR12	12AA.5.4.15	Editorial/Match STD	Revise the fourth paragraph to delete the second instance of "the" such that it reads "Add the following reference to NEI 07-03A REFERENCES."
HAR-463	HAR	PT02	FSAR12	12AA.T / T12AA-201	Editorial/Match STD	Delete the space after "Pump" before "Valve".

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
Chapter 13						
HAR-736	HAR	PT02	FSAR 13	13	Revision to reflect same organizational structure as Levy	Change "New Generation Program and Processes" to "New Generation Programs and Projects" throughout the chapter.
HAR-715	HAR	PT02	FSAR 13	13.01	Revision to reflect same organizational structure as Levy	Revise the first sentence in the third paragraph to read: "This section describes the proposed organizational positions of a nuclear power station and the interface with its owner/applicant corporations including their associated functions and responsibilities."
HAR-716	HAR	PT02	FSAR 13	13.01.01.01	Revision to reflect same organizational structure as Levy	In the second and fourth sentences of the first paragraph revise "Executive Vice President - Corporate Development" to read: Senior Vice President - Corporate Development & Improvement.
HAR-738	HAR	PT02	FSAR 13	13.01.01.01	Editorial	Last sentence of 13.1.1.1 on page 13.1-1, remove the dash between "Vice" and "President" for Vice President – New Generation Programs and Projects.
HAR-717	HAR	PT02	FSAR 13	13.01.01.02.02	Revision to reflect same organizational structure as Levy	In the first sentence of the paragraph add a "," after activities. In the third sentence revise "Executive Vice President - Corporate Development" to read: "Senior Vice President – Corporate Development & Improvement."
HAR-718	HAR	PT02	FSAR 13	13.01.01.03.01.01	Revision to reflect same organizational structure as Levy	In the last sentence of the paragraph revise "Executive Vice President - Corporate Development" to read: "Senior Vice President – Corporate Development & Improvement."
HAR-719	HAR	PT02	FSAR 13	13.01.01.03.01.03	Revision to reflect same organizational structure as Levy	In the subsection heading and the first, second, and third sentences of the paragraph revise "Executive Vice President - Corporate Development" to read: "Senior Vice President – Corporate Development & Improvement."
HAR-720	HAR	PT02	FSAR 13	13.01.01.03.01.04	Revision to reflect same organizational structure as Levy	In the first sentence of the paragraph revise "Executive Vice President - Corporate Development" to read: "Senior Vice President – Corporate Development & Improvement."
HAR-721	HAR	PT02	FSAR 13	13.01.01.03.01.05	Revision to reflect same organizational structure as Levy	In the first sentence of the paragraph revise "Executive Vice President - Corporate Development" to read: "Senior Vice President – Corporate Development & Improvement."
HAR-722	HAR	PT02	FSAR 13	13.01.01.03.01.06	Revision to reflect same organizational structure as Levy	In the first sentence of the paragraph revise "Executive Vice President - Corporate Development" to read: "Senior Vice President – Corporate Development & Improvement."
HAR-464	HAR	PT02	FSAR 13	13.01.02	LMA	Remove LMA STD DEP 1.1-1 to match Vogtle.
HAR-465	HAR	PT02	FSAR 13	13.01.05	LMA	Remove LMA HAR COL 18.6-1 and HAR COL 13.1-1 from references section.
						COLA Part 2, FSAR Chapter 13, Subsection 13.1.5 add the following information before Subsection 13.1.5:
HAR-466	HAR	PT02	FSAR 13	13.01.05	Editorial	"Add the following information after renumbered DCD Subsection 13.1.4:"
HAR-467	HAR	PT02	FSAR 13	13.01.05	Editorial/Match STD	Revise the end of the references 201 and 203 titles to have the commas before the end quotes.
HAR-468	HAR	PT02	FSAR 13	13.01.05	Editorial/Match STD	Revise the end of Reference 202 to have the period before the end quote.
HAR-723	HAR	PT02	FSAR 13	13.01.F / F13.1-203	Revision to reflect same organizational structure as Levy	In the org chart under Progress Energy Inc Chairman and CEO revise the block "Executive Vice President - Corporate Development" to read: "Senior Vice President – Corporate Development & Improvement."
HAR-469	HAR	PT02	FSAR 13	13.02.02	Editorial	COLA Part 2, FSAR Chapter 13, Subsection 13.2.2 add the following information before Subsection 13.2.2:
						"Add the following subsection after DCD Subsection 13.2.1:"
HAR-470	HAR	PT02	FSAR 13	13.03	editorial/Match STD	Add period after "reference" at the end of the second sentence of Section 13.3.
HAR-471	HAR	PT02	FSAR 13	13.04	Editorial/Match STD	Revise sentence to read "...with the following departures and/or supplements."
						COLA Part 2, FSAR Chapter 13, Subsection 13.4.2 add the following information before Subsection 13.4.2:
HAR-472	HAR	PT02	FSAR 13	13.04.02	Editorial	"Add the following subsection after DCD Subsection 13.4.1:"
9305	STD	PT02	FSAR 13	13.04.T / T13.04-201 Item 15	VEGP-VOL-73.55 Impl response to VEGP 13.06 VR2 item 1 SNC Ltr ND-11-0313	1. COLA Part 2, FSAR, Section 13.4, Table 13.4-201, Item 15, Security Program, revised by moving the entry for portions applicable to radioactive material above the line for "Physical Security Program," and revising the portions applicable to radioactive material entry to read: (retain left margin annotation (LMA) of STD COL 13.4-1) Program Title: Physical Protection Program (applicable to protection of special nuclear material prior to the protected area being declared operational) Program Source (Required by): 10 CFR 73.1, 10 CFR 73.67 FSAR Section: 13.5.2.2.8, 13.6 Implementation Milestone: Prior to initial receipt of special nuclear material Implementation Requirement: 10 CFR 73.1(a), 10 CFR 73.67
HAR-483	HAR	PT02	FSAR 13	13.04.T / T13.04-201 Item 16	Errata - conformance with R-COLA	Table 13.4-201, Item 16 – for QA Program – Operation, VEGP states it is effective at COL Issuance, HAR says 30 days after COL issuance or prior to construction start – this is HAR-specific (see Chapter 17, 17.1), and needs a LMA for site-specific. Add LMA HAR COL 13.4-1 and horizontal separator lines before and after item 16.
HAR-473	HAR	PT02	FSAR 13	13.04.T / T13.4-201 Item 08	Editorial/Match STD	Revise "by-product" to "byproduct" to match Vogtle.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-474	HAR	PT02	FSAR 13	13.04.T / T13.4-201 Item 10	Formatting	Change Item 10 dashes "-" to be bullets
HAR-475	HAR	PT02	FSAR 13	13.04.T / T13.4-201 Item 10	Editorial/Match STD	Revise "supervisor" to Supervisor" in the first bullet
HAR-476	HAR	PT02	FSAR 13	13.04.T / T13.4-201 Item 10	Editorial/Match STD	Revise "10 CFR 1406" to "10 CFR 20.1406" to match Vogtle.
HAR-477	HAR	PT02	FSAR 13	13.04.T / T13.4-201 Item 10	Editorial/Match STD	Delete dash before "- Monitoring and Assessment" to revise from " - Effluents and Environmental - Monitoring and Assessment" to " - Effluents and Environmental Monitoring and Assessment"
HAR-478	HAR	PT02	FSAR 13	13.04.T / T13.4-201 Item 11	Editorial/Match STD	Revise "by-product" to "byproduct" to match Vogtle.
HAR-479	HAR	PT02	FSAR 13	13.04.T / T13.4-201 Item 14	Editorial/Match STD	Table 13.4-201, Item 14, add LMA HAR COL 13.4-1 next to first two implementation milestones and requirements for Item 14 and add separator line above first implementation milestone and requirement and below second implementation milestone and requirement. The rest remain STD COL 13.4-1.
HAR-480	HAR	PT02	FSAR 13	13.04.T / T13.4-201 Item 14	Editorial/Match STD	Revise to remove a "." at the end of "fuel" in at the end of middle paragraph to match Vogtle.
HAR-481	HAR	PT02	FSAR 13	13.04.T / T13.4-201 Item 15	Editorial/Match STD	Under Item 15, Security Program, remove "10 CFR 50.34;"
HAR-482	HAR	PT02	FSAR 13	13.04.T / T13.4-201 Item 15	Separator Line	Add separator line underneath the heading row of the table of sheets 7 and 8.
HAR-484	HAR	PT02	FSAR 13	13.04.T / T13.4-201 Item 20	Editorial/Match STD	Add a "." after "App. E" to read "Prior to the conduct of the first full-participation emergency preparedness exercise under 10 CRF Part 50, App. E, Section F.2.a
HAR-485	HAR	PT02	FSAR 13	13.04.T / T13.4-201 Item 20	Editorial/Match STD	Add period after "20", "21", and "22" to match Vogtle.
HAR-487	HAR	PT02	FSAR 13	13.05	Editorial/Match STD	Add period at the end of the last bulleted list item after "10 CFR 73.58" to match Vogtle.
HAR-486	HAR	PT02	FSAR 13	13.05.01	Editorial/Match STD	Move " Fire protection program implementation." to after " A vendor interface program that provides vendor information for safety related components is incorporated into plant documentation."
9306	STD	PT02	FSAR 13	13.05.02.02.08	VEGP-VOL-73.55-Impl response to VEGP 13.06 VR2 item 2 SNC Ltr ND-11-0313	2. COLA Part 2, FSAR, Section 13.5.2.2.8, Security Procedures, revised by adding the following paragraph after the current text in this section (retain LMA of STD COL 13.5-1): The Special Nuclear Material (SNM) Physical Protection Program describes the 10 CFR Part 70 required protection program in effect for the period of time during which new fuel as SNM is received and stored in a controlled access area (CAA), in accordance with the requirements of 10 CFR 73.67.
9760	STD	PT02	FSAR 13	13.05.02.02.08	VEGP-RAH-LTR-065 S1 in response to VEGP 13.06-37 VR1 Item 1 SNC Ltr ND-11-0894	1. COLA Part 2, FSAR, Section 13.5.2.2.8, Security Procedures, revised by inserting the following paragraph at the end of this subsection following the new paragraph that was provided regarding protection of Special Nuclear Material (SNM) prior to 10 CFR 73.55 implementation (retain left margin annotation (LMA) of STD COL 13.5-1): The New Fuel Shipping Plan addresses the applicable 10 CFR 73.67 requirements in the event that unirradiated new fuel assemblies or components are returned to the supplying fuel manufacturer(s) facility.
HAR-488	HAR	PT02	FSAR 13	13.05.03	Errata - conformance with R-COLA	13.5.3, STD COL 13.5-1 – delete "and Subsection 9.1.5.5"
HAR-489	HAR	PT02	FSAR 13	13.05.03	Editorial/Match STD	Revise sentence to read "Information for this COL item is addressed in Section 13.5.
HAR-490	HAR	PT02	FSAR 13	13.06.01	Editorial/Match STD	Revise 13.6.1 to read "COMBINED LICENSE INFORMATION ITEM" and update Table of Contents.
HAR-491	HAR	PT02	FSAR 13	13.06.01	Editorial/Match STD	Revise the first two sentences to be two separate paragraphs
HAR-492	HAR	PT02	FSAR 13	13.06.02	Editorial/Match STD	Add period at the end of Reference 201 and change "Used" to "used" to match Vogtle.
HAR-493	HAR	PT02	FSAR 13	13.07	Editorial/Match STD	In the first sentence revise order of "(FFD) Program" to "Program (FFD)" to match Vogtle.
HAR-494	HAR	PT02	FSAR 13	13.07	Editorial/Match STD	Add comma after "systems" in the first sentence of the second paragraph.
HAR-495	HAR	PT02	FSAR 13	13.07	Errata - conformance with R-COLA	STD SUP 13.7-1, at end of 13.7 – revise to read, "The operations phase FFD program is consistent with the applicable subparts of 10 CFR Part 26 (elements Subpart A – I, N, and O, except for individuals listed in §26.4(b), who are not subject to §§ 26.205 – 209)."
HAR-496	HAR	PT02	FSAR 13	13.07	Errata - conformance with R-COLA	Insert a horizontal separator line following STD SUP 13.7-1
HAR-497	HAR	PT02	FSAR 13	13.07	Consistency with R-COLA	Paragraph before horizontal break line before Section 13.7: Revise to add the term "FSAR" in two places so as get the term "COLA FSAR Subsection"
HAR-498	HAR	PT02	FSAR 13	13.07	Consistency with R-COLA	Bullet beginning "PGN FFD Program personnel.", add the phrase ", and C per licensee's discretion" in the parentheses.
HAR-1056	HAR	PT02	FSAR 13	13.07	Editorial	Bullet beginning "PNG security personnel ..." change "PNG" to "PGN"
HAR-499	HAR	PT02	FSAR 13	13.07.01	Editorial/Match STD	Revise reference 201 to: "Nuclear Energy Institute "Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites," NEI 06-06, Revision 5, August 2009 (ML092430016)."
HAR-737	HAR	PT02	FSAR 13	13AA.01.01.01.02 TOC	Revision to reflect same organizational structure as Levy	Change Executive VP – Corporate Development to Senior VP – Corporate Development and Improvement.
HAR-500	HAR	PT02	FSAR 13	13AA.01.01.01.02.03	Separator Line	Insert separator line at end of section to match Vogtle.
Chapter 14						
HAR-501	HAR	PT02	FSAR14	14.01	Editorial/Match STD	Revise "PRELIMINARY / FINAL" to delete spaces and read "PRELIMINARY/FINAL" and update Table of Contents and Master FSAR Table of Contents to match Vogtle.
HAR-502	HAR	PT02	FSAR14	14.02	Errata - conformance to VEGP R-COLA format and content	Insert a horizontal line divider to separate Section 14.2 and Subsection 14.2.1

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-503	HAR	PT02	FSAR14	14.02.01	Editorial/Match STD	Revise "text" in first sentence to "Subsection" to match Vogtle.
HAR-504	HAR	PT02	FSAR14	14.02.01	Editorial/Match STD	Revise "(ITP)" to "(ITP)" in second paragraph to match Vogtle.
HAR-505	HAR	PT02	FSAR14	14.02.01.04	Editorial/Match STD	Revise "add the following text at the end of DCD Subsection 14.2.1.3:" to read "Add the following Subsections after DCD Subsection 14.2.1.3" to match Vogtle.
HAR-506	HAR	PT02	FSAR14	14.02.01.05	Errata - conformance to VEGP R-COLA format and content	Delete redundant LMA "STD COL 14.4-3" to match Vogtle.
HAR-507	HAR	PT02	FSAR14	14.02.02.01.05	Consistency with R-COLA	Make the first 2 sentences in the same paragraph. Does not need to be 2 paragraphs.
HAR-508	HAR	PT02	FSAR14	14.02.02.02	Editorial/Match STD	Revise the third paragraph to delete space after "program" such that it reads "The training program/procedures shall include:" to match Vogtle.
HAR-509	HAR	PT02	FSAR14	14.02.02.03	Errata - conformance to VEGP R-COLA format and content	Remove underlining for Joint Test Work Group in the first line of the first paragraph
HAR-510	HAR	PT02	FSAR14	14.02.02.03	Editorial/Match STD	Under "Site Startup Test Group" revise second sentence to read "The primary interfaces for this group are the Licensee's Operations Group and Technical Support organizations, as well as the Westinghouse Engineering Organization, Preoperational Testing Team and the..."
HAR-511	HAR	PT02	FSAR14	14.02.02.04	Editorial/Match STD	Revise first sentence to end with a colon to match Vogtle.
HAR-512	HAR	PT02	FSAR14	14.02.02.04	Errata - conformance to VEGP R-COLA format and content	In the first and seventh paragraph, remove underlining for Site Construction Group
HAR-712	HAR	PT02	FSAR14	14.02.02.05	Errata - conformance to VEGP R-COLA format and content	Remove underlining for the Site Prooperational Test Group in the first and second paragraph.
HAR-513	HAR	PT02	FSAR14	14.02.02.06	Errata - conformance to VEGP R-COLA format and content	Remove underlining for Site Startup Test Group in the first and second paragraphs
HAR-514	HAR	PT02	FSAR14	14.02.03.01	Editorial/Match STD	Revise "Add the following text and subsection at the end of DCD..." to read "Add the following text and Subsection at the end of DCD..."
HAR-515	HAR	PT02	FSAR14	14.02.03.01.02	Separator Line	Add a horizontal separator line prior to 14.2.3.1.2.
HAR-516	HAR	PT02	FSAR14	14.02.03.01.03	Separator Line	Add a horizontal separator line prior to 14.2.3.1.3.
HAR-517	HAR	PT02	FSAR14	14.02.03.01.04	Separator Line	Add a horizontal separator line prior to 14.2.3.1.4.
HAR-518	HAR	PT02	FSAR14	14.02.03.01.04	Editorial/Match STD	Revise the next to the last sentence to add "(and)" around "g" read "...NRC issuance of the 10 CFR 52.103(g) finding are..."
HAR-519	HAR	PT02	FSAR14	14.02.03.01.05	Separator Line	Add a horizontal separator line prior to 14.2.3.1.5.
HAR-520	HAR	PT02	FSAR14	14.02.03.01.05	Editorial/Match STD	Revise the first "post-maintenance" to read "postmaintenance"
HAR-521	HAR	PT02	FSAR14	14.02.03.02	Editorial/Match STD	Revise "Add the following subsections..." to read "Add the following Subsections..."
HAR-522	HAR	PT02	FSAR14	14.02.03.02	LMA Placement	Revise LMA STD COL 14.4-4 to be adjacent to 14.2.3.2.1 Review and Approval Responsibilities
HAR-523	HAR	PT02	FSAR14	14.02.03.02.01	Revision to reflect the replacement of the generic title of plant manager with the Harris-specific title of VP-Harris Nuclear Plant	For the third paragraph of this subsection, insert horizontal separator lines above and below the paragraph, and add a LMA of HAR COL 14.4-4.
HAR-524	HAR	PT02	FSAR14	14.02.03.02.01	Editorial/Match STD	In addition, add a LMA of STD COL 14.4-4 starting with the text of the fourth paragraph of this section
HAR-525	HAR	PT02	FSAR14	14.02.03.02.01	Editorial/Match STD	In the third paragraph after the bulleted list revise "Plant Manager" to "plant manager" to match Vogtle.
HAR-526	HAR	PT02	FSAR14	14.02.03.03	Editorial/Match STD	In the last sentence of the third paragraph after the bulleted list revise "test" to "Test" in the RG title to match Vogtle.
HAR-527	HAR	PT02	FSAR14	14.02.03.03.01	Editorial/Match STD	Revise the first sentence to make subsections singular: "Add the following subsection..." to match Vogtle.
						Revise 3) to read "90 days after start of commercial operations..."
						Delete heading 14.2.5 and separator line under it and replace it the following text such that it reads: "
						Add the following subsections after DCD Subsection 14.2.5: Utilization of Operating Experience
HAR-528	HAR	PT02	FSAR14	14.02.05	Editorial/Match STD	Administrative procedures ..." to match Vogtle.
HAR-529	HAR	PT02	FSAR14	14.02.05.01	Editorial/Match STD	Revise "Use of OE during Test Procedure Preparation" to read "Use of OE During Test Procedure Preparation" and update the Table of Contents to match Vogtle.
HAR-530	HAR	PT02	FSAR14	14.02.05.03	Editorial/Match STD	Revise first bullet, middle sentence to read "...steps to conduct termination is conducted in a safe and orderly manner."
HAR-531	HAR	PT02	FSAR14	14.02.06	Editorial/Match STD	Revise "Add the following text and subsection at the end of..." to read "Add the following text and Subsection to the end of..."
HAR-532	HAR	PT02	FSAR14	14.02.06.01	Editorial/Match STD	In the last line of the first paragraph, change "off-normal" to "offnormal"
HAR-533	HAR	PT02	FSAR14	14.02.08	Editorial/Match STD	In the last bullet of the second list revise "SSC" to "SSCs" to match Vogtle.
HAR-534	HAR	PT02	FSAR14	14.02.09	Editorial/Match STD	Revise the first sentence to delete the colon at the end of the sentence to match Vogtle.
HAR-535	HAR	PT02	FSAR14	14.02.09	Editorial/Match STD	Revise the third bullet to add space after "operability" such that it remains on the previous line to match Vogtle.
HAR-536	HAR	PT02	FSAR14	14.02.09.02.22	Editorial/Match STD	Revise the last sentence under the subheading Purpose from "Subsections" to "subsections" to match Vogtle.
HAR-537	HAR	PT02	FSAR14	14.02.09.02.22	Editorial/Match STD	Revise the last sentence under the subheading General Test Methods and Acceptance Criteria from "Subsection" to "subsection" to match Vogtle.
HAR-538	HAR	PT02	FSAR14	14.02.09.02.22	Editorial/Match STD	Revise the first bullet under item c) to "Hot leg temperature" to match Vogtle.
HAR-539	HAR	PT02	FSAR14	14.02.09.02.22	Editorial/Match STD	Add a period at the end of the last bullet under item c) to match Vogtle.
HAR-540	HAR	PT02	FSAR14	14.02.09.04.23	Editorial/Match STD	Revise the heading "Off-Site AC Power Systems" to read "Off-site AC Power Systems" to match Vogtle and update the Table of Contents.
HAR-541	HAR	PT02	FSAR14	14.02.09.04.23	Editorial/Match STD	Revise j. to read "Proper operation and load carrying capability of breakers, switchgear, transformers, and cables, and verification of these items by a non-testing means such as a QC nameplate check of as built equipment where testing would not be practical or feasible." to match Vogtle.
HAR-542	HAR	PT02	FSAR14	14.02.10.04.29	Editorial/Match STD	Delete extra paragraph spacing before heading 14.2.10.4.29 to match Vogtle.
HAR-543	HAR	PT02	FSAR14	14.02.10.04.29	Separator Line	Add Line Separator at the end of the section to match Vogtle.
HAR-680	HAR	PT02	FSAR14	14.03.02.03	LMA	Revise LMA from HAR SUP 14.3-1 to STD SUP 14.3-1.
HAR-544	HAR	PT02	FSAR14	14.03.02.03	Editorial/Match STD	Revise design commitment heading "Inspections, Tests, Analyses" to read "Inspection, Tests, Analyses"
HAR-681	HAR	PT02	FSAR14	14.03.02.03	Editorial/Match STD	Remove text after Selection Criteria ". The following are considered when determining what information is included in the SS-ITAC."

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-545	HAR	PT02	FSAR14	14.03.02.03.02	Separator Line	Insert Separator Line before 14.3.2.3.2 and delete the separator line after 14.3.2.3.2 heading
HAR-706	HAR	PT02	FSAR 14	14.03.02.03.03	Editorial/Match STD	Revise paragraph to read: "One additional site-specific system has been determined to meet the ITAAC selection criteria, and ITAAC have been included for the Transmission Switchyard and Offsite Power System (ZBS) as indicated in Table 14.3-201. Systems not meeting the selection criteria are subject to the normal functional testing to verify that newly designed and installed systems, structures, or components perform as designed." to match Vogtle.
HAR-682	HAR	PT02	FSAR14	14.03.02.03.03	LMA	Revise LMA from HAR SUP 14.3-2 to HAR SUP 14.3-1.
HAR-546	HAR	PT02	FSAR14	14.03.03	Editorial/Match STD	Revise heading to add comma after "3.0" to match Vogtle and update the Table of Contents.
HAR-683	HAR	PT02	FSAR14	14.03.03.01	LMA	Revise LMA from HAR SUP 14.3-3 to HAR COL 2.5-17.
HAR-684	HAR	PT02	FSAR14	14.03.03.02	LMA	Revise LMA from HAR SUP 14.3-4 to HAR SUP 14.3-2.
HAR-547	HAR	PT02	FSAR14	14.03.03.03	Editorial/Match STD	In the last sentence of the first paragraph add comma after "structures" to match Vogtle.
HAR-548	HAR	PT02	FSAR14	14.03.03.03	Editorial/Match STD	In the second paragraph revise "resistant" to "restraint" to match Vogtle.
HAR-549	HAR	PT02	FSAR14	14.03.03.03	Editorial/Match STD	In the last sentence of the second paragraph revise "and" to "or" to match Vogtle.
HAR-550	HAR	PT02	FSAR14	14.03.03.03	Editorial/Match STD	In the last sentence of the third paragraph revise "on" to "one" inside the quotes to match Vogtle.
HAR-685	HAR	PT02	FSAR14	14.03.T / T14.3-201	LMA	Revise LMA from HAR SUP 14.3-2 to HAR SUP 14.3-1.
HAR-551	HAR	PT02	FSAR14	14.04.05	Editorial/Match STD	Add STD COL 14.4-5 for this paragraph, in addition to HAR COL 14.4-5 already listed.
HAR-735	HAR	PT02	FSAR 14	14.04.06	Editorial/Match STD	Insert Separator Line after 14.04.06 and before paragraph
HAR-552	HAR	PT02	FSAR14	APP. 14A	Editorial/Match STD	Revise Appendix 14A heading to "DESIGN ACCEPTANCE CRITERIA/ITAAC CLOSURE PROCESS" to delete spaces around "/" to match Vogtle and update the Table of Contents and the Master FSAR Table of Contents.
Chapter 15						
HAR-707	HAR	PT02	FSAR 15	15.00.03.02	LMA Placement	Revise LMA to be adjacent to "The plant operating instrumentation selected..."
9253	STD	PT02	FSAR15	15.00.03.02	VEGP-VOL-CH 15 ACRS response to OI 15.00-001 SNC Ltr ND-11-0253	COLA Part 2, FSAR Chapter 15, Subsection 15.0.3.2, revised to read: The plant operating instrumentation selected for feedwater flow measurement is a Caldon [Cameron] LEFM CheckPlus System (Reference 201), which will be calibrated (in a certified laboratory using a piping configuration representative of the plant piping design) prior to installation and will be tested after installation in the plant in accordance with the LEFM CheckPlus commissioning procedure. This selected plant operating instrumentation has documented instrumentation uncertainties to calculate a power calorimetric uncertainty that confirms the 1% uncertainty assumed for the initial reactor power in the safety analysis bounds the calculated calorimetric power uncertainty values. The calculated calorimetric is done in accordance with a previously accepted Westinghouse methodology (Reference 202). Administrative controls implement maintenance and contingency activities related to the power calorimetric instrumentation.
9303	STD	PT02	FSAR15	15.00.03.02	Editorial revision to VEGP-VOL-CH 15 ACRS response to OI 15.00-001 SNC Ltr ND-11-0253	COLA Part 2, FSAR Chapter 15, Subsection 15.0.3.2, revised to include "with" to read: The plant operating instrumentation selected for feedwater flow measurement is a Caldon [Cameron] LEFM CheckPlus System (Reference 201), which will be calibrated (in a certified laboratory using a piping configuration representative of the plant piping design) prior to installation and will be tested after installation in the plant in accordance with the LEFM CheckPlus commissioning procedure.
HAR-553	HAR	PT02	FSAR15	15.00.03.02	errata - conformance to R-COLA	COLA Part 2, FSAR Chapter 15, Subsection 15.0.3.2, revised to change "Reference 201" in the first sentence from black type to red type.
HAR-554	HAR	PT02	FSAR15	15.00.15	errata - conformance to R-COLA	Align LMA for STD COL 15.0-1 to be adjacent to "This COL item is addressed in..." for consistency with R-COLA.
HAR-555	HAR	PT02	FSAR15	15.00.16	Separator Line	Insert separator line after Reference 202.
HAR-556	HAR	PT02	FSAR15	15.00.16	Editorial/Match STD	In Reference 201, Revise the "" after August 16, 2010 to be a ""
HAR-557	HAR	PT02	FSAR15	15.06.05.03.07.03	errata - conformance to R-COLA	Align LMA for HAR COL 2.3-4 to paragraph consistent with R-COLA
HAR-558	HAR	PT02	FSAR15	15.07.06	Separator Line	Insert separator line after "15.7.6 COMBINED LICENSE INFORMATION" to match Vogtle.
Chapter 16						
HAR-559	HAR	PT02	FSAR16	16.01	Errata - conformance to R-COLA	Section 16.1, last line, change "...Part 4 of this COL application." to "...Part 4 of the COL application."
HAR-703	HAR	PT02	FSAR16	16.01	Editorial - conformance to R-COLA	Last sentence under 16.1 TECHNICAL SPECIFICATIONS: "Part 4" does not fall on the same line as the Vogtle Reference COLA. Maintain "Part 4" on one line.
Chapter 17						

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
						Editorial changes were made to the following references: Section 17.8, revise References 203, 204, and 205 from: 203. Sargent & Lundy (S&L) LLC, Nuclear Quality Assurance Program, Topical Report SL-TR-1A. 204. WorleyParsons Resources & Energy, Nuclear Quality Manual, NQM-01. 205. CH2M HILL Quality Assurance Program, Nuclear Business Group Quality Manual NBG-QA-02-00. To read: 203. Sargent & Lundy LLC, Nuclear Quality Assurance Program, Topical Report SL-TR-1A. 204. WorleyParsons Resources & Energy, NUCLEAR QUALITY MANUAL, QMP-7008. 205. CH2M HILL Quality Assurance Program, Nuclear Business Group Quality Manual NU-S02-QUALITY-M.
HAR-689	HAR	PT02	FSAR17	17.0 (all)	Editorial	For Reference 206 change the date from "July 2009" to "August 2010"
HAR-1039	HAR	PT02	FSAR17	17.01	Editorial/Match STD	Insert "Replace the information in DCD Section 17.1 with the following information." after the first separator line.
HAR-1059	HAR	PT02	FSAR17	17.01	Changes to allow early implementation of QAPD	FSAR Section 17.1, 2nd paragraph: Add "(HAR)" at the end of the first sentence. FSAR Section 17.1, 3rd paragraph: Change the beginning of the first sentence from: Effective during the COL application development through COL issuance, To read: During the COL application phase,
HAR-1060	HAR	PT02	FSAR17	17.01	Changes to allow early implementation of QAPD	FSAR 17.1, add a new paragraph after the current 3rd paragraph that reads: The Quality Assurance Program Description (QAPD) discussed in Section 17.5 is NGGM-PM-0033, Progress Energy New Nuclear Plant Development Quality Assurance Program Description Topical Report. This is the same document submitted for all Progress Energy COL applications and is intended to be applied to all docket numbers identified in the document. This QAPD will become effective following approval of a Progress Energy COL application. With respect to the approved COL, the QAPD will be implemented within 30 days following issuance, or prior to the initiation of quality related activities following COL issuance, whichever is later. With respect to the remaining COLA, the QAPD may be implemented for COLA development and approval activities as early as QAPD approval. However, the QAPD will be implemented no later than 30 days following issuance of the applicable COL, or prior to the initiation of quality related activities following COL issuance, whichever is later.
HAR-1061	HAR	PT02	FSAR17	17.01	Changes to allow early implementation of QAPD	FSAR 17.1, 5th paragraph: Add the following phrase at the end of the first sentence: or the QAPD described in Section 17.5, depending on when these activities are performed.
HAR-1062	HAR	PT02	FSAR17	17.01	Changes to allow early implementation of QAPD	FSAR Section 17.1, last paragraph: Replace the first sentence with the following: The Progress Energy Quality Assurance Program Description Topical Report (NGGM-PM-0033) discussed in Section 17.5 and provided in Part 11 of the COLA will be implemented for HAR 2 and 3 no later than thirty days following the issuance of the HAR 2 and 3 COL, or prior to the initiation of quality related activities following COL issuance, whichever is later.
HAR-1063	HAR	PT02	FSAR17	17.01	Changes to allow early implementation of QAPD	Errata - conformance to R-COLA
HAR-560	HAR	PT02	FSAR17	17.04	Errata - conformance to R-COLA	VEGP has a horizontal separator line above and below text adjacent to "STD SUP 17.4-1". Add these separator lines to HAR.
HAR-561	HAR	PT02	FSAR17	17.05	Editorial/Match STD	Move the last sentence of the first paragraph to be the new second sentence, replacing the current second sentence. The second sentence should then read: "This QAPD is incorporated by reference (see Table 1.6-201)."
HAR-562	HAR	PT02	FSAR17	17.05	Editorial/Match STD	Near the end of the first paragraph, remove the comma after "Description" and before "(Reference 206)".
HAR-563	HAR	PT02	FSAR17	17.06	Separator Line	Add separator line after 17.6 MAINTENANCE RULE PROGRAM.
HAR-564	HAR	PT02	FSAR17	17.06	LMA	Vogtle has two STD LMAs for the first paragraph while Harris only has one. Add STD SUP 17.6-1 to first paragraph. Additionally, the LMA placement revised to align with the beginning of the first paragraph.
HAR-565	HAR	PT02	FSAR17	17.08	Editorial/Match STD	At the end of Reference 207 add date such that it reads "... Revision 0, March 2008."
Chapter 18						
HAR-566	HAR	PT02	FSAR18	18.02.01.03	Editorial/Match STD	Revise the first word of Subsection 18.2.1.3 from "Insert" to "Add".
HAR-567	HAR	PT02	FSAR18	18.06.02	Editorial/Match STD	The quote at the end of the title of Reference 202 revised to an end quote.
HAR-568	HAR	PT02	FSAR18	18.06	Editorial/Match STD	In the last paragraph of Section 18.6 before heading 18.6.1 delete the first instance of "the" in the title of WCAP-14694. Following Subsection 18.6.2, add the following statement: "Add the following information at the end of DCD Subsection 18.6.2:"
HAR-569	HAR	PT02	FSAR18	18.06.02	Editorial	"Add the following information at the end of DCD Subsection 18.6.2:"
HAR-570	HAR	PT02	FSAR18	18.1	Editorial/Match STD	Revise "Subsection" to "subsection"
HAR-571	HAR	PT02	FSAR18	18.14	Editorial/Match STD	Revise the second to last paragraph of Section 18.14 to add "of" after "implementation".
Chapter 19						

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

[illegible]

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-699	HAR	PT03	ER02	02.02.F / F2.2-3	401/404 environmental permit consistency Item	Transmission lines have been revised.
HAR-590	HAR	PT03	ER02	02.03	401/404 environmental permit consistency Item 1	Paragraph on Page 2-17 identifies the intake channel in the Cape Fear River as part of the makeup water system. The channel has been replaced with an intake structure.
HAR-1219	HAR	PT03	ER02	02.03	Editorial	Replaced reference with correct one - 2.3-049
					NPD-NRC-2011-071, H-0646 response, ER Item 1	Subsection 2.3.1.2.1.1, "Dam and Appurtenance," revise the last sentence of the second paragraph: The proposed spillway design.....crest at 67.1 m (220 ft.) NGVD29. To read: The proposed spillway design for the Main Dam includes raising Main Dam ogee spillway crest from elevation 67.1 m (220 ft.) NGVD29 to elevation 73.2 m (240 ft.) NGVD29 and providing an emergency spillway with a crest elevation of 74.3 m (243.7 ft.) NGVD29 and a crest length of 172.2 m (565 ft.).
HAR-601	HAR	PT03	ER02	02.03.01.02.01.01	Editorial	Revise he stormwater drainage information for consistency.
HAR-1242	HAR	PT03	ER02	02.03.02.03.02		
HAR-591	HAR	PT03	ER02	2.03.02.01	401/404 environmental permit consistency Item 2	Paragraph identifies the makeup water system to include an intake channel. The intake channel has been replaced with an intake structure.
HAR-1011	HAR	PT03	ER02	02.03.F / F2.3-34	401/404 environmental permit consistency Item	Makeup pipeline route has been revised.
HAR-1012	HAR	PT03	ER02	02.03.F / F2.3-35	401/404 environmental permit consistency Item	Plant layout has been revised.
HAR-700	HAR	PT03	ER02	02.03.F / F2.3-2	401/404 environmental permit consistency Item	Plant layout, blowdown have been revised.
HAR-592	HAR	PT03	ER02	02.03.F / F2.3-2	401/404 environmental permit consistency Item 5B	The figure also shows the alignment of the U2/U3 blowdown pipeline alignment. The pipeline alignment has been revised.
HAR-1000	HAR	PT03	ER02	02.03.F / F2.3-3	401/404 environmental permit consistency Item	The makeup water pipeline corridor needs to be revised.
HAR-593	HAR	PT03	ER02	02.03.F / F2.3-3	401/404 environmental permit consistency Item 5C	The figure also shows the alignment of the U2/U3 blowdown pipeline alignment. The pipeline alignment has been revised.
HAR-594	HAR	PT03	ER02	02.03.F / F2.3-13	401/404 environmental permit consistency Item 6A	The figure shows the makeup water pump house and makeup water pipeline alignment. The pipeline alignment has been revised.
HAR-595	HAR	PT03	ER02	02.03.F / F2.3-15	401/404 environmental permit consistency Item 6B	The figure shows the makeup and blowdown water pipeline alignments. These pipeline alignments have been revised.
HAR-596	HAR	PT03	ER02	02.03.F / F2.3-16	401/404 environmental permit consistency Item 6C	The figure shows the makeup and blowdown water pipeline alignments. These pipeline alignments have been revised.
HAR-1001	HAR	PT03	ER02	02.03.F / F2.3-17	401/404 environmental permit consistency Item	Plant layout has been revised.
HAR-1002	HAR	PT03	ER02	02.03.F / F2.3-21	401/404 environmental permit consistency Item	Plant layout has been revised.
HAR-1003	HAR	PT03	ER02	02.03.F / F2.3-22	401/404 environmental permit consistency Item	Plant layout has been revised.
HAR-1004	HAR	PT03	ER02	02.03.F / F2.3-23	401/404 environmental permit consistency Item	Plant layout has been revised.
HAR-1005	HAR	PT03	ER02	02.03.F / F2.3-24	401/404 environmental permit consistency Item	Plant layout has been revised.
HAR-1006	HAR	PT03	ER02	02.03.F / F2.3-25	401/404 environmental permit consistency Item	Plant layout has been revised.
HAR-1007	HAR	PT03	ER02	02.03.F / F2.3-26	401/404 environmental permit consistency Item	Plant layout has been revised.
HAR-1008	HAR	PT03	ER02	02.03.F / F2.3-27	401/404 environmental permit consistency Item	Plant layout has been revised.
HAR-1009	HAR	PT03	ER02	02.03.F / F2.3-28	401/404 environmental permit consistency Item	Plant layout has been revised.
HAR-1010	HAR	PT03	ER02	02.03.F / F2.3-29	401/404 environmental permit consistency Item	The figure revised to include latest revisions of GA, grading and drainage and temporary construction facilities drawings.
HAR-597	HAR	PT03	ER02	02.04.01.03	401/404 environmental permit consistency Item 3	Paragraph identifies the intake structure to be installed immediately upstream of the Buckhorn Dam with a reference to Figure 2.4-5. The intake structure has been located farther upstream of the dam.
HAR-1013	HAR	PT03	ER02	02.04.01.04	401/404 environmental permit consistency Item	Paragraph on page 2-282 describes the lake makeup water system corridor and references Figure 2.4-6. Description revised based on latest ESS figures.
HAR-941	HAR	PT03	ER02	02.04.01.05	Editorial	Modify 2nd sentence of 1st paragraph such that it reads "These seven transmission line, along with an eighth planned line, will also connect HAR 2 through the HNP common expanded switchyard to the PEC electrical grid".
HAR-947	HAR	PT03	ER02	02.04.02.01	Editorial for consistency in ER	Surface area of main reservoir and aux different than rest of ER; check references; surface area of main reservoir should be 1460 ha (3610 ac.); aux should be 146 ha (360 ac.)
HAR-943	HAR	PT03	ER02	02.04.02.01.02	Editorial	Remove "most recent" from 3 locations in this section: (1) 1st sentence should end with "agency's 2004 Basinwide Assessment Report", (2) "most recently" should be removed from 2nd sentence, and (3) last sentence of 2nd paragraph should begin "The 2004 monitoring report confirms..."
HAR-1118	HAR	PT03	ER02	02.04.02.02	401/404 environmental permit consistency Item	Add sentence to end of 1st paragraph that reads "Wetland types were determined based on field observations."
HAR-1119	HAR	PT03	ER02	02.04.02.02	401/404 environmental permit consistency Item	2nd paragraph reference changed (referenced initial biological report and not reports listing JDs). Reference should be 2.4-040.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-1120	HAR	PT03	ER02	02.04.02.02	401/404 environmental permit consistency item	Last sentence of 2nd paragraph should read "Approximately 82 ha (204 ac.) of wetlands occurring outside the current reservoir fringe would be inundated by increasing the pool level to 73.2 m (240 ft)."
HAR-1121	HAR	PT03	ER02	02.04.02.02	401/404 environmental permit consistency item	Change 9th paragraph to reflect the actual JD wetlands. This paragraph should read "In the area between the 67- and 73.2-m (220- and 240-ft.) contours surrounding Harris Reservoir, a total of 77 ha (190 ac.) of forested and herbaceous wetlands were determine to exist by the jurisdictional delineations (Reference 2.4-040)."
HAR-1122	HAR	PT03	ER02	02.04.02.04.01	401/404 environmental permit consistency item	Change beginning of 2nd paragraph to read "The ROW crosses 5 streams and contains two wetlands. Three of these streams are perennial, two are intermittent, and one has perennial and intermittent sections (Table 2.4-12). The stream lengths included in Table 2.4-12 are the length of the streams delineated in the field and therefore bound the potential impacts of the waterline. The actual impacts will be less than those included in Table 2.4-12. In addition, the ROW crosses two additional streams that will be flooded when the elevation of Harris Lake is raised." Continue on with remaining information on the wetlands.
HAR-1123	HAR	PT03	ER02	02.04.02.04.01	401/404 environmental permit consistency item	Add the following to end of 2nd paragraph. "In addition, the ROW contains one other herbaceous wetland that will be flooded when the elevation of Harris Lake is raised."
HAR-598	HAR	PT03	ER02	02.04.F / F2.4-4	NPD-NRC-2011-070, H-0661 response	Figure 2.4-4, Significant Natural Areas revised as shown in Attachment 3.1-1H to NPD-NRC-2011-070 (H-0661).
HAR-599	HAR	PT03	ER02	02.04.F / F2.4-5	401/404 environmental permit consistency item 7	The figure shows the location of the makeup water intake structure and pipeline alignment. The intake structure location has been moved and the pipeline alignment has been revised.
HAR-600	HAR	PT03	ER02	02.04.F / F2.4-6	401/404 environmental permit consistency item 8	The figure shows the makeup water pipeline alignment. The pipeline alignment has been revised.
HAR-1014	HAR	PT03	ER02	02.04.F / F2.4-7	401/404 environmental permit consistency item	Transmission lines have been revised.
HAR-1015	HAR	PT03	ER02	02.05.02.08	401/404 environmental permit consistency item	Section on page 2-364 discusses the road impacts and the plant access road. This subsection revised based on the ESS figures for access road and figures for road modifications.
HAR-1128	HAR	PT03	ER02	02.07.04.01.07	Editorial	2nd paragraph - this is approximately 99 percent increase in surface area and not 72 percent
HAR-1016	HAR	PT03	ER02	02.07.F / F2.7-24	401/404 environmental permit consistency item	Plant layout has been revised.
HAR-1220	HAR	PT03	ER02	02.08.01	Editorial	remove reference to 2011 for planned transmission line
HAR-1203	HAR	PT03	ER02	02.08.02	401/404 environmental permit consistency item	Section 02.08.02 discusses the proposed road and highways impacts and improvements as well as the plant access road. This subsection revised based on the ESS figures and 404 permit for access road and figures for road modifications.
HAR-1200	HAR	PT03	ER03	03.00	401/404 environmental permit consistency item	Following new reference added: Sargent & Lundy, LLC, "Lake Makeup Water Intake and Pumphouse – Study of Alternatives," Report No. HAG-XK01-GER-005, REV 0, June 22, 2011.
HAR-1110	HAR	PT03	ER03	03.01.04.01	401/404 environmental permit consistency item	Remove all references to intake channel; include short description of proposed intake structure based on S&L document, if appropriate
HAR-1111	HAR	PT03	ER03	03.01.04.01	401/404 environmental permit consistency item	Remove "immediately" from 2nd sentence of the 5th paragraph such that sentence reads "The intake structure will be constructed upstream of the Buckhorn Dam within the Cape Fear River main channel. Ensure figure updated to show new location of intake structure."
HAR-1017	HAR	PT03	ER03	03.01.F / F3.1-3	401/404 environmental permit consistency item	Plant layout has been revised.
HAR-1018	HAR	PT03	ER03	03.01.F / F3.1-4	401/404 environmental permit consistency item	Plant layout has been revised.
HAR-1112	HAR	PT03	ER03	03.02.06.02	401/404 environmental permit consistency item	Remove all references to intake channel; include short description of proposed intake structure based on S&L document, if appropriate
HAR-1113	HAR	PT03	ER03	03.02.06.02	401/404 environmental permit consistency item	Remove "immediately" from 2nd sentence of 5th paragraph such that sentence reads "The intake structure will be constructed upstream of the Buckhorn Dam within the Cape Fear River main channel. Ensure figure updated to show new location of intake structure."
HAR-1114	HAR	PT03	ER03	03.03	401/404 environmental permit consistency item	Remove all references to intake channel; include short description of proposed intake structure based on S&L document, if appropriate
HAR-1115	HAR	PT03	ER03	03.03	401/404 environmental permit consistency item	Remove "immediately" from 2nd sentence of 5th paragraph such that sentence reads "The intake structure will be constructed upstream of the Buckhorn Dam within the Cape Fear River main channel. Ensure figure updated to show new location of intake structure."
HAR-1103	HAR	PT03	ER03	03.04.01.01	401/404 environmental permit consistency item	Remove all references to intake channel; include short description of proposed intake structure based on S&L document
HAR-1116	HAR	PT03	ER03	03.04.01.01	401/404 environmental permit consistency item	Remove "immediately" from 2nd sentence of 8th paragraph such that sentence reads "The intake structure will be constructed upstream of the Buckhorn Dam within the Cape Fear River main channel. Ensure figure updated to show new location of intake structure."
HAR-1104	HAR	PT03	ER03	03.04.02.01.01.06	401/404 environmental permit consistency item	Remove reference to intake channel in 3rd paragraph, 4th paragraph, and 6th paragraph; location of intake structure in 5th paragraph; provide information in section on intake structure based on S&L report. Add reference to S&L report
HAR-1117	HAR	PT03	ER03	03.04.02.01.01.06	401/404 environmental permit consistency item	Remove "immediately" from 2nd sentence of 5th paragraph such that sentence reads "The intake structure will be constructed upstream of the Buckhorn Dam within the Cape Fear River main channel. Ensure figure updated to show new location of intake structure."
HAR-1131	HAR	PT03	ER03	03.07.01.01	Editorial	Remove "for 2011" from 2nd sentence of 3rd paragraph.
HAR-1132	HAR	PT03	ER03	03.07.01.01	Editorial	Remove "in 2011" from 2nd sentence of 4th paragraph.
HAR-1019	HAR	PT03	ER03	03.07.F / F3.7-1	401/404 environmental permit consistency item	Transmission lines have been revised.
HAR-1020	HAR	PT03	ER03	03.07.F / F3.7-2	401/404 environmental permit consistency item	Transmission lines have been revised.
HAR-1021	HAR	PT03	ER03	03.07.F / F3.7-3	401/404 environmental permit consistency item	Transmission lines have been revised.
HAR-602	HAR	PT03	ER04	04.00	NPD-NRC-2011-071, H-0645 response, ER item 2	Section 4.0, Environmental Impact of Construction, second set of bullets, last sentence in the second to last bullet: The proposed spillway design for the Main Dam crest at 67.1 m (220 ft.) NGVD29. revised to read as follows: The proposed spillway design for the Main Dam includes raising Main Dam ogee spillway crest from elevation 67.1 m (220 ft.) NGVD29 to elevation 73.2 m (240 ft.) NGVD29 and providing an emergency spillway with a 172.2 m (565 ft.) long crest at elevation 74.3 m (243.7 ft.) NGVD29.
HAR-1022	HAR	PT03	ER04	04.00.F / F4.0-01	401/404 environmental permit consistency item	The figure revised to include latest revisions of makeup water pipeline and blowdown pipeline.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-1023	HAR	PT03	ER04	04.00.F / F4.0-02	401/404 environmental permit consistency item	The figure revised to include latest revisions of GA drawing and temporary construction facilities drawing.
HAR-1024	HAR	PT03	ER04	04.00.F / F4.0-03	401/404 environmental permit consistency item	The figure revised to include latest revisions of GA drawing and temporary construction facilities drawing.
HAR-1025	HAR	PT03	ER04	04.00.F / F4.0-04	401/404 environmental permit consistency item	The figure revised to show latest revisions of makeup water pipeline.
HAR-1026	HAR	PT03	ER04	04.00.F / F4.0-05	401/404 environmental permit consistency item	The figure revised to show latest revisions of intake structure and makeup water pipeline.
HAR-603	HAR	PT03	ER04	04.00.F / F4.0-10	NPD-NRC-2011-070, H-0661 response	Figure 4.0-10, HAR Blowdown Pipeline revised as shown in Attachment 3.1-1B to NPD-NRC-2011-070 (H-0661).
HAR-604	HAR	PT03	ER04	04.00.F / F4.0-10	401/404 environmental permit consistency item 12	The figure shows the alignment of the U2/U3 makeup water and blowdown pipeline alignments. The pipeline alignment has been revised.
HAR-1027	HAR	PT03	ER04	04.00.F / F4.0-11	401/404 environmental permit consistency item	The figure revised to include latest access road alignment, revisions of GA drawing and temporary construction facilities drawing.
HAR-903	HAR	PT03	ER04	04.01.01.01	Consistency with NPD-NRC-2011-070, RAI 3.1-1	Revise construction disturbance estimates per RAI 3.1-1; need language on why permanent are over-estimated; can also state known permanent impacts from cooling towers and reactors
HAR-904	HAR	PT03	ER04	04.01.01.01.01	401/404 environmental permit consistency item 2	Change Intake Channel to Intake structure
HAR-948	HAR	PT03	ER04	04.01.01.04	NPD-NRC-2011-070; RAI 3.1-1	Need to show 313.5 ac plus 116.1 ac as total impacts to 2nd paragraph; need language on why these overestimated; can also say what permanent impacts are from cooling towers and reactors
HAR-907	HAR	PT03	ER04	04.01.02.05	401/404 environmental permit consistency item 2	Change Intake Channel to Intake structure
HAR-1126	HAR	PT03	ER04	04.01.02.05	401/404 environmental permit consistency item	Change 5th paragraph to read the ROW would cross 5 streams and contains two wetlands (Table 2.4-12). In addition, the ROW crosses two additional streams and one wetland that will be flooded when the elevation of Harris Lake is raised (Reference 4.1-32).
HAR-1243	HAR	PT03	ER04	04.02.01.06	Editorial	Revise stormwater drainage ditch information for consistency.
HAR-909	HAR	PT03	ER04	04.03.01.01	Consistency with NPD-NRC-2011-070, RAI 3.1-1	Revise construction disturbance estimates per RAI 3.1-1
HAR-910	HAR	PT03	ER04	04.03.01.01	Consistency with NPD-NRC-2011-070, RAI 3.1-1	Revise road length estimate; use newly developed language: Permanent roads with a total linear length of approximately 10,424 m (34,200 ft.), with widths ranging from 7.9 m to 9.8 m (26 ft. to 32 ft.), will be constructed to provide access to HAR 2 and HAR 3. Roads will require the commitment of approximately 9.7 ha (23.9 ac. or 0.037 mi.2), resulting in both short-term and long-term adverse effects. An asphalt-paved access road 3300 m (10,824 ft.) long and 9.8 m (32 ft.) wide will be constructed along an existing unpaved road partially running parallel to U.S. Highway 1 (Figure 4.0-11). Additional asphalt-paved roads will be constructed within the footprint of HAR 2 and HAR 3 with an approximate length of 4318 m (14,168 feet) and widths ranging from 7.9 m to 9.8 m (26 ft. to 32 ft.).
HAR-944	HAR	PT03	ER04	04.03.01.02	401/404 environmental permit consistency item	2nd sentence of 4th paragraph revised; pipelines not adjacent on peninsula. Modify to read "These pipelines will be placed roughly parallel to the existing blowdown pipeline that services the HNP".
HAR-912	HAR	PT03	ER04	04.03.01.03	401/404 environmental permit consistency item 2	Change Intake Channel to Intake structure; provide information in section on intake structure based on S&L report. Add reference to S&L report.
HAR-949	HAR	PT03	ER04	04.03.01.04.03	Consistency with NPD-NRC-2011-070, RAI 3.1-1	Revise pipeline disturbance area; indicate that 181.1 ac will be included in ROW; route selected to minimize disturbance - follows ROW of Buckhorn Rd and transmission lines so disturbed area will be significantly less.
HAR-914	HAR	PT03	ER04	04.03.01.04	Consistency with NPD-NRC-2011-070, RAI 3.1-1	Revise pipeline disturbance area; indicate that 181.1 ac will be included in ROW; route selected to minimize disturbance - follows ROW of Buckhorn Rd and transmission lines so disturbed area will be significantly less.
HAR-1124	HAR	PT03	ER04	04.03.02.02.03	401/404 environmental permit consistency item	Change 3rd sentence of 8th paragraph to read "An approximately linear 45,425 m (149,033 ft.) length of stream will be inundated by the water level increase (Reference 4.3-041). Reference needs to be added to end of section and should read as follows "CH2M HILL, "Progress Energy Harris Advanced Reactor (HAR) Project Jurisdictional Stream and Wetland Delineation," Technical Memorandum prepared for Progress Energy Carolinas, Inc., March 15, 2010."
HAR-1136	HAR	PT03	ER04	04.03.02.04	401/404 environmental permit consistency item	Change 3rd paragraph to read the ROW would cross 5 streams and contains two wetlands (Table 2.4-12). In addition, the ROW crosses two additional streams and one wetland that will be flooded when the elevation of Harris Lake is raised (Reference 4.3-041).
HAR-1210	HAR	PT03	ER04	04.03.03	401/404 environmental permit consistency item	Following new reference 4.3-040 added: Sargent & Lundy, LLC, "Lake Makeup Water Intake and Pumphouse – Study of Alternatives," Report No. HAG-XK01-GER-005, REV 0, June 22, 2011.
HAR-1211	HAR	PT03	ER04	04.03.03	401/404 environmental permit consistency item	Following new reference 4.3-041 added: CH2M HILL, Inc. "Progress Energy Harris Advanced Reactor (HAR) Project Jurisdictional Stream and Wetland Delineation," Technical Memorandum prepared for Progress Energy Carolinas, Inc., March 15, 2010.
HAR-950	HAR	PT03	ER04	04.03.T / T4.3-1	Consistency with NPD-NRC-2011-070, RAI 3.1-1	Replace the table with information from RAI
HAR-1101	HAR	PT03	ER04	04.04.01.02	Editorial	Wake County is maintenance area for ozone; update reference Following new reference 4.4-040 added to support HAR-1101:
HAR-1221	HAR	PT03	ER04	04.04.03	Editorial	U.S. Environmental Protection Agency, "Green Book: Currently Designated Nonattainment Areas for All Criteria Pollutants," Websites, www.epa.gov/oar/oaqps/greenbk/ , accessed February 19, 2007, and www.epa.gov/oar/oaqps/greenbk/andl.html , accessed January 2, 2007.
HAR-1222	HAR	PT03	ER04	04.04.03	Editorial	Following reference listed as "Not Used": 4.4-010 updated with HAR-1221
HAR-1028	HAR	PT03	ER04	04.04.F / F4.4-1	401/404 environmental permit consistency item	Plant layout, blowdown, makeup pipeline have been revised.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-1029	HAR	PT03	ER04	04.04.F / F4.4-2	401/404 environmental permit consistency item	The figure revised to show latest revisions of makeup water pipeline and blowdown pipeline alignment.
HAR-1030	HAR	PT03	ER04	04.04.F / F4.4-3	401/404 environmental permit consistency item	Plant layout, blowdown, makeup pipeline have been revised.
HAR-605	HAR	PT03	ER04	04.05	Consistency with response to HAR-RAI-LTR-078 in NPD-NRC-2011-020	Evaluate ER 4.5 for potential changes from HAR-RAI-LTR-078 related to construction worker dose. FSAR Ch 12 changes are documented in AR 448167. Include specific changes in roadmap when identified.
HAR-1212	HAR	PT03	ER04	04.05.03.01.01, 04.05.03.02.01, 04.05.05	Consistency with response to HAR-RAI-LTR-078 in NPD-NRC-2011-020	Following new reference 4.5-006 added: Progress Energy Carolinas, Inc., "Shearon Harris Nuclear Power Plant Off-Site Dose Calculation Manual (ODCM)," Revision 17, Docket No. STN-50-400," November 30, 2004.
HAR-1214	HAR	PT03	ER04	04.05.03.01.01, 04.05.05	Consistency with response to HAR-RAI-LTR-078 in NPD-NRC-2011-020	Following new reference 4.5-008 added: Progress Energy Carolinas, Inc. (PEC), "Shearon Harris Nuclear Power Plant Annual Radioactive Effluent Release Report: January 1 2007 to December 31, 2007."
HAR-1215	HAR	PT03	ER04	04.05.03.01.01, 04.05.05	Consistency with response to HAR-RAI-LTR-078 in NPD-NRC-2011-020	Following new reference 4.5-009 added: Progress Energy Carolinas, Inc. (PEC), "Shearon Harris Nuclear Power Plant Annual Radioactive Effluent Release Report: January 1, 2008 through December 31, 2008."
HAR-1213	HAR	PT03	ER04	04.05.03.01.01, 04.05.04, 04.05.05	Consistency with response to HAR-RAI-LTR-078 in NPD-NRC-2011-020	Following new reference 4.5-007 added: Progress Energy Carolinas, Inc. (PEC), "Shearon Harris Nuclear Power Plant Annual Radioactive Effluent Release Report: January 1, 2004 to December 31, 2004."
HAR-1216	HAR	PT03	ER04	04.05.03.02.01, 04.05.05	Consistency with response to HAR-RAI-LTR-078 in NPD-NRC-2011-020	Following new reference 4.5-010 added: Progress Energy Carolinas, Inc. (PEC), "Shearon Harris Nuclear Power Plant Annual Radioactive Effluent Release Report: January 1 2010 to December 31, 2010."
HAR-1217	HAR	PT03	ER04	04.05.03.03.01, 04.05.05	Consistency with response to HAR-RAI-LTR-078 in NPD-NRC-2011-020	Following new reference 4.5-011 added: Nuclear Generation Group, "Area Thermoluminescent Dosimeter (TLD) Monitoring," DOS-NGGC-0010, Revision 7, 2006, Nuclear Generation Group Standard Procedure Volume 99 Book/Part 99, information obtained from the HNP TLD monitoring group via a request for information.
HAR-1218	HAR	PT03	ER04	04.05.05	Consistency with response to HAR-RAI-LTR-078 in NPD-NRC-2011-020	Following references listed as "Not Used": HAR-002, HAR-003, HAR-004, and HAR-005. Rename to Table 4.5-1; delete source information; revise "Total effective dose equivalent" for "Estimated HAR Construction Worker Dose" to 38.2 mrem/yr ^(a) with footnote: (a) The largest contribution to the TEDE is from the external dose assumed from active HNP operations (31 mrem/yr). Doses contributed by liquid effluents from HNP and HAR 2 provide an additional 0.8 mrem/yr. Doses contributed by gaseous effluents from HNP and HAR 2 provide an additional 6.4 mrem/yr
HAR-1135	HAR	PT03	ER04	04.05.T / T4.5-2	Consistency with response to HAR-RAI-LTR-078 in NPD-NRC-2011-020	(a) The largest contribution to the TEDE is from the external dose assumed from active HNP operations (31 mrem/yr). Doses contributed by liquid effluents from HNP and HAR 2 provide an additional 0.8 mrem/yr. Doses contributed by gaseous effluents from HNP and HAR 2 provide an additional 6.4 mrem/yr
HAR-1134	HAR	PT03	ER04	04.05.T / T4.5-1	Consistency with response to HAR-RAI-LTR-078 in NPD-NRC-2011-020	Delete Table 4.5-1
HAR-606	HAR	PT03	ER05	05.00	NPD-NRC-2011-071, H-0646 response, ER Item 3	Section 5.0, Environmental Effects of Station Operation, second set of bullets: • Operation of the modified Main Damand a pier at mid-length. revised to read as follows: • Operation of the modified Main Dam at Harris Reservoir with a modified concrete service spillway with 15.2 m (50 ft.) long crest at elevation 73.2 m (240 ft.) NGVD29 along with an emergency spillway with a 172.2 m (565 ft.) long crest at elevation 74.3 m (243.7 ft.) NGVD29. Both the spillways will be uncontrolled. Revise road length estimate; use newly developed language, wherever appropriate: Permanent roads with a total linear length of approximately 10,424 m (34,200 ft.), with widths ranging from 7.9 m to 9.8 m (26 ft. to 32 ft.), will be constructed to provide access to HAR 2 and HAR 3. Roads will require the commitment of approximately 9.7 ha (23.9 ac. or 0.037 mi. ²), resulting in both short-term and long-term adverse effects. An asphalt-paved access road 3300 m (10,862 ft.) long and 9.8 m (32 ft.) wide will be constructed along an existing unpaved road partially running parallel to U.S. Highway 1 (Figure 4.0-11). Additional asphalt-paved roads will be constructed within the footprint of HAR 2 and HAR 3 with an approximate length of 4318 m (14,168 feet) and widths ranging from 7.9 m to 9.8 m (26 ft. to 32 ft.). Change last sentence of 7th paragraph to "would cross eight stream segments (5 streams), with impacts limited..." Revise the stormwater drainage ditch information for consistency.
HAR-918	HAR	PT03	ER05	05.01.01.01.02	NPD-NRC-2011-070, RAI 3.1-1	
HAR-1125	HAR	PT03	ER05	05.02.01.01	Editorial	
HAR-1244	HAR	PT03	ER05	05.02.01.03	Editorial	
HAR-607	HAR	PT03	ER05	05.03.01.01	401/404 environmental permit consistency item 9	Paragraphs refer to Buckhorn Dam being removed. The intake structure and pipeline require that the dam remain in service. Revise to remove reference to Buckhorn Dam being lost or removed (for whatever reason).
HAR-919	HAR	PT03	ER05	05.03.01.01	401/404 environmental permit consistency item 2	Change Intake Channel to Intake structure
HAR-1102	HAR	PT03	ER05	05.03.01.01	401/404 environmental permit consistency item	4th paragraph; intake structure is 1800 feet upstream of pumphouse; can include more information on intake structure (S&L report included in 404 application)
HAR-1208	HAR	PT03	ER05	05.03	Editorial	Following new reference (5.3-027) added: Sargent & Lundy, LLC, "Lake Makeup Water Intake and Pumphouse – Study of Alternatives," Report No. HAG-XK01-GER-005, REV 0, June 22, 2011.
HAR-1031	HAR	PT03	ER06	06.01.F / F6.1-1	401/404 environmental permit consistency item	Makeup pipeline route has been revised.

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
HAR-608	HAR	PT03	ER06	06.03.03.03	NPD-NRC-2011-003, H-0650 response	Subsection 6.3.3.3 revised as described in response to NRC RAI 02.04.12-5 in NPD-NRC-2011-003 (H-0650).
HAR-609	HAR	PT03	ER06	06.03.04.03	NPD-NRC-2011-003, H-0650 response	Subsection 6.3.4.3 revised as described in response to NRC RAI 02.04.12-5 in NPD-NRC-2011-003 (H-0650).
HAR-1032	HAR	PT03	ER06	06.03.F / F6.3-1	401/404 environmental permit consistency item	Plant layout has been revised.
HAR-610	HAR	PT03	ER06	06.03.F / F6.3-2	NPD-NRC-2011-003, H-0650 response	New Figure 6.3-2 added to ER Section 6.3 as shown in Attachment 02.04.12-5A in NPD-NRC-2011-003 (H-0650).
HAR-1033	HAR	PT03	ER06	06.04.F / F6.4-1	401/404 environmental permit consistency item	Plant layout has been revised.
HAR-1034	HAR	PT03	ER06	06.05.02.02.02.01	Editorial correction	Section 6.5.2.2.2.1: change first sentence in the 4th paragraph from "Appropriate USACE Section 404, Independent Energy Producers Association (IEPA) 401 Water Quality Certification, and NPDES permits will be obtained as part of site preparation activities." to "Appropriate USACE Section 404, NC Department of Environmental and Natural Resources Division of Water Quality (NC DWQ) 401 Water Quality Certification, and NPDES permits will be obtained as part of site preparation activities."
HAR-1035	HAR	PT03	ER06	06.06.F / F6.6-1	401/404 environmental permit consistency item	Plant layout has been revised.
HAR-1036	HAR	PT03	ER06	06.06.F / F6.6-2	401/404 environmental permit consistency item	Plant layout has been revised.
HAR-611	HAR	PT03	ER08	08.00	NPD-NRC-2011-030 response to H-0656	Chapter 8, Need for Power, revised in its entirety, as shown in Attachment 1 to NPD-NRC-2011-030 response to NRC RAI 8.0-1 (H-0656).
HAR-922	HAR	PT03	ER08	08.01.01	Editorial	Change "62-2(3a)" to "62-2(a)(3a)"
HAR-923	HAR	PT03	ER08	08.01.01	Editorial	Change "the process for review and approval of such IRPs." to "the process for review of such IRPs."
HAR-924	HAR	PT03	ER08	08.01.01	Editorial	Change "Reference 8.1-015" in the middle of paragraph so that it links to Reference 8.1-013
HAR-925	HAR	PT03	ER08	08.01.02	Editorial	Change "... are reviewed publicly through ..." to "... are reviewed publicly and there may be ..."
HAR-927	HAR	PT03	ER08	08.01.03	Editorial	Change "After the filing of a biannual or annual report, ..." to "After the filing of a biennial or annual report, ..."
HAR-928	HAR	PT03	ER08	08.01.03	Editorial	Change "Reference 8.1-015" in the two paragraphs that reference NC Gen. Stat. 62-110.1(c) so that it links to Reference 8.1-013
HAR-929	HAR	PT03	ER08	08.01.03	Editorial	Change "Like IRP Reports, ..." to "Like the IRP review process ..."
HAR-930	HAR	PT03	ER08	08.01.05	Editorial	Add "Id. at Rule 88-60(2)(i)(i)." to end of first paragraph in section
HAR-931	HAR	PT03	ER08	08.01.05	Editorial	Add "(Reference 8.1 013)" to end of third paragraph in section
HAR-936	HAR	PT03	ER08	08.01.F / F8.1-1	Editorial	Add "and a public hearing" to the first line, 4th blue box
HAR-937	HAR	PT03	ER08	08.01.F / F8.1-1	Editorial	Revise last line in 3 rd blue box to read as "NCUC considers long-range needs in its review"
HAR-938	HAR	PT03	ER08	08.01.F / F8.1-1	Editorial	Fix typo in "utility" in bottom line of 2nd block
HAR-932	HAR	PT03	ER08	08.02.02	Editorial	Delete "to" from first sentence in 2nd to last paragraph
HAR-933	HAR	PT03	ER08	08.03	Editorial	Make the following change "In their IRP reports, utilities. ..." to the beginning of the 3rd paragraph in the section
HAR-934	HAR	PT03	ER08	08.04	Editorial	Add "that are" in sixth sentence in the first paragraph in section
HAR-935	HAR	PT03	ER08	08.04	Editorial	Deleted "future as discussed in Section 8.3" from sixth sentence in first paragraph
HAR-1129	HAR	PT03	ER09	09.04.02.01.01	401/404 environmental permit consistency item	Remove all references to intake channel; include short description of proposed intake structure based on S&L document, if appropriate
HAR-1105	HAR	PT03	ER09	09.04.02.02	401/404 environmental permit consistency item	Change location of intake structure to 1800 feet upstream of pumphouse location; check reference; likely need to update to S&L report (or add S&L report to intake location)
HAR-613	HAR	PT03	ER10	10.00	Editorial correction for consistency throughout Ch 10	NPIT 464318 is to review the amount of land that is to be resurfaced and verify that the numbers are consistent throughout all of Ch. 10. Once review is done, need to add details of actual changes to this roadmap item.
HAR-1106	HAR	PT03	ER10	10.01.01	NPD-NRC-2011-070; RAI 3.1-1	Land Use Paragraph - need to reflect 313.5 acres of permanent impacts, but note that this bounds potential permanent impacts; approx 50 acres will be permanently impacted by cooling towers and reactors
HAR-1107	HAR	PT03	ER10	10.01.T / T10.1-1	NPD-NRC-2011-070; RAI 3.1-1	Land use impacts should reflect changes in roadmap item HAR-613 and HAR-1106
HAR-1108	HAR	PT03	ER10	10.02.01.01	401/404 environmental permit consistency item	Change reference from intake channel to intake structure; area of disturbance should be 1.8 ha (4.4 ac) to be consistent with Chapter 4.3.1.3.2 and 4.3.1.3.1
HAR-1205	HAR	PT03	ER10	10.02.01.01	Editorial	Remove "for 2011" from 2nd sentence of 2nd paragraph.
HAR-1204	HAR	PT03	ER10	10.02.03	401/404 environmental permit consistency item	Following new reference added: Sargent & Lundy, LLC, "Lake Makeup Water Intake and Pumphouse – Study of Alternatives," Report No. HAG-XK01-GER-005, REV 0, June 22, 2011.
HAR-1109	HAR	PT03	ER10	10.03.01.01	NPD-NRC-2011-070; RAI 3.1-1	3rd paragraph updated to indicate that 313.5 ac could be permanently disturbed; this is from bounding exercise and overestimates amount of permanent impacts; impacts from new reactors and cooling towers will be approximately 50 ac
HAR-1206	HAR	PT03	ER10	10.03.01.08	Editorial	Remove "for 2011" from 2nd sentence of 1st paragraph.
HAR-939	HAR	PT03	ER	All	Editorial	Editorial change in ER
PT04						
HAR-705	HAR	PT04		A, All	Editorial / Match Vogtle	Revise Part A of the Technical Specifications to match Vogtle for the page breaks.
9090	STD	PT04		A.2-03.03.01	DCD Rev 18	COLA Part 4, Section A, revised to delete the item for GTS 3.3.1.
9091	STD	PT04		A.2-03.03.02	DCD Rev 18	COLA Part 4, Section A, revised to delete the item for GTS 3.3.2.
9092	STD	PT04		A.2-03.06.04	DCD Rev 18	COLA Part 4, Section A, revised to delete the item for GTS 3.6.4.
HAR-1046	STD	PT04		A.2-05.02.02	Editorial	COLA Part 4, Section A, in second GTS 5.2.2, last sentence change "10 CFT Part 26" to "10 CFR Part 26."

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
9087	STD	PT04		A.2-B03.03.01	DCD Rev 18	COLA Part 4, Section A, revised to add a new item for GTS Bases 3.3.1 to read: GTS B3.3.1 The Bases for Specification 3.3.1 (Background) contain a Reviewer Note which addresses future confirmation of chosen setpoints. Remove the reviewer note in the PSTS. There is no replacement language. Justification: The reviewer's note information for this specification is deleted because it is not intended to be a part of technical specifications.
9088	STD	PT04		A.2-B03.03.02	DCD Rev 18	COLA Part 4, Section A, revised to add a new item for GTS Bases 3.3.2 to read: GTS B3.3.2 The Bases for Specification 3.3.2 (Background) contain a Reviewer Note which addresses future confirmation of chosen setpoints. Remove the reviewer note in the PSTS. There is no replacement language. Justification: The reviewer's note information for this specification is deleted because it is not intended to be a part of technical specifications.
9089	STD	PT04		A.2-B03.06.08	DCD Rev 15 (overlooked)	COLA Part 4, Section A, revised to add a new item for GTS Bases 3.6.8 to read: GTS B3.6.8 The Bases for Specification 3.6.8 contain a bracketed Figure which addresses the anticipated time prior to coolant inventory boiling under various conditions. Remove the reviewer note in the PSTS. There is no replacement language. Justification: The information is applicable as provided since no major departures from the certified design have been taken.
9093	STD	PT04		B, 00 All	DCD Rev 19	COLA Part 4, Technical Specifications, revised to incorporate the AP1000 GTS changes identified by WEC and incorporated into DCD Revision 19.
HAR-615	HAR	PT04		B, 05.05.08	DCD Rev 19	COLA Part 4, Technical Specifications, GTS Section 5.5.8.b, revised from: The calculated peak containment internal pressure for the design basis loss of coolant accident, P_a , is 57.8 psig. The containment design pressure is 59 psig. To read: The calculated peak containment internal pressure for the design basis loss of coolant accident, P_a , is 58.3 psig. The containment design pressure is 59 psig.
HAR-616	HAR	PT04		B, B03.06.04	DCD Rev 19	COLA Part 4, Technical Specifications, Bases for 3.6.4 Containment Pressure, Applicable Safety Analyses, second paragraph, revised from: "The initial pressure condition used in the containment analysis was 15.7 psia (1.0 psig). This resulted in a maximum peak pressure from a LOCA, P_a , of 57.8 psig. The containment analysis (Ref. 1) shows that the maximum peak calculated containment pressure results from the limiting LOCA. The maximum containment pressure resulting from the worst case LOCA, 57.8 psig, does not exceed the containment design pressure, 59 psig." To read: "The initial pressure condition used in the containment analysis was 15.7 psia (1.0 psig). This resulted in a maximum peak pressure from a LOCA, P_a , of 58.3 psig. The containment analysis (Ref. 1) shows that the maximum peak calculated containment pressure results from the limiting LOCA. The maximum containment pressure resulting from the worst case LOCA does not exceed the containment design pressure, 59 psig."
HAR-730	HAR	PT04		03.03.02	Editorial	On page 3.3.2-13, remove the "SURVEILLANCE REQUIRED (continued)" in the middle of the page.
HAR-728	HAR	PT04		04.0 and 05.0 – All	Editorial	The page breaks and section breaks are inconsistent. Match R-COLA for the page break / section break consistencies.
HAR-729	HAR	PT04		5.06	Editorial	Add a continued header on the top of page 5.6-6 since this is a continuation of subsection 5.6.8. Also start subsection 5.6.6 on the top of page 5.6-5 similar to VEGP.
PT05						
No change						
PT06						
No change						
PT07						
HAR-617	HAR	PT07		B.2	Editorial - format only	COLA Part 7, Section B.2, under Discussion, first paragraph, third sentence, add the word "the" before "topic."

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	Part	Chapter	Section	Basis for Change	Change Summary
PT08						
HAR-618	HAR				NPD-NRC-2011-051 Incorporate SNMPPP description (SGI) from SNC Ltr ND-11-0494 and modify for HAR	PSP Plan changes per RAI Responses to HAR-RAI-LTR-079.
9313	STD	PT08		SNMPPP		COLA Part 8, Safeguards/Security Plans, Cover Page, revised to reflect a new revision number (Revision 3).
HAR-619	HAR	PT08		PSP	NPD-NRC-2011-054	Submittal of PSP R2
HAR-620	HAR	PT08		Cover Page	Editorial	COLA Part 8, Safeguards/Security Plans, Cover Page, revised to reflect a new revision number (Revision 2).
10027	STD	PT08		SNMPPP	Incorporation of SNMPPP into Part 8	COLA Part 8, Safeguards/Security Plans, revised to include new INDEX page to show that Part 8 now includes two documents, the Physical Security Plan and the Special Nuclear Material Physical Protection Plan (SNMPPP) description.
9313	STD	PT08		SNMPPP	SNC Ltr ND-11-0494	Incorporate SNMPPP description (SGI) from SNC Ltr ND-11-0494 and modify for HAR
PT09						
9446	STD	PT09		11B-CSP Att A	Editorial change to VEGP-VOL-CSP BOP SSCs response to VEGP 13.06 VR item 3 SNC Ltr ND-11-0207	Editorial change to move closing quotation marks to the end of addition of BOP structures, systems and components to scope of CSP.
HAR-621	HAR	PT09		11B-CSP Att A	Editorial Correction to CSP Attachment A for consistency with VEGP-VOL-CSP BOP SSCs response to VEGP 13.06 VR item 3 SNC Ltr ND-11-0207	COLA Part 11B, Cyber Security Plan, Attachment A, "Harris Nuclear Plant, Units 2 and 3 Cyber Security Plan (CSP) Deviations from Regulatory Guide (RG) 5.71, Rev. 0," table titled "HAR Units 2 and 3 Cyber Security Plan Deviations from RG 5.71, Rev. 0 Black Text," revised by changing the last sentence in the Comments column associated with the deviation to RG 5.71, Section A.1, 1st paragraph, to regular text rather than bold text.
HAR-622	HAR	PT09		11B-CSP	See Change ID #9446 and HAR-621	Include Cybersecurity plan Revision 3 with submittal of COLA Rev. 4
PT10						
9239	STD	PT10		LC#01	VEGP-VOL-CH01 IBR of PI & SGI item 2 SNC Ltr ND-11-0254	2. COLA Part 10, Proposed License Condition #1, ITAAC, introductory statements revised to read: There are several ITAAC identified in the COLA. Once incorporated into the COL, the regulations identify the requirements that must be met. The incorporation below includes references to the sensitive unclassified non-safeguards information (including proprietary information) and safeguards information, contained in the AP1000 DCD. Such DCD information is included in this combined license application in the same manner as it is included in the AP1000 DCD, i.e., references in the DCD are included as references in the FSAR, and material incorporated by reference into the DCD is incorporated by reference into the FSAR. Appropriate agreements are in place to provide for the licensee's rights to possession (including constructive possession) and use of the withheld sensitive unclassified non-safeguards information (including proprietary information) and safeguards information referenced in the AP1000 DCD for the life of the project.
HAR-623	HAR	PT10		LC#2	Editorial/Match STD	Revise "cannot" to be "can not" in two places in the first two sentences. Note that the 3rd sentence should remain unchanged.
HAR-624	HAR	PT10		LC#2, 03.06-1	Editorial/Match STD	Remove "a." in Implementation Milestone column
HAR-625	HAR	PT10		LC#2, 05.03-1	Editorial/Match STD	Add "the" before "plant-specific material properties..." to match Vogtle
HAR-626	HAR	PT10		LC#2, 09.01-7	Editorial/Match STD	Revise middle sentence to read "...measurements and/or visual examination."
HAR-1053	HAR	PT10		LC#2, 09.01-7	Editorial/Match STD	In the third sentence add "also" in front of "include"
HAR-627	HAR	PT10		LC#2, 15.00-1	Editorial/Match STD	Revise "Note" to "NOTE"
HAR-628	HAR	PT10		LC#2, 19.59.10-1	Editorial/Match STD	In first paragraph, "plant specific-design" will be revised to read "plant-specific design".
HAR-629	HAR	PT10		LC#2, 19.59.10-2	Editorial/Match STD	Change "plant specific" to "plant-specific" in first two places
HAR-630	HAR	PT10		LC#2, 19.59.10-2	Editorial/Match STD	Change "...plant specific-design and, any..." to read "...plant-specific design and any..."
HAR-631	HAR	PT10		LC#2, 19.59.10-3	Editorial/Match STD	Change "plant specific" to "plant-specific"
HAR-632	HAR	PT10		LC#2, 19.59.10-3	Editorial/Match STD	Change "...plant-specific design, and any..." to read "...plant-specific design and any..."
HAR-633	HAR	PT10		LC#3	Editorial/Match STD	Revise "FSAR Section 13.4..." to read "FSAR Subsection 13.4..."
HAR-634	HAR	PT10		LC#3	Editorial/Match STD	Revise "PROPOSED" to "PROPOSED".
HAR-635	HAR	PT10		LC#3 A.	Editorial/Match STD	Revise to read "...construction of nuclear safety or security related structures..."
9308	STD	PT10		LC#03 C.5	VEGP-VOL-73.55-Impl response to VEGP 13.06 VR2 item 4 SNC Ltr ND-11-0313	4. COLA Part 10, Proposed License Conditions (Including ITAAC), LC #3.C, Operational Program Implementation, Receipt of Materials, Item C.5, will be revised, to read: C.5 – Deleted
HAR-636	HAR	PT10		LC#3 D.	Editorial/Match STD	Revise "on-site" to "onsite"
9309	STD	PT10		LC#03 D.3	VEGP-VOL-73.55-Impl response to VEGP 13.06 VR2 item 5 SNC Ltr ND-11-0313	5. COLA Part 10, Proposed License Conditions (Including ITAAC), LC #3.D, Operational Program Implementation, Fuel Receipt, Item D.3, will be revised to read: D.3 – Special Nuclear Material Physical Protection Program

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	COLA Part	Chapter	Section	Basis for Change	Change Summary
9334	STD	PT10		LC#03 D.5	For consistency with changes included in VEGP-RAH-LTR-062 response to RAI 01.05-001 item 3 SNC Ltr ND-10-2002	COLA Part 10, proposed License Condition 3, Operational Program Implementation, item D, Fuel Receipt, will be revised to read: D.5 - Deleted
HAR-637	HAR	PT10		LC#3 H.	Editorial/Match STD	Proposed License Conditions (Including ITAAC), Section 3, H, revised from "H.1-Initial Test Program..." to read "H.1 – Initial Test Program..."
9307	STD	PT10		LC#05	VEGP-VOL-73.55-Impl response to VEGP 13.06 VR2 item 3 SNC Ltr ND-11-0313	3. COLA Part 10, Proposed License Conditions (Including ITAAC), proposed License Condition (LC) #5, will be revised by renumbering and renaming the current proposed LC and adding a new License Condition #5B. This revision will change proposed LC#5 to read: 5. SECURITY PROGRAM: A. SECURITY PROGRAM IMPLEMENTATION: An implementation license condition approved in the SRM regarding SECY-05-0197 applies to the security program. PROPOSED LICENSE CONDITION: The licensee shall maintain in effect the provisions of the physical security plan, security personnel training and qualification plan, safeguards contingency plan, and cyber security plan, and all amendments made pursuant to the authority of 10 CFR 50.90, 50.54(p), 52.97, and Section VIII of Appendix D to Part 52 when nuclear fuel is onsite (protected area), and continuing until all nuclear fuel is permanently removed from the site. B. SPECIAL NUCLEAR MATERIAL PHYSICAL PROTECTION: A license condition is proposed to address when the boundary for physical protection of new fuel as SNM is required to be extended from the controlled access area (CAA) in accordance with the requirements of 10 CFR 73.67 to the operational protected area (PA) in accordance with 10 CFR 73.55. PROPOSED LICENSE CONDITION The licensee shall receive and store new fuel as SNM in a controlled access area (CAA) in accordance with the requirements of 10 CFR 73.67, until such time as an operational protected area (PA) that satisfies the requirements of 10 CFR 73.55(e)(8) is established. If new fuel is already stored in a CAA that is within the boundary of the proposed PA, then upon declaration of an operational PA, the remaining requirements of 10 CFR 73.55 shall be implemented. The PA shall be established and declared operational prior to initial fuel load.
HAR-638	HAR	PT10		LC#6	Editorial/Match STD	Revise the "." at the end of the first sentence to be a ".".
HAR-639	HAR	PT10		LC#6 d.	Editorial/Match STD	Change "I" and "J" to "C" and "D" in d.
HAR-640	HAR	PT10		LC#6 e.	Editorial/Match STD	Revise to read "the flow accelerated corrosion (FAC) program implementation, including the construction phase activities."
9901	STD	PT10		LC #06 h.	VEGP-VOL-Ch03 Const response to STD COL 03.08-006 Supp SNC Ltr ND-11-0895	COLA Part 10, Proposed License Conditions, item h. related to construction and inspection procedures will be revised to read: h. the implementation of construction and inspection procedures for steel concrete composite (SC) construction activities for seismic Category I nuclear island modules (including shield building SC modules) before and after concrete placement, and inspection of such construction before and after concrete placement.
HAR-641	HAR	PT10		LC#7	Editorial/Match STD	In the first sentence of the last paragraph, add a dash between "three" and "plants" to read "...or by the first-three-plants..."
HAR-642	HAR	PT10		LC#9	Editorial/Match STD	In the first sentence after Low-Power (<5% RTP) Testing, move "testing" to be after "(<5% RTP)."
HAR-643	HAR	PT10		LC#4	Editorial	COLA Part 10, Proposed License Condition 4, revise acronym "PGN" to "PEC" as indicated below. 4. EMERGENCY PLANNING ACTIONS: PROPOSED LICENSE CONDITION: B. Prior to the full-participation exercise to be conducted in accordance with the requirements of Appendix E to 10 CFR Part 50, PGN PEC will have available for NRC inspection Letters of Agreement... C. Prior to the full-participation exercise to be conducted in accordance with the requirements of Appendix E to 10 CFR Part 50, PGN PEC will have available for NRC inspection... D. Prior to the full-participation exercise to be conducted in accordance with the requirements of Appendix E to 10 CFR Part 50, PGN PEC will have available for NRC inspection...
HAR-644	HAR	PT10		LC#AppB	Editorial/Match STD	Revise title to read "Inspections, Tests, Analyses and Acceptance Criteria"
HAR-645	HAR	PT10		LC#AppB	Editorial/Match STD	Revise middle sentence under Physical Security ITAAC to read "Site-specific physical..." After "...together with associated acceptance criteria for the offsite power system." add "2.6.13 Offsite Retail Power System No entry for this system. The following non-system based site specific ITAAC are provided:"
HAR-646	HAR	PT10		LC#AppB	Editorial/Match STD	
HAR-647	HAR	PT10		LC#AppB	Editorial/Match STD	Add the statement "Include the following non-system ITAAC after DCD Tier 1 Section 3.7." to before "Emergency Planning ITAAC".

Attachment to NPD-NRC-2012-008
HAR COLA Revision 4 Roadmap of Changes

Change ID#	COLA	Part	Chapter	Section	Basis for Change	Change Summary
HAR-648	HAR	PT10		LC#AppB	Editorial/Match STD	Change "ITAAC is included" to "ITAAC are included" in two locations: Waterproof Membrane ITAAC, and Concrete Fill ITAAC.
HAR-649	HAR	PT10		LC#AppB	Editorial/Match STD	Delete the statement "Include this ITAAC after DCD Tier 1 Section 3.7." from the following three locations: Emergency Planning ITAAC, Waterproof Membrane ITAAC, and Concrete Fill ITAAC.
PT11						
HAR-1038	HAR	PT11		Table of Contents	Conformance between HAR and LNP projects	Revise Table of Contents to include an identifier for each enclosure (i.e., 11A, 11B, 11C, etc.) similar to LNP and revise revision number to Cyber Security Plan from "Revision 2" to "Revision 3."
					VEGP-RAI-LTR-064 response to RAI 01.05-003 item 7 SNC Ltr ND-10-2257	7. COLA Part 11, Enclosures, revised by the addition of a new Enclosure 11.D, Special Nuclear Material Control and Accounting Program Description. Enclosure 11.D is provided as Enclosure 2 to this letter.
8389	STD	PT11		D - MC&A		Include 11.D on Index Sheet for Part 11. (Refer to the final response letter for Enclosure 2)
				E - New Fuel Shipping Plan	VEGP-RAI-LTR-065 S1 in response to RAI 13.06-37-VR1 item 2 SNC Ltr ND-11-0894	
9761	STD	PT11				2. COLA Part 11, Enclosures, revised by the addition of a new Enclosure 11.E, New Fuel Shipping Plan. Enclosure 11.E is provided as Enclosure 2 to this letter.
HAR-650	HAR	PT11		A - QAPD	Conformance between HAR and LNP projects	Replace the QAPD in Part 11 with the correct QAPD: NGGM-PM-0033, Progress Energy New Nuclear Plant Quality Assurance Program Description Topical Report, Revision 4.
10024	STD	PT11		F - P170 SNM	SNC Ltr ND-11-1211	COLA Part 11, Enclosures, revised by the addition of a new Enclosure 11F, Supplemental Information in Support of 10 CFR Part 70 Special Nuclear Material License Application. Enclosure 11F is provided as Enclosure 2 to this letter.
HAR-1047	STD	PT11		Table of Contents	Editorial	COLA Part 11, Table of Contents/Revision Summary, revise from "LOLA Plan" to read "Mitigative Strategies Description and Plans"