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June 5, 2013

10CFR52.3

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

Subject: Duke Energy Carolinas, LLC
William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019
AP1000 Combined License Application for the William States Lee III Nuclear Station Units 1 and 2
Update Roadmap
Ltr#: WLG2013.06-01

Reference: Letter from Christopher Fallon (Duke Energy) to NRC Document Control Desk, *Update for William States Lee III Nuclear Station Units 1 and 2 Combined License Application,* dated May 9, 2013 (ML13144A150)

This letter provides information supporting the recent Duke Energy update of the application for a combined license for William States Lee III Nuclear Station Units 1 and 2. Enclosed is a "roadmap" of the changes included in the recent update provided as an enclosure to the referenced letter, along with an explanation of the information contained in the roadmap. The enclosed roadmap is provided as a convenience and is not part of the application for a combined license.

If you have any questions or need any additional information, please contact Robert H. Kitchen, Nuclear Development Licensing Director, at (704) 382-4046.

Sincerely,

Christopher M. Fallon

Christopher M. Fallon
Vice President
Nuclear Development

D093
NRO

Enclosure:

Lee Nuclear COLA Submittal 10 Update Roadmap

xc (w/out enclosures):
Frederick Brown, Deputy Regional Administrator, Region II

xc (w/ enclosures):
Brian Hughes, Senior Project Manager, DNRL

Lee Nuclear COLA Submittal 10 Update Roadmap

Format Explanation (by column)

QB Change ID# - unique identifier for tracking purposes

COLA Part A - identifies the affected COLA Part (Part 01 through Part 11)

COLA Chapter A - identifies the affected FSAR chapter (Part 2 only, FSAR 01 to 19)

Section/Page A - section and page number (if identified) specific to the document to be revised

Complete Change Description - description of the change

Basis for Change - the source or reason for the change

Attachment:

Duke Energy WLS COLA Roadmap of Submittal 10 Update

Attachment 1

Duke Energy WLS COLA Roadmap of Submittal 10 Update

APOG Tracking System : COLA Changes | WLS COLA Roadmap of Submittal 10

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WLS COLA Roadmap of Submittal 10

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
Pt 01 (12 COLA Changes)						
11259	WLS	Pt 01		01.00.T / T1.0-1	COLA Part 1, Table 1.0-1 is revised to reflect changes to the Duke Energy 2013 Integrated Resource Plan.	Duke Energy 2013 Integrated Resource Plan
11261	WLS	Pt 01		01.00.T / T1.0-1	COLA Part 1, Table 1.0-1 is revised to reflect changes from Shaw Nuclear to Chicago Bridge and Iron.	Corporate merger between Shaw Nuclear and Chicago Bridge and Iron
11260	WLS	Pt 01		01.00.T / T1.0-2	COLA Part 1, Table 1.0-2 is revised to reflect changes to the Duke Energy 2013 Integrated Resource Plan.	Duke Energy 2013 Integrated Resource Plan
11209	WLS	Pt 01		01.01.03.01	COLA Part 1, Subsection 1.1.3.1, first paragraph, last sentence is removed.	Duke Energy 2013 Organizational Update
11210	WLS	Pt 01		01.01.03.01	COLA Part 1, Subsection 1.1.3.1, listing of the business address, names and citizenship of the current directors of Duke Energy Carolinas, LLC is revised to replace James E. Rogers with B. Keith Trent and add Lloyd M. Yates.	Duke Energy 2013 Organizational Updated
11211	WLS	Pt 01		01.01.03.01	COLA Part 1, Subsection 1.1.3.1, listing of the business address, names, current titles and citizenship of the current executive officers and senior nuclear leadership of Duke Energy Carolinas, LLC is revised to read: Duke Energy Carolinas, LLC 526 South Church Street Charlotte, North Carolina 28202 Name Position Citizenship Donahue, Joseph W., Vice President, Nuclear Oversight, US Duncan II, Robert J., Senior Vice President, Catawba and McGuire, US Fallon, Christopher M., Vice President, Nuclear Development, US Gillespy, Clark S., President, South Carolina, US Gillespie, Jr., T.P., Senior Vice President, Oconee and Robinson, US Good, Lynn J., Executive Vice President and Chief Financial Officer, US Jamil, Dhiaa M., Executive Vice President and President, Duke Energy Nuclear, US Janson, Julia S., Executive Vice President and Chief Legal Officer, US McRainey, Daniel K., Vice President, Major Nuclear Projects, US Miller, Garry D., Senior Vice President, Nuclear Engineering, US Newton, Paul R., President, North Carolina, US Pitesa, John W., Senior Vice President and Chief Nuclear Officer, US Repko, Regis T., Senior Vice President, Harris and Brunswick, US Rogers, James E., Chief Executive Officer, US Trent, B. Keith, Executive Vice President and Chief Operating Officer, Regulated Utilities, US Waldrep, Benjamin C., Vice President, Nuclear Corporate Governance and Operations Support, US	Duke Energy 2013 Organizational Updated

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
					Weber, Jennifer L., Executive Vice President and Chief Human Resources Officer, US Yates, Lloyd M., Executive Vice President, Regulated Utilities, US Young, Steven K., Vice President, Chief Accounting Officer and Controller, US	
11212	WLS	Pt 01		01.01.03.02	COLA Part 1, Subsection 1.1.3.2, listing of the The business address, names and citizenship of the current directors of Duke Energy Corporation is revised to read: Duke Energy Corporation 550 South Tryon Street Charlotte, North Carolina 28202 Name Citizenship Barnet, III, William US Bernhardt, Sr., George Alexander US Browning, Michael G. US DeLoach, Jr., Harris E. US DiMicco, Daniel R. US Forsgren, John H. US Gray, Ann Maynard US Hance, Jr., James H. US Herron, John T. US Hyler, Jr., James B. US McKee, E. Marie US Reinsch, E. James US Rhodes, James Thomas US Rogers, James E. US Saladrigas, Carlos A. US Sharp, Philip R. US	Duke Energy 2013 Organizational Updated
11213	WLS	Pt 01		01.01.03.02	COLA Part 1, Subsection 1.1.3.2, listing of the business address, names, current titles and citizenship of the current executive officers of Duke Energy Corporation is revised to read: Duke Energy Corporation 550 South Tryon Street Charlotte, North Carolina 28202 Name Position Citizenship Good, Lynn J., Executive Vice President and Chief Financial Officer, US Jamil, Dhiaa M., Executive Vice President and President, Duke Energy Nuclear, US Janson, Julia S., Executive Vice President, Chief Legal Officer and Corporate Secretary, US Manly, Marc E., Executive Vice President and President Commercial Businesses, US Pitesa, John W., Seniot Vice President and Chief Nuclear Officer, US Rogers, James E., President and Chief Executive Officer, US Trent, B. Keith, Executive Vice President and Chief Operating Officer, Regulated Utilities, US Weber, Jennifer L., Executive Vice President and Chief Human Resources, Officer, US Yates, Lloyd M., Executive Vice President, Regulated Utilities, US Young, Steven K., Vice President, Chief Accounting Officer and Controller, US	Duke Energy 2013 Organizational Updated
11214	WLS	Pt 01		01.01.06	COLA Part 1, Subsection 1.1.6 is revised to read: 1.1.6 CONSTRUCTION AND COMMERCIAL DATES Scheduled dates for completion of construction (fuel load, start up) and commercial operation of the Lee Nuclear Station Units 1 and 2 are presented in Table 1.1-203 of the Final Safety Analysis Report (FSAR, Part 2 of this application) . The schedule presented in FSAR Table 1.1-203 is influenced by the following factors: 1. Duke Energy Carolinas, LLC economic evaluations, 2. The State schedule for issuance of the Certificate of Environmental Compatibility and Public Convenience	Duke Energy 2013 Integrated Resource Plan

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
					and Necessity and various environmental permits, 3. The Federal schedule for issuing U.S. Army Corps of Engineers and FERC construction permits, and 4. The Federal licensing and adjudicatory process schedule. Duke Energy Carolina, LLC's 2013 Integrated Resource Plan is scheduled for completion and submittal to both the North Carolina Utility Commission and the South Carolina Public Service Commission in September, 2013. For purposes of preparing the Integrated Resource Plan, a commercial operation date of 2023 is being used for the first unit of the Lee Nuclear Station. The Integrated Resource Plan is sensitive to assumptions made for various factors such as market conditions, commodity costs, environmental compliance costs, customer growth, and customer usage patterns. The precision with which these factors can be predicted diminishes as the forecast period increases. This plan is updated annually, increasing the precision of this forecast as the licensing process progresses. It is assumed that the NRC licensing and adjudicatory process will result in the issuance of a license in 2014. The construction schedule in FSAR Table 1.1-203 provides for completion of the plant in a timeframe supporting a 2023 commercial operation date. The construction of Unit 2 is nominally planned to follow Unit 1 by a year. The actual schedule will be influenced by many of the same factors discussed above.	
11215	WLS	Pt 01		01.01.07	**COLA Part 1, Subsection 1.1.7, under the listing of the names and addresses of regulatory agencies that have jurisdiction over the rates and services incident to the proposed operation of the Lee Nuclear Station, names of Ms. Jocelyn G. Boyd and Ms. Gail L. Mount are revised to include middle initials.**	Editorial
11216	WLS	Pt 01		01.03.01	COLA Part 1, Subsection 1.3.1 is revised to read: 1.3.1 DECOMMISSIONING COST ESTIMATE Lee Nuclear Station is a two-unit PWR (Units 1 and 2) that is to be built in accordance with the Westinghouse AP1000 certified design. The AP1000 design has a per unit thermal power rating of 3400 MWt. The decommissioning cost estimate calculated in accordance with 10 CFR 50.75(c) and using NUREG-1307, Revision 15, is computed on a per-unit basis (in 2012 dollars) as described in this section. Pursuant to the requirements of 10 CFR 50.75(c)(1)(i), for a PWR equal to 3400 MWt, the minimum amount required to demonstrate reasonable assurance of funds for decommissioning is $105 million (in 1986 dollars). The amount is adjusted for inflation to 2012 dollars using an overall adjustment factor equal to 0.65(L) + 0.13 (E) + 0.22(B). The factors L and E are escalation factors for labor and energy, respectively, and are determined from regional data provided by the U.S. Bureau of Labor Statistics (BLS). The factor B is an escalation factor for waste burial and is taken from NRC report NUREG-1307, Report on Waste Burial Charges, Revision 15, which included an update to reflect 2012 dollars. This calculation is presented in 2012 dollars. The escalation factor for labor costs, L, for the South Region, is calculated as the Base Lx (from NUREG-1307) times the Employment Cost Index (ECI) (from BLS), divided by 100. For 2012, Lx = (1.98 * 117.8)/100 = 2.3324. The escalation factor for energy cost, E, is a weighted average of industrial electric power, Px and light fuel oil, Fx. The formula for this weighted average for a PWR is identified in NUREG-1307, Section 3.2, Energy Adjustment Factors, as 0.58Px + 0.42Fx. The values of Px and Fx are calculated from the Producer Price Indexes (PPI) of industrial electric power and light fuel provided by BLS. The PPI values provided by BLS for industrial electric power are 213.0 for December 2012 and 114.2 for January 1986. The PPI values provided for light fuel oils are 302.6 for December 2012 and 82.0 for January 1986. The values of Px and Fx are equal to the ratio of the December 2012 Producer Price Indexes to the corresponding indexes for January 1986 for industrial electric power and light fuel oils, respectively. E= 0.58(Px) + 0.42(Fx) = 0.58(213.0/114.2)+0.42(302.6/82.0)	Duke Energy 2013 Financial Update

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
					= 0.58(1.865)+0.42(3.690) = 2.631 The escalation factor for waste burial, B, for a member of the Atlantic Compact with a PWR using a combination of compact-affiliated (Barnwell, South Carolina Site) and non-compact facility waste disposal strategy is 13.885, as provided in Table 2.1 of NUREG-1307, Revision 15. The adjusted per-unit minimum decommissioning fund amount (MDF) required to demonstrate reasonable assurance of funds for the decommissioning of the Lee Nuclear Station is $516 million (in 2012 dollars) per unit, as calculated below. MDF= $105 million [0.65(L) + 0.13(E) + 0.22(B)] = $105 million [0.65(2.3324)+0.13(2.631)+0.22(13.885)] = $105 million [4.913] = $516 million (in 2012 dollars) per unit This cost estimate is updated annually using the adjustment factor described in 10 CFR 50.75(c)(2).	
11404	WLS	Pt 01		01.06.01	COLA Part 1, Subsection 1.6.1 is revised to read: 1.6.1 FINANCIAL STRENGTH The financial position and creditworthiness of Duke Energy Carolinas, LLC and its holding company, Duke Energy Corporation, provide them with reliable access to the capital markets. As of September 30, 2012, Duke Energy Corporation's market capitalization was approximately $46 billion and its total assets were $112 billion. Duke Energy Carolinas, LLC, on that same date, had book equity of approximately $9.9 billion and total assets of $31 billion. The audited financial statements of Duke Energy Carolinas, LLC and Duke Energy Corporation for the three most recent fiscal years and the unaudited quarterly interim financial statements for the current fiscal year are available as part of the investor information provided at www.duke-energy.com/investors/publications.asp. The financial statements most recently filed prior to the submission of this application are also provided in Appendices A-1 through A-5 to this part. The current credit ratings of Duke Energy Corporation are: S&P Moody's Fitch Corporate Credit Rating BBB+ -- BBB+ Issuer Rating -- Baa2 -- Senior Unsecured BBB Baa2 BBB+ Commercial Paper A-2 P-2 F-2 Duke Energy Carolinas, LLC's total outstanding long-term debt (as of September 30, 2012) was approximately $9.2 billion, including current maturities. As of September 30, 2012, the company had approximately $850 million of short term borrowing capacity under the Duke Energy Corporation $6.0 billion Master Credit Facility. Duke Energy Carolinas, LLC's standalone ratings at the time of this application are as follows: S&P Moody's Fitch Senior Secured A A1 A+ Senior Unsecured BBB+ A3 A Duke Energy Corporation intends to maintain a capital structure for Duke Energy Carolinas, LLC, as required to meet regulatory requirements and to maintain its current credit ratings.	Duke Energy 2013 Financial Update

Pt 02 (562 COLA Changes)

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
11125	WLS	Pt 02	FSAR 01	01.01	COLA Part 2, FSAR Chapter 1, Subsection 1.1, 3rd paragraph is revised to replace "Design Control Document (DCD)" with "DCD".	Acronym update
11126	WLS	Pt 02	FSAR 01	01.01	COLA Part 2, FSAR Chapter 1, Subsection 1.1, 4th paragraph, is revised to replace "COL" with Combined License (COL)".	Acronym update
11127	WLS	Pt 02	FSAR 01	01.01	COLA Part 2, FSAR Chapter 1, Subsection 1.1, 5th paragraphis revised to replace "combined licenses (COLs)" with "(COLs)".	Acronym update
11263	WLS	Pt 02	FSAR 01	01.01.05	COLA Part 2, FSAR Chapter 1, Subsection 1.1.5, second and third paragraphs are revised to read: Duke Energy's 2013 Annual Plan reflects a commercial operation date of 2023 for the first unit of the Lee Nuclear Station. The Annual Plan is sensitive to assumptions made for various factors such as market conditions, commodity costs, environmental compliance costs, customer growth, and customer usage patterns. The precision with which these factors can be predicted diminishes as the forecast period increases. Although the current optimal timeframe for commercial operations is 2023, this plan will be updated annually, increasing the precision of this forecast as the licensing process progresses. The construction schedule in Table 1.1-203 provides for completion of the plant in a timeframe that would support commercial operation beginning in 2023. Such scheduling assumes that an adequate planning window exists in order to accommodate changes due to uncertainties in the Federal and State regulatory processes, construction schedule, availability of critical components, and market forces. The construction of Unit 2 is nominally planned to follow Unit 1 by one year. The actual schedule will be influenced by many of the same factors discussed above. Some population-sensitive impacts projected in the Final Safety Analysis Report Revision 0 were based on a projected operation date of 2016. Duke Energy has concluded that the change in operation date from 2016 to 2023 does not affect the validity of the data or conclusions in the Final Safety Analysis Report.	Duke Energy 2013 Integrated Resource Plan
11012	WLS	Pt 02	FSAR 01	01.01.F / F1.1-202	COLA Part 2, FSAR Chapter 1, Figure 1.1-202 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 1.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 1, WLG2013.05-02
11168	WLS	Pt 02	FSAR 01	01.01.T / T1.1-201	COLA Part 2, FSAR Chapter 1, Table 1.1-201, "Acronyms Used in the FSAR" is updated to reflect 2013 Acronym Update.	Acronym update
11264	WLS	Pt 02	FSAR 01	01.01.T / T1.1-203	COLA Part 2, FSAR Chapter 1, Table 1.1-203 is revised to reflect schedule changes in accordance with Duke Energy's 2013 Integrated Resource Plan.	Duke Energy 2013 Integrated Resource Plan
11013	WLS	Pt 02	FSAR 01	01.02.02	COLA Part 2, FSAR Chapter 1, Subsection 1.2.2, second paragraph under the sub-heading 'Site Plan' is revised to read: The site plan for Lee Nuclear Station is shown on Figure 1.1-202. Principal structures and facilities, parking areas, roads, and transmission lines are illustrated. Orientation of the two AP1000 units is such that "plant north" faces 168 degrees from true north. Unless otherwise noted, directions in this subsection are based on true north. Similarly, design plant grade for the DCD is defined as 100 feet; whereas design plant grade for the Lee Nuclear Station Units 1 and 2 is 593 feet; therefore, DCD elevations are to be increased by 493 feet to be actual site elevations.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 1, WLG2013.05-02
11128	WLS	Pt 02	FSAR 01	01.04.02.08.04	COLA Part 2, FSAR Chapter 1, Subsection 1.4.2.8.4, last paragraph is revised to replace "WLS" with "the Lee Nuclear Station".	Acronym update

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
11269	WLS	Pt 02	FSAR 01	01.04.02.08.05	COLA Part 2, FSAR Chapter 1, Subsection 1.4.2.8.5 is revised to read: 1.4.2.8.5 Chicago Bridge and Iron Chicago Bridge and Iron (CB&I) has more than 60 years expertise in the nuclear industry, including a pioneering history of firsts. These firsts included the design and construction of the Y-12 facility in Oak Ridge, Tennessee, and the engineering and design of Shippingport, the first commercial nuclear power plant in the United States. CB&I was also the original engineer / designer for 17 U. S. nuclear power plants, developed the first U. S. Nuclear Regulatory Commission-approved Nuclear Quality Assurance Program, and completed the first license application for a spent fuel dry storage facility. CB&I has provided services to 95 percent of all U. S. nuclear plants. CB&I is part of the AP1000 Consortium with Westinghouse Electric Company, which is 20 percent owned by CB&I. This consortium was selected by the People's Republic of China State Nuclear Power Technology Company to build four new nuclear power plants using Westinghouse's AP1000 technology. CB&I has performed conceptual design engineering in support of the COL Application for the Lee Nuclear Station.	Corporate merger between Shaw Nuclear and Chicago Bridge and Iron
11014	WLS	Pt 02	FSAR 01	01.06.T / T1.6-201	COLA Part 2, FSAR Chapter 1, Table 1.6-201 is revised at the entry QAPD as follows: Author / Report Number — Title — Revision QAPD — Duke Energy Quality Assurance Topical Report for 10 FR Part 52 Licenses — 8 FSAR Section — Document Transmittal Date — ADAMS Accession Number 17.5 — April 2013 — -	Duke Energy update to Quality Assurance Topical Report for 10 CFR Part 52 Licenses, NGGM-PM-0033
11129	WLS	Pt 02	FSAR 01	01.07.02	COLA Part 2, FSAR Chapter 1, Subsection 1.7.2, 2nd paragraph is revised to replace "piping and instrumentation diagrams (P&IDs)" with "P&IDs".	Acronym update
11534	WLS	Pt 02	FSAR 01	01.08.T / T1.8-201	COLA Part 2, FSAR Chapter 1, Table 1.8-201 is revised to add the following new Departure: Departure Number WLS DEP 1.8-1 Departure Description Summary Departure to correct regulatory citation error in AP1000 DCD Table 1.8-203 FSAR Section or Subsection Interface Item 13.1	Departure update
11535	WLS	Pt 02	FSAR 01	01.08.T / T1.8-203	COLA Part 2, FSAR Chapter 1, Table 1.8-203, Item 13.1 is revised, with a new left margin annotation "WLS DEP 1.8-1, under the Interface column to read: 13.1 The infromation pertaining to design features that affect plans for coping with emergencies in the operation of thereactor facility or a major portion thereof as specified in 10 CFR 52.137(a)(11)	Departure update
11254	WLS	Pt 02	FSAR 01	01.09.T / T1.9-201	COLA Part 2, FSAR Chapter 1, Table 1.9-201, Sheet 14 of 17 is revised to add RG 1.219 as reflected on Duke Energy Submittal on Final Rule on Enhancements to Emergency Preparedness Regulation, Enclosure 2.	Duke Energy Submittal on Final Rule on Enhancements to Emergency

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Preparedness Regulation, Enclosure 2, WLG2013.02-01
11255	WLS	Pt 02	FSAR 01	01.09.T / T1.9-204	COLA Part 2, FSAR Chapter 1, Table 1.9-204, Sheets 2, 3 and 5 are revised to remove Generic Letters 80-22, 80-094, 80-108, 81-10, and 91-14 as reflected on Duke Energy Submittal on Final Rule on Enhancements to Emergency Preparedness Regulation, Enclosure 2.	Duke Energy Submittal on Final Rule on Enhancements to Emergency Preparedness Regulation, Enclosure 2, WLG2013.02-01
11256	WLS	Pt 02	FSAR 01	01.AA	COLA Part 2, FSAR Chapter 1, Appendix 1AA is revised to add RG 1.219, as reflected on Duke Energy Submittal on Final Rule on Enhancements to Emergency Preparedness Regulation, Enclosure 2.	Duke Energy Submittal on Final Rule on Enhancements to Emergency Preparedness Regulation, Enclosure 2, WLG2013.02-01
11533	WLS	Pt 02	FSAR 02	02 / LOF	COLA Part 2, FSAR Chapter 2, List of Figures is updated to reflect the titles on figures.	Editorial
11169	WLS	Pt 02	FSAR 02	02.00	COLA Part 2, FSAR Chapter 2, Section 2.0 first paragraph is revised to replace "(WLS)" with "(Lee)."	Acronym update
11170	WLS	Pt 02	FSAR 02	02.00.T / T2.0-201	COLA Part 2, FSAR Chapter 2, Table 2.0-201 is revised to replace "WLS" with "Lee" on three column headings.	Acronym update
10890	WLS	Pt 02	FSAR 02	02.00.T / T2.0-201	COLA Part 2, FSAR Chapter 2, Table 2.0-201 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 2.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 2, WLG2013.05-02
11171	WLS	Pt 02	FSAR 02	02.00.T / T2.0-201 SH05	COLA Part 2, FSAR Chapter 2, Table 2.0-201, Sheet 5 is revised to replace "WLS" with "Lee" under the column heading, AP 1000 DCD Site Parameters, at the entries for Flood Level, Groundwater Level, and Plant Grade Elevation.	Acronym update
10891	WLS	Pt 02	FSAR 02	02.01.01	COLA Part 2, FSAR Chapter 2, subsection 2.1.1, third paragraph is revised as follows: The coordinates of the two new reactors are given below: LONGITUDE AND LATITUDE (decimal degrees [NAD83]) UNIT 1: 35.036527 North -81.512962 West UNIT 2: 35.036995 North -81.510351 West UNIVERSAL TRANSVERSE MERCATOR NAD83 ZONE 17 (Meters) Northing Easting	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 3, WLG2013.05-02

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
					UNIT 1: 3877214.1 453211.9 UNIT 2: 3877264.7 453450.3	
11172	WLS	Pt 02	FSAR 02	02.01.01.02	COLA Part 2, FSAR Chapter 2, Section 2.1.1.2 is revised at the last sentence to replace "EAB" with "Exclusion Area Boundary (EAB)."	Acronym update
10892	WLS	Pt 02	FSAR 02	02.01.01.02	COLA Part 2, FSAR Chapter 2, Subsection 2.1.1.2 is revised as follows: Figure 2.1-203 illustrates the region surrounding the Nuclear Site within a radius of 50 mi. This map includes prominent geophysical and political features in the area. Figure 2.1-202 shows greater detail of the Lee Nuclear Site out to a radius of 6 mi. The Lee Nuclear Station site boundary is boldly outlined. As shown in the figure, there are no industrial and transportation facilities, commercial, institutional, recreational, and residential structures within the site area. Figure 2.1-204 is a USGS topographic map that shows prominent natural and manmade features. Figure 2.1-201 illustrates the site in greater detail. The reactor building, turbine building, and the cooling towers are labeled. The auxiliary buildings are shown in the background. Figures 2.1-209A and 2.1-209B illustrate the shortest distances from the Effluent Release Boundaries to the EAB for both Units 1 and 2. The total area contained by the site boundary is about 1,900 acres of land. There are no industrial, military, transportation facilities, commercial, institutional, recreational, or residential structures within the site area. The EAB generally follows the site boundary (but extends beyond it on the northern and eastern sides of the site). The Effluent Release Boundary is defined as an assumed 448 ft. radius circle around each reactor that encompasses all site release points. Figures 2.1-209A and 2.1-209B show the location of the EAB and the shortest distances from the Effluent Release Boundaries associated with Units 1 and 2. The nearest segment of the EAB to the Effluent Release Boundary is 2914 feet.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 3, WLG2013.05-02
10893	WLS	Pt 02	FSAR 02	02.01.02	COLA Part 2, FSAR Chapter 2, Subsection 2.1.2 is revised as follows: The boundary on which limits for the release of radioactive effluents are based is the exclusion area boundary shown in Figures 2.1-209A and 2.1-209B. The site is clearly posted with no trespassing signs that also include actions to be taken in the event of emergency conditions at the plant. The site's physical security plan contains information on actions to be taken by security force personnel in the event of unauthorized persons crossing the EAB during emergency operations.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 3, WLG2013.05-02
11409	WLS	Pt 02	FSAR 02	02.01.02.01	COLA Part 2, FSAR Chapter 2, Subsection 2.1.2.1 is revised to read: All of the land inside the site boundary (Figure 2.1-201) is owned by Duke Energy. Duke Energy controls all activities within this area including exclusion and removal of personnel from the area during emergency operations. Duke Energy owns the mineral rights on the Lee Nuclear Site. There are no known easements that affect the Lee Nuclear Station. The Exclusion Area Boundary (EAB), shown in Figures 2.1-209A and 2.1-209B, extends beyond the site boundary to the north and east. Certain properties within the EAB that lay beyond the site boundary are currently not owned by Duke Energy. Negotiations regarding these properties have been initiated and Duke Energy ownership or control authority, including the mineral rights, will be obtained prior to start of construction.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 3, WLG2013.05-02
11265	WLS	Pt 02	FSAR 02	02.01.03	COLA Part 2, FSAR Chapter 2, Subsection 2.1.3, last paragraph is revised to read: The commercial operation date was initially estimated to be 2016, but has been revised to approximately 2023. The FSAR evaluations are based on 2016; however, Duke Energy has evaluated the change and has determined that it is not significant.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 3, WLG2013.05-02

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
11173	WLS	Pt 02	FSAR 02	02.01.03.03	COLA Part 2, FSAR Chapter 2, Section 2.1.3.3 second paragraph, second to last sentence is revised to replace "EPZ" with "Emergency Planning Zone (EPZ)."	Acronym update
10894	WLS	Pt 02	FSAR 02	02.01.F / F2.1-209	COLA Part 2, FSAR Chapter 2, Figure 2.1-209 is deleted to provide EAB distances for each unit, presented as Figure 2.1-209A and Figure 2.1-209B.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 3, WLG2013.05-02
11174	WLS	Pt 02	FSAR 02	02.02.01	COLA Part 2, FSAR Chapter 2, Section 2.2.1, fifth paragraph is revised to replace "ASTs" with "aboveground storage tanks (ASTs)."	Acronym update
10895	WLS	Pt 02	FSAR 02	02.03.01	COLA Part 2, FSAR Chapter 2, Subsection 2.3.1, first paragraph is revised, retaining the LMA WLSCOL 2.3-1, as follows: The description of the general climate of the region is based primarily on climatological records for Greenville/Spartanburg International Airport (GSP), located between Greenville and Spartanburg, South Carolina. This first order station was selected because the terrain and land-use in the surrounding area is similar to the area around the Lee Nuclear Site (i.e., rural). This description uses data from those records, as appropriate, and is augmented by recent data from the Lee Nuclear Station site meteorological tower (Tower 2). Meteorological data for the Lee Nuclear Site collected from 12/1/2005 through 11/30/2007 is presented and used in FSAR Section 2.3 to calculate atmospheric dispersion values. FSAR Appendix 2CC provides an evaluation which concludes that one-year and two year site data sets are consistent and representative of long-term conditions for the site.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10896	WLS	Pt 02	FSAR 02	02.03.01.02.02	COLA Part 2, FSAR Chapter 2, Subsection 2.3.1.2.2, second paragraph is revised to add Rutherford and Polk Counties to the listing of counties assessed for tornado activity as follows: The tornadoes reported during the years 1950-2005 in the vicinity of Cherokee, Spartanburg, Union, Chester, and York Counties in South Carolina and Polk, Rutherford, Cleveland, Gaston, and Mecklenburg Counties in North Carolina are shown in Table 2.3-204. During the period 1950 to 2005, a total of 125 tornadoes touched down in these counties, which have a combined total land area of 5,131.2 square miles (Reference 212). These local tornadoes have a mean path area of 0.459 square miles, excluding tornadoes without a length specified. The site recurrence frequency of tornadoes can be calculated using the point probability method as follows: Total area of tornado sightings = 5,131.2 sq mi Average annual frequency = 125 tornadoes/56 years = 2.23 tornadoes/year Annual frequency of a tornado striking a particular point P = [(0.459 mi2/tornado) (2.23 tornadoes/year)] / 5,131.2 sq. mi = 0.0002 yr-1 Mean recurrence interval = 1/P = 5000 years.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
11193	WLS	Pt 02	FSAR 02	02.03.02.05.01	COLA Part 2, FSAR Chapter 2, Subsection 2.3.2.5.1, sixth paragraph, third sentence is revised to read: Annually, plume shadowing effects reach 1200 meters downwind 1 percent of the time with the farthest impact reaching approximately 4000 meters downwind for 0.5 percent of the time.	Correction to the Duke Energy Submittal, Supplemental Inforamtion Related to Design Changes to the Circulating Water System, WLG2011.11-04

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10897	WLS	Pt 02	FSAR 02	02.03.02.07	COLA Part 2, FSAR Chapter 2, Subsection 2.3.2.7, last paragraph is revised to read: These air quality characteristics are not expected to be a significant factor in the design and operating bases of Units 1 and 2. The new nuclear steam supply system and other related radiological systems are not sources of criteria pollutants or other air toxics. The addition of supporting auxiliary boilers, emergency diesel generators, and station blackout generators (and other non-radiological emission sources) are not expected to be significant sources of criteria pollutant emissions because these units operate on an intermittent test and/or emergency basis.	Editorial as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10898	WLS	Pt 02	FSAR 02	02.03.03.01	COLA Part 2, FSAR Chapter 2, Subsection 2.3.3.1, second paragraph is revised as follows: Calculations to determine diffusion estimates for both short- and long-term conditions are provided in Subsections 2.3.4 and 2.3.5, respectively. These analyses were completed using data from the meteorological Tower 2. The short-term and long-term X/Q modeling is based on the 24-month period from December 1, 2005 to November 30, 2007.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10899	WLS	Pt 02	FSAR 02	02.03.03.01	COLA Part 2, FSAR Chapter 2, Subsection 2.3.3.1, fourth and fifth paragraphs are revised as follows: The Tower 1 meteorological installation encompassed an original 55-meter (m) tower and a 10-m tower from the original Cherokee Nuclear site. Tower 1 was located at 588 ft. msl roughly 5 ft. lower than the future final grade of the Lee Nuclear Station containment structures. Because of its large size (e.g., transmission style tower), Tower 1 did not meet the structural requirements of Regulatory Guide 1.23, Revision 1, "Meteorological Monitoring Programs for Nuclear Power Plants." Consequently, Tower 1 data was not used for the Lee Nuclear Station COLA analyses and are not discussed further. Tower 1 was decommissioned in May 2011. Tower 2 is a 60-m meteorological tower, located on the east side of the power block. This tower is representative of both the wider site area and regional weather conditions. The base elevation for Tower 2 is approximately 611 ft., or approximately 18 ft. above the 593 ft. plant grade. Data collection from this meteorological tower began on December 1, 2005.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10900	WLS	Pt 02	FSAR 02	02.03.04	COLA Part 2, FSAR Chapter 2, Subsection 2.3.4 is revised, retaining LMA WLS COL 2.3-4, at the first sentence is revised as follows: The consequences of a design basis accident in terms of human exposure are a function of the atmospheric dispersion conditions at the site of the potential release.	Editorial as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
11207	WLS	Pt 02	FSAR 02	02.03.04	COLA Part 2, FSAR Chapter 2, Section 2.3.4, last sentence is revised to replace "LPZ" with "low population zone (LPZ)"."	Acronym update
11208	WLS	Pt 02	FSAR 02	02.03.04.01	COLA Part 2, FSAR Chapter 2, Section 2.3.4.1, second paragraph is revised to replace "low population zone (LPZ)" with "LPZ."	Acronym update
10901	WLS	Pt 02	FSAR 02	02.03.04.01	COLA Part 2, FSAR Chapter 2, Subsection 2.3.4.1, fifth and sixth paragraphs are revised as follows: Using joint frequency distributions of wind direction and wind speed by atmospheric stability, PAVAN provides the X/Q values as functions of direction for various time periods at the EAB and the LPZ. The meteorological	Duke Energy Supplemental Response to Lee Units 1 and 2

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
					data needed for this calculation includes wind speed, wind direction, and atmospheric stability. The meteorological data used for this analysis was obtained from the onsite meteorological Tower 2 data from December 1, 2005 through November 30, 2007. The joint frequency distribution for this period is reported in Table 2.3 235 through Table 2.3-241. Other plant specific data included tower height at which wind speed was measured (10.0 m) and distances to the EAB and LPZ. The Exclusion Area Boundary (EAB) for Lee Nuclear Station is shown in FSAR Figures 2.1-209A and 2.1-209B. The minimum EAB distances are reported in Table 2.3 -282. In this table, the distances are measured from a 448-foot radius effluent release boundary (from each Unit's containment building) to the EAB. The low population zone (LPZ) is defined as a circle with a 2-mile radius centered on the midpoint between the Unit 1 and 2 containment buildings. Within the ground release category, two sets of meteorological conditions are treated differently. During neutral (D) or stable (E, F, or G) atmospheric stability conditions when the wind speed at the 10-meter level is less than 6 meters per second (m/s), horizontal plume meander is considered. The X/Q values are determined through the selective use of the following set of equations for ground-level relative concentrations at the plume centerline:	Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
11175	WLS	Pt 02	FSAR 02	02.03.04.01	COLA Part 2, FSAR Chapter 2, Section 2.3.4.1, fifth paragraph is revised to replace "low population zone (LPZ)" with "LPZ."	Acronym update
10902	WLS	Pt 02	FSAR 02	02.03.04.01	COLA Part 2, FSAR Chapter 2, Subsection 2.3.4.1, eighth paragraph is revised as follows: During all other meteorological conditions, unstable (A, B, or C) atmospheric stability and/or 10-meter level wind speeds of 6 m/s or more, plume meander is not considered. The higher value calculated from Equation 1 or 2 is used as the appropriate X/Q value.	Editorial, as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10903	WLS	Pt 02	FSAR 02	02.03.04.02	COLA Part 2, FSAR Chapter 2, Subsection 2.3.4.2, first paragraph is revised as follows: The methodology described in Regulatory Guide 1.145 divides release configurations into two modes, ground release and stack release. A stack or elevated release includes all release points that are effectively greater than two and one-half times the height of the adjacent solid structures. Since the AP1000 release points do not meet this criterion, releases are considered to be ground level releases. The analysis also assumed a 448 ft radius circle, centered on each Unit's containment, which encompasses all release points (sources) when calculating distances to the receptors.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10904	WLS	Pt 02	FSAR 02	02.03.04.02	COLA Part 2, FSAR Chapter 2, Subsection 2.3.4.2, fifth paragraph through the end of the subsection is revised as follows: Building cross-sectional area is defined as the smallest vertical-plane area of the reactor building, in square meters. The area of the reactor building to be used in the determination of building-wake effects will be conservatively estimated as the above grade, cross-sectional area of the shield building. This area was determined to be 2843 m2. Building height is the height above plant grade of the containment structure used in the building-wake term for the annual-average calculations. The Passive Containment Cooling System (PCCS) tank roof is at Elevation 329 ft. The DCD design grade elevation for the AP1000 is 100 ft; therefore, the height above plant grade of the containment structure or building height is 229 ft. As described in Regulatory Guide 1.145, a ground release includes all release points that are effectively lower than two and one-half times the height of adjacent solid structures. Therefore, as stated above, a ground release was assumed.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02

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					The tower height is the height at which the wind speed was measured. Based on the ground level release assumption, the lower measurement level (i.e., 10-meter level) on the tower height was used. Table 2.3-283 gives the direction-dependent sector and the direction independent X/Q values at the EAB and LPZ along with the 5 percent maximum X/Q values for both Units 1 and 2. As shown, the 0.5 percent direction dependent maximum sector relative dispersion exceeds the 5 percent direction independent overall site dispersion at the EAB. Since a higher relative dispersion coefficient is conservative, the 0.5 percent maximum sector (SE at 1410 m for Unit 1 and SE at 1309 m for Unit 2) relative dispersion is limiting for the EAB. For the LPZ, the comparison also resulted in the conclusion that the 0.5 percent direction dependent relative dispersion was limiting. A summary of these results is provided below. Short Term Accident X/Q VALUES for Unit 1 (sec/m3) (Based on December 2005-November 2007 Meteorological Data) 0-2 Hrs 0-8 Hrs 8-24 Hrs 24-96 Hrs 96-720 Hrs EAB 3.32E-04 N/A N/A N/A N/A (1410 m, SE sector) LPZ N/A 8.05E-05 5.52E-05 2.43E-05 7.52E-06 (3219 m, SE sector) Short Term Accident X/Q VALUES for Unit 2 (sec/m3) (Based on December 2005-November 2007 Meteorological Data) 0-2 Hrs 0-8 Hrs 8-24 Hrs 24-96 Hrs 96-720 Hrs EAB 3.55E-04 N/A N/A N/A N/A (1309 m, SE sector) LPZ N/A 8.05E-05 5.52E-05 2.43E-05 7.52E-06 (3219 m, SE sector) As seen from the above tables, the atmospheric dispersion values for Unit 2 are limiting. The above Lee Nuclear Station site characteristics are compared to the AP1000 design criteria in Table 2.0-201.	
11176	WLS	Pt 02	FSAR 02	02.03.04.02	COLA Part 2, FSAR Chapter 2, Section 2.3.4.2, fifth paragraph is revised to replace "(PCCS)" with "(PCS)."	Acronym update
11410	WLS	Pt 02	FSAR 02	02.03.04.04	COLA Part 2, FSAR Chapter 2, Subsection 2.3.4.4, third paragraph, third sentence is revised as follows: The building area used for building wake corrections is the above grade containment shell area which was conservatively calculated to be 2843 m2.	Editorial, as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10905	WLS	Pt 02	FSAR 02	02.03.05.01	COLA Part 2, FSAR Chapter 2, Subsection 2.3.5.1, second and fourth paragraphs are revised as follows: The gridded receptor locations were determined from the locations obtained from the 2007 and 2008 land use information. Hourly meteorological data was used in the development of joint frequency distributions, in hours, of wind direction and wind speed by atmospheric stability class. The wind speed categories used were consistent with the Lee Nuclear short-term (accident) diffusion X/Q calculation discussed above. Calms (wind speeds below the anemometer starting speed of 1 mph) were distributed into the first wind speed class with the same proportion and direction as the direction frequency of the 2nd wind-speed class. For receptors located at the EAB, the analysis assumed a ground level point source located at the Effluent Release Boundary closest to the receptor. For other offsite receptors such as cows and gardens, the analysis	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02

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					assumed a ground level point source located at the center of the facility midpoint between the Unit 1 and 2 containment buildings. At ground level locations beyond several miles from the plant, the annual average concentration of effluents are essentially independent of release mode; however, for ground level concentrations within a few miles, the release mode is important. Gaseous effluents released from tall stacks generally produce peak ground-level air concentrations near or beyond the site boundary. Near ground level releases usually produce concentrations that decrease from the release point to all locations downwind. Guidance for selection of the release mode is provided in Regulatory Guide 1.111. In general, in order for an elevated release to be assumed, either the release height must be at least twice the height of adjacent buildings or detailed information must be known about the wind speed at the height of the release. For this analysis, the routine releases were conservatively modeled as ground level releases.	
10906	WLS	Pt 02	FSAR 02	02.03.05.01	COLA Part 2, FSAR Chapter 2, Subsection 2.3.5.1, sixth paragraph, last sentence is revised to read: The calculation results, with and without consideration of dry deposition, are identified in the output as "depleted" and "undepleted".	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10907	WLS	Pt 02	FSAR 02	02.03.05.02	COLA Part 2, FSAR Chapter 2, Subsection 2.3.5.2, last paragraph is revised as follows: The results of the analysis, based on two years of data collected on site, are presented in Tables 2.3-287 through 2.3-292. The limiting atmospheric dispersion factor (X/Q) at the EAB, 6.30 x 10-6 sec/m3, is in the SE direction from Unit 2 at 1309 meters. The limiting atmospheric dispersion at the nearest residence, 4.60 x 10-6 sec/m3, is also in the SE direction at 1588 meters. Atmospheric dispersion factors for other receptors are given in Table 2.3-289. Long term atmospheric dispersion factors are not given in the AP1000 DCD except at the EAB. The DCD site boundary annual average X/Q is 2.0 x 10-5 sec/m3. This bounds the Lee Nuclear Station annual average routine release EAB X/Q value of 6.3 x 10-6 sec/m3. Table 2.0-201 provides a comparison of the Lee Nuclear Station site characteristics with the DCD design parameters.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10908	WLS	Pt 02	FSAR 02	02.03.T / T2.3-204 SH08	COLA Part 2, FSAR Chapter 2, Table 2.3-204 is revised reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 4.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10909	WLS	Pt 02	FSAR 02	02.03.T / T2.3-235	COLA Part 2, FSAR Chapter 2, Table 2.3-235 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10910	WLS	Pt 02	FSAR 02	02.03.T / T2.3-236	COLA Part 2, FSAR Chapter 2, Table 2.3-236 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Attachment 4, WLG2013.05-02
10911	WLS	Pt 02	FSAR 02	02.03.T / T2.3-237	COLA Part 2, FSAR Chapter 2, Table 2.3-237 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10912	WLS	Pt 02	FSAR 02	02.03.T / T2.3-238	COLA Part 2, FSAR Chapter 2, Table 2.3-238 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10913	WLS	Pt 02	FSAR 02	02.03.T / T2.3-239	COLA Part 2, FSAR Chapter 2, Table 2.3-239 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4 WLG2013.05-02
10914	WLS	Pt 02	FSAR 02	02.03.T / T2.3-240	COLA Part 2, FSAR Chapter 2, Table 2.3-240 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10915	WLS	Pt 02	FSAR 02	02.03.T / T2.3-241	COLA Part 2, FSAR Chapter 2, Table 2.3-241 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
11177	WLS	Pt 02	FSAR 02	02.03.T / T2.3-245	COLA Part 2, FSAR Chapter 2, Table 2.3-245 is revised at three column headings to replace "WLS" with "Lee."	Acronym update
11178	WLS	Pt 02	FSAR 02	02.03.T / T2.3-255	COLA Part 2, FSAR Chapter 2, Table 2.3-255 is revised at four column headings to replace "WLS" with "Lee."	Acronym update
10916	WLS	Pt 02	FSAR 02	02.03.T / T2.3-282	COLA Part 2, FSAR Chapter 2, Table 2.3-282 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10917	WLS	Pt 02	FSAR 02	02.03.T / T2.3-283	COLA Part 2, FSAR Chapter 2, Table 2.3-283 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10918	WLS	Pt 02	FSAR 02	02.03.T / T2.3-286	COLA Part 2, FSAR Chapter 2, Table 2.3-286 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10919	WLS	Pt 02	FSAR 02	02.03.T / T2.3-287	COLA Part 2, FSAR Chapter 2, Table 2.3-287 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10920	WLS	Pt 02	FSAR 02	02.03.T / T2.3-288	COLA Part 2, FSAR Chapter 2, Table 2.3-288 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10921	WLS	Pt 02	FSAR 02	02.03.T / T2.3-289	COLA Part 2, FSAR Chapter 2, Table 2.3-289 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10922	WLS	Pt 02	FSAR 02	02.03.T / T2.3-290	COLA Part 2, FSAR Chapter 2, Table 2.3-290 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10923	WLS	Pt 02	FSAR 02	02.03.T / T2.3-291	COLA Part 2, FSAR Chapter 2, Table 2.3-291 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10924	WLS	Pt 02	FSAR 02	02.03.T / T2.3-292	COLA Part 2, FSAR Chapter 2, Table 2.3-292 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10925	WLS	Pt 02	FSAR 02	02.03.T / T2.3-294	COLA Part 2, FSAR Chapter 2, Table 2.3-294 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10926	WLS	Pt 02	FSAR 02	02.03.T / T2.3-295	COLA Part 2, FSAR Chapter 2, Table 2.3-295 is revised as reflected on Duke Energy Plant Relocation Submittal, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
10929	WLS	Pt 02	FSAR 02	02.04.01.01.03	COLA Part 2, FSAR Chapter 2, Subsection 2.4.1.1.3 is revised, second paragraph as follows: The DCD reference floor elevation of 100 ft. corresponds to the nuclear island finished floor elevation set at 593 ft. above msl. Therefore, the nuclear island basemat elevation is 553.5 ft. above msl. Yard grade elevation is 592 ft. above msl, which keeps water from pooling in areas of safety related structures (Subsection 2.4.2.3). An extensive site stormwater drainage system is planned and is slated for implementation before the construction commences on Units 1 and 2. The elevations of safety-related components are presented on Table 2.4.1 201.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
11179	WLS	Pt 02	FSAR 02	02.04.01.01.04	COLA Part 2, FSAR Chapter 2, Subsection 2.4.1.1.4 under the sub-heading, Intake System, last paragraph is revised to replace "(DTS)" with "demineralized water treatment system."	Acronym update
11180	WLS	Pt 02	FSAR 02	02.04.01.02.02.05	COLA Part 2, FSAR Chapter 2, Subsection 2.4.1.2.2.5 under the sub-heading, Circulation and Mixing, third paragraph is revised to remove "(DO)."	Acronym update

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
11405	WLS	Pt 02	FSAR 02	02.04.01.02.02.06	COLA Part 2, FSAR chapter 2, Subsection 2.4.1.2.2.6, third paragraph under the sub-heading Make-Up Pond B is revised to read: Make-Up Pond B dam crest elevation is 590 ft. Make-Up Pond B has a normal full pond elevation of 570 ft. above msl (spillway elevation) and occupies approximately 11 percent of the total drainage area of McKowns Creek. Bathymetry exhibited a maximum depth of 59.3 ft., a mean depth of 31.4 ft., total storage capacity of approximately 4000 ac.-ft. and the surface area at full pond is approximately 150 ac. (Figure 2.4.1-209, Sheet 2). The useable storage is approximately 3200 ac.-ft.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
11406	WLS	Pt 02	FSAR 02	02.04.01.02.02.06	COLA Part 2, FSAR Chapter 2, Subsection 2.4.1.2.2.6 following the fourth paragraph under the sub-heading Make-Up Pond B is revised to read: Make-Up Pond B includes an adequately sized outlet structure and is not located on a sizeable river or stream. Therefore, the potential for significant debris to be picked up by a rise in the water level and then transported to the outlet structure where it could collect as an obstruction is minimal which eliminates the need for clear cutting around the perimeter of the pond. Floating debris has not been a problem historically and no clogging of the overflow spillway has been recorded. To ensure no debris blockage of the spillway, a shoreline management program is established along the banks of Make-Up Pond B. The shoreline management program consists of annually inspecting the shoreline around Make-Up Pond B and removing any trees that show distress of falling into the pond and removing any trees that may be down on the ground. In addition, Duke Energy will inspect the spillway after any rain event greater than 3 inches per hour to ensure that the spillway remains clear of any debris. Even though the shoreline management program is considered to be adequate for preventing debris blockage of the spillway, as a secondary measure a debris barrier system will be installed approximately 350 feet away from the spillway as shown on Figure 2.4.1-214. The debris barrier is designed to rise and fall with fluctuations in the pond water level. The debris barrier system is considered non-safety related.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10930	WLS	Pt 02	FSAR 02	02.04.01.02.02.06	COLA Part 2, FSAR Chapter 2, Subsection 2.4.1.2.2.6, sixth paragraph under the sub-heading Make-Up Pond B is revised to read: The maximum flood level of surface water features at the Lee Nuclear Station is elevation 589.10 ft. msl. This elevation would result from a Probable Maximum Flood (PMF) event on Make-Up Pond B watershed with the added effects of coincident wind wave activity as described in Subsection 2.4.4. The Lee Nuclear Station safety-related structures have a grade elevation of 593 ft. msl.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10887	WLS	Pt 02	FSAR 02	02.04.01.02.02.06	COLA Part 2, FSAR Chapter 2, Subsection 2.4.1.2.2.6, last paragraph under the sub-heading Make-Up Pond B is revised to read: The Upper Arm Dam has a design crest elevation of 590 ft. located at the access road. The normal pool elevation of the Upper Arm is 575 ft and the Upper Arm Pond surface area at full pond conditions is approximately 5 percent of the total drainage area of the Upper Arm watershed. Bathymetry exhibited a maximum depth of 32.2 ft., a mean depth of 31.4 ft., total storage capacity of approximately 101 ac.-ft. and the surface area at full pond is approximately 9.1 ac. (Figure 2.4.1-209, Sheet 2).	Clarification: The watershed and the surface area should be associated with the Upper Arm.
10967	WLS	Pt 02	FSAR 02	02.04.01.F / F2.4.1-201	COLA Part 2, FSAR Chapter 2, Figure 2.4.1-201 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1,

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						Attachment 5, WLG2013.05-02
10961	WLS	Pt 02	FSAR 02	02.04.01.F / F2.4.1-214	COLA Part 2, FSAR Chapter 2, Figure 2.4.1-214 is added as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
11195	WLS	Pt 02	FSAR 02	02.04.01.T / T2.4.1-201 SH02	COLA Part 2, FSAR Chapter 2, Table 2.4.1-201, Sheet 2 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10931	WLS	Pt 02	FSAR 02	02.04.02.02	COLA Part 2, FSAR Chapter 2, Subsection 2.4.2.2, last paragraph is revised as follows: The maximum flood level at the Lee Nuclear Station is established as the maximum of calculated results from flooding events analyzed in Section 2.4. That maximum flood level is elevation 592.56 ft. msl. This elevation would result from a PMP event on the Lee Nuclear Station site (local intense precipitation) as described in Subsection 2.4.2.3. The Lee Nuclear Station safety related plant elevation is 593 ft. msl. This maximum flood level is identified as a site characteristic in Table 2.0-201.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10932	WLS	Pt 02	FSAR 02	02.04.02.03	COLA Part 2, FSAR Chapter 2, Subsection 2.4.2.3 is revised as follows: [Second through sixth paragraphs] The site is generally defined by wide flat areas. However, the site is graded such that runoff will drain away from safety-related structures either to Make Up Pond B, Make-Up Pond A, or directly to the Broad River. Runoff from a specific power block area flows through four graded channels per unit as described in the discussion below and then flows across the site to the receiving water body. Computed water surface elevations in the vicinity of safety-related structures are below plant elevation 593 ft. The site grading and drainage plan is shown in Figure 2.4.2 202. The site is graded to drain runoff away from the power blocks. The finished floor elevation of the safety related structures for each unit is 593 ft. The areas immediately adjacent to the power blocks range in elevation from 592 ft. to 590 ft. The adjacent area is generally bounded by a roadway surrounding the power blocks. The power block area bounded by the roadway is either paved or gravel surfaced. Areas beyond the roadway are generally maintained grass surfaces. Further from the power blocks, the site is flat from the roadway to the plant side of the vehicle barrier system at elevation 590 ft. The opposite bank of the vehicle barrier system is at elevation 588 ft. Beyond the vehicle barrier system, the site is generally flat at elevation 588 ft. before encountering the steeper slopes into the adjacent, downstream water bodies. The effects of local intense precipitation are analyzed using a series of models, each establishing boundary conditions for additional modeling. The overall site, generally described by the flat areas at elevation 588 ft., is idealized as a dry reservoir and modeled using level-pool storage routing with U.S. Army Corps of Engineers HEC-HMS 3.5 computer software (Reference 302) for the site drainage area shown in Figure 2.4.2-202. The area of the site upstream of the vehicle barrier system, generally described by the flat areas at elevation 590 ft.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02

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					are also idealized as a dry reservoir and modeled using level-pool storage routing with HEC-HMS 3.5 computer software. The idealized reservoir for the overall site is defined by an elevation-discharge-storage relationship. Storage is based on an elevation-area relationship and is developed using the available storage areas across the site within the drainage area. Storage routing does not incorporate the entire area of the power block bounded by the vehicle barrier system and a sloped area that transitions from elevation 590 ft. to 588 ft., located north of Unit 2. In addition, all other site structures and the switchyard area are assumed to provide no storage. The discharge relationship for this idealized reservoir is determined using broad crested weir flow. The 588 ft. contour along the banks of the steeper slopes into adjacent, downstream water bodies is used to develop the length of the weir. The total length was reduced to account for ineffective areas where adjacent slopes may not be as steep as areas where structures could obstruct flow discharging from the site. The downstream water bodies are used to establish boundary conditions and determine any tailwater effects. Although tailwater effects are not determined to affect weir flow, a conservative estimate of 2.0 is used for the weir flow coefficient. [Twelfth, thirteenth and newly added four paragraphs that follow] Runoff is applied to the site reservoir model in HEC-HMS and level-pool storage routing is used to determine the resulting water surface elevation. Several time distributions are examined for both modeled storm events. For the 72-hr. duration storm, several temporal distributions produce the highest water surface elevation for the site. For reference the tail end peaking hyetograph is provided in Figure 2.4.3 236. As a conservative approach, the results from the 72-hr. duration storm are used to establish the starting elevation for the 6-hr. duration storm. For the 6-hr. duration storm, a tail end peaking storm event is found to result in the highest water surface elevation for the site. The corresponding hyetograph is provided in Figure 2.4.3 235. Based on a combination of the two storms the maximum water surface elevation determined using HEC-HMS is 588.82 ft. This elevation is applied to the overall site and used as the downstream boundary condition for the analysis of the area upstream of the vehicle barrier system. Similar to the previous discussion, the idealized reservoir for the area upstream of the vehicle barrier system is defined by an elevation-discharge-storage relationship. Storage is based on an elevation-area relationship and is developed using the available storage areas within the drainage area. Storage routing does not incorporate the entire area of the power block bounded by the elevation 590 ft. contour adjacent to the road looping around the power block. In addition, all other structures in the area are assumed to provide no storage. The discharge relationship for this idealized reservoir is determined using broad crested weir flow. The upstream, higher side of the vehicle barrier system 590 ft. contour is used to develop the length of the weir. The total length does not include the sloped transition area north of Unit 2 and was reduced to account for ineffective areas where structures could obstruct flow discharging from the area. The result for the downstream area is less than the bank elevation of 590 ft. Therefore, there are no tailwater effects. As a conservative estimate, a weir flow coefficient of 2.0 is used. Two storms are modeled as previously identified for the downstream area. The local intense PMP is converted to runoff instantaneously and no runoff losses are included. Runoff is applied to the idealized reservoir model in HEC-HMS and level-pool storage routing is used to determine the resulting water surface elevation. Several time distributions are examined for both modeled storm events. For the 72-hr. duration storm, all temporal distributions produce the same water surface elevation for the area. As a conservative approach, the results from the 72-hr. duration storm are used to establish the starting elevation for the 6-hr. duration storm. For the 6-hr. duration storm, several temporal distributions produce the highest water surface elevation for the area. Based on a combination of the two storms the maximum water surface elevation determined using HEC-HMS is 590.56 ft. This elevation is applied to the area upstream of the vehicle barrier system and used as the downstream boundary condition for the analysis of the power block	

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					area. [Twenty third paragraph] The resulting water surface elevations are provided in Table 2.4.2-204. The maximum water surface elevation determined is 592.56 ft. and occurs at drainage area B1 of the Unit 1 power block area and at drainage area B2 of the Unit 2 power block area. These drainage areas, B1 and B2, are located on the west side of each, respective, power block area between the Annex Building, north storage tanks and ramp, and the Transformer Area. All Lee Nuclear Station safety-related structures are located above the effects of local intense precipitation at plant elevation 593 ft.	
10968	WLS	Pt 02	FSAR 02	02.04.02.F / F2.4.2-202	COLA Part 2, FSAR Chapter 2, Figure 2.4.2-202 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10969	WLS	Pt 02	FSAR 02	02.04.02.F / F2.4.2-204	COLA Part 2, FSAR Chapter 2, Figure 2.4.2-204 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10962	WLS	Pt 02	FSAR 02	02.04.02.T / T2.4.2-204	COLA Part 2, FSAR Chapter 2, Table 2.4.2-204 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10933	WLS	Pt 02	FSAR 02	02.04.03	COLA Part 2, FSAR Chapter 2, Subsection 2.4.3 is revised under the sub-headings McKowns Creek/Make-Up Pond B and Intermittent Stream/Make-Up Pond A as follows: McKowns Creek/Make-Up Pond B The PMF for McKowns Creek and Make-Up Pond B is determined from the PMP for the 2.190-sq. mi. drainage basin of Make-Up Pond B and the 0.294-sq. mi drainage basin of the Upper Arm. The Make-Up Pond B drainage basin, including the Upper Arm, is shown in Figure 2.4.3-201. Intermittent Stream/Make-Up Pond A The PMF for the intermittent stream and Make-Up Pond A are determined from the PMP for the 0.619-sq. mi. drainage basin of Make-Up Pond A. Make-Up Pond A drainage basin is shown in Figure 2.4.3-201.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10934	WLS	Pt 02	FSAR 02	02.04.03.01	COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.1 is revised under the subheadings McKowns Creek/Make-Up Pond B, last paragraph and Intermittent Stream/Make-Up Pond A, last paragraph as follows: McKowns Creek /Make-Up Pond B For the Upper Arm to Make-Up Pond B, for a 72-hr. storm, a tail end peaking storm event was found to provide the greatest runoff and the peak water surface elevation. For the 6-hr. storm, the one-third, two-thirds and	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1,

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					center peaking storms were found to provide the greatest runoff. However, the tail-end peaking storm provides the peak water surface elevation. The 6-hr and 72-hr. storm events are discussed in Subsection 2.4.3.5. Hyetographs are provided in Figure 2.4.3-204 and Figure 2.4.3-205 for the two-thirds peaking storm events. Hyetographs are provided in Figure 2.4.3-235 and Figure 2.4.3-236 for the tail end peaking storm events. Intermittent Stream/Make-Up Pond A Several time distributions were examined for both modeled events. For the 72-hr. storm, a tail end peaking storm event was found to provide the greatest runoff and peak water surface elevation. The corresponding hyetograph is provided in Figure 2.4.3-236. For the 6-hr. storm, multiple peaking distributions, including the two-thirds peaking distribution provided the maximum runoff and peak water surface elevation. For reference, the two-thirds peaking hyetograph is provided in Figure 2.4.3-204.	Attachment 5, WLG2013.05-02
10935	WLS	Pt 02	FSAR 02	02.04.03.03	COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.3 is revised under the sub-heading McKowns Creek/Make-Up Pond B as follows: [Third and fourth paragraphs] The best calibration of the modified SCS unit hydrograph with the initial SCS unit hydrograph was found using a 10-min. computational time step in Make-Up Pond B in the HEC-HMS modeling software. Therefore, the time step used to define the ordinates of the modified SCS unit hydrograph is also 10 min. The Make-Up Pond B subbasin has a lag time of 76.8 min. The initial SCS unit hydrograph and modified unit hydrograph to account for the effects of nonlinear basin response are provided in Figure 2.4.3 237. The modified SCS unit hydrograph is tabulated in Table 2.4.3 208. The best calibration of the modified SCS unit hydrograph with the initial SCS unit hydrograph was found using a 2-min. computational time step in the Upper Arm watershed in the HEC-HMS modeling software. Therefore, the time step used to define the ordinates of the modified SCS unit hydrograph is also 2 min. The Upper Arm subbasin has a lag time of 16.2 min. The initial SCS unit hydrograph and modified unit hydrograph to account for the effects of nonlinear basin response are provided in Figure 2.4.3 246. The modified SCS unit hydrograph is tabulated in Table 2.4.3 209. [Sixth paragraph (follows the SCS curve number regression equation)] The resulting characteristic parameters for the Make-Up Pond B watershed are as follows: Drainage Area (sq. mi.) L (ft.) CN S (in.) Y (%) Tlag (hr.) 2.190 10,320 87 1.49 1.60 1.28 The resulting characteristic parameters for the Upper Arm watershed are as follows: Drainage Area (sq. mi.) L (ft.) CN S (in.) Y (%) Tlag (hr.) 0.294 3194 86 1.63 6.03 0.27 [Eighth paragraph] Base flow was determined using the minimum average monthly flow of the Gaffney and Ninety-Nine Island gauges (USGS No. 02153500 and 02153551). The flow was then corrected on the basis of a ratio of drainage basin areas. Base flow was estimated to be 1.77 cfs for the Make-Up Pond B watershed and 0.24 cfs for the Upper Arm watershed. Baseflow is applied to the model as a constant rate. [Tenth and eleventh paragraphs] The Upper Arm Dam outlet structures consist of a 54 in. steel pipe with headwalls at both the upstream and downstream inverts. The upstream invert within the Upper Arm Dam is placed at an elevation of 575.0 ft., which is the normal full pond elevation. The downstream invert emptying into Make-Up Pond B is placed at an elevation of 570.0 ft. Figure 2.4.3-249 shows a schematic of the Upper Arm culvert structure. The Upper Arm culvert is evaluated considering full flow capacity and also no flow. The access road separating the Upper Arm Dam from Make-Up Pond B is at elevation 590.0 ft. and acts as a broad-crested weir with a crest length of 390 ft. with a crest breadth of 8 ft. The maximum height of the dam is 15 ft. from the normal full pond elevation of 575 ft. up to the crest embankment. Water volume below 575 ft. is	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02

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					not considered due to nearly equivalent hydrostatic forces on both sides of the dam embankment during the PMF event. Overtopping of the Upper Arm dam crest is evaluated using the standard weir flow equation with a coefficient of 2.6. The Upper Arm Dam overtopping discharge rating curve is provided in Figure 2.4.3-247. Available storage was determined based on aerial topography. Figure 2.4.3-248 provides the storage capacity curve. Antecedent conditions for the normal full pond elevation were assumed to be 575 ft. based on historical observation.	
10936	WLS	Pt 02	FSAR 02	02.04.03.03	COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.3 is revised under the sub-heading Intermittent Stream/Make-Up Pond A, third and fifth paragraphs as follows: [Third paragraph] The resulting characteristic parameters for the watershed are as follows: Drainage Area (sq. mi.) L (ft.) CN S (in.) Y (%) Tlag (hr.) 0.619 3340 92 0.87 3.48 0.29 [Fifth paragraph] Base flow was determined using the minimum average monthly flow of the Gaffney and Ninety-Nine Island gauges (USGS No. 02153500 and 02153551). The flow was then corrected on the basis of a ratio of drainage basin areas. Base flow was estimated to be 0.50 cfs and applied to the model as a constant rate.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10937	WLS	Pt 02	FSAR 02	02.04.03.04	COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.4 is revised under the sub-headings McKowns Creek/Make-Up Pond B and Intermittent Stream/Make-Up Pond A as follows: McKowns Creek/Make-Up Pond B The precipitation, described in Subsection 2.4.3.1, with no precipitation losses, described in Subsection 2.4.3.2 is applied to the runoff model, described in Subsection 2.4.3.3. Assuming the Upper Arm Dam culvert is not functional produces the maximum conditions. The McKowns Creek and Make-Up Pond B peak PMF runoff was determined to be 20,039 cfs resulting from the 6-hr. two-thirds peaking storm event. The routed peak discharge is 6471 cfs. However, the 72-hr. tail end peaking storm event resulting in a peak PMF runoff of 18,937 cfs and a routed discharge of 8386 cfs provided the controlling water surface elevation. The peak runoff in the Upper Arm Dam during the 72-hr. tail end peaking storm event will be 3577 cfs with a peak discharge of 3549 cfs. The resulting Make-Up Pond B flow hydrograph for the 72-hr. tail end peaking storm event is shown in Figure 2.4.3-227. Temporal distribution of the PMP is discussed in Subsection 2.4.3.1. Because the Make-Up Pond B and Upper Arm Dam watersheds are small, the position of the PMP is considered point rainfall affecting the entire watershed equally. With the exception of the Upper Arm Dam, there are no upstream structures. Failure of the Upper Arm Dam is discussed in Subsection 2.4.4. No credit is taken for the lowering of flood levels at the site due to downstream dam failure. Intermittent Stream/Make-Up Pond A Applying the precipitation, described in Subsection 2.4.3.1, with no precipitation losses, described in Subsection 2.4.3.2, to the runoff model, described in Subsection 2.4.3.3, the intermittent stream and Make-Up Pond A peak PMF runoff was determined to be 11,644 cfs resulting from the 6-hr. storm event. The routed peak discharge is 9847 cfs. The resulting flow hydrograph is shown in Figure 2.4.3-228. Temporal distribution of the PMP is discussed in Subsection 2.4.3.1. Because the watershed is small, the position of the PMP is considered point rainfall affecting the entire watershed equally. There are no upstream structures. No credit is taken for the lowering of flood levels at the site due to downstream dam failure.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10938	WLS	Pt 02	FSAR 02	02.04.03.05	COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.5 is revised under the sub-heading Broad River, last sentence as follows: The maximum flood elevation is well below the station's safety-related plant elevation of 593 ft.	Duke Energy Supplemental Response to Lee Units 1 and 2

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						Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10939	WLS	Pt 02	FSAR 02	02.04.03.05	COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.5 is revised under the sub-heading McKowns Creek/Make-Up Pond B, first paragraph as follows: Subsection 2.4.4.3 addresses coincident wind wave activity for Make-Up Pond B. The maximum water surface elevation of Make-Up Pond B without considering Upper Arm Dam failure, resulting from the 6 hr. two-thirds peaking storm event modeled with a 1-min. time step, was found to be 583.29 ft. The elevation hydrograph is provided in Figure 2.4.3-230. The maximum water surface elevation of Make-Up Pond B resulting from the 72-hr. tail end peaking storm event modeled with a 1-min. time step was found to be 584.40 ft. The maximum is produced by the condition that the Upper Arm Dam culvert is not functional, but does include overtopping flows. The peak water surface elevation in the Upper Arm Dam for the 72-hr. tail end, peaking storm will be 592.28 ft. The ridge on the east side of the Upper Arm Dam separates the Upper Arm and the site, as illustrated in Figure 2.4.3-201. At elevations above 590.0 ft., discharge across the dam embankment flows directly into Make-Up Pond B. Nevertheless, peak water surface elevations for the Upper Arm are below the station's safety-related plant elevation of 593 ft. The elevation hydrograph for Make-Up Pond B is provided in Figure 2.4.3-231.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
11407	WLS	Pt 02	FSAR 02	02.04.03.05	COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.5 under the sub-heading McKowns Creek/Make-Up Pond B, last sentence is revised as follows: Blockage of the outlet structure was not considered in the analysis and debris blockage of the outlet structure is not considered to be a credible event due to Duke Energy's shoreline management program and debris barrier system discussed in Subsection 2.4.1.2.2.6.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10940	WLS	Pt 02	FSAR 02	02.04.03.05	COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.5 is revised under the sub-heading Intermittent Stream/Make-Up Pond A as follows: Subsection 2.4.4.3 addresses coincident wind wave activity for Make-Up Pond A. The maximum water surface elevation of Make-Up Pond A, resulting from the 6 hr. storm, two-thirds peaking distribution, modeled with a 1-min. time step, was found to be 558.15 ft. The elevation hydrograph is provided in Figure 2.4.3-233. Subsection 2.4.3.3 describes the models used to translate the PMP discharge to elevation.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10970	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-201	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-201 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10971	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-223	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-223 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1,

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10972	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-225	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-225 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10973	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-227	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-227 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10974	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-228	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-228 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10975	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-230	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-230 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10976	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-231	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-231 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10977	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-233	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-233 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1,

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10978	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-234	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-234 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10979	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-237	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-237 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10980	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-239	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-239 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10981	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-246	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-246 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10982	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-247	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-247 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10983	WLS	Pt 02	FSAR 02	02.04.03.F / F2.4.3-248	COLA Part 2, FSAR Chapter 2, Figure 2.4.3-248 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1,

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10963	WLS	Pt 02	FSAR 02	02.04.03.T / T2.4.3-208	COLA Part 2, FSAR Chapter 2, Table 2.4.3-208 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10964	WLS	Pt 02	FSAR 02	02.04.03.T / T2.4.3-209	COLA Part 2, FSAR Chapter 2, Table 2.4.3-209 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10941	WLS	Pt 02	FSAR 02	02.04.04.01	COLA Part 2, FSAR Chapter 2, Subsection 2.4.4.1 is revised under the sub-heading McKowns Creek/Make-Up Pond B, second paragraph as follows: The maximum peak PMF runoff from Make-Up Pond B, considering Upper Arm Dam failure, resulting from the 6 hr. tail end peaking storm event modeled with a 1-minute. time step, was found to be 23,726 cfs. However, the controlling water surface elevation resulted from the 72 hr. tail end peaking storm event modeled with a 1 minute time step. The peak elevation is produced by the condition that the Upper Arm Dam culvert is not functional. The peak PMF runoff from the 72-hr. tail end peaking storm into Make-Up Pond B was found to be 23,515 cfs. The peak runoff hydrograph is provided in Figure 2.4.4 203. The peak runoff in the Upper Arm Dam resulting from the 72 hr. tail end peaking storm is 3577 cfs with a dam failure peak discharge of 6785 cfs.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10942	WLS	Pt 02	FSAR 02	02.04.04.03	COLA Part 2, FSAR Chapter 2, Subsection 2.4.4.3, second paragraph through the sub-heading McKowns Creek/Make-Up Pond B is revised as follows: The resulting water surface elevation at the Lee Nuclear Station is 576.50 ft. The maximum flood elevation is well below the station's safety-related plant elevation of 593 ft. The resulting water surface elevation of the dam failure analysis using HEC-HMS and HEC-RAS was compared with the resulting water surface elevations of the PMF analysis using HEC-HMS and HEC-RAS. The comparison is provided in Table 2.4.4-201. Given the significant freeboard remaining at the site, a full unsteady-flow analysis to determine dam breach flows and resulting water surface elevations with greater precision was determined to be unnecessary. McKowns Creek/Make-Up Pond B Using the HEC-HMS model, the maximum water surface elevation of Make-Up Pond B, considering Upper Arm Dam failure, resulting from the 72-hr. tail end peaking storm event modeled with a 1-min. time step was found to be 585.06 ft. The maximum is produced by the condition that the Upper Arm Dam culvert is not functional. The elevation hydrograph is provided in Figure 2.4.4-205. The peak water surface in the Upper Arm Dam resulting from the 72-hr. tail end peaking storm is 592.28 ft. The ridge on the east side of the Upper Arm separates the Upper Arm and the site, as illustrated in Figure 2.4.3-201. At elevations above 590.0 ft., discharge across the dam embankment flows directly into Make-Up Pond B. Nevertheless, peak water surface elevations for the Upper Arm are below the station's safety-related plant elevation of 593 ft.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10943	WLS	Pt 02	FSAR 02	02.04.04.03	COLA Part 2, FSAR Chapter 2, Subsection 2.4.4.3, under the sub-heading Broad River is revised as follows: Broad River	Duke Energy Supplemental Response to Lee

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					Wind wave activity on the Broad River is evaluated coincident with the maximum water surface elevation of the PMF including the effects of dam failures as discussed above. The determined fetch length of 2.77 mi., shown in Figure 2.4.4 201, has a runup slope of 40 percent. The PMF including effects of dam failures and the coincident wind wave activity results in a flood elevation of 584.79 ft. msl. The Lee Nuclear Station safety-related plant elevation is 593 ft. msl and is unaffected by flood conditions and coincident wind wave activity. A more critical wind wave activity result was determined considering a fetch length through Make-Up Pond A, which becomes inundated by backwaters of the Broad River during severe flooding events. Therefore, the critical wind wave activity for the Broad River is equal to the wind wave activity for Make-Up Pond A, as discussed below.	Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10944	WLS	Pt 02	FSAR 02	02.04.04.03	COLA Part 2, FSAR Chapter 2, Subsection 2.4.4.3, under the sub-heading Intermittent Stream/Make-Up Pond A, last two paragraphs are revised as follows: Significant wave height (average height of the maximum 33-1/3 percent of waves) is estimated to be 2.76 ft., crest to trough. The maximum wave height (average height of the maximum 1 percent of waves) is estimated to be 4.59 ft., crest to trough. The corresponding wave period is 2.6 sec. The 47 percent slopes along the banks of Make-Up Pond A adjacent to the site are used to determine the wave setup and runup. The maximum runup, including wave setup, is estimated to be 8.79 ft. The maximum wind setup is estimated to be 0.07 ft. Therefore, the total wind wave activity is estimated to be 8.86 ft. The PMF including effects of dam failures and the coincident wind wave activity results in a flood elevation of 585.36 ft. msl for Make-Up Pond A and the Broad River. The Lee Nuclear Station safety-related plant elevation is 593 ft. msl and is unaffected by flood conditions and coincident wind wave activity.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10945	WLS	Pt 02	FSAR 02	02.04.04.03	COLA Part 2, FSAR Chapter 2, Subsection 2.4.4.3, under the second sub-heading McKowns Creek/Make-Up Pond B is revised as follows: McKowns Creek/Make-Up Pond B Wind wave activity on Make-Up Pond B is evaluated coincident with the maximum water surface elevation of the PMF including the effects of dam failure, as discussed above. The determined critical fetch length of 1.39 mi. is shown in Figure 2.4.3-234. The 2-year annual extreme mile wind speed is adjusted based on the factors of fetch length, level overland or over water, critical duration, and stability. The critical duration is approximately 35 min. The adjusted wind speed is 50.33 mph. Significant wave height (average height of the maximum one-third of waves) is estimated to be 2.00 ft., crest to trough. The maximum wave height (average height of the maximum 1 percent of waves) is estimated to be 3.35 ft., crest to trough. The corresponding wave period is 2.1 sec. The slopes approaching the units are not constant. The slopes above the PMF elevation are steep up to elevation 588 ft., then level out to a flat area. To represent a conservative approach, runup is calculated assuming the runup slope continues above elevation 588 ft. A conservative estimate of 25 percent is determined for the runup slope based on finished grade contours. The maximum runup, including wave setup, is estimated to be 3.97 ft. The maximum wind setup is estimated to be 0.07 ft. Therefore, the total wind wave activity is estimated to be 4.04 ft. The PMF and the coincident wind wave activity results in a flood elevation of 589.10 ft. msl. The Lee Nuclear Station safety-related plant elevation is 593 ft. msl and is unaffected by flood conditions and coincident wind wave activity.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10984	WLS	Pt 02	FSAR 02	02.04.04.F / F2.4.4-201	COLA Part 2, FSAR Chapter 2, Figure 2.4.4-201 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02

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10985	WLS	Pt 02	FSAR 02	02.04.04.F / F2.4.4-202	COLA Part 2, FSAR Chapter 2, Figure 2.4.4-202 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10986	WLS	Pt 02	FSAR 02	02.04.04.F / F2.4.4-203	COLA Part 2, FSAR Chapter 2, Figure 2.4.4-203 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
11000	WLS	Pt 02	FSAR 02	02.04.04.F / F2.4.4-204	COLA Part 2, FSAR Chapter 2, Figure 2.4.4-204 is deleted as a conforming change to Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5, removal of the call-out of the figure.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10987	WLS	Pt 02	FSAR 02	02.04.04.F / F2.4.4-205	COLA Part 2, FSAR Chapter 2, Figure 2.4.4-205 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
11181	WLS	Pt 02	FSAR 02	02.04.05	COLA Part 2, FSAR Chapter 2, Subsection 2.4.5 first paragraph is revised to replace "(PMWS)" with "probable maximum windstorm."	Acronym update
10946	WLS	Pt 02	FSAR 02	02.04.05	COLA Part 2, FSAR Chapter 2, Subsection 2.4.5, third paragraph is revised as follows: Regulatory guidance prescribed by Regulatory Guide 1.59 indicates consideration of a PMH for areas within 200 miles of coastal areas. The Lee Nuclear Station is located approximately 175 miles inland from the Atlantic Coast. The safety-related plant elevation is 593 ft. The normal maximum water surface elevation of the Broad River is 511.1 ft., the spillway flashboard elevation at Ninety-Nine Islands Dam (Reference 217).	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10947	WLS	Pt 02	FSAR 02	02.04.05	COLA Part 2, FSAR Chapter 2, Subsection 2.4.5, sixth and seventh paragraphs are revised as follows: [Sixth paragraph, last sentence] Transposition of the probable maximum surge, without any type of reduction for distance or instream structures, is nearly three times less than the 81.9-ft. difference in elevation between the station and the adjacent river.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1,

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					[Seventh paragraph, first sentence] There are no known documented surge or seiche occurrences on the Broad River near the Lee Nuclear Station. Seismically induced seiche are discussed in Subsection 2.4.6.	Attachment 5, WLG2013.05-02
10948	WLS	Pt 02	FSAR 02	02.04.05	COLA Part 2, FSAR Chapter 2, Subsection 2.4.5 is revised under the sub-headings Make-Up Pond A and Make-Up Pond B as follows: Make-Up Pond A Make-Up Pond A surge flooding is evaluated coincident with the 100-yr. water surface elevation of 556.08 ft. The critical fetch length is 0.39 mi. as shown in Figure 2.4.5-201. The wind speed is adjusted based on the factors of fetch length, level overland or over water, critical duration, and stability using U.S. Army Corps of Engineers guidance (Reference 295). The critical duration is 11 min. The adjusted wind speed is 92.7 mph. Significant wave height (average height of the maximum 33-1/3 percent of waves) is estimated to be 2.30 ft., crest to trough. The maximum wave height (average height of the maximum 1 percent of waves) is estimated to be 3.84 ft., crest to trough. The corresponding wave period is 1.8 sec. The slopes along the banks of Make-Up Pond A adjacent to the site area are approximately 42 percent at most and are used to determine the wave setup and runup. The maximum runup, including wave setup, is estimated to be 5.48 ft. The maximum wind setup is estimated to be 0.12 ft. Therefore, the total water surface elevation increase due to high speed wind wave activity is estimated to be 5.60 ft. The resulting flood elevation is 561.68 ft. The Lee Nuclear Station safety-related plant elevation is 593 ft. and is unaffected by high speed wind wave activity flooding conditions. Make-Up Pond B Make-Up Pond B surge flooding is evaluated coincident with the 100-yr. water surface elevation of 576.18 ft. The critical fetch length is 1.38 mi. as shown in Figure 2.4.5-202. The wind speed is adjusted based on the factors of fetch length, level overland or over water, critical duration, and stability using U.S. Army Corps of Engineers guidance (Reference 295). The critical duration is 28 min. The adjusted wind speed is 89.9 mph. Significant wave height (average height of the maximum 33-1/3 percent of waves) is estimated to be 4.10 ft., crest to trough. The maximum wave height (average height of the maximum 1 percent of waves) is estimated to be 6.86 ft., crest to trough. The corresponding wave period is 2.7 sec. The slopes along the banks of Make-Up Pond B adjacent to the site area are approximately 25 percent and are used to determine the wave setup and runup. The maximum runup, including wave setup, is estimated to be 7.48 ft. The maximum wind setup is estimated to be 0.28 ft. Therefore, the total water surface elevation increase due to high speed wind wave activity is estimated to be 7.76 ft. The resulting flood elevation is 583.94 ft. The Lee Nuclear Station safety-related plant elevation is 593 ft. and is unaffected by high speed wind wave flooding conditions. Seiche evaluation is based on the natural fundamental period for Make-Up Pond A and Make-Up Pond B. The natural fundamental period of both water bodies is determined using Merian's formula (Reference 295). T = 2 * L / (g * h)0.5 where; T = natural oscillation period at the fundamental mode (sec.) L = fetch length (ft.) g = gravitational acceleration (ft/sec2) h = depth of water (ft.) Based on bathymetry mapping, an average depth of 20.10 ft. is determined for Make-Up Pond A and used as the depth of water. The resulting natural fundamental period is 2.7 min. The Make-Up Pond B average depth is 28.59 ft. The resulting natural fundamental period is 8.0 min. The wave periods determined above (1.8 sec. and	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02

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					2.7 sec.) are much shorter than the natural fundamental period for both water bodies (2.7 min. and 8.0 min.). Furthermore, natural fundamental periods are significantly shorter than meteorologically induced wave periods (e.g., synoptic storm pattern frequency and dramatic reversals in steady wind direction necessary for wind setup). Since the natural periods of Make-Up Pond A and Make-Up Pond B are significantly different than the period of the excitations, they are not susceptible to meteorologically induced seiche waves. Seismically induced waves are discussed in Subsection 2.4.6.	
10988	WLS	Pt 02	FSAR 02	02.04.05.F / F2.4.5-201	COLA Part 2, FSAR Chapter 2, Figure 2.4.5-201 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10989	WLS	Pt 02	FSAR 02	02.04.05.F / F2.4.5-202	COLA Part 2, FSAR Chapter 2, Figure 2.4.5-202 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10949	WLS	Pt 02	FSAR 02	02.04.06	COLA Part 2, FSAR Chapter 2, Subsection 2.4.6, third paragraph is revised as follows: The Lee Nuclear Station is located approximately 175 mi. inland from the Atlantic Coast. The safety-related plant elevation is 593 ft. Based on data provided above, and site location and elevation characteristics, the station's safety-related facilities are not considered at risk from tsunami flooding.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10950	WLS	Pt 02	FSAR 02	02.04.06	COLA Part 2, FSAR Chapter 2, Subsection 2.4.6, sixth and seventh paragraphs are revised as follows: Seismic induced waves resulting from surface fault rupture in the site vicinity are also not plausible. As discussed in Subsection 2.5.3, there are no capable tectonic sources within the Lee Nuclear Site vicinity (25 mi. radius), and there is negligible potential for tectonic fault rupture at the site and within the site vicinity. The only identified occurrence of a seismic induced seiche on the Broad River was measured approximately 64 miles downstream of the Lee Nuclear Station. A 0.08 ft. seiche was induced by the Alaska earthquake of 1964. Any seismic event that could occur would generate potential waves that would be insignificant compared to the available freeboard of the on-site make-up ponds or the Broad River. As shown in Figure 2.4.1-209, Make-Up Pond A and Make-Up Pond B have normal pool elevations of 547 ft. msl and 570 ft. msl, respectively. Safety-related facilities are located at an elevation of 593 ft. Therefore, Make-Up Pond A has an available freeboard of 46 ft. and Make-Up Pond B has an available freeboard 23 ft. The geology and seismology and geotechnical engineering characteristics of the Lee Nuclear Station are presented in Section 2.5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10951	WLS	Pt 02	FSAR 02	02.04.07	COLA Part 2, FSAR Chapter 2, Subsection 2.4.7, sixth paragraph, first sentence is revised as follows: The Lee Nuclear Station's safety-related plant elevation is 593 ft.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations,

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						Enclosure 1, Attachment 5, WLG2013.05-02
10952	WLS	Pt 02	FSAR 02	02.04.10	COLA Part 2, FSAR Chapter 2, Subsection 2.4.10 is revised, retaining LMA WLS COL 2.4-2, as follows: All safety-related facilities are located at an elevation above the maximum flood levels resulting from all types of flooding as described in Subsection 2.4.2. The critical flooding event is identified and discussed in detail in Subsection 2.4.2. Based on the design information provided above, flood protection measures and emergency procedures to address flood protection are not required.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
11182	WLS	Pt 02	FSAR 02	02.04.11.06	COLA Part 2, FSAR Chapter 2, Subsection 2.4.11.6 first paragraph is revised to replace "ultimate heat sink (UHS)" with "UHS" and "passive containment cooling system (PCS)" is replaced with "PCS."	Acronym update
11183	WLS	Pt 02	FSAR 02	02.04.12.02.03	COLA Part 2, FSAR Chapter 2, Subsection 2.4.12.2.3, tenth paragraph is revised to replace "stormwater drainage system (DRS)" with "storm drain system (DRS)."	Acronym update
11184	WLS	Pt 02	FSAR 02	02.04.12.02.03.01	COLA Part 2, FSAR Chapter 2, Subsection 2.4.12.2.3.1, first bullet is revised to remove "(VBS)" and replace with "vehicle barrier system."	Acronym update
10953	WLS	Pt 02	FSAR 02	02.04.12.02.03.01	COLA Part 2, FSAR Chapter 2, Subsection 2.4.12.2.3.1, last paragraph in subsection is revised as follows: The analysis concluded that the maximum post-construction groundwater elevation remained below 584 ft. msl; therefore, satisfying the DCD site parameter for maximum groundwater elevation of less than 591 ft. msl (Table 2.0-201).	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10954	WLS	Pt 02	FSAR 02	02.04.12.03.01	COLA Part 2, FSAR Chapter 2, Subsection 2.4.12.3.1, the second paragraph in subsection is revised as follows: The projected groundwater movement in the vicinity of the Lee Nuclear Station power block was assessed to evaluate contaminant migration for the postulated release scenario (Subsection 2.4.13). For the release scenario, radwaste contaminant sources include the Units 1 and 2 radwaste storage tanks, located below plant grade atelevation 559.5 ft. msl. This elevation is 32.5 ft. below plant grade. For the assessment of alternative pathways, four locations were assumed to be plausible points of exposure (i.e. locations at which groundwater would be discharged to the surface to allow human contact or to facilitate transport). The pathways evaluated are: • Pathway 1: Unit 2 to Hold-Up Pond A • Pathway 2: Unit 2 to the Broad River • Pathway 3: Unit 2 to Make-Up Pond A • Pathway 4: Unit 1 to Make-Up Pond B	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10955	WLS	Pt 02	FSAR 02	02.04.12.03.02	COLA Part 2, FSAR Chapter 2, Subsection 2.4.12.3.2, starting with the third paragraph in subsection is revised as follows: Travel distances for contaminants from postulated release points at the reactors to downgradient receptors were estimated from site information for each of four possible flow paths. Although the aquifer is comprised principally of saprolite and PWR, the more conservative PWR values for hydraulic conductivity and effective porosity were used in the analysis of groundwater velocities. Estimated travel times for the four groundwater flow paths are as follows: • Pathway 1: Groundwater travels from Unit 2 to Hold-Up Pond A in approximately 1.6 years.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02

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					• Pathway 2: From Unit 2 to the Broad River in approximately 2.6 years. • Pathway 3: From Unit 2 to Make-Up Pond A in approximately 4.0 years. • Pathway 4: From Unit 1 to Make-Up Pond B in approximately 5.5 years.	
11191	WLS	Pt 02	FSAR 02	02.04.12.04	COLA Part 2, FSAR Chapter 2, Subsection 2.4.12.4, is revised to remove "(LRW)."	Acronym update
10956	WLS	Pt 02	FSAR 02	02.04.12.05	COLA Part 2, FSAR Chapter 2, Subsection 2.4.12.5 is revised and retains the left margin annotation, WLS COL 2.4-4 as follows: According to the AP1000 Design Control Document (DCD), the design maximum groundwater elevation is 2 ft. below plant elevation. The Lee Nuclear Station plant elevation is 593 ft. above msl and the yard grade is 592 ft. above msl; therefore, the design maximum groundwater elevation for the Lee Site is 591 ft above msl. A maximum groundwater elevation, considering the most severe historically recorded natural phenomena for the Lee site is estimated to be approximately 584 ft. msl, as discussed in Subsection 2.4.12.2.3.1. The hydrostatic loading is not expected to exceed design criteria. An unsaturated zone of at least 8 ft. below plant grade elevation will be maintained during operations. The installation and operation of a permanent dewatering system is not a facility design requirement.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10990	WLS	Pt 02	FSAR 02	02.04.12.F / F2.4.12-204 SH08	COLA Part 2, FSAR Chapter 2, Figure 2.4.12-204, Sheet 8 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10991	WLS	Pt 02	FSAR 02	02.04.12.F / F2.4.12-205 SH01	COLA Part 2, FSAR Chapter 2, Figure 2.4.12-205, Sheet 1 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10992	WLS	Pt 02	FSAR 02	02.04.12.F / F2.4.12-205 SH03	COLA Part 2, FSAR Chapter 2, Figure 2.4.12-205, Sheet 3 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10993	WLS	Pt 02	FSAR 02	02.04.12.F / F2.4.12-206	COLA Part 2, FSAR Chapter 2, Figure 2.4.12-206 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02

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10994	WLS	Pt 02	FSAR 02	02.04.12.F / F2.4.12-208	COLA Part 2, FSAR Chapter 2, Figure 2.4.12-208 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10995	WLS	Pt 02	FSAR 02	02.04.12.F / F2.4.12-209	COLA Part 2, FSAR Chapter 2, Figure 2.4.12-209 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10996	WLS	Pt 02	FSAR 02	02.04.12.F / F2.4.12-210	COLA Part 2, FSAR Chapter 2, Figure 2.4.12-210 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10997	WLS	Pt 02	FSAR 02	02.04.12.F / F2.4.12-211	COLA Part 2, FSAR Chapter 2, Figure 2.4.12-211 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10957	WLS	Pt 02	FSAR 02	02.04.13.02	COLA Part 2, FSAR Chapter 2, Subsection 2.4.13.2, seventh paragraph is revised as follows: The effluent holdup tanks are located in an unlined room on the lowest level of the auxiliary building. This level is 32 feet 6 inches below the existing surface grade elevation of the plant. Each unit has two effluent holdup tanks, one of which is postulated to fail.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10888	WLS	Pt 02	FSAR 02	02.04.13.03	COLA Part 2, FSAR Chapter 2, Subsection 2.4.13.3, second bullet is revised to separate source terms to two bullets as follows: • Corrosion product source terms Cr-51, Mn-54, Mn-56, Fe-55, Fe-59, Co-58, and Co-60 taken from DCD Table 11.1-2; • Other isotope source terms taken from DCD Table 11.1-2 multiplied by 0.12/0.25 to adjust the radionuclide concentrations to the required 0.12 percent failed fuel fraction outlined in Branch Technical Position 11-6, March, 2007; and	Editorial

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10958	WLS	Pt 02	FSAR 02	02.04.13.03	COLA Part 2, FSAR Chapter 2, Subsection 2.4.13.3, fifth paragraph is revised as follows: The conceptual model of radionuclide transport through groundwater, from Unit 2 to Hold-Up Pond A, is shown in Figure 2.4.12-205 (Sheet 3). As stated in Subsection 2.4.13.1, a direct conveyance between Hold-Up Pond A and the Broad River is assumed. With the failure of the effluent holdup tank and subsequent liquid release to the environment, radionuclides enter the subgrade soils at an elevation of 32 feet 6 inches below the surrounding grade. The contaminated zone is, therefore, a volume of contaminated soil for which the effective porosity is saturated with contaminated water released from the liquid effluent holdup tank. The contaminated zone soil is assumed to exhibit PWR characteristics. Because RESRAD-OFFSITE considers soil at the source of the contamination, the liquid initial source term concentrations were converted to an equivalent concentration on a soil mass basis.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
11408	WLS	Pt 02	FSAR 02	02.04.13.04	COLA Part 2, FSAR Chapter 2, Subsection 2.4.13.4, last paragraph is revised as follows: The saturated zone dispersion values are set to mimic infusion, rather than injection, of the contaminated liquid into the groundwater flow by assigning a value to the longitudinal dispersivity equal to one-hundredth of the length of the transport distance (contaminated zone). The horizontal dispersivity is one tenth of the longitudinal dispersivity and the vertical dispersivity is one hundredth of the longitudinal dispersivity distance. FSAR Table 2.4.13-203 indicates the values used in the analysis for these parameters. These settings allow the contamination to move with the natural groundwater flow rather than be pushed through the groundwater and arrive over a longer time frame in a more dilute state.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10959	WLS	Pt 02	FSAR 02	02.04.13.05	COLA Part 2, FSAR Chapter 2, Subsection 2.4.13.5, first bullet following the first paragraph is revised as follows: • Hydraulic gradient of the saturated zone (varied by a factor of 2);	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10965	WLS	Pt 02	FSAR 02	02.04.13.T / T2.4.13-203 SH04-05	COLA Part 2, FSAR Chapter 2, Table 2.4.13-203, Sheets 4 and 5 are revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10966	WLS	Pt 02	FSAR 02	02.04.13.T / T2.4.13-204	COLA Part 2, FSAR Chapter 2, Table 2.4.13-204 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 1, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
10960	WLS	Pt 02	FSAR 02	02.04.14	COLA Part 2, FSAR Chapter 2, Subsection 2.4.14, first paragraph is revised and retains the left margin annotation WLS COL 2.4-6 as follows: The maximum flood level at the Lee Nuclear Station is established as the maximum of calculated results from flooding events analyzed in Section 2.4. That maximum flood level is elevation 592.56 ft. msl. This elevation	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations,

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					would result from a PMP event on the Lee Nuclear Station site (local intense precipitation) as described in Subsection 2.4.2.3. The Lee Nuclear Station safety-related structures have a plant elevation of 593 ft. msl. This maximum flood level is identified as a site characteristic in Table 2.0-201. Also, Subsection 2.4.12.5 describes plant elevation relative to the maximum anticipated groundwater level. The hydrostatic loading is not expected to exceed design criteria.	Enclosure 1, Attachment 5, WLG2013.05-02
11036	WLS	Pt 02	FSAR 02	02.04.16 298	COLA Part 2, FSAR Chapter 2, Subsecton 2.4.16, Reference 298 is revised to read Enercon Services, Inc., Bathymetry Study for the COL Application, June 2008.	Editorial
11015	WLS	Pt 02	FSAR 02	02.04.16 303	COLA Part 2, FSAR Chapter 2, Subsection 2.4.16, References, is revised to remove Reference 303.	Conforming change to Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 5, WLG2013.05-02
11401	WLS	Pt 02	FSAR 02	02.05.01.F / F2.5.1-220	COLA Part 2, FSAR Chapter 2, Subsection 2.5.1, Figure 2.5.1-220 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 2, Attachment 1.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 1, WLG2013.05-02
11402	WLS	Pt 02	FSAR 02	02.05.01.F / F2.5.1-229	COLA Part 2, FSAR Chapter 2, Subsection 2.5.1, Figure 2.5.1-229 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 2, Attachment 1.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 1, WLG2013.05-02
11403	WLS	Pt 02	FSAR 02	02.05.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2, second paragraph, last bullet is revised as follows: • Development of FIRS for Units 1 and 2 (Subsection 2.5.2.7)	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11445	WLS	Pt 02	FSAR 02	02.05.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2, third paragraph, first sentence is revised to replace "U. S. Nuclear Regulatory Commission (NRC)" with "NRC".	Acronym update
11446	WLS	Pt 02	FSAR 02	02.05.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2, fourth paragraph, fifth sentence is revised to replace "seismic design criteria (SDC)" with "seismic design criteria".	Acronym update
11447	WLS	Pt 02	FSAR 02	02.05.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2, fifth paragraph is revised to replace the first three instances of "SDC" with "Seismic Design Category", the last two instances of "SDC" with "seismic design criteria", and "Seismic Design Basis (SDB)" with "Seismic Design Basis".	Acronym update

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11448	WLS	Pt 02	FSAR 02	02.05.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2, sixth paragraph is revised to replace "foundation input response spectra (FIRS)" with FIRS.	Acronym update
11453	WLS	Pt 02	FSAR 02	02.05.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2, sixth paragraph is revised and new last paragraph is added to read: Subsections 2.5.2.1 through 2.5.2.4 document the review and update of the available EPRI seismicity, seismic source, and ground motion models. Subsection 2.5.2.5 summarizes information about the seismic wave transmission characteristics of the Lee Nuclear Site with reference to more detailed discussion of all engineering aspects of the subsurface in Subsection 2.5.4. Subsection 2.5.2.6 describes the development of the site-specific GMRS for the Lee Nuclear Site. Regulatory Guide 1.208 provides guidance for development of the GMRS. Subsection 2.5.2.7 describes the development of the FIRS for Units 1 and 2, to evaluate potential site response effects attributed to existing fill concrete and structural concrete materials placed during construction of the existing Cherokee Nuclear Station as well as new fill concrete for Lee Nuclear Station placed above the existing Cherokee Nuclear Station concrete materials and within localized lower pump room areas. For Unit 2, sound, continuous rock meeting the hard rock definitions is located at the foundation level. Therefore, the calculated GMRS defines the input motion at Unit 2. The information provided for the Lee Nuclear Station Units 1 and 2 is based on data from historic field explorations for the Cherokee Nuclear Station and the field explorations for the Lee Nuclear Station completed in 2006, 2007, and 2012.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11449	WLS	Pt 02	FSAR 02	02.05.02.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.1, first paragraph is revised to replace "Central and Eastern United States (CEUS)" with "CEUS".	Acronym update
11450	WLS	Pt 02	FSAR 02	02.05.02.01.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.1.2, second paragraph is revised to replace "National Earthquake Information Center (NEIC)" with "National Earthquake Information Center".	Acronym update
11451	WLS	Pt 02	FSAR 02	02.05.02.01.03	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.1.3, first paragraph, first sentence is revised to replace "RIS" with "Reservoir-Induced Seismicity (RIS)".	Acronym update
11452	WLS	Pt 02	FSAR 02	02.05.02.02.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.2.2, first paragraph, second sentence is revised to replace "U.S. Geological Survey's (USGS)" with "USGS" and replace "U.S. Nuclear Regulatory Commission's (NRC)" with "NRC".	Acronym update
11454	WLS	Pt 02	FSAR 02	02.05.02.02.02.05	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.2.2.5, first paragraph, first sentence is revised to replace "Eastern Tennessee Seismic Zone (ETSZ)" with "ETSZ".	Acronym update
11455	WLS	Pt 02	FSAR 02	02.05.02.02.02.05	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.2.2.5, second paragraph, second sentence is revised to replace "Earth Science Teams (ESTs)" with "ESTs".	Acronym update
11456	WLS	Pt 02	FSAR 02	02.05.02.02.02.05	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.2.2.5, third paragraph, seventh sentence is revised to replace "Trial Implementation Project (TIP)" with "TIP".	Acronym update
11457	WLS	Pt 02	FSAR 02	02.05.02.04.03.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.4.3.1, first paragraph, first sentence is revised to replace "new Charleston source model (the Updated Charleston Seismic Source, or UCSS)" with "UCSS".	Acronym update
11194	WLS	Pt 02	FSAR 02	02.05.02.06	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.6, third paragraph, the call-outs for Figure 2.5.2-240, mid-paragraph are revised to read: The median estmates of the computed V/H ratios are shown in Figure 2.5.2-240a, 2.5.2-240b and 2.5.2-240c. Only a subset of the computed ratios are shown in Figures 2.5.2-240a, 2.5.2-240b and 2.5.2-240c, as there is little change at distances beyond about 6 to 9 mi. (10 to 15 im), with an abrupt jump in the ratios within about 6 mi. (10 km).	Conforming change to Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

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						Attachment 2, WLG2013.05-02
11464	WLS	Pt 02	FSAR 02	02.05.02.07	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7 is revised to read: 2.5.2.7 Development of FIRS for Units 1 and 2 This subsection presents location-specific Lee Nuclear Station Unit 1 FIRS A1, with Unit 1 FIRS A5 and Unit 2 FIRS C4 representing sensitivity evaluations to assess localized foundation conditions described below. As previously stated, the Lee Nuclear Station Unit 1 foundation is supported on new and previously placed concrete materials positioned directly over continuous hard rock with shear wave velocity dominantly over 9,200 ft/sec. Localized portions of the Unit 1 nuclear island overlie legacy Cherokee lower rooms (Figure 2.5.4-266). The Lee Nuclear Station Unit 2 foundation is supported on continuous hard rock with shear wave velocity dominantly over 9,200 ft/sec with the exception of the eastern edge of the nuclear island which may be supported by up to 20 feet of new leveling fill concrete (Figure 2.5.4-267). To address these configurations, location-specific FIRS analyses are conducted for the Unit 1 nuclear island, referred to as Unit 1 FIRS A1, the Unit 1 localized condition where the nuclear island overlies legacy CNS pump rooms, referred to as FIRS A5, and the eastern edge of the Unit 2 nuclear island, referred to as FIRS C4. Subsection 2.5.4.7 describes the material dynamic properties and Figures 2.5.4-252a, 2.5.4-252b and 2.5.4-252c show the dynamic profiles for Base Cases A1, A5, and C4 respectively that represent the Unit 1 FIRS A1, Unit 1 FIRS A5 and Unit 2 FIRS C4 configurations. Unit 1 FIRS (Figure 2.5.4-252a) defines the Unit 1 nuclear island centerline foundation input motion and is based on the Lee Nuclear Station GMRS developed at the top of a hypothetical outcrop (continuous rock) transferred up through previously placed Cherokee Nuclear Station concrete materials and newly placed Lee Nuclear Station concrete materials to the basemat foundation level at 553.5 ft (NAVD). Unit 1 FIRS as described in this subsection is calculated using the mean and fractiles hazard curves described in Subsection 2.5.2.4.5. The profile for the Lee Nuclear Station Unit 1 FIRS is shown in Figure 2.5.4-252a with approximately eight (8) feet of new fill concrete overlying an average of about 15 feet of existing fill concrete, structural basemat concrete and native rock from the former Cherokee foundation. The Unit 1 NI centerline Vs reflects shear wave velocities from about 7,500 feet per second (fps) (fill concrete) to about 9,600 fps (continuous rock) as shown in Figure 2.5.4-252a, Base Case A1 – Unit 1 for basemat at 553.5 ft. Unit 1 FIRS A5 defines the localized condition of the Lee Unit 1 nuclear island that will overlie legacy CNS pump rooms at approximately 527 ft (NAVD). As described in Subsection 2.5.4.5.2 the horizontal slab concrete of these CNS pump rooms and existing waterproofing membrane will be removed during construction and the pump rooms will then be backfilled using fill concrete up to the basemat floor level at 553.5 ft (NAVD). FIRS A5 is based on the Lee Nuclear Station Ground Motion Response Spectra (GMRS) developed at the top of a hypothetical outcrop (continuous rock) fixed at 523 ft (NAVD) transferred up through previously placed Cherokee Nuclear Station concrete materials and newly placed Lee Nuclear Station concrete materials to the basemat foundation level at 553.5 ft (NAVD). Unit 2 FIRS C4 defines the Unit 2 nuclear island eastern edge foundation input motion and is based on the Lee Nuclear Station GMRS developed at the top of a hypothetical outcrop (continuous rock) fixed at 509 ft (NAVD) transferred up through newly placed Lee Nuclear Station concrete materials to the basemat foundation level at 553.5 ft (NAVD).	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11469	WLS	Pt 02	FSAR 02	02.05.02.07.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.1, first paragraph, first sentence is revised to read: In calculating the probabilistic ground motions at the Lee Nuclear Site, the FIRS A1, FIRS A5, and FIRS C4 must be hazard consistent (i.e., the annual exceedance probability of the uniform hazard spectrum (UHRS) from which the FIRS is derived should be the same as the hard rock UHRS, referred to herein as the hypothetical rock outcrop UHRS). NUREG/CR-6728 (Reference 251), recommends several site response approaches to produce soil or rock motions consistent with the hypothetical outcrop UHRS.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

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						Attachment 2, WLG2013.05-02
11458	WLS	Pt 02	FSAR 02	02.05.02.07.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.1, first paragraph, first sentence is revised to replace "uniform hazard spectrum (UHRS)" with "UHRS".	Acronym update
11459	WLS	Pt 02	FSAR 02	02.05.02.07.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.1, second paragraph, third sentence is revised to replace "Random Vibration Theory (RVT)" with "RVT".	Acronym update
11460	WLS	Pt 02	FSAR 02	02.05.02.07.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.1, fifth paragraph, third sentence is revised to replace "annual probability of exceedance (APE)" with "annual probability of exceedance".	Acronym update
11470	WLS	Pt 02	FSAR 02	02.05.02.07.01.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.1.1, first paragraph, first bullet is revised to read: • Randomization of the base case site-dynamic velocity profiles (A1, A5, and C4) to produce suites of velocity profiles that incorporates site-specific randomness.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11471	WLS	Pt 02	FSAR 02	02.05.02.07.01.01.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.1.1.1, first paragraph is revised to read: Transfer functions are spectral ratios (5% damping) of horizontal top of concrete foundation (firm rock) motions to hard rock (Table 2.5.2-221) as well as vertical-to-horizontal ratios (5% damping) computed for the location-specific profiles. Horizontal amplification factors reflect motions (5% damping response spectra) computed at the top of the profiles (concrete) divided by motions computed for a hypothetical (hard) rock outcrop (9,300 ft/sec, Table 2.5.2-221). Due to the profile stiffness, 7,500 ft/sec for concrete, linear analyses are performed.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11472	WLS	Pt 02	FSAR 02	02.05.02.07.01.01.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.1.1.1, third paragraph is revised to read: Empirical western North America (WNA) V/H ratios are included in the development of vertical motions in addition to site-specific point-source simulations. The use of WNA empirical V/H ratios implicitly assumes similarity in shear- and compression-wave profiles and nonlinear dynamic material properties between site conditions in WNA and location-specific soft rock columns (Figures 2.5.4-252a, 2.5.4-252b, and 2.5.4-252c). Whereas this may not be the case for the average WNA rock site profile (Reference 281), the range in site conditions sampled by the WNA empirical generic rock relations likely accommodates site-specific conditions. The relative weights listed in Table 2.5.2-223 reflect the assumed appropriateness of WNA soft rock empirical V/H ratios for Unit 1 and Unit 2. Additionally, because the model for vertical motions is not as thoroughly validated as the model for horizontal motions (References 277, 280, and 281), inclusion of empirical models is warranted. The additional epistemic variability introduced by inclusion of both analytical and empirical models also appropriately reflects the difficulty and lack of consensus regarding the modeling of site-specific vertical motions (Reference 282). In the implementation of Approach 3 to develop vertical hazard curves, the epistemic variability is properly accommodated in the vertical mean UHRS, reflecting a weighted average over multiple vertical hazard curves computed for the FIRS A1, FIRS A5, and FIRS C4(Figures 2.5.4-252a, 2.5.4-252b, and 2.5.2-252c) models (empirical and numerical). The vertical FIRS (and UHRSs) then maintain the desired risk and hazard levels, consistent with the horizontal design response spectra (GMRS) and UHRSs.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11473	WLS	Pt 02	FSAR 02	02.05.02.07.01.01.01.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.1.1.1.1, first paragraph is revised to read: Horizontal amplification factors are developed using hard rock spectral shapes as control motions (Reference 251). Base Case Profiles A1, A5, and C4 were placed on top of the regional hard rock crustal model (Table 2.5.2 -221, Reference 273). A hard rock kappa value of 0.006 sec (Table 2.5.2-221) is used, consistent with that incorporated in the hard rock attenuation relations (Reference 273). With a hysteretic damping in concrete	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

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					between 0.5% and 1.0% any additional damping in the shallow concrete profile is neglected as its impacts will be beyond the fundamental shallow column resonance, well above 50 Hz.	Attachment 2, WLG2013.05-02
11474	WLS	Pt 02	FSAR 02	02.05.02.07.01.01.01.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.1.1.1.1, last paragraph, last two sentences are revised to read: Results are shown in Figures 2.5.2-241a, 2.5.2-241b, and 2.5.2-241c and reveal the shallow site resonance. The FIRS demonstrate median amplification of about 11%, 15% and 10% for A1, A5 and C4 respectively. This occurs near 60 Hz to 70 Hz for FIRS A1 and A5 and near 40 and 80 Hz for FIRS C4. All amplification factors show very slight differences only at 250 mi (400 km). The width of the resonance is broadened by the profile randomization with shear-wave velocities varying ±10% about the concrete Vs value of 7,500 ft/sec along with depth to hard rock at 23.5 ft for FIRS A1, 30.5 ft for FIRS A5, and 20 ft for FIRS C4, randomly varied ± 3 ft.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11412	WLS	Pt 02	FSAR 02	02.05.02.07.01.01.01.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.1.1.1.2, first paragraph, first sentence is revised as follows: For the Lee Nuclear Station, the concrete profile is randomized between depths of 23.5±3 ft for FIRS A1, 30.5±3 ft for FIRS A5, and 20±3 ft for FIRS C4, the range in depths to hard rock conditions [shear-wave velocity exceeding, on average, 9,300 ft/sec (2.83 km/sec)] (Reference 273).	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11073	WLS	Pt 02	FSAR 02	02.05.02.07.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.2, first paragraph, last sentence is revised to read: To model site response, the near-surface Vp and Vs profiles (Figures 2.5.4-252a, 2.5.4-252b and 2.5.4-252c) are placed on the crustal structure (Table 2.5.2-221), the incident P-SV wavefield is propagated to the surface, and the vertical motions are computed.	Conforming Change to Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11413	WLS	Pt 02	FSAR 02	02.05.02.07.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.2, second paragraph is revised as follows: In the implementation of the equivalent-linear approach to estimate V/H response spectral ratios for the Lee Nuclear Station FIRS A1, FIRS A5, and FIRS C4, the horizontal component analyses are performed for vertically propagating shear waves. To compute the vertical motions, a linear analysis is performed for incident inclined P -SV waves using low-strain VP and VS derived from the profiles 1 FIRS A1, FIRS A5, and FIRS C4 (Subsection 2.5.4.7). The P-wave damping is set equal to the low strain S-wave damping (Reference 289). The horizontal component and vertical component analyses are performed independently.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11414	WLS	Pt 02	FSAR 02	02.05.02.07.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.2, fifth paragraph is revised as follows: For Lee Nuclear Station FIRS the site-specific V/H ratios, Figures 2.5.2-240a, 2.5.2-240b, and 2.5.2-240c for FIRS A1, FIRS A5 and FIRS C4 respectively show median estimates computed with the stochastic model for M 5.1. For M 5.1, the distances range from 50 to 0 mi. (80 to 0 km) (Table 2.5.2-221) with expected horizontal hard rock peak accelerations ranging from 0.01 to 0.50g. Figures 2.5.2 240a, 2.5.2-240b, and 2.5.2-240c all show that the V/H for the shallow concrete profile FIRS are nearly constant with frequency and increase rapidly as distance decreases, within about a 9 mi. source distance. For distances beyond 6 to 9 mi., the V/H ratio is about 0.5 and increases rapidly to about 0.9. The peaks near 60 Hz are likely due to the peak in the horizontal amplification factors (Figures 2.5.2-241a, 2.5.2-241b, and 2.5.2-241c). In Figures 2.5.2-240a, 2.5.2-240b, and 2.5.2-240c, the multiple peaks beginning near 1 Hz reflect deep crustal resonances (structure below 0.5 mi., Table 2.5.2-221) that would be smoothed if the crustal model were randomized and discrete layers replaced	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02

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					with steep velocity gradients to reflect lateral variability and a more realistic crustal structure. The M 5.1 distance ranges more than adequately accommodate the hazard deaggregation (Subsection 2.5.2.4.5).	
11461	WLS	Pt 02	FSAR 02	02.05.02.07.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.2, ninth paragraph, seventh sentence is revised to replace "AEP" with "Annual Exceedance Probability (AEP)".	Acronym update
11415	WLS	Pt 02	FSAR 02	02.05.02.07.03	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.3, first paragraph, second sentence is revised as follows: At high frequency, hard rock hazard curves are interpolated at 34 and 50 Hz, as these are the critical frequencies to define the FIRS A1, FIRS A5, FIRS C4, and UHRS shapes beyond 25 Hz.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11416	WLS	Pt 02	FSAR 02	02.05.02.07.04	COLA Part 2, FSAR Chapter 2, Subsection 2.5.2.7.4, first paragraph, second sentence is revised as follows: Tables 2.5.2-224, 2.5.2-225, and 2.5.2-226 and Figures 2.5.2-244a, 2.5.2-244b, 2.5.2-244c, 2.5.2-245a, 2.5.2-245b, and 2.5.2-245c show horizontal and vertical FIRS A1, A5, and C4 developed compared to the horizontal and vertical GMRS developed for Unit 2. Figures 2.5.2-246a, 2.5.2246b, and 2.5.2-246c show both the horizontal and vertical FIRS A1, A5, and C4, respectively. Figures 2.5.2 247a, 2.5.2-247b, and 2.5.2-247c show the horizontal and vertical UHRS at exceedance levels of 10-4, 10-5, and 10-6 yr-1 for FIRS A1, A5, and C4, respectively. Through Approach 3, both the horizontal and vertical UHRS and FIRS are hazard- and performance -based consistent across structural frequency from 0.5 to 100 Hz, the frequency range over which the hard rock hazard is computed (Reference 273). For frequencies below 0.5 to 0.1 Hz, the extrapolation employed is intended to reflect conservatism, likely resulting in motions of lower probability. Tables 2.5.2-224, 2.5.2-225, and 2.5.2-226 list discrete FIRS and UHRS horizontal and vertical spectral acceleration values. As illustrated in Figure 2.5.4-266, the conditions associated with FIRS A5 are only applicable to a small localized portion of the Unit 1 footprint, while FIRS A1 is applicable to the remainder. Since the nuclear island basemat will respond as a unit, the actual input to the nuclear island will be much closer to FIRS A1, and the contribution of FIRS A5 will not adversely impact the overall response of Unit 1. Similarly, FIRS C4 was developed as a sensitivity analysis of the potential effects of localized fill concrete beneath the eastern extents of Unit 2. The potential effects of FIRS C4 are bounded by FIRS A1 for Unit 1, and the GMRS presented in Subsection 2.5.2.6 defines the input motion at Unit 2. Section 3.7 compares the site-specific ground motions to the AP-1000 design ground motions.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11484	WLS	Pt 02	FSAR 02	02.05.02.F / F2.5.2-240	COLA Part 2, FSAR Chapter 2, Figure 2.5.2-240 is deleted and presented as Figure 2.5.2-240a, Figure 2.5.2-240b, and Figure 2.5.2-240c as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11485	WLS	Pt 02	FSAR 02	02.05.02.F / F2.5.2-241	COLA Part 2, FSAR Chapter 2, Figure 2.5.2-241 is deleted and presented as Figure 2.5.2-241a, Figure 2.5.2-241b, and Figure 2.5.2-241c as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
11486	WLS	Pt 02	FSAR 02	02.05.02.F / F2.5.2-244	COLA Part 2, FSAR Chapter 2, Figure 2.5.2-244 is deleted and presented as Figure 2.5.2-244a, Figure 2.5.2-244b, and Figure 2.5.2-244c as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11487	WLS	Pt 02	FSAR 02	02.05.02.F / F2.5.2-245	COLA Part 2, FSAR Chapter 2, Figure 2.5.2-245 is deleted and presented as Figure 2.5.2-245a, Figure 2.5.2-245b, and Figure 2.5.2-245c as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11488	WLS	Pt 02	FSAR 02	02.05.02.F / F2.5.2-246	COLA Part 2, FSAR Chapter 2,Figure 2.5.2-246 is deleted and presented as Figure 2.5.2-246a, Figure 2.5.2-246b, and Figure 2.5.2-246c as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11489	WLS	Pt 02	FSAR 02	02.05.02.F / F2.5.2-247	COLA Part 2, FSAR Chapter 2, , Figure 2.5.2-247 is deleted and presented as Figure 2.5.2-247a, Figure 2.5.2-247b, and Figure 2.5.2-247c as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11417	WLS	Pt 02	FSAR 02	02.05.02.T / T2.5.2-222	COLA Part 2, FSAR Chapter 2, Table 2.5.2-222 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11418	WLS	Pt 02	FSAR 02	02.05.02.T / T2.5.2-224	COLA Part 2, FSAR Chapter 2, Table 2.5.2-224 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02

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11419	WLS	Pt 02	FSAR 02	02.05.02.T / T2.5.2-225	COLA Part 2, FSAR Chapter 2, Table 2.5.2-225 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11420	WLS	Pt 02	FSAR 02	02.05.02.T / T2.5.2-226	COLA Part 2, FSAR Chapter 2, , Subsection 2.5.2, Table 2.5.2-226 is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 2, Attachment 2.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 2, WLG2013.05-02
11274	WLS	Pt 02	FSAR 02	02.05.04	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, third paragraph is revised to read: The information presented in this Subsection was developed on the basis of evaluations of historic field explorations performed for the Cherokee Nuclear Station (CNS) and field investigations for Lee Nuclear Station, Units 1 and 2 completed between early 2006 and mid-2007, and the 2012 field data (described below). Further information was gathered using geophysical investigations and laboratory tests conducted on soil and rock samples obtained during the field exploration program for Lee Nuclear Station. Results from historic site investigations for Cherokee Nuclear Station are presented in the Preliminary Safety Analysis Report (PSAR) (Reference 201) and Final Safety Evaluation Report (Reference 202). Additional field work consisting of borings and geophysical tests was performed in 2012 to obtain additional geotechnical data at the nuclear islands to confirm the applicability of the 2006-2007 data. The information provided for the Lee Nuclear Station Units 1 and 2 is based on data from historic field explorations for the Cherokee Nuclear Station, the field explorations for the Lee Nuclear Station completed in 2006 and 2007, and the 2012 field data.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11462	WLS	Pt 02	FSAR 02	02.05.04.02.01.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.1.1, second paragraph, first sentence is revised to replace "hollow stem auger (HSA)" with "hollow stem auger".	Acronym update
11275	WLS	Pt 02	FSAR 02	02.05.04.02.01.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.1.1, eighth paragraph, bulleted list is revised to add a new last bullet as follows: • Appendix 2AA, Attachment 6, Lee Nuclear Station Geotechnical Boring Logs, 2012 Exploration.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11276	WLS	Pt 02	FSAR 02	02.05.04.02.01.06.03	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.1.6.3, first paragraph, fourth sentence is revised to read: The borehole geophysical test locations performed as part of the Lee Nuclear Station 2006-2007 exploration and 2012 exploration are shown on Figure 2.5.4-215.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02

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11277	WLS	Pt 02	FSAR 02	02.05.04.02.02.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.2.2, first paragraph, first sentence is revised as follows: For the borings of the Lee Nuclear Station exploration in 2006-2007 and 2012, rock coring was performed, when assigned, for those materials that could not be penetrated with soil drilling methods.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11278	WLS	Pt 02	FSAR 02	02.05.04.02.02.05	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.2.5, first paragraph, first sentence is revised to read: An on-site sample storage facility was established for the Lee Nuclear Station exploration in 2006-2007 and 2012 in a warehouse building that remained on-site from Cherokee Nuclear Station Site construction activities.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11279	WLS	Pt 02	FSAR 02	02.05.04.02.03	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.3, first paragraph is revised to add a new sentence after the third sentence as follows: No additional laboratory tests were performed in 2012.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11463	WLS	Pt 02	FSAR 02	02.05.04.02.03.12	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.3.12, first paragraph, fifth sentence is revised to replace "linear variable differential transformer (LVDT)" with "linear variable differential transformer".	Acronym update
11280	WLS	Pt 02	FSAR 02	02.05.04.02.04.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.4.1, first paragraph is revised to add a new sentence after the fourth sentence as follows: The explorations in 2012 encountered only rock and the pre-existing concrete; these materials are already included in the geotechnical model.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11465	WLS	Pt 02	FSAR 02	02.05.04.02.04.01.05	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.4.1.5 heading is revised to delete "(PWR)".	Acronym update
11281	WLS	Pt 02	FSAR 02	02.05.04.02.04.01.06	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.4.1.6, first paragraph,, third sentence is revised to read: At the time of the Lee Nuclear Station exploration program in 2006, 2007 and 2012, the pre-existing concrete was encountered in the Cherokee Nuclear Station Unit 1 construction area.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11282	WLS	Pt 02	FSAR 02	02.05.04.03	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.3, second paragraph, first sentence is revised to read: The Lee Nuclear Station Site investigation program was conducted in 2006 – 2007, and 2012.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations,

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						Enclosure 2, Attachment 3, WLG2013.05-02
11283	WLS	Pt 02	FSAR 02	02.05.04.03.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.3.1 is revised to read: A comprehensive exploration program of surface geophysics, in situ testing, and subsurface drilling and sampling was conducted in 2006-2007 as shown in a site view on Figure 2.5.4-208 and Power Block and Adjacent Areas on Figure 2.5.4 209. These figures show the principal and secondary exploration borings and other field explorations performed. The historic boring locations on this figure are identified to distinguish them from the 2006-2007 boring and test locations. The locations of groundwater monitoring wells constructed and packer test performed as part of the Lee Nuclear Station exploration are shown on Figure 2.5.4-210. Figure 2.5.4-211 shows the location of SASW survey lines at the Lee Nuclear Station Site. The location of CPT tests performed as part of the Lee Nuclear Station exploration is shown on Figure 2.5.4-212. The location of test pits and trenches excavated as part of the Lee Nuclear Station exploration is shown on Figure 2.5.4-213. The Goodman Jack and borehole pressuremeter test locations performed as part of the Lee Nuclear Station exploration are shown on Figure 2.5.4-214. The borehole geophysical test locations performed as part of the Lee Nuclear Station 2006-2007 exploration and 2012 exploration are shown on Figure 2.5.4-215. The petrographic test locations performed as part of the Lee Nuclear Station exploration are shown on Figure 2.5.4-216. The geotechnical field exploration program in 2012 consisted of additional borings, some with borehole geophysical tests consisting of P-S velocity measurements and/or acoustic televiewer logging. The locations of the borings made in 2012 are shown on Figure 2.5.4-209 in addition to those made in 2006-2007. The locations of the borings with borehole geophysical tests in 2012 are shown on Figure 2.5.4-215 in addition to those made in 2006-2007.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11284	WLS	Pt 02	FSAR 02	02.05.04.03.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.3.2, first paragraph, fourth sentence is revised and a fifth sentence added as follows: The exploration locations made in 2006-2007 are shown on Figure 2.5.4-208. The locations of the borings made in 2012 are shown on Figure 2.5.4-209 in addition to those made in 2006-2007.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11285	WLS	Pt 02	FSAR 02	02.05.04.03.03	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.3.3, first and second paragraphs are revised to read: Contemporary and historic geotechnical data sets were used to compile the geotechnical figures contained in this Subsection. The Lee Nuclear Station field exploration records are presented in Appendix 2AA, Attachments 1 through 5. The boring logs for the geotechnical borings made in 2012 are contained in Appendix 2AA, Attachment 6. The Cherokee Nuclear Station field exploration records are presented in Appendix 2BB. As-built survey data and topographic surveys were used to prepare maps of the final geotechnical data exploration program as presented in Figures 2.5.4-208 (2006-2007 explorations only) and 2.5.4-209 (2012 explorations in addition to 2006-2007 explorations). The locations of exploratory borings, monitoring wells, test pits, and surface geophysical lines were recorded in digital format. These data were uploaded into a geographic information system (GIS). The GIS was used to prepare plan view maps and profile drawings that were used to develop geologic interpretations.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11286	WLS	Pt 02	FSAR 02	02.05.04.03.04	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.3.4, third sentence is revised to read: An explanatory figure showing these data sources is included as Figure 2.5.4-218, followed by 21 Borehole Summaries, Figures 2.5.4 219 through 2.5.4-232 and Figures 2.5.4-233a through 2.5.4-233g.	Duke Energy Supplemental Response to Lee Units 1 and 2

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						Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11287	WLS	Pt 02	FSAR 02	02.05.04.03.05	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.3.5, first and second paragraphs are revised to read: The borehole summaries are evaluated in the geologic context described in more detail in Subsections 2.5.1 and 2.5.4.1 to construct geotechnical profiles. Seven geologic cross sections intersecting the Lee Nuclear Station Unit 1 and 2 nuclear islands and adjacent areas are presented; the locations of these cross sections are shown on Figure 2.5.4-209. Geologic Cross Sections BB-BB', CC-CC', EE-EE', F-F', FF-FF', UU-UU', andZZ-ZZ' are shown on Figures 2.5.4-234 through 2.5.4-240. Key cross sections in this evaluation include the following: • Figure 2.5.4-234, Cross Section BB-BB', west-east profile through Unit 1 and Unit 2 centerline • Figure 2.5.4-235, Cross Section CC-CC', west-east profile through the south ends of Unit 1 and Unit 2 turbine buildings • Figure 2.5.4-239, Cross Section UU-UU', west-east profile through the north end of the Units 1 and 2 nuclear island • Figure 2.5.4-240, Cross Section ZZ-ZZ', west-east profile through the south end of Units 1 and 2 nuclear island • Figure 2.5.4-236, Cross Section EE-EE', north-south profile through the Unit 1 centerline • Figure 2.5.4-237, Cross Section F-F', north-south profile through the Unit 2 centerline • Figure 2.5.4-238, Cross Section FF-FF', north-south profile through the east side of Unit 2 nuclear island	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11288	WLS	Pt 02	FSAR 02	02.05.04.03.06	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.3.6, first and second paragraphs are revised to read: To indicate the extent of the granular fill to be placed around the nuclear islands and extending out to form the supporting materials for the adjacent buildings (radwaste, annex, and turbine buildings), seven geologic cross sections intersecting the Lee Nuclear Station Unit 1 and 2 nuclear islands and adjacent areas are presented. The locations of these cross sections are shown on Figure 2.5.4-209. Cross Sections BB-BB', CC-CC', EE-EE', F-F', FF-FF', UU-UU', and ZZ-ZZ' are shown on Figures 2.5.4-245, and 2.5.4-260 through 2.5.4-265. All of these planned excavation geologic cross sections correspond to the geotechnical profiles presented in Subsection 2.5.4.3.5. Geologic cross sections depicting the granular fill are the following: • Figure 2.5.4-260, Planned Excavation Profile, Cross Section BB-BB', west-east profile through Unit 1 and Unit 2 centerline • Figure 2.5.4-261, Planned Excavation Profile, Cross Section CC-CC', west-east profile through the south end of Units 1 and 2 turbine building • Figure 2.5.4-245, Planned Excavation Profile, Cross Section UU-UU', west-east profile through the north end of the Unit 1 and Unit 2 nuclear islands • Figure 2.5.4-262, Planned Excavation Profile, Cross Section EE-EE', north-south profile through the Unit 1 centerline • Figure 2.5.4-263, Planned Excavation Profile, Cross Section F-F', north-south profile through the Unit 2 centerline • Figure 2.5.4-264, Planned Excavation Profile, Cross Section FF-FF', north-south profile along the east side of the Unit 2 nuclear island • Figure 2.5.4-265, Planned Excavation Profile, Cross Section ZZ-ZZ', west-east profile through the south end of the Unit 1 and Unit 2 nuclear islands	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11289	WLS	Pt 02	FSAR 02	02.05.04.04	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.4,first paragraph, first sentence is revised to read: Surface and borehole geophysical surveys were conducted on the Lee Nuclear Station Site in 2006-2007 and	Duke Energy Supplemental Response to Lee

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					2012 to characterize the subsurface conditions of the soil and bedrock including dynamic properties and geologic features.	Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11290	WLS	Pt 02	FSAR 02	02.05.04.04.01.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.4.1.2 ,first paragraph, second sentence is revised to read: The results of SASW and borehole Vs measurements are presented on the Boring Summary Sheets, Figures 2.5.4-219 through 2.5.4-232 and Figures 2.5.4-233a through 2.5.4-233g.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11466	WLS	Pt 02	FSAR 02	02.05.04.04.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.4.2 heading is revised to delete "(SCPT)".	Acronym update
11291	WLS	Pt 02	FSAR 02	02.05.04.04.03	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.4.3, first paragraph is revised to read: A total of 16 borehole velocity surveys were performed at the Lee Nuclear Station site. The borehole velocity surveys consisted of 13 P-S suspension logging tests with four companion downhole velocity tests in 2006-2007, and three P-S suspension logging tests in 2012. The surveys were performed within uncased and cased boreholes. Downhole surveys were performed in four boreholes with P-S suspension surveys as a means to compare and validate P S suspension results. Comparison of downhole velocity measurements to the companion P-S suspension measurements indicated good correlation of velocity values. Table 2.5.4-216 provides a summary of the borehole geophysical testing performed in 2006-2007 and 2012. Figure 2.5.4-215 shows the locations of the borehole surveys. The objective of the suspension and downhole logging tests was to obtain shear wave (Vs) and compressional wave (Vp) velocity measurements as a function of depth within each borehole. The Vs velocity values were used to determine whether the unweathered rock met the hard rock requirements for the site response analyses and development of the GMRS as discussed in Subsection 2.5.2. The seismic hazard model defines hard rock as having a minimum Vs of 9200 fps.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11292	WLS	Pt 02	FSAR 02	02.05.04.04.03.03	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.4.3.3, first paragraph is revised to read: The travel-time data from the P-S suspension logging and the downhole tests were used to create velocity layer models. The resultant velocity layers are presented on the Lee Nuclear Station boring summary sheets Figures 2.5.4-218 through 2.5.4-232 and Figures 2.5.4-233a through 2.5.4-233g. The interpreted P-S Suspension and Downhole velocity layer models are presented in Tables 2.5.4-217 and 2.5.4-218, respectively for 2006-2007 borehole tests. The interpreted P-S Suspension velocity layer models for the 2012 borehole tests are also presented in Table 2.5.4-217.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11293	WLS	Pt 02	FSAR 02	02.05.04.04.04	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.4.4, first paragraph, first sentence is revised to read: Acoustic televiewer logging was conducted in seventeen boreholes and optical televiewer logging was conducted in nine boreholes on the Lee Nuclear Station Site.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11294	WLS	Pt 02	FSAR 02	02.05.04.05	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5 is revised to read: The Lee Nuclear Station utilizes a combination of excavation slopes and temporary retaining structures to facilitate construction of below grade portions of the nuclear island. The excavation remaining from Cherokee Nuclear Station construction activities is utilized and enlarged or reconfigured, as needed, to support Lee	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations,

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					Nuclear Station construction. Backfill is placed within the excavation against the below grade nuclear island walls to create the ground surface surrounding the nuclear island structure. The ground surface surrounding the nuclear island is generally at about Elevation 589 feet which is 4.0 feet below the building floor slab elevation 593 ft (AP1000 Grade El. 100'-00"). The yard grade adjacent to the buildings is at Elevation 592 ft (AP1000 Grade El. 99'-00") The seismic Category I structures consist of the Unit 1 and Unit 2 nuclear islands. Other structures within the power block are not seismic Category I structures and are not safety related. The location of the nuclear island structures is shown on Figures 2.5.4-201 and 2.5.4-208. The Lee Nuclear Station nuclear island is constructed with a building floor slab elevation of 593 feet (AP1000 Grade El. 100'-00"). Below grade portions of the nuclear island extend 39.5 feet below building slab elevation, to Elevation 553.5 feet (AP1000 Grade El. 60'-6"). Foundation materials, consisting of continuous rock or concrete, are located at this elevation or below for support of the nuclear island. Fill concrete is used in areas where continuous rock or Cherokee Nuclear Station concrete is below Elevation 553.5 feet (AP1000 Grade El. 60'-6") to bring that surface up to the Lee Nuclear Station base of foundation elevation.	Enclosure 2, Attachment 3, WLG2013.05-02
11295	WLS	Pt 02	FSAR 02	02.05.04.05.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.1, first paragraph, first sentence is revised to read: The Lee Nuclear Station Site requires granular backfill material described in Subsection 2.5.4.5.3.5 to fill the area around the below-grade nuclear island walls out to the extents shown on Figures 2.5.4-245 and 2.5.4-260 through 2.5.4-265.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11296	WLS	Pt 02	FSAR 02	02.05.04.05.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.2, first and second paragraphs are revised and a new third paragraph is added to read: A large excavation was constructed during site preparation work for Cherokee Nuclear Station construction. This excavation is utilized as the initial excavation for the Lee Nuclear Station. Additional excavation for Lee Nuclear Station extends about 10 feet laterally into the fill and natural soil materials comprising the Cherokee Nuclear Station construction slope or as necessary to remove softened, sloughed, or other loose soil and rock materials. This excavation extends only a sufficient distance into the slope to reach materials that are relatively undisturbed by erosion or shallow sloughing during the time the excavation remained open following Cherokee Nuclear Station construction. In addition to the slope trimming described above, additional excavation of the soil and partially weathered rock slope that formed the Cherokee Nuclear Station excavation limits is necessary to provide relatively uniform thickness of fill for support conditions beneath the Lee Nuclear Station power block structures adjacent to the nuclear island. Excavation to a reasonably uniform subgrade elevation is performed within the limits of the adjacent non safety-related power block structures and outside the structure limits to a point defined by a line extended at 1 horizontal to 1 vertical or flatter from the base edge of the structure foundations. This geometery defines the foundation support zone for the non-safety annex, turbine and radwaste buildings. For the nuclear island foundation, the line is 0.5 horizontal to 1 vertical or flatter and the line begins at a point located 6 feet or more horizontally from the perimeter of the nuclear island foundation limits. This geometry defines the foundation support zone for the nuclear island. These nuclear island area excavation limits, as estimated prior to construction of Lee Nuclear Station, are shown on Figure 2.5.4-243. Excavation to a uniform subgrade elevation for adjacent non-safety and non-seismic structures exposes fill concrete, rock, partially weathered rock, or saprolite. The adjacent non-safety related structures include two areas designated as Seismic Category II (SC-II) structures because of their characteristics and proximity to the nuclear island. These are the annex building area outlined by columns E-I.1 and 2-13 and the turbine building, first bay adjacent to the nuclear island as outlined by columns I.1 to R and 11.05 to 11.2. Excavations within the support zone of these SC-II structures expose concrete or rock.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02

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					Excavation to a subgrade elevation for the seismic category II portions of the adjacent non-safety structures exposes concrete or rock. The foundation support zone for the Unit 1 annex building (SC-II) may expose a relatively small area of partially weathered rock to fractured rock in the northwest corner, but the majority of the foundation support zone for this structure will encounter rock or concrete overlying rock. Within the foundation support zone these SC-II structures, in areas where the pre-existing concrete and/or rock are at a lower elevation than the base of the nuclear island, fill concrete will be used to build up the base level of the nuclear island. If rock within the support zones of the SC-II structures is higher than the base of the nuclear island, the rock will be removed to the elevation of the base of the nuclear island.	
11297	WLS	Pt 02	FSAR 02	02.05.04.05.02.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.2.1 , second paragraph is revised to read: Excavation to the foundation subgrade elevation includes removal of the Cherokee Nuclear Station reactor building superstructure and portions of the Cherokee Nuclear Station auxiliary building mat foundations within the nuclear island foundation support zone. The Cherokee Nuclear Station reactor building foundation mat and some of the Cherokee auxiliary building basemat are left in place. To avoid damage to the reactor building mat, 3 to 6 inches of the vertical walls may remain above the mat surface after the walls are removed. In areas where the Cherokee auxiliary building basemat is within the foundation support zone for the Lee Nuclear Station Unit 1 nuclear island, the isolation joint surrounding the Cherokee Nuclear Station reactor building mat is also removed to reduce the discontinuity between reactor building basemat and new fill concrete. Removal of the Cherokee Nuclear Station foundation mats exposes underlying fill concrete or continuous rock. The Lee Nuclear Station nuclear island for Unit 1 is positioned so that additional excavation beyond the Cherokee Nuclear Station concrete edges is not necessary. The foundation support zone for the Lee Nuclear Station Unit 1 nuclear island is entirely underlain by the existing concrete of Cherokee Nuclear Station Unit 1 which is underlain by continuous rock.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11298	WLS	Pt 02	FSAR 02	02.05.04.05.02.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.2.1, beginning with the fourth paragraph is revised to read: The Cherokee Nuclear Station foundation mat for the reactor building and auxiliary building was underlain by a groundwater drainage system. When this drainage system is exposed by excavation for the Lee Nuclear Station nuclear island foundation it is sealed with fill concrete material as illustrated by Figures 2.5.4-244a through 2.5.4-244e. Exposure of this drainage system is most likely to occur at the perimeter of the Cherokee Nuclear Station reactor building mat where a portion of the Cherokee Nuclear Station auxiliary building basemat is removed to take out the existing isolation joint (Figures 2.5.4-244b and 2.5.4-244c) or in the southern end of the Lee Nuclear Station nuclear island where the Cherokee Nuclear Station auxiliary building basemat must be removed because it is above the bottom of the Nuclear Island (Figure 2.5.4-244d). The existing Cherokee Nuclear Station concrete foundation has several local pits (referred to as pump rooms) that were to serve various purposes (Figure 2.5.4-266). These local pits were typically to be provided with horizontal and vertical waterproofing membranes. The horizontal membrane was to be installed on a fill concrete layer resting on the continuous rock and then covered by a fill concrete mudmat approximately 3.5 inches thick. The vertical membrane was to be secured to the outside face of the vertical structural walls and covered by a protective sheathing. The space between the surrounding rock and the vertical pit walls with their protective sheathing and vertical membrane was then backfilled with fill concrete. In pits having the horizontal and vertical waterproofing membranes, these features will be removed down to the top of the fill concrete layer resting on the continuous rock and outward to the surrounding rock and replaced with new fill concrete as depicted on Figure 2.5.4-244e. The width of the pits, thus excavated, will be increased by an estimated 13 feet which is equal to the combined width of the structural pit walls (estimated to be 3.5 feet for each typical wall) plus the combined widths of the concrete fill behind the structural pit walls (having an estimated typical width of 3 feet from the back of each structural pit wall). The depth of the pits, thus excavated, will be increased by an estimated 4.3 feet, which is equal to the thickness of the structural basemat (estimated to be typically 4 feet) plus the horizontal membrane and the 3.5 inch thick mudmat. The pits, thus excavated and backfilled with new fill concrete, will continue to be localized areas of deeper fill concrete below the nuclear island of Unit 1.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02

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					The foundation support zone for the Lee Nuclear Station nuclear island is entirely underlain by the footprint of the existing concrete foundation of Cherokee Nuclear Station Unit 1 which is underlain by continuous rock.	
11299	WLS	Pt 02	FSAR 02	02.05.04.05.02.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.2 is revised to read: Excavation to a uniform foundation subgrade elevation of approximately 553.5 feet is possible for Lee Nuclear Station because some of the Cherokee Nuclear Station excavation in this area remained above this elevation. During the site exploration for Lee Nuclear Station in 2006 and 2007, the base of the Cherokee Nuclear Station excavation generally consisted of exposed rock beneath the location of the Lee Nuclear Station Unit 2 nuclear island. The same is true for the Lee Nuclear Station Unit 2 nuclear island in the 2012 exploration, but to a somewhat lesser extent because of the raised plant elevation. At 2012 boring B-2006 near the northeast corner of the Unit 2 nuclear island the continuous rock level is 2 feet above the foundation elevation 553.5 feet. In much of the Lee Nuclear Station Unit 2 nuclear island foundation area the elevation of the rock was higher than the Lee Nuclear Station foundation elevation. Excavation into soil, partially weathered rock, weathered or loose rock, and continuous rock is required to reach the Lee Nuclear Station Unit 2 nuclear island foundation elevation. These materials are excavated and removed down to the Unit 2 nuclear island foundation elevation. Below this elevation soil, partially weathered rock, and weathered or loose rock materials are excavated until continuous rock is reached. Backfill material is required where the rock surface elevation is below the Lee Nuclear Station foundation elevation or where additional rock removal is required to reach continuous rock due to localized weathering conditions. One area where the rock surface was already below the Lee Nuclear Station Unit 2 nuclear island foundation elevation is the east side of the nuclear island near the boring locations B-1014 and B-1018. At 2012 boring B-2005 near the southeast corner of the Unit 2 nuclear island, the continuous rock is 8 feet below the foundation elevation 553.5 feet. Fill concrete is used in this and any other area to bring the bearing surface back up to the Unit 2 nuclear island foundation elevation (Figure 2.5.4-267).	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11300	WLS	Pt 02	FSAR 02	02.05.04.05.03.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.3.1, third paragraph is revised to read: Geologic mapping of the final exposed excavation rock surface beneath the nuclear island, and any required extension due to depth of suitable continuous rock material, is performed at a scale of 1 inch equals 10 feet. Geologic mapping is performed at a scale of 1 inch equals 5 feet for local areas where further detail is needed to document significant features. The geologic mapping program includes photographic documentation of the exposed surface and laboratory testing and documentation for significant features. Lee Unit 1 is entirely underlain by Cherokee concrete over previously-mapped rock. Because of different footprints of legacy Cherokee structures, some additional excavation will be required, and may expose previously-mapped foundation rock. Exposed rock at Lee Unit 1 will be mapped and compared to the previous Cherokee mapping to confirm interpretations discussed in Subsection 2.5.1.2.5.5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11301	WLS	Pt 02	FSAR 02	02.05.04.05.03.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.3.2 is revised to add a new first paragraph as follows: The following requirements are also applicable to the fill concrete that is used to build up the rock surface exposed by excavation to the same level as the bottom of the nuclear island foundation in the foundation support zones of the SC-II building areas (annex building and turbine building first bay).	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11302	WLS	Pt 02	FSAR 02	02.05.04.05.03.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.3.2, third paragraph, third sentence is revised to read: At Unit 1, fill concrete is placed on top of the Cherokee Nuclear Station Unit 1 reactor building and auxiliary	Duke Energy Supplemental Response to Lee Units 1 and 2

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					building basemat, or on Cherokee Nuclear Station fill concrete or underlying rock exposed by removal of the Cherokee Nuclear Station auxiliary building basemat.	Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11303	WLS	Pt 02	FSAR 02	02.05.04.05.03.03	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.3.3 is revised to read: Outside the limits of the nuclear island support zone, steps are used to determine the presence of suitable foundation materials prior to placement of granular backfill materials within the foundation support zones beneath the non safety-related structures. For the structures not designated as SC-II, or for areas to be supported only on granular fill, this applies to continuous rock, existing concrete remaining from Cherokee Nuclear Station construction, weathered rock, partially weathered rock, or saprolite that remains in place below the non safety-related power block structures adjacent to the SC-II structures or the nuclear island. This also applies to areas to support only the granular fill. For the structures designated as SC-II (part of the annex building and the turbine building first bay as described in Subsection 2.5.4.5.3) the acceptable subgrade exposes concrete, rock, or the limited area of partially weathered rock in the northwest corner of the foundation support zone for the Unit 1 annex building. Steps for verification of proper foundation conditions consist of: • Removing loose soil, rock, and any organic materials. • Determine if the base of excavation consists of saprolite having N60 values, equal to or greater than 15 blows per foot, measured at a depth of 3 feet below the base of the excavation. Partially weathered rock, weathered rock, or rock would also be suitable in these areas provided it meets or exceeds the minimum criteria stated for saprolite and any loose material or soft zones are removed. For the SC-II building areas, rock is the acceptable support material, with limited areas of partially weathered rock such as in the northwest corner of the foundation support zone for the Unit 1 annex building. For the SC-II building areas, if rock within the foundation support zone is higher than the elevation of the bottom of the nuclear island, remove the rock to the elevation of the bottom of the nuclear island to be replaced with granular fill materials. • For the SC-II building areas, fill any depressions in the surface of the subgrade rock with fill concrete, then use fill concrete to backfill to the elevation level with that of the nuclear island (elevation 553.5 ft). This forms a uniform surface grade for the placement of granular backfill to support the SC-II building areas. If the rock in the foundation support zone of the SC-II buildings is above the elevation of the bottom of the nuclear island, the rock will be excavated to the elevation of the nuclear island bottom and replaced with granular fill materials. • For the structures not designated as SC-II or for areas that support only granular fill, fill any depressions or cavities in the surface of the foundation soil or rock with fill concrete or properly compacted granular fill materials. This forms a uniform surface grade for the placement of additional granular fill, to support the non SC-II buildings or to complete the area of granular fill. • Continue placing granular fill materials in layers according to the procedures described in Subsection 2.5.4.5.3.5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11304	WLS	Pt 02	FSAR 02	02.05.04.05.03.04	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.3.4 is revised to add a new first paragraph as follows: For fill concrete used within the foundation support zone of the SC-II building areas adjacent to the nuclear island, see Subsection 2.5.4.5.3.2.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11305	WLS	Pt 02	FSAR 02	02.05.04.05.03.05	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.3.5 is revised to add a new paragraph immediately following the fourth paragraph as follows: Compactors equivalent to those used in the test fill may be utilized in the production backfill provided that results of in situ tests of the backfill compacted using the equivalent compactors are capable of producing acceptable and consistent results.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

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						Attachment 3, WLG2013.05-02
11306	WLS	Pt 02	FSAR 02	02.05.04.05.03.05	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.3.5, fifth paragraph, sixth through ninth bullets are revised to read: • The lift thickness is appropriate for the type of compaction equipment, but generally does not exceed about 8 inches (compacted thickness) for mechanized equipment nor about 4 to 6 inches for hand-guided compactors. Lift thicknesses may vary from the above values depending on the capability of the equipment being used as demonstrated by the test fill and in situ tests in the production fill. • Within confined areas, or within close proximity of the nuclear island walls, appropriate compactors are used to prevent excessive lateral pressures against the walls from the residual soil stress caused by heavy compactors. The compactors have sufficient weight and striking power to produce the same degree of compaction that is obtained on the other portions of the fill by the rolling equipment, as specified.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11307	WLS	Pt 02	FSAR 02	02.05.04.06	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.6, first paragraph, first sentence is revised to read: The nuclear island structure extends below grade to Elevation 553.5 feet.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11476	WLS	Pt 02	FSAR 02	02.05.04.06.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.6.1, last paragraph, fourth sentence is revised as follows: The upper end of this groundwater elevation range is below the design groundwater elevation of 591 feet (standard plant Elevation 98 feet) used in the DCD Table 2-1.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11308	WLS	Pt 02	FSAR 02	02.05.04.06.04	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.6.4, first paragraph, third sentence is revised to read: Monitoring of groundwater elevations following cessation of site dewatering to confirm long term site groundwater elevations is not needed because the design groundwater level per the DCD (elevation 591-feet [AP1000 Grade El. 98'-00"]) exceeds the upper bound of the expected groundwater elevation range (elevation 584-feet) (see Table 2.0 201).	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11309	WLS	Pt 02	FSAR 02	02.05.04.07.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.7.1,second paragraph, third sentence is revised to read: Continuity of bedrock below, between, and adjacent to the Lee Nuclear Station Units 1 and 2 nuclear islands is confirmed in the subsurface by a dense network of continuously-logged vertical and inclined rock core borings (to a maximum depth of 255 feet) as shown in Figures 2.5.4-234 to 2.5.4-240.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11310	WLS	Pt 02	FSAR 02	02.05.04.07.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.7.2 is revised as follows: [Second paragraph, first sentence]	Duke Energy Supplemental Response to Lee

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					In 2006-2007 and 2012, borehole P-S suspension log seismic velocity surveys were performed in the nuclear island footprint areas for both Lee Nuclear Station Unit 1 and 2, and between the two plant footprints, as shown on Figure 2.5.4-215. [Third paragraph, first sentence] In 2006-2007, four downhole seismic surveys were completed in boreholes that also were surveyed using P-S Suspension logging methods to provide an independent verification of rock velocity. The two methods produced velocity profiles that are very similar, as shown in Figure 2.5.4-219, Figure 2.5.4-222, Figure 2.5.4-226, and Figure 2.5.4-227. [Fourth paragraph, first sentence] In 2006-2007, a third geophysical method, Spectral Analysis of Surface Waves (SASW) described in Subsection 2.5.4.4 was performed in the Lee Nuclear Station Unit 2 footprint area in the floor of the excavation and in existing fill materials located in both Unit 1 and Unit 2 Cooling Tower Pads. [Fifth paragraph] In 2006-2007, a fourth geophysical method, Seismic Cone Penetrometer Test (SCPT) surveys, was performed in soil.	Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11467	WLS	Pt 02	FSAR 02	02.05.04.07.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.7.2, fifth paragraph is revised to replace "Seismic Cone Penetrometer Test (SCPT)" with "SCPT".	Acronym update
11311	WLS	Pt 02	FSAR 02	02.05.04.07.04	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.7.4, first paragraph is revised to read: Figure 2.5.4-241 shows the Lee Nuclear Station Units 1 and 2 footprints superimposed on a contour map showing the surface of continuous rock (rock defined with an RQD of at least 65 percent). The contours illustrated on this figure represent the top of continuous rock surface, defined as continuous rock displaying fresh to moderate weathering with an RQD of at least 65 percent, developed using borehole data from historic field explorations for the Cherokee Nuclear Station and the field explorations for the Lee Nuclear Station completed in 2006 and 2007. Figure 2.5.4-241 also shows the extent of the partially constructed Cherokee Nuclear Station Unit 1 structures and the position of the Lee Nuclear Station Units 1 and 2 power block structures relative to the Cherokee Nuclear Station excavation.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11312	WLS	Pt 02	FSAR 02	02.05.04.07.04.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.7.4.1, beginning with the second paragraph is revised to read: Within the influence zone of the nuclear island foundation, the Lee Nuclear Station Unit 1 nuclear island footprint is entirely underlain by sound concrete that was placed over continuous rock during construction of the Cherokee Nuclear Station Unit 1 as shown on Figure 2.5.4-241. The Cherokee Nuclear Station concrete was placed over a prepared rock surface of sound, continuous rock that met the DCD Subsection 2.5.4.5 Subsurface Uniformity criteria. In some places, new fill concrete is placed over a sound prepared rock surface, or a cleaned and roughened Cherokee Nuclear Station concrete surface, to develop the level basemat grade as part of the Lee Nuclear Station Unit 1 foundation construction. The thicknesses of the composite concrete, defined as Lee Nuclear Station and Cherokee Nuclear Station Unit 1 fill and structural concretes, under Lee Nuclear Station Unit 1 nuclear island basemat generally ranges between several feet to about 25 feet thick and contains localized areas underlain by CNS pump room that will be backfilled with approximately 22 ft of new fill concrete. The localized condition associated with the CNS pump rooms is limited to a small portion of the Unit 1 nuclear island footprint as depicted in Figure 2.5.4-266. For development of the Lee Nuclear Station dynamic velocity model, the Unit 1 concrete materials are assumed to be of similar composition, strength, quality, and dynamic properties. Assumed dynamic properties for Cherokee Nuclear Station fill and structural concrete materials are estimated using static and dynamic field and laboratory correlations developed by Boone (2005) (Reference 211). The composite sound rock and fill concrete underlying the Lee Nuclear Station Unit 1 nuclear island basemat comply with the subsurface uniformity criteria as described in DCD Subsection 2.5.4.5. The foundation support zone for the Lee Nuclear Station nuclear island is entirely underlain by the footprint of	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02

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					the existing concrete foundation of Cherokee Nuclear Station Unit 1 which is underlain by continuous rock. The nuclear island foundation rock is characterized as sound, massive meta-granodioritic to meta-quartz dioritic rock, no dipping layers exist and the rock supporting the nuclear island foundation meet DCD case 1 criteria.	
11313	WLS	Pt 02	FSAR 02	02.05.04.07.04.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.7.4.2, first paragraph is revised to read: The Lee Nuclear Station Unit 2 nuclear island basemat at subgrade elevation is underlain by sound, massive meta-granodiorite and meta-quartz diorite bedrock with meta-diorite dikes. Rock in these intrusions is strong and similar in strength to the host rock, and contact margins are tight with minor local narrow altered/weathered zones. The rock underlying the Lee Nuclear Station Unit 2 nuclear island complies with the subsurface uniformity criteria as described in DCD Subsection 2.5.4.5. Minor localized areas of rock excavation or infilling with fill concrete is required under portions of the Lee Nuclear Station Unit 2 nuclear island footprint to develop a level bearing surface. Low areas will be backfilled with fill concrete to achieve basemat subgrade of similar composition and quality as that described above for Lee Nuclear Station Unit 1 nuclear island concrete fill to provide a dense, coupled interface with sound rock. The maximum thickness of fill concrete is about 20 feet beneath the east portion of the nuclear island, but generally will be less than about 1 to 2 feet. Unit 2 excavation conditions will require about 20 ft. of fill concrete between the bottom of the nuclear island and the top of continuous rock along the eastern edge of the nuclear island, Subsection 2.5.4.2.2. This relatively small area of concrete fill required to build up the eastern edge of the Unit 2 nuclear island basemat will not result in localized adverse conditions due to the relatively small difference in shear wave velocity of fill concrete (7,500 ft/sec) and rock (8391 to 8983 ft/sec) in this area. The fill concrete conditions described for the Lee Nuclear Station Unit 2 nuclear island eastern portion have no practical significance on differential shear wave velocity, site amplification or foundation performance. The nuclear island foundation rock is characterized as sound, massive meta-granodioritic to meta-quartz dioritic rock, no dipping layers exist and the rock supporting the nuclear island foundation meet DCD case 1 criteria.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11314	WLS	Pt 02	FSAR 02	02.05.04.07.05	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.7.5 is revised to read: 2.5.4..7.5 Dynamic Profiles This subsection presents the methodology and approach to develop site-specific dynamic velocity profiles at the Lee Nuclear Station site. Dynamic velocity profiles were compiled and applied at two locations for evaluation of site ground motion characteristics of Class I safety-related plant facilities with a third profile developed to evaluate generic engineered granular fill properties. These profiles are defined below. • Smoothed Dynamic Profile A, Unit 1 nuclear island centerline • Smoothed Dynamic Profile C, Unit 2 nuclear island centerline • Best Estimate Layer Velocity Profile G, Generic engineered granular fill Figure 2.5.4-247 shows the locations of the dynamic profiles (Profiles A and C) developed for the Duke Lee Nuclear Station. Smoothed dynamic profiles, Dynamic Profiles A and C, are shown on Figures 2.5.4-248 and 2.5.4 250, respectively. The site GMRS, discussed below and in Subsection 2.5.2, is represented by Profile A. Dynamic Profile C is used to evaluate possible differences in site response between Lee Nuclear Station Units 1 (Profile A) and 2 (Profile C) as a result of the spatial separation and possible lateral variability in the rock properties. A third, artificial generic engineered granular fill profile, identified as Best Estimate Layer Velocity Profile G, was developed to represent engineered granular fill placed over the bedrock and around the plant nuclear islands to develop the plant grade. It represents a reasonable range of granular engineered fill materials, well-graded gravel (GW) (Figure 2.5.4-251a), poorly-graded gravel (GP) (Figure 2.5.4-251b), and well graded sand (SW) (Figure 2.5.4-251c) that may be placed adjacent to the AP1000 nuclear islands. These generic engineered granular fill seismic velocity profiles were constructed by estimating the maximum shear wave velocities, the elastic modulus values and the corresponding Poisson's ratio, and compression wave velocities for granular fill	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02

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					materials, well-graded gravel (GW) (Table 2.5.4-224A), poorly-graded gravel (GP) (Table 2.5.4 224B), and well graded sand (SW) (Table 2.5.4-224C) that may be typical of that to be placed at the site. The modulus ratio and damping ratio at various values of shear strain for generic granular fill materials, well-graded gravel (GW), poorly-graded gravel (GP), and well-graded sand (SW) are summarized in Tables 2.5.4-224D, 2.5.4-224E, and 2.5.4-224F. Shear modulus and damping ratio plots of these data are illustrated in Figures 2.5.4-253a, 2.5.4-253b, and 2.5.4 253c. During site preparation, the area forming the foundation support zone, as defined in Subsection 2.5.4.5.2 of the DCD, of the SC-II areas of the annex building and the turbine building first bay will be excavated to pre-existing concrete or to rock and built up to the level of the bottom of the nuclear island foundation with fill concrete. If the rock in the foundation support zones of the SC-II buildings is above the elevation of the bottom of the nuclear island, the rock will be excavated to the elevation of the nuclear island bottom and replaced with granular fill materials. Generic granular fill Profile G extends to a depth thatis consistent with this condition. The generic granular fill is described in Subsection 2.5.4.5.3.5. The shear wave velocities of granular fill in Tables 2.5.4-224A, 2.5.4-224B and 2.5.4-224C are estimated based on the ground surface (yard elevation) at Elevation 592 feet. The modulus ratio and damping ratio results for the granular fill are in Tables 2.5.4-224D, 2.5.4-224E and 2.5.4-224F. In these tables, the depth reference is the ground surface. Following the development of the dynamic profiles, two base case dynamic velocity profiles were developed for the Lee Nuclear Station Unit 1 centerline and one base case dynamic profile was developed for Lee Nuclear Station Unit 2. The base case models the Lee Units 1 and 2 nuclear island configuration and are described below. • Base Case A1, Unit 1 Nuclear Island Centerline Defines the GMRS and the typical relationship of the Lee Nuclear Station fill concrete (8.5 feet) overlying Cherokee Nuclear Station structural and fill concrete (composite 23.5 feet) above continuous rock. • Base Case A5, Unit 1 CNS Pump Rooms Defines the GMRS and localized condition of the Lee Unit 1 nuclear island that will overlie legacy CNS pump rooms at approximately 527 ft (NAVD). Base Case Profile A5 is based on the Lee Nuclear Station GMRS developed at the top of a hypothetical outcrop fixed at 523 ft (NAVD) transferred up through previously placed Cherokee Nuclear Station concrete materials and newly placed Lee Nuclear Station concrete materials to the basemat foundation level at 553.5 ft (NAVD). Base Case Profile A5 models the localized as-built areas of the Lee Unit 1 nuclear island that will overlie legacy CNS pump rooms (Figure 2.5.4-266). As depicted in Figure 2.5.4-244e, the horizontal slab concrete of these pump rooms and existing waterproofing membrane will be removed during Lee construction and the pump rooms will then be backfilled using approximately 22 feet of fill concrete up to CNS basemat elevation 545 feet MSL with an additional 8.5 feet of fill concrete placed up to the basemat floor elevation (553.5 feet MSL) (Reference 239). • Base Case C4, Unit 2 Nuclear Island Eastern Edge Defines the GMRS and the typical relationship of proposed new leveling fill concrete above continuous rock. The location of Lee Unit 2 will require the emplacement of between 8 and 20 feet of new leveling fill concrete beneath the eastern extents of the Lee Unit 2 Nuclear Island as depicted in Figure 2.5.4-267. Base Case C4 defines the GMRS and the maximum concrete thickness along the eastern extents of Lee Nuclear Station Unit 2. The model representing Dynamic Profile Base Case A1, Unit 1 Centerline is shown on Figure 2.5.4-252a. Base Case A1 defined for the Lee Nuclear Station Unit 1 considers variability of site conditions such as material thickness and lateral variability within foundation rock, including Cherokee and Lee Nuclear Station concrete materials based on an average shear wave velocity of 7500 ft/sec. Assumed typical index properties for Cherokee Nuclear Station and Lee Nuclear Station concrete materials are summarized in Table 2.5.4-223. The site GMRS and Unit 1 FIRS (Base case profile A1) analysis are described in Subsections 2.5.2.6 and 2.5.2.7, respectively. The model representing Dynamic Profile Base Case A5, Unit 1 CNS Pump Rooms is shown on Figure 2.5.4-252b. Base Case A5 defined for the localized as-built areas of the Lee Unit 1 nuclear island that will overlie legacy CNS pump rooms considers variability of site conditions such as as-built Lee constructed condition, material	

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					thickness and lateral variability within foundation rock, including Cherokee and Lee Nuclear Station concrete materials based on an average shear wave velocity of 7500 ft/sec. The additional thickness of fill concrete amounts to a 30% increase in the fill concrete profile is applicable for this small portion of the nuclear island foundation. Considering the limited area beneath the Unit 1 nuclear island represented by Base Case Profile A5, the increased fill concrete thickness will have no practical significance on differential shear wave velocity, site amplification or foundation performance and comply with the subsurface uniformity criteria as described in DCD Subsection 2.5.4.5. Base Case Profile FIRS A1 represents the dominant dynamic profile for Lee Nuclear Station Unit 1. The model representing Dynamic Profile Base Case C4, Unit 2 Nuclear Island Eastern Edge is shown on Figure 2.5.4-252c. Base Case C4 defined for the location-specific as-built conditions beneath the eastern edge of the Unit 2 nuclear island considers variability of site conditions such as as-built Lee constructed condition, material thickness and lateral variability within foundation rock, including Lee Nuclear Station concrete materials based on an average shear wave velocity of 7500 ft/sec. The concrete profile represented in Base Case C4 is very similar to Base Case A1, (Figure 2.5.4-252a.) The placement of up to about 20 ft of new fill concrete along the eastern edge of the Unit 2 nuclear island represents a minor difference in the base case profile and will have no practical significance on differential shear wave velocity, site amplification or foundation performance and comply with the subsurface uniformity criteria as described in DCD Subsection 2.5.4.5. Assumed typical index properties for Cherokee Nuclear Station and Lee Nuclear Station concrete materials are summarized in Table 2.5.4-223. The site GMRS, Unit 1 FIRS (Base Case Profiles A1 and A5) and Unit 2 FIRS (Base Case Profile C4) analysis are described in Subsections 2.5.2.6 and 2.5.2.7, respectively.	
11315	WLS	Pt 02	FSAR 02	02.05.04.08	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.8, second through the sixth paragraphs are revised to read: [Second, third, and fourth paragraphs] All seismic Category I safety-related plant foundations for Lee Nuclear Station Units 1 and 2 will bear on rock, or fill concrete over rock. Neither fill concrete nor rock is susceptible to liquefaction. Plan maps, cross sections, and summary boring logs presented in Subsection 2.5.4.3 show the locations and rock foundation conditions of the Category I nuclear island structures that have a design subgrade elevation of 553.5 feet (AP1000 El. 60'-6"). The design basemat subgrade places the foundation for the Lee Nuclear Station Unit 1 nuclear island on existing concrete that was placed over a sound and cleaned rock surface remaining from the Cherokee Nuclear Station Unit 1, and directly on a newly-excavated and cleaned sound rock surface for the Lee Nuclear Station Unit 2 nuclear island. Therefore, a liquefaction hazard does not exist that could affect the Category I plant structures and facilities. Outside the nuclear islands, compacted engineered granular fill is placed adjacent to seismic Category I structures over the exposed rock/fill concrete surfaces to the extent shown on Figures 2.5.4 245 and 2.5.4 260 through 2.5.4 265. This granular backfill forms the supporting materials for the power block structures outside but adjacent to the nuclear islands. The typical thickness of granular fill is about 40 feet with a maximum thickness of about 55 feet under the radwaste building where fill concrete is not used to build up to the bottom of the nuclear island foundation. Beyond the perimeter of the granular fill as shown on the above-referenced figures, Group I engineered soil fill is placed as necessary to completely backfill the Cherokee Nuclear Station excavation, encompassing the granular backfill around the Lee Nuclear Station nuclear island structures up to yard grade. As discussed in Subsection 2.5.4.6, groundwater will rise above the bedrock surface within the engineered granular fill to elevations between about 574 feet to 584 feet msl. Shallow foundations for non-Category I plant facilities adjacent to the nuclear island (i.e., seismic Category II part of the annex building, non-seismic radwaste building, and seismic Category II part of the turbine building) are completely founded on or over compacted engineered granular fill over partially weathered rock/continuous rock, or compacted engineered granular fill over concrete and partially weathered rock/continuous rock. The non-seismic part of the annex building and non-seismic part of the turbine building and the radwaste building are founded on or over compacted engineered granular fill over partially weathered rock/continuous rock, compacted engineered granular fill over concrete and partially weathered rock/ continuous rock, or compacted	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02

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					engineered granular fill over saprolite soils overlying partially weathered rock/continuous rock. [Sixth paragraph, second sentence] Figures 2.5.4 245 and 2.5.4 260 through 2.5.4-265 depict the conditions below the base of the granular fill.	
11316	WLS	Pt 02	FSAR 02	02.05.04.10	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.10, third paragraph, sixth sentence is revised to read: As discussed in Subsection 2.5.4.6.1, the generic design groundwater elevation is 591 feet (AP1000 Elevation 98'-00") per the DCD.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11317	WLS	Pt 02	FSAR 02	02.05.04.10.01.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.10.1.1, second and third paragraphs are revised to read: The Peck, Hanson, and Thornburn method utilizes an empirical relationship between allowable bearing pressure and average Rock Quality Designation. The allowable bearing pressure determined from this empirical relationship is compared to the required allowable bearing capacity provided in the DCD Subsection 2.5.4.2. The FSAR specifically considers 2006-2007 data, 2012 data, and historic boring data relevant to the positions of the nuclear islands. Calculations using this method estimate a minimum allowable bearing pressure of 190,000 lb/ft2 at Unit 1 and 242,000 lb/ft2 at Unit 2. These allowable bearing pressures exceed the bearing requirements of 8,900 lb/ft2 static and 35,000 lb/ft2 combined (static plus seismic) loading provided in the DCD Subsection 2.5.4.2 and DCD Table 2-1. The Ultimate Bearing Capacity method utilizes Hoek-Brown parameters of the rock mass to establish the Mohr-Coulomb parameters of friction angle and cohesion for the rock. The bearing capacity factors, as developed in EM 1110 1 2908 (Reference 214) and in Sowers (Reference 215), are determined based on the established Mohr-Coulomb parameters. Shape, size, and eccentricity correction factors are applied to the foundation conditions based on the size and shape of the nuclear island. The ultimate bearing capacity is then calculated using these parameters and factors. Bearing capacity calculations using these methods estimate an ultimate bearing capacity of at least 2,539,000 lb/ft2 under static conditions and 2,444,000 lb/ft2 under combined (static plus seismic) loading conditions.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11318	WLS	Pt 02	FSAR 02	02.05.04.10.01.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.10.1.2, ninth paragraph is revised to read: Due to the yard surface not being level, the operative values of Df shown in Table 2.5.4-230 are used for computing Cw. The future water table may be as high as an elevation of 584 ft, which would be about 8 ft below the yard surface at the perimeter of the buildings. The yard surface slopes down away from the buildings and therefore is not level; the datum for measuring Dw is the average yard surface. For example, for an average depth to the bottom of the mat equal to 3.0 ft, below the average sloping yard level this would place the future water table at a depth of 7.5 ft below the average yard level for computing Cw. This depth of water table, about 7.5 ft, is reasonable to apply to the foundations for the radwaste and annex buildings. The foundation bearing levels in the turbine building are at generally differing elevations than those of the radwaste and annex buildings, and Df and Dw are appropriately assigned.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11319	WLS	Pt 02	FSAR 02	02.05.04.10.02.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.10.2.1, sixth paragraph is revised to read: Lee Nuclear Station nuclear island structures are founded on rock and fill concrete which does not incur sufficient settlement to disrupt the operation of the structure. The FSAR considers the 2006-2007 data, 2012 data, and historic CNS data. Settlement of Lee Nuclear Station Unit 1 and Unit 2 nuclear island structures founded on rock or fill concrete is calculated to be less than 1/10 of an inch. The maximum estimated settlement is 0.047 inches beneath Unit 1 and 0.048 inches beneath Unit 2 using the elastic modulus methods. The maximum estimated settlement is 0.071 inches beneath Unit 1 and 0.055 inches beneath Unit 2 using the	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02

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					empirical Rock Quality Designation based method. Differential settlement, even if equivalent to the estimated maximum total settlement, is within the limits allowed by DCD Subsection 2.5.4.3 (0.5 inch in 50 ft allowable).	
11320	WLS	Pt 02	FSAR 02	02.05.04.10.03	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.10.3 is revised through the last bulleted item to read: The highest water table (Elevation 584 feet) is below the design water table from the DCD (AP1000 Elevation 98'-00", corresponding to Lee Nuclear Station Elevation 591 ft). Lateral pressures are developed against the below-grade nuclear island wall resulting from the placement and compaction of granular backfill materials. Earth pressure envelopes are calculated for active, at-rest, and passive pressure conditions as developed in Figures 2.5.4-255a, 2.5.4 255b, and 2.5.4-255c. Lateral earth pressure values based on the maximum groundwater elevation are provided in Tables 2.5.4-225A, 2.5.4 225B, and 2.5.4-225C. Potential compaction-induced earth pressures are presented in Figure 2.5.4 256a. Numerical values of compaction-induced earth pressure are given in Table 2.5.4 226A. The compaction-induced earth pressures in Table 2.5.4-226A do not result in excessive lateral pressures on the nuclear island walls (Reference 240). Table 2.5.4-226B provides some generic combinations of soil compaction equipment and closest distance from the nuclear island wall the compaction equipment can be operated without exceeding the envelope of residual + at-rest pressure values adjacent to the nuclear island wall in Table 2.5.4-226A. Assumptions or references used to develop the active, at-rest, passive, and compaction-induced earth pressure envelopes are described in the following list. Earth Pressure Assumptions: • The granular fill used to backfill around the nuclear islands will likely come from an off-site borrow source such as an operating quarry, as described in Subsection 2.5.4.5. The granular fill will likely be USCS group symbol GW to GP (well-graded gravel to poorly-graded gravel) or SW (well-graded sand) and have material properties as described in Subsection 2.5.4.2. • Granular backfill is compacted to 96 percent of the maximum dry density determined from the modified Proctor laboratory test performed in accordance with ASTM D 1557. • Appropriate compaction equipment is used to compact the granular fill within close proximity of the nuclear island walls. Heavier compaction equipment may be used at greater distances from the walls. The use of appropriate compaction equipment near the wall avoids excessive compaction-induced stresses against the wall. • The potential compaction-induced earth pressures for vibratory roller compactors are computed using the method in Peck and Mesri, 1987 (Reference 229). The potential compaction-induced earth pressures for vibratory plate compactors are computed using information in Duncan, et al., 1991 (Reference 238). • The groundwater table elevation may vary over time between elevations 584 and 574 feet. The design water table elevation from the Design Control Document is up to elevation 591 feet (AP1000 Elevation 98'-00"). • The nuclear island walls do not yield due to the lateral earth pressure applied to them. The at-rest pressure is the appropriate earth pressure to assume for design of the walls.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11321	WLS	Pt 02	FSAR 02	02.05.04.12	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.12, first paragraph, fourth sentence is revised to read: Continuous rock is based on criteria of fresh to moderate weathering and RQD of at least 65%, based on the boring logs.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11322	WLS	Pt 02	FSAR 02	02.05.04.12	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.12, fifth paragraph is revised to read: The Cherokee Nuclear Station Unit 1 circular reactor building and the structures adjacent to it were designed for the dewatered condition and were constructed with an under slab drainage system. This drainage system consists of a network of channels located below the Cherokee Nuclear Station foundation slabs. The under slab	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations,

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					drainage network is contained within the footprint of the Cherokee Nuclear Station structures and was sealed at the Cherokee foundation perimeter. Removal of the isolation joint surrounding the Cherokee Nuclear Station circular reactor building exposes portions of this existing drainage network within the foundation support zone of the nuclear island. Removal of the Cherokee Nuclear Station auxiliary building basemat because of its high elevation in the southern end of the Lee Nuclear Station nuclear island basemat exposed portions of this existing drainage network. Where the Cherokee Nuclear Station drainage system is exposed by Lee Nuclear Station construction it is sealed off to keep the Lee Nuclear Station fill materials from eroding into the Cherokee Nuclear Station drainage channels. The sealing of these drainage channels is not an issue where the Cherokee Nuclear Station foundation structures are not removed; the drainage channels do not extend to the edges of the Lee Nuclear Station basemats and thus pose no risk that the Lee Nuclear Stationfill materials can erode into the drainage channels. The Cherokee Nuclear Station foundation basemat drainage system and an outline of the Lee Nuclear Station nuclear island foundation limits are shown on Figures 2.5.4-244a through 2.5.4-244e.	Enclosure 2, Attachment 3, WLG2013.05-02
11323	WLS	Pt 02	FSAR 02	02.05.04.13	COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.13 is revised to add new references as follows: 238. Duncan, J. M., Williams, G. W., Sehn, A. L., and Seed, R. B., 1991. Estimation Earth Pressures Due to Compaction, Journal of Geotechnical Engineering, Vol. 117, No. 12. 239. Shaw, 2011, Constructability Study: Methodology and Sequence for Final Demolition Activities for the Removal of Cherokee Legacy Waterproofing Membrane and Sheathing of Steel-lined Collection Puts, Pump Rooms and Other Localized Sumps and Pits, Rev. 0, December 20, 2011. 240. Westinghouse Electric Company LLC, 2013. "William S. Lee Site-Specific Assessment of Lateral Pressure Load Due to Relocation 3' Higher," No. WLG-1000-S2R-806, Rev. 1, Approved Feb. 13, 2013.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11340	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-201	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-201 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11341	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-202	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-202 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11342	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-207	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-207 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11343	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-208	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-208 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee

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						Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11344	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-209	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-209 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11345	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-210	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-210 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11346	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-211	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-211 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11347	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-212	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-212 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11348	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-213	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-213 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11349	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-214	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-214 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2

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						Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11350	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-215	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-215 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11351	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-216	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-216 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11352	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-218	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-218 is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11376	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-219	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-219 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11353	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-220	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-220 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11354	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-221	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-221 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Enclosure 2, Attachment 3, WLG2013.05-02
11389	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-222	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-222 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11355	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-223	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-223 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11356	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-224	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-224 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11357	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-225	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-225 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11433	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-226	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-226 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11434	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-227	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-227 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Attachment 3, WLG2013.05-02
11435	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-228	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-228 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11436	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-229	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-229 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11358	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-230	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-230 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11359	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-231	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-231 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11360	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-232	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-232 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11361	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-233a	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-233 is deleted and replaced with Figure 2.5.4-233a as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Attachment 3, WLG2013.05-02
11362	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-233b	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-233b is added as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11363	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-233c	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-233c is added as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11364	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-233d	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-233d is added as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11365	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-233e	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-233e is added as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11366	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-233f	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-233f is added as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11367	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-233g	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-233g is added as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Attachment 3, WLG2013.05-02
11368	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-234	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-234 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11369	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-235	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-235 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11370	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-236	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-236 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11371	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-237	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-237 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11372	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-238	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-238 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11373	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-239	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-239 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

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						Attachment 3, WLG2013.05-02
11374	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-240	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-240 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11375	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-241	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-241 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11377	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-243	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-243 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11378	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-244a	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-244a is replaced as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11437	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-244b	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-244b is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11438	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-244c	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-244c is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

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						Attachment 3, WLG2013.05-02
11439	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-244d	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-244d is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11379	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-244e	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-244e is added as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11380	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-245	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-245 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11381	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-246	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-246 is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11382	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-247	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-247 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11383	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-248	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-248 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Attachment 3, WLG2013.05-02
11384	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-249	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-249 is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11385	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-250	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-250 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11440	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-251a	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-251a is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11441	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-251b	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-251b is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11442	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-251c	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-251c is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11386	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-252	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-252 is deleted and replaced with Figure 2.5.2-252a as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Attachment 3, WLG2013.05-02
11387	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-252b	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-252b is added as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11388	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-252c	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-252c is added as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11390	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-255a	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-255a is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11391	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-255b	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-255b is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11392	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-255c	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-255c is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11443	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-256a	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-256a is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Attachment 3, WLG2013.05-02
11444	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-256b	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-256b is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11393	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-260	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-260 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11394	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-261	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-261 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11395	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-262	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-262 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11396	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-263	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-263 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11397	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-264	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-264 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Attachment 3, WLG2013.05-02
11398	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-265	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-265 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11399	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-266	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-266 is added as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11400	WLS	Pt 02	FSAR 02	02.05.04.F / F2.5.4-267	COLA Part 2, FSAR Chapter 2, Figure 2.5.4-267 is added as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11324	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-202	COLA Part 2, FSAR Chapter 2, Table 2.5.4-202 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11325	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-203	COLA Part 2, FSAR Chapter 2, Table 2.5.4-203 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11326	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-211	COLA Part 2, FSAR Chapter 2,Table 2.5.4-211 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Attachment 3, WLG2013.05-02
11327	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-216	COLA Part 2, FSAR Chapter 2, Table 2.5.4-216 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11475	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-217	COLA Part 2, FSAR Chapter 2, Table 2.5.4-217 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11328	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-222	COLA Part 2, FSAR Chapter 2, Table 2.5.4-222 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11329	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-224A	COLA Part 2, FSAR Chapter 2, Table 2.5.4-224A is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11330	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-224B	COLA Part 2, FSAR Chapter 2, Table 2.5.4-224B is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11331	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-224C	COLA Part 2, FSAR Chapter 2, Table 2.5.4-224C is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Attachment 3, WLG2013.05-02
11332	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-225A	COLA Part 2, FSAR Chapter 2, Table 2.5.4-225A is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11333	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-225B	COLA Part 2, FSAR Chapter 2, Table 2.5.4-225B is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11334	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-225C	COLA Part 2, FSAR Chapter 2, Table 2.5.4-225C is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11468	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-226A	COLA Part 2, FSAR Chapter 2, Table 2.5.4-226 is deleted and replaced with to Table 2.5.4-226A as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11335	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-226B	COLA Part 2, FSAR Chapter 2, Table 2.5.4-226B is added as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11336	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-227	COLA Part 2, FSAR Chapter 2, Table 2.5.4-227 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
						Attachment 3, WLG2013.05-02
11337	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-228	COLA Part 2, FSAR Chapter 2, Table 2.5.4-228 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11338	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-229	COLA Part 2, FSAR Chapter 2, Table 2.5.4-229 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11339	WLS	Pt 02	FSAR 02	02.05.04.T / T2.5.4-230	COLA Part 2, FSAR Chapter 2, Table 2.5.4-230 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 3, WLG2013.05-02
11490	WLS	Pt 02	FSAR 02	02.05.05	COLA Part 2, FSAR Chapter 2, Subsection 2.5.5, third paragraph is revised to read: The plants are centrally sited within a backfilled excavation forming a broad, relatively level yard grade at approximate elevation 592 feet for a distance of approximately 1000 feet from the nuclear island. No natural or manmade slopes exist in proximity to the safety related nuclear island structures that pose a potential slope stability hazard to the safe operation of the plant. Additionally, no natural descending slopes, such as river banks or ridge slopes, exist around the perimeter of the Lee Nuclear Station plant yard area that pose a potential encroachment or undermining hazard. Site investigations, subsurface geotechnical characterizations, and excavation and backfill profiles used for the slope stability evaluation are presented in Subsections 2.5.4.1, 2.5.4.2, 2.5.4.3, and 2.5.4.5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 4, WLG2013.05-02
11491	WLS	Pt 02	FSAR 02	02.05.05.01.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.5.1.1, first paragraph, last sentence is revised as follows: Additional descriptions for two of these slopes nearest to the nuclear island structures are provided below.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 4, WLG2013.05-02
11492	WLS	Pt 02	FSAR 02	02.05.05.01.01	COLA Part 2, FSAR Chapter 2, Subsection 2.5.5.1.1, fourth paragraph forward is revised as follows: The nearest permanent slope that ascends above the Lee Nuclear Station nuclear island area is a natural hill slope located southwest of the Unit 1 (Slope 5). This slope is also the highest slope within the one-quarter mile search area. This hill slope may be trimmed during plant grading.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations,

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					This hill rises approximately 80 feet above the yard elevation. The hill has a slope of approximately 2.5 horizontal to 1 vertical and is located about 1000 feet from the Unit 1 nuclear island. The closest distance to the toe of the slope is more than 9 times the height of the slope. No credible mechanism of slope failure would predict movement of the slope failure material over such a large distance. Based on the past stable history, slope height and inclination, and the distance from the nuclear island, this hill does not pose a hazard to safety related structures. Excavation of this hill for borrow source material may reduce the slope height, and the toe of slope may be relocated in a southerly direction away from the plant area, further reducing the already negligible potential hazard. The nearest permanent slope that descends below the plant yard grade and the nuclear island area is an engineered slope located north of Unit 2 (Slope 7). The top of this slope is about 1200 feet from the nuclear island. This slope descends 55 feet below the yard elevation to the surface of a pond adjacent to the Broad River. The slope is inclined approximately 2 horizontal to 1 vertical. There is no credible mechanism whereby failure of a descending slope 55 feet high and 1200 feet away could affect the nuclear island. Based on the distance, height, and inclination of this slope from the nuclear island, it does not pose a hazard to the safety related structures.	Enclosure 2, Attachment 4, WLG2013.05-02
11493	WLS	Pt 02	FSAR 02	02.05.05.02	COLA Part 2, FSAR Chapter 2, Subsection 2.5.5.2 is revised to read: Analyses of permanent slope conditions were limited to a review of permanent slopes within a one-quarter mile distance from the Units 1 and 2 nuclear island structures. This conservative evaluation is based on past performance, height, slope angle, and distance from the safety related structures. The nearest permanent slopes are 1000 feet or more away from the Units 1 and 2 nuclear island structures. These permanent slopes do not require further analysis, including quantitative pseudostatic analysis, to calculate a safety factor because there is no failure mechanism that would create a hazard to the safety related structures.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 4, WLG2013.05-02
11495	WLS	Pt 02	FSAR 02	02.05.05.F / F2.5.5-201	COLA Part 2, FSAR Chapter 2, Figure 2.5.5-201 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 4.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 4, WLG2013.05-02
11494	WLS	Pt 02	FSAR 02	02.05.05.T / T2.5.5-201	COLA Part 2, FSAR Chapter 2, Table 2.5.5-201 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 4.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 4, WLG2013.05-02
10998	WLS	Pt 02	FSAR 02	APP02AA	COLA Part 2, FSAR Chapter 2, Appendix 2AA first paragraph is revised to read: APPENDIX 2AA This Appendix contains geotechnical boring logs, test pit logs, SPT energy measurements, and Packer Test results that are the basis for discussion in relevant sections of 2.5. The logs and tests represent a record of subsurface conditions at the William States Lee III Nuclear Station site. Attachment 1 contains geotechnical boring logs (124 borings in total) and monitoring well construction logs (24 in total) resulting from the COL investigation as well as a key to symbols and descriptions. Attachment 2 contains the results of SPT energy measurement testing performed on the Lee Nuclear Station site. Attachment 3 contains test pit logs resulting	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 6, WLG2013.05-02

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					from the COL investigation, 14 logs in total. Attachment 4 contains Packer Test results from four locations on the Lee site. Attachment 5 contains the Cone Penetrometer Test, Seismic Cone Penetrometer Test, and Pore Pressure Dissipation Test results performed on the Lee Nuclear Station site. Attachment 6 contains seven geotechnical boring logs for WLS Units 1 and 2, which supplement the boring logs presented in Attachment 1.	
11198	WLS	Pt 02	FSAR 02	APP02AA	COLA Part 2, FSAR Chapter 2, Appendix 2AA, last sentence is revised to replace "WLS" with "Lee." (This change is on the chapter document)	Acronym update
10999	WLS	Pt 02	FSAR 02	APP02AA	COLA Part 2, FSAR Chapter 2, Appendix 2AA is revised to add Attachment 6 as follows: APPENDIX 2AA ATTACHMENT 6 – LEE NUCLEAR STATION GEOTECHNICAL BORINGS LOGS, 2012 EXPLORATION This Attachment contains the seven geotechnical boring logs from the 2012 geotechnical investigation supporting WLS Units 1 and 2. This attachment supplements the geotechnical boring logs presented in Attachment 1.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 6, WLG2013.05-02
10927	WLS	Pt 02	FSAR 02	APP02CC	COLA Part 2, FSAR Chapter 2, Appendix 2CC is revised to read: This Appendix demonstrates the consistency of the Lee meteorological data between years. In addition, comparisons are provided between the onsite data and the National Weather Service station (Greenville-Spartanburg (GSP)) for selected data.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
11480	WLS	Pt 02	FSAR 02	APP02CC	COLA Part 2, FSAR Chapter 2, Appendix 2CC is revised as reflected on Duke Energy Submittal on Plant Relocation, Enclosure 2, Attachment 4.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
11200	WLS	Pt 02	FSAR 02	APP02DD	COLA Part 2, FSAR Chapter 2, Appendix 2DD, Section 2DD.1 is revised to replace "WLS" with "Lee." (This change is on the Appendix document)	Acronym update
10928	WLS	Pt 02	FSAR 02	APP02DD	COLA Part 2, FSAR Chapter 2, Appendix 2DD, Subsection 2DD.2, first paragraph is revised as follows: The weather station at the Charlotte-Douglas Airport (CLT) is located approximately 35 miles northeast of the site. The ground elevation of the CLT airport is approximately 740 feet above mean sea level (msl). The weather station at the Greenville-Spartanburg Airport (Greer, GSP) is located approximately 40miles southwest of the site. The ground elevation of the GSP airport is approximately 940 feet above mean sea level (msl). The plant elevation is approximately 593 feet msl with the circular mechanical draft cooling towers being located at a grade elevation of approximately 588 feet msl and the top of the towers at approximately 673 feet msl. The onsite meteorological tower (i.e., Tower 2) is located at a base elevation of approximately 611 feet msl with instrumentation levels of 644 ft msl and 808 ft msl. Because the CLT weather station is in reasonable proximity to the site and is located at fairly similar elevations above sea level, the data from CLT are judged to be representative of the site. The following comparison of CLT and Lee Nuclear Station meteorological data supports this conclusion.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 4, WLG2013.05-02
11201	WLS	Pt 02	FSAR 02	APP02DD	COLA Part 2, FSAR Chapter 2, Appendix 2DD, Section 2DD.2, under the sub-heading Salt Deposition is revised to replace "WLS" with "Lee." (This change is on the Appendix document)	Acronym update

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11202	WLS	Pt 02	FSAR 02	APP02DD / T2DD-205	COLA Part 2, FSAR Chapter 2, Appendix 2DD, Table 2DD-205 is revised to replace "WLS" with "Lee." (15 Instances) (This change is on the Appendix document)	Acronym update
11203	WLS	Pt 02	FSAR 02	APP02DD.F / F2DD-205	COLA Part 2, FSAR Chapter 2, Appendix 2DD, Figure 2DD-205 is revised to replace "WLS" with "Lee." (This change is on the Appendix document)	Acronym update
11204	WLS	Pt 02	FSAR 02	APP02DD.F / F2DD-206	COLA Part 2, FSAR Chapter 2, Appendix 2DD, Figure 2DD-206 is revised to replace "WLS" with "Lee." (This change is on the Appendix document)	Acronym update
11069	WLS	Pt 02	FSAR 03	03.05.01.06	COLA Part 2, FSAR Chapter 3, Subsection 3.5.1.6, first bullet is revised to read: Charlotte/Douglas International Airport (CLT) is located about 34.4 miles from Lee Nuclear Station. The average number of operations is approximately 502,152 operations per year, which is less than the acceptable projected annual number of operations of 1,183,360. Based on forecast for terminal area by Federal Aviation Administration (FAA), the number of CLT operations for year 2025 is 767,691 operations per year.	Acronym update
11070	WLS	Pt 02	FSAR 03	03.05.01.06	COLA Part 2, FSAR Chapter 3, Subsection 3.5.1.6, second bullet is revised to read: One federal airway passes within four miles of the plant site. Low altitude Airway V54 runs between Spartanburg Downtown Memorial Airport, South Carolina (SPA) located 26.1 miles from Lee Nuclear Station and CLT located 34.4 miles from Lee Nuclear Station. The average annual number of flights using Airway V54 is approximately 15 to 25 percent of the total airport operation. The FAA forecast number of SPA operation for year 2025 is approximately 73,000 operations per year. Based on annual compound growth rate of one percent from year 2025 to year 2060 for SPA, the projected annual number of operations at year 2060 is approximately 103,412. The average annual number of flights for Airway V54 is assumed to be 25 percent of the total airport operation. Therefore, the annual number of flights for Airway V54 is assumed to be 25,853.	Acronym update
11072	WLS	Pt 02	FSAR 03	03.07.01.01.01	COLA Part 2, FSAR Chapter 3, Subsection 3.7.1.1.1, third paragraph, first sentence is revised to remove the full for of the acronym, CDSRS; the third sentence is revised to add "North American Vertical Datum" preceeding the first instance of "(NAVD)".	Acronym update
11496	WLS	Pt 02	FSAR 03	03.07.01.01.01	COLA Part 2, FSAR Chapter 3, Subsection 3.7.1.1.1 is revised to read: 3.7.1.1.1 Design Ground Motion Response Spectra Design ground motion response spectra for Lee Nuclear Station Unit 1 and Unit 2 nuclear islands are presented in this subsection. The foundation conditions at Lee Nuclear Station are unique in that the Unit 1 nuclear island foundation is supported on new and previously placed concrete materials placed directly over continuous rock. In contrast, the Unit 2 nuclear island foundation is configured more conventionally with the nuclear island founded directly over continuous rock, except for the eastern edge of the Unit 2 nuclear island, which will require approximately 20 ft. of fill concrete to build up the support zone to the base of the nuclear island. Based on these foundation conditions, individual design ground motion response spectra are provided for the certified design portion of the plant at Units 1 and 2. Measured shear wave velocities for continuous rock underlying the Units 1 and 2 nuclear islands range from between 9000 to 10,000 fps, as described in Subsection 2.5.4.7. The stability of subsurface materials including foundation conditions are described in Subsection 2.5.4. Figures 3.7-201 and 3.7-202 compare the Units 1 and 2 horizontal and vertical site-specific design ground motion response spectra to the certified seismic design response spectrum (CSDRS) and the AP1000 generic hard rock spectrum (WEC). For Unit 1, the Foundation Input Response Spectrum (FIRS) defines the site response foundation input motion for the nuclear island foundation placed on concrete over continuous rock. Unit 1 FIRS, associated with Unit 1 FIRS A1 (Figure 2.5.4-252a), represents the nuclear island centerline foundation input motion and is based on the GMRS developed at the top of a hypothetical outcrop (e.g. continuous rock) fixed at 530 feet (NAVD) transferred up through previously placed and new concrete materials	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02

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					to the basemat foundation level at 553.5 feet (NAVD). For Unit 2, the GMRS defines the site response foundation input motion developed at the top of a hypothetical outcrop of competent material (e.g. continuous rock) fixed at the basemat foundation level at 553.5 feet (NAVD). Detailed discussions of the methods used to calculate the horizontal and vertical GMRS and FIRS are described in Subsections 2.5.2.6, Ground Motion Response Spectra, and 2.5.2.7, Development of FIRS for Units 1 and 2. Variations in the Unit 1 FIRS and GMRS horizontal and vertical spectrum shown on Figures 3.7-201 and 3.7-202 are attributed to the independent calculation methodologies used to estimate the site-specific design ground motion response spectra. As shown on Figure 3.7-201, the horizontal GMRS and Unit 1 FIRS exceed the horizontal CSDRS at frequencies of about 20 to 75 hertz and 20 to 85 hertz, respectively. PGA at 100 hertz of the GMRS and Unit 1 FIRS is 0.21 g and 0.23 g, respectively. As shown on Figure 3.7-202, the vertical GMRS and Unit 1 FIRS exceed the vertical CSDRS at frequencies between about 25 to 70 hertz. Similar high-frequency exceedances were evaluated by Westinghouse in DCD Appendix 3I using a standard hard rock spectrum (shown as WEC generic hard rock spectrum in Figures 3.7-201 and 3.7-202). In Figures 3.7 -201 and 3.7-202, it can be seen that the horizontal and vertical GMRS and Unit 1 FIRS are below the corresponding horizontal and vertical WEC generic hard rock spectrum for all frequencies. As described in DCD Appendix 3I, generic hard rock spectrum high frequency exceedances are within the seismic design margin of the AP1000 and will not adversely affect the systems, structures, or components of the plant. The Lee Nuclear Station site provides uniform hard-rock support for the nuclear island, and the site characteristic GMRS and Unit 1 FIRS are less than the horizontal and vertical WEC generic hard rock spectrum at all frequencies. Therefore the site complies explicitly with the AP1000 DCD and no site-specific analysis is required. Subsection 3.7.2.15 describes confirmatory site-specific analyses of the nuclear island that demonstrate compliance with the AP1000 DCD.	
11497	WLS	Pt 02	FSAR 03	03.07.02.01.02	COLA Part 2, FSAR Chapter 3, Subsection 3.7.2.1.2, first paragraph is revised to read: For cases when site-specific analyses of the nuclear island structures may be required, artificial time histories (two horizontal and one vertical) were developed to be compatible with the Lee Nuclear Station Unit 1 FIRS spectrum (FSAR Figures 3.7-201 and 3.7 202), and to satisfy the requirements of Standard Review Plan (SRP) 3.7.1. The methodology used in the development of these time histories is summarized in the following four steps:	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11498	WLS	Pt 02	FSAR 03	03.07.02.01.02	COLA Part 2, FSAR Chapter 3, Subsection 3.7.2.1.2, last paragraph is revised to read: Attributes of the resulting time histories representing the Unit 1 FIRS are shown in FSAR Table 3.7-201. FSAR Figure 3.7-203 illustrates a representative horizontal component time history.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11499	WLS	Pt 02	FSAR 03	03.07.02.08.04	COLA Part 2, FSAR Chapter 3, Subsection 3.7.2.8.4 is revised to read: Add the following information to the end of DCD Subsection 3.7.2.8.4: FSAR Subsection 2.5.4.5.2 describes how areas in the foundation support zones of Seismic Category II buildings (the Annex Building and Turbine Building first bay) will be excavated to expose concrete or rock, and fill concrete will be used to build up to the base level of the nuclear island. If rock within the foundation support zone of these Seismic Category II structures is higher than the base of the nuclear island, the rock will be	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02

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					removed to the elevation of the base of the nuclear island. In areas where the pre-existing concrete and/or rock within the foundation support zone of these Seismic Category II structures are at a lower elevation than the base of the nuclear island, fill concrete will be used to build up to the base level of the nuclear island. This configuration is illustrated in FSAR Figures 2.5.4-245 and 2.5.4-260 through 2.5.4-265. These measures ensure that the Lee Nuclear Station site provides uniform support for the Seismic Category II structures in a configuration identical to that considered in the AP1000 DCD designs. From the candidate granular fill materials described in FSAR Subsection 2.5.4, Duke Energy has determined that Macadam Base Course material provides properties appropriate for precluding interaction of Seismic Category II buildings with the nuclear island. Duke Energy has selected the static and dynamic properties described in FSAR Subsection 2.5.4 as well-graded gravel (GW) to represent that Macadam Base Course material. As shown in FSAR Subsection 3.7.1.1.1, the Lee GMRS and Unit 1 FIRS are enveloped by the AP1000 HRHF response spectrum. The properties of the granular fill material that will be placed above continuous rock, presented in FSAR Table 2.5.4-211 and FSAR Tables 2.5.4-224A through 2.5.4-224F, are consistent with those used by Westinghouse in developing design criteria for adjacent Seismic Category II structures and include having a shear wave velocity greater than 500 fps. The Lee site-specific bearing capacity for the granular fill material supporting the Seismic Category II structures (shown in FSAR Table 2.5.4-228) is greater than the generic AP1000 bearing demand for these structures. As described in FSAR Subsection 2.5.4.5.1, the source for the granular fill material (Macadam Base Course) supporting the Seismic Category II buildings has not yet been identified. Once a source for the granular fill material has been selected, the static and dynamic properties of the material supporting Seismic Category II buildings will be verified as compatible with Lee Nuclear Station site response analyses. The information above demonstrates that the Lee site provides uniform support for the Seismic Category II buildings; site-specific fill material is consistent with that considered in establishing generic AP1000 design criteria for these buildings; the site-specific seismic demands on the Seismic Category II buildings are less than those considered in the AP1000 standard design; the configuration of the granular fill supporting the Seismic Category II buildings is consistent with that described in the DCD; and the bearing capacity of the supporting granular fill is greater than the bearing demand. Therefore, the Lee Nuclear Station site complies explicitly with the requirements of DCD Subsection 3.7.2.8.4 for a hard rock site, and no site-specific analysis is required. Westinghouse has nevertheless performed a confirmatory site-specific analysis of Seismic Category II structures supported by granular fill material with the static and dynamic properties associated with well-graded gravel (GW), and has concluded that all DCD criteria have been met. This analysis is presented in Reference 205. The conditions considered in Reference 205 included a variety of potential thicknesses of granular fill material (depth to supporting rock). The analysis cases considering thicker granular fill bound the Lee Nuclear Station site configuration actually selected. The lower levels of granular fill considered in Reference 205 have actually been replaced by fill concrete, resulting in a configuration virtually identical to the DCD.	
11074	WLS	Pt 02	FSAR 03	03.07.02.15	COLA Part 2, FSAR Chapter 3, Subsection 3.7.2.15, first paragraph, last sentence is revised to read: These analyses were initially documented in Revision 1 of Reference 201, and were subsequently updated in Revision 2 of Reference 201 to address AP1000 modeling updates during the Design Certification Amendment, revisions to the Lee Unit 1 FIRS and the associated time-histories, and the decision to use granular fill material adjacent to the Lee nuclear island structures.	Acronym update
11500	WLS	Pt 02	FSAR 03	03.07.02.15	COLA Part 2, FSAR Chapter 3, Subsection 3.7.2.15 is revised to read: Add the following information to the end of DCD Subsection 3.7.2: As described in FSAR Subsection 3.7.1.1.1, the Lee Nuclear Station site provides uniform hard-rock support and the site characteristic GMRS and Unit 1 FIRS are bounded by the Westinghouse generic hard rock spectrum. Therefore, no site-specific analysis of the nuclear island is required. Westinghouse has nevertheless performed	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations,

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					confirmatory site-specific analyses of the nuclear island Seismic Category I structures. These analyses were initially documented in Revision 1 of Reference 201, and were subsequently updated in Revision 2 of Reference 201 to address AP1000 modeling updates during the Design Certification Amendment, revisions to the WLS Unit 1 Foundation Input Response Spectrum (FIRS) and the associated time-histories, and the decision to use granular fill material adjacent to the WLS nuclear island structures. These site-specific analyses included two-dimensional SSI analysis, as well as three-dimensional incoherent SSI analysis, and investigated the effect of having layers of fill concrete over hard rock supporting the nuclear island (Lee Unit 1), compared to the nuclear island supported on hard rock (Lee Unit 2). The measure of the effects was a comparison of in-structure response spectra at six key locations shown below. • CIS at Reactor Vessel Support Elevation • ASB SW Corner at Control Room Floor • CIS at Operating Deck • ASB Corner of Fuel Building Roof at Shield Building • SCV Near Polar Crane • ASB Shield Building Roof Area The results of these site-specific analyses confirmed that the presence of approximately 20' of fill concrete instead of rock has very small effect on in-structure response spectra. The three-dimensional incoherent SSI analyses confirm that at these key locations, in-structure response spectra are enveloped by those resulting from the AP1000 CSDRS and HRHF SSI envelopes.	Enclosure 2, Attachment 5, WLG2013.05-02
11501	WLS	Pt 02	FSAR 03	03.07.06	COLA Part 2, FSAR Chapter 3, Subsection 3.7.6, is revised to remove References 202, 203, and 204 as follows: 3.7.6 REFERENCES 201. Westinghouse Electric Company Report WLG-1000-S2R-802, Revision 2, William S. Lee Site Specific Seismic Evaluation Report, March 15, 2012. 202. Deleted. 203. Deleted. 204. Deleted. 205. Westinghouse Electric Company Report WLG-1000-S2R-804, Revision 2, William S. Lee Site Specific Adjacent Building Seismic Evaluation Report, July 2012.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11503	WLS	Pt 02	FSAR 03	03.07.F / F3.7-201	COLA Part 2, FSAR Chapter 3, Figure 3.7-201 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11504	WLS	Pt 02	FSAR 03	03.07.F / F3.7-202	COLA Part 2, FSAR Chapter 3, Figure 3.7-202 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11505	WLS	Pt 02	FSAR 03	03.07.F / F3.7-203	COLA Part 2, FSAR Chapter 3, Figure 3.7-203 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2

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						Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11506	WLS	Pt 02	FSAR 03	03.07.F / F3.7-204a	COLA Part 2, FSAR Chapter 3, Figure 3.7-204a is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11507	WLS	Pt 02	FSAR 03	03.07.F / F3.7-204b	COLA Part 2, FSAR Chapter 3, Figure 3.7-204b is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11508	WLS	Pt 02	FSAR 03	03.07.F / F3.7-204c	COLA Part 2, FSAR Chapter 3, Figure 3.7-204c is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11509	WLS	Pt 02	FSAR 03	03.07.F / F3.7-205a	COLA Part 2, FSAR Chapter 3, Figure 3.7-205a is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11510	WLS	Pt 02	FSAR 03	03.07.F / F3.7-205b	COLA Part 2, FSAR Chapter 3, Figure 3.7-205b is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11511	WLS	Pt 02	FSAR 03	03.07.F / F3.7-205c	COLA Part 2, FSAR Chapter 3, Figure 3.7-205c is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations,

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						Enclosure 2, Attachment 5, WLG2013.05-02
11512	WLS	Pt 02	FSAR 03	03.07.F / F3.7-206a	COLA Part 2, FSAR Chapter 3, Figure 3.7-206a is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11513	WLS	Pt 02	FSAR 03	03.07.F / F3.7-206b	COLA Part 2, FSAR Chapter 3, Figure 3.7-206b is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11514	WLS	Pt 02	FSAR 03	03.07.F / F3.7-206c	COLA Part 2, FSAR Chapter 3, Figure 3.7-206c is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11515	WLS	Pt 02	FSAR 03	03.07.F / F3.7-207a	COLA Part 2, FSAR Chapter 3, Figure 3.7-207a is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11516	WLS	Pt 02	FSAR 03	03.07.F / F3.7-207b	COLA Part 2, FSAR Chapter 3, Figure 3.7-207b is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11517	WLS	Pt 02	FSAR 03	03.07.F / F3.7-207c	COLA Part 2, FSAR Chapter 3, Figure 3.7-207c is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2,

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						Attachment 5, WLG2013.05-02
11431	WLS	Pt 02	FSAR 03	03.07.F / F3.7-208a	COLA Part 2, FSAR Chapter 3, Figure 3.7-208a is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11190	WLS	Pt 02	FSAR 03	03.07.F / F3.7-208b	COLA Part 2, FSAR Chapter 3, Figure 3.7-208b is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11196	WLS	Pt 02	FSAR 03	03.07.F / F3.7-208c	COLA Part 2, FSAR Chapter 3, Figure 3.7-208c is deleted as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11502	WLS	Pt 02	FSAR 03	03.07.T / T3.7-201	COLA Part 2, FSAR Chapter 3, Table 3.7-201 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 2, Attachment 5, WLG2013.05-02
11091	WLS	Pt 02	FSAR 03	03.09.06.02.02	COLA Part 2, FSAR Chapter 3, Subsection 3.9.6.2.2, first sentence is revised to add "(IST)" following "inservice testing".	Acronym update
11092	WLS	Pt 02	FSAR 03	03.09.06.03	COLA Part 2, FSAR Chapter 3, Subsection 3.9.6.3, following the fifth paragraph item #2 is revised to replace "CDF" with "core damage frequency (CDF)".	Acronym update
10889	WLS	Pt 02	FSAR 04	04.04.07	COLA Part 2, FSAR Chapter 4, Subsection 4.4.7, second sentence is revised to read: "The calculations will be completed using the revised thermal design procedure (RTDP) with these instrumentation uncertainties and confirm that either..."	Acronym update
11001	WLS	Pt 02	FSAR 05	05.02.01.01	COLA Part 2, FSAR Chapter 5, Subsection 5.2.1.1, second paragraph is revised to read: Inservice inspection of the RCPB is conducted in accordance with the applicable edition and addenda of the ASME Boiler and Pressure Vessel Code Section XI, as described in Subsection 5.2.4. Inservice testing of the RCPB components is in accordance with the edition and addenda of the ASME OM Code as discussed in Subsection 3.9.6 for pumps and valves, and as discussed in Subsection 3.9.3.4.4 for dynamic restraints.	Acronym update

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11002	WLS	Pt 02	FSAR 05	05.02.04.01	COLA Part 2, FSAR Chapter 5, Subsection 5.2.4.1, first bullet following the first paragraph is revised to read: *Reactor pressure vessel (RPV);	Acronym update
11003	WLS	Pt 02	FSAR 05	05.02.04.01	COLA Part 2, FSAR Chapter 5, Subsection 5.2.4.1, second paragraph is revised to read: Those portions of the above systems within the Class1 boundary are those items that are part of the RCPB as defined in Section 5.2.	Acronym update
11004	WLS	Pt 02	FSAR 05	05.02.04.01	COLA Part 2, FSAR Chapter 5, Subsection 5.2.4.1, under the sub-heading Exclusions, the first paragraph is revised to read: Portions of the systems within the RCPB, as defined above, that are excluded from the Class 1 boundary in accordance with 10 CFR 50, Section 50.55a, are as follows: ——— Components that are or can be isolated from the RCS by two valves in series (both closed, both open, or one closed and the other open).	Acronym update
11005	WLS	Pt 02	FSAR 05	05.02.04.01	COLA Part 2, FSAR Chapter 5, Subsection 5.2.4.1, under the sub-heading Exclusions, the fourth paragraph is revised to read: Boric acid corrosion control procedures require inspection of the RCPB subject to leakage that can cause boric acid corrosion of the RCPB materials. The procedures determine the principle locations where leaks can cause degradation of the primary pressure boundary by boric acid corrosion. Potential paths of the leaking coolant are established. The boric acid corrosion control procedures also contain methods for conducting examinations and performing engineering evaluations to establish the impact on the RCPB when leakage is located.	Acronym update
11006	WLS	Pt 02	FSAR 05	05.02.04.03.01	COLA Part 2, FSAR Chapter 5, Subsection 5.2.4.3.1, under the sub-heading Surface Examination is revised to remove the acronyms "(MT)" and "(PT)" and use the full form, magnetic particle and liquid penetrant. (2 instances for each)	Acronym update
11007	WLS	Pt 02	FSAR 05	05.02.05.03.05	COLA Part 2, FSAR Chapter 5, Subsection 5.2.5.3.5 is revised under the second bullet to replace 'Technical Specifications' with the acronym, TS in both sub-bullets.	Acronym update
11008	WLS	Pt 02	FSAR 05	05.03.02.06	COLA Part 2, FSAR Chapter 5, Subsection 5.3.2.6 third paragraph, third sentence is revised to remove the acronym "(EOL)".	Acronym update
11009	WLS	Pt 02	FSAR 05	05.03.02.063.03	COLA Part 2, FSAR Chapter 5, Subsection 5.3.2.6.3 third paragraph, third sentence is revised to read: If the test results indicate a change in the Technical Specifications (TS) is required, either in the pressure-temperature limits or in the operating procedures required to meet the limits, the expected date for submittal of the revised TS is provided with the report.	Acronym update
11010	WLS	Pt 02	FSAR 05	05.03.03.02	COLA Part 2, FSAR Chapter 5, Subsection 5.3.3.2 is revised to read: Plant operating procedures are developed and maintained to prevent exceeding the pressure-temperature limits identified in reactor coolant system pressure and temperature limits report, as required by TS 5.6.6, during normal and abnormal operating conditions and system tests.	Acronym update
11011	WLS	Pt 02	FSAR 05	05.03.03.02	COLA Part 2, FSAR Chapter 5, Subsection 5.3.6.1 is revised to read: The pressure-temperature curves shown in DCD Figures 5.3-2 and 5.3-3 are generic curves for AP1000 reactor vessel design, and they are the limiting curves based on copper and nickel material composition. Plant-specific curves will be developed based on material composition of copper and nickel. Use of plant-specific curves will	Acronym update

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					be addressed during procurement and fabrication of the reactor vessel. As noted in the bases to TS 3.4.14, use of plant-specific curves requires evaluation of the low temperature overpressure protection system. This includes an evaluation of the setpoint pressure for the normal residual heat removal relief valve to determine if the setpoint pressure needs to be changed based on the plant-specific pressure-temperature curves. The development of the plant-specific curves and evaluation of the setpoint pressure are required prior to fuel load.	
11043	WLS	Pt 02	FSAR 06	06.06.02	COLA Part 2, FSAR Chapter 6, Subsection 6.6.2 is revised to remove the acronym "(QMS)" (two instances).	Acronym update
11051	WLS	Pt 02	FSAR 06	06.06.03.01	COLA Part 2, FSAR Chapter 6, Subsection 6.6.3.1, under sub-heading Surface Examination, first sentence is revised to replace "Magnetic particle, liquid penetrant,..." with "Magnetic particle test (MT), penetrant test (PT),..." The second sentence is revised to replace "Magnetic particle (MT) and liquid penetrant (PT)" with "MT and PT."	Acronym update
11052	WLS	Pt 02	FSAR 08	08.01.01	COLA Part 2, FSAR Chapter 8, Subsection 8.1.1, acronyms (VACAR) and (SERC) are removed.	Acronym update
11053	WLS	Pt 02	FSAR 08	08.02.01	COLA Part 2, FSAR Chapter 8, Subsection 8.2.1 is revised to replace "step-up transformers (GSU)" with "generator step-up (GSU) transformers."	Acronym update
11054	WLS	Pt 02	FSAR 08	08.02.01.01	COLA Part 2, FSAR Chapter 8, Subsection 8.2.1.1, sub-heading Failure Analysis is revised to replace "GDC" with "General Design Criteria (GDC)."	Acronym update
11055	WLS	Pt 02	FSAR 08	08.02.01.01	COLA Part 2, FSAR Chapter 8, Subsection 8.2.1.1, sub-heading Transmission System Provider/Operator is revised to remove the acronyms TSP/TSO from the title.	Acronym update
11056	WLS	Pt 02	FSAR 08	08.02.01.01	COLA Part 2, FSAR Chapter 8, Subsection 8.2.1.1, under sub-heading Transmission System Provider/Operator, first paragraph is revised to read: Duke Energy is a regulated, vertically integrated utility with regards to its electric generation and transmission operations. Duke Energy's Nuclear Generation Department (NGD) has a formal agreement titled Nuclear Switchyard Interface Agreement with the transmission system operator (TSO), which is Duke Energy's Power Delivery (PD) department. The PD department includes the Transmission Control Center (TCC), transmission System Operation Center, and transmission Planning and Grid Operations. The Nuclear Switchyard Interface Agreement and associated Department Directives serve as the communications protocol with the TSO. These documents facilitate adequate and prompt communications between the TSO and the plant operators.	Acronym update
11057	WLS	Pt 02	FSAR 08	08.02.01.01	COLA Part 2, FSAR Chapter 8, Subsection 8.2.1.1, under sub-heading Transmission System Provider/Operator, 2nd paragraph, "(TSP)" is added following "transmission system provider."	Acronym update
11058	WLS	Pt 02	FSAR 08	08.02.01.02	COLA Part 2, FSAR Chapter 8, Subsection 8.2.1.2, first paragraph is revised to replace "single-phase tranformers (GSU)" with "single-phase generator step-up (GSU) transformers"	Acronym update
11016	WLS	Pt 02	FSAR 08	08.02.F / F8.2-202	COLA Part 2, FSAR Chapter 8, Figure 8.2-202 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 7.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 7, WLG2013.05-02
11115	WLS	Pt 02	FSAR 09	09.02.01.02.02	COLA Part 2, FSAR Chapter 9, Subsection 9.2.1.2.2, 2nd paragraph, replace "Service Water System (SWS)" with "SWS."	Acronym update
11116	WLS	Pt 02	FSAR 09	09.02.06.02.01	COLA Part 2, FSAR Chapter 9, Subsection 9.2.6.2.1, 2nd paragraph, replace "sanitary drainage system (SDS)" with "SDS."	Acronym update

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
11117	WLS	Pt 02	FSAR 09	09.02.08	COLA Part 2, FSAR Chapter 9, Subsection 9.2.8, replace "raw water system (RWS)" with "RWS."	Acronym update
10886	WLS	Pt 02	FSAR 09	09.02.08.04	COLA Part 2, FSAR Chapter 9, Subsection 9.2.8.4 is revised to read: Pre-operational testing is described in DCD Chapter 14. The performance, structural, and leaktight integrity of system components is demonstrated by operation of the system.	"DCD" is added before "Chapter 14" to differentiate between DCD and FSAR.
11118	WLS	Pt 02	FSAR 09	09.02.09.02.02	COLA Part 2, FSAR Chapter 9, Subsection 9.2.9.2.2, under subheading Blowdown Sump, replace "circulating water system (CWS)" with "CWS."	Acronym update
11119	WLS	Pt 02	FSAR 09	09.02.09.02.02	COLA Part 2, FSAR Chapter 9, Subsection 9.2.9.2.2, under subheading Blowdown Sump, replace "raw water system (RWS)" with "RWS."	Acronym update
11120	WLS	Pt 02	FSAR 09	09.02.09.02.02	COLA Part 2, FSAR Chapter 9, Subsection 9.2.9.2.2, under subheading Plant Outfall, replace "HDPE (High Density Polyethylene)" with "high density polyethylene (HDPE)."	Acronym update
11121	WLS	Pt 02	FSAR 09	09.02.09.02.02	COLA Part 2, FSAR Chapter 9, Subsection 9.2.9.2.2, under subheading Plant Outfall, replace "raw water system" with "RWS."	Acronym update
11122	WLS	Pt 02	FSAR 09	09.02.09.02.02	COLA Part 2, FSAR Chapter 9, Subsection 9.2.9.2.2, under subheading Plant Outfall, replace "liquid radwaste system" with "WLS" (2 instances).	Acronym update
10885	WLS	Pt 02	FSAR 09	09.02.11.02.01	COLA Part 2, FSAR Chapter 9, Subsection 9.2.11.2.1, fourth paragraph, first sentence is revised to read: Subsystems that Subsystems that provide normal and alternate make-up flow to the SWS cooling towers predominately utilize high density polyethylene (HDPE) material for underground piping.	To allow flexibility in the use of HDPE in the SWS system.
11123	WLS	Pt 02	FSAR 09	09.02.11.02.01	COLA Part 2, FSAR Chapter 9, Subsection 9.2.11.2.1, 9th paragraph, replace "high density polyethylene (HDPE)" with "HDPE."	Acronym update
11124	WLS	Pt 02	FSAR 09	09.05.01.02.01.03	COLA Part 2, FSAR Chapter 9, Subsection 9.5.1.2.1.3, 3rd paragraph, replace "RWS" with "raw water system."	Acronym update
11267	WLS	Pt 02	FSAR 09	09.05.04.05.02	COLA Part 2, FSAR Chapter 9, Subsection 9.5.4.5.2 second paragraph, second sentence is revised to correct the call-out of ASTM D4176 to read: The sample moisture content and particulate or color is verified per ASTM D4176 (Reference 213).	Editorial
11141	WLS	Pt 02	FSAR 10	10.01.03.01.03	COLA Part 2, FSAR Chapter 10, Subsection 10.1.3.1.3, second sentence is revised to delete "(UT)."	Acronym update
11142	WLS	Pt 02	FSAR 10	10.01.03.01.03	COLA Part 2, FSAR Chapter 10, Subsection 10.1.3.1.3, second sentence is revised to delete "(RT)."	Acronym update
11144	WLS	Pt 02	FSAR 10	10.04.05	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5 is revised to delete "(CDI)."	Acronym update
11145	WLS	Pt 02	FSAR 10	10.04.05.01.01	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.1.1 is revised to replace "circulating water system (CWS)" with "CWS."	Acronym update
11146	WLS	Pt 02	FSAR 10	10.04.05.01.02	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.1.2 is revised to replace "circulating water system" with "CWS"	Acronym update
11147	WLS	Pt 02	FSAR 10	10.04.05.01.02	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.1.2 is revised to add "(RWS)" following "raw water system."	Acronym update
11148	WLS	Pt 02	FSAR 10	10.04.05.02.01	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.2.1 is revised to replace "circulating water system" with "(CWS)" (4 instances).	Acronym update
11149	WLS	Pt 02	FSAR 10	10.04.05.02.02	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.2.2, under sub-heading Cooling Towers, 3rd paragraph is revised to replace "circulating water system" with "(CWS)" (2 instances).	Acronym update

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11150	WLS	Pt 02	FSAR 10	10.04.05.02.02	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.2.2, under sub-heading Cooling Towers Makeup and Blowdown, 2nd paragraph is revised to replace "circulating water system" with "(CWS)" (2 instances).	Acronym update
11151	WLS	Pt 02	FSAR 10	10.04.05.02.02	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.2.2, under sub-heading Piping and Valves, 1st paragraph is revised to replace "circulating water system" with "(CWS)".	Acronym update
11152	WLS	Pt 02	FSAR 10	10.04.05.02.02	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.2.2, under subheading Circulating Water Chemical Injection, 2nd paragraph is revised to replace "circulating water system" with "CWS."	Acronym update
11153	WLS	Pt 02	FSAR 10	10.04.05.02.02	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.2.2, under subheading Circulating Water Chemical Injection, 6th paragraph is revised to delete "(CNS)."	Acronym update
11154	WLS	Pt 02	FSAR 10	10.04.05.02.02	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.2.2, under subheading Circulating Water Chemical Injection, 6th paragraph is revised to replace "CNS" with "Catawba Nuclear Station."	Acronym update
11155	WLS	Pt 02	FSAR 10	10.04.05.02.03	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.2.3, 2nd paragraph is revised to replace "circulating water system" with "CWS."	Acronym update
11156	WLS	Pt 02	FSAR 10	10.04.05.02.03	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.2.3, 3rd paragraph is revised to replace "raw water system" with "RWS".	Acronym update
11157	WLS	Pt 02	FSAR 10	10.04.05.02.03	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.2.3, 5th paragraph is revised to replace "circulating water system" with "CWS" (2 instances).	Acronym update
11158	WLS	Pt 02	FSAR 10	10.04.05.02.03	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.2.3, 10th paragraph is revised to replace "closed cooling water system" with "TCS".	Acronym update
11159	WLS	Pt 02	FSAR 10	10.04.05.02.03	COLA Part 2, FSAR Chapter 10, Subsection 10.4.5.2.3, 11th paragraph is revised to replace "circulating water system" with "CWS" (2 instances).	Acronym update
11059	WLS	Pt 02	FSAR 11	11.02.01.02.04	COLA Part 2, FSAR Chapter 11, Subsection 11.2.1.2.4 is revised to remove "(HDPE)."	Acronym update
11167	WLS	Pt 02	FSAR 11	11.02.T / T11.2-206	COLA Part 2, FSAR Chapter 11, Table 11.2-206 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8, WLG2013.05-02
11017	WLS	Pt 02	FSAR 11	11.03.03.04	COLA Part 2, FSAR Chapter 11, Subsection 11.3.3.4 is revised as follows: Add the following information at the end of DCD subsection 11.3.3.4: The calculated gaseous doses for the maximum exposed individual are compared to the regulatory limits from Appendix I of 10 CFR Part 50 and 10 CFR Part 20.1301 for acceptance. Table 11.3-205 and Table 11.3-206 display this comparison and demonstrate that the calculated gaseous doses for the maximally exposed individual are less than the regulatory limits. The Lee Nuclear Station site-specific values are bounded by the DCD identified acceptable releases. With the annual airborne releases listed in DCD Table 11.3¬ 3, the site-specific air doses at ground level at the site boundary are 0.773 mrad for gamma radiation and 3.25 mrad for beta radiation. These doses are based on the annual average atmospheric dispersion factor from Section 2.3. These doses are below the 10 CFR Part 50, Appendix I design objectives of 10 mrad per year for gamma radiation or 20 mrad per year for beta radiation. Dose and dose rate to man were calculated using the GASPAR II computer code. This code is based on the	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8, WLG2013.05-02

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					methodology presented in Regulatory Guide 1.109. Factors common to both estimated individual dose rates and estimated population dose are addressed in this subsection. Unique data are discussed in the respective subsections. Activity pathways considered are plume, ground deposition, inhalation, and ingestion of vegetables, meat, and milk (cow or goat). Based on site meteorological conditions, the highest rate of plume exposure and ground deposition occurs at the Exclusion Area Boundary (EAB) 0.81 mi. SE of the Effluent Release Boundary. Agricultural products are estimated from U.S. Department of Agriculture National Agricultural Statistics Service. GASPAR II evenly distributes the food production over the entire 50 miles when given a total production for calculating dose. Population distribution within the 50-mi. radius is presented in FSAR Tables 2.1 203 and 2.1-204.	
11018	WLS	Pt 02	FSAR 11	11.03.03.04.01	COLA Part 2, FSAR Chapter 11, Subsection 11.3.3.4.1 is revised as follows: Dose rates to individuals are calculated for airborne decay and deposition, inhalation, and ingestion of milk (goat or cow), meat and vegetables. Dose from plume and ground deposition are calculated as affecting all age groups equally. Plume exposure approximately 0.81 mi. SE of the Effluent Release Boundary produced a maximum dose rate to a single organ of 2.38 mrem/yr to skin. The maximum total body dose rate was calculated to be 4.73E-1 mrem/yr. Ground deposition approximately 0.81 mi. SE of the Effluent Release Boundary produced a maximum dose rate to a single organ of 1.33E-1 mrem/yr to skin. The maximum total body dose rate was calculated to be 1.14E-1 mrem/yr. Inhalation Dose at the EAB, 0.81 mi. SE of the Effluent Release Boundary, results in a maximum dose rate to a single organ of 7.03E-1 mrem/yr to a child's thyroid. The maximum total body dose rate is calculated to be 5.24E-2 mrem/yr to a teenager. Vegetable consumption assumes that the dose is received from the garden special location, approximately 1.0 mi. SSE of the plant. GASPAR II default vegetable consumption values are used in lieu of site-specific vegetable consumption data as permitted by Regulatory Guide 1.109. The estimated maximum dose rate to a single organ is 2.42 mrem/yr to a child's thyroid. The maximum total body dose rate is calculated to be 4.59E-1 mrem/yr to a child. Meat consumption assumes that the dose is received from the cow special location, approximately 1.65 mi. SE of the plant. GASPAR II default meat consumption values are used in lieu of site-specific meat consumption data as permitted by Regulatory Guide 1.109. The estimated maximum dose rate to a single organ is 2.74E-1 mrem/yr to a child's bone. The maximum total body dose rate is calculated to be 5.81E-2 mrem/yr to a child. Cow milk consumption assumes that the dose is received from the cow special location, approximately 1.65 mi. SE of the plant. GASPAR II default cow milk consumption values are used in lieu of site-specific cow milk consumption data as permitted by Regulatory Guide 1.109. The estimated maximum dose rate to a single organ is 6.23 mrem/yr to an infant's thyroid. The maximum total body dose rate is calculated to be 3.99E-1 mrem/yr to an infant. Goat milk consumption assumes that the dose is received from the nearest milk goat special location, approximately 1.05 mi. SSW of the plant. GASPAR II default goat milk consumption values are used in lieu of site-specific goat milk consumption data as permitted by Regulatory Guide 1.109. The estimated maximum dose	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8, WLG2013.05-02

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					rate to a single organ is 7.58 mrem/yr to an infant's thyroid. The maximum total body dose rate is calculated to be 3.26E-1 mrem/yr to an infant. The maximum dose rate to any organ considering every pathway is calculated to be 8.80 mrem/yr to an infant's thyroid. The maximum total body dose rate is calculated to be 1.35 mrem/yr to a child. These are below the 10 CFR 50, Appendix I design objectives of 5 mrem/yr to total body, and 15 mrem/yr to any organ, including skin. Table 11.3-201 contains GASPAR II input data for dose rate calculations. Information regarding the special locations for man, cow, goat, garden, and the EAB is located in Section 2.3. Table 11.3-202 contains total organ dose rates based on age group and pathway. Table 11.3-203 contains total air dose at each special location.	
11019	WLS	Pt 02	FSAR 11	11.03.03.04.04	COLA Part 2, FSAR Chapter 11, Subsection 11.3.3.4.4 is revised as follows: The population doses are given in Tables 11.3-204 and 11.3-208. The lowest cost gaseous radwaste system augment is $6,320. Assuming 100 percent efficiency of this augment, the minimum possible cost per person-rem is determined by dividing the cost of the augment by the population dose. This is $1,264 per person rem total body ($6,320/5.00 person-rem). The total body exposure-related costs per person-rem reduction exceed the $1,000 per person-rem criterion prescribed in Appendix I to 10 CFR Part 50 and are therefore not cost beneficial. Realistic efficiencies would increase the cost per person-rem further above the $1,000 criterion. As shown in Tables 11.3-204 and 11.3-208, the WLS thyroid dose from gaseous effluents is 9.80 person-rem, which exceeds the 6.32 person-rem threshold value. Based on the estimated 9.80 person-rem/year thyroid dose, those augments with a "Total Annual Cost" less than $9,800 are considered below. PWR Air Ejector Charcoal/HEPA Filtration Unit The Total Annual Cost (TAC) for this augment is $9,140. To be cost beneficial at $1000 per person-rem, this augment must remove sufficient activity to decrease the population dose by at least 9.14 person-rem (thyroid); that is, decrease the thyroid dose from 9.80 person-rem (initial level) to a final level of 0.66 person-rem. No iodine is released through the condenser air removal (offgas) system as shown in DCD Table 11.3-3, sheet 2 of 3. This augment does not affect the iodine discharged by the plant which accounts for a total 4.85 person-rem in the thyroid population dose. Therefore, it would be impossible to achieve the necessary dose reduction, and this augment is not cost-beneficial. 3-Ton Charcoal Adsorber The TAC for this augment is $8,770. To be cost beneficial at $1,000 per person-rem, this augment must remove sufficient activity to decrease the population dose by at least 8.77 person-rem (thyroid); that is, decrease the thyroid dose from 9.80 person-rem (initial level) to a final level of 1.03 person-rem. The 3-Ton Charcoal Adsorber unit in Regulatory Guide 1.110 is based on a 200 cubic foot charge of activated charcoal for an "add-on" vessel to an existing system per the information contained within that document's Total Direct Cost Estimate Sheet attachments. For the AP1000, it is assumed that this augment would be appended to the Gaseous Radwaste System where it would increase the delay time of noble gases exiting the existing activated carbon delay beds. No iodine is released through the Gaseous Radwaste System as shown in DCD Table 11.3-3, sheet 2 of 3. This augment does not affect the iodine discharged from the plant which accounts for 4.85 person-rem in the thyroid population dose. Therefore, it would be impossible to achieve the necessary dose reduction, and this augment is not cost-beneficial. Main Condenser Vacuum Pump Charcoal/HEPA Filtration System The TAC for this augment is $7,690. To be cost beneficial at $1,000 per person-rem, this augment must remove sufficient activity to decrease the population dose by at least 7.69 person-rem (thyroid); that is, decrease the thyroid dose from an initial level of 9.80 person rem to a final level of 2.11 person-rem. However, no iodine is	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8, WLG2013.05-02

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					released through the condenser air removal system as shown in DCD Table 11.3-3, sheet 2 of 3. This augment does not affect the iodine discharged by the plant which accounts for 4.85 person-rem in the thyroid population dose. Therefore, it would be impossible to achieve the necessary dose reduction, and this augment is not cost-beneficial. 1,000 cfm Charcoal/HEPA Filtration System The TAC for this augment is $7,580. To be cost beneficial at $1,000 per person-rem, this augment must remove sufficient activity to decrease the population dose by at least 7.58 person-rem (thyroid); that is, decrease the thyroid dose from an initial level of 9.80 person rem to a final level of 2.22 person-rem. Conservatively assuming that this rather small capacity augment could be placed in the ventilation system at some point that would eliminate all iodine and particulate releases, it would not be effective in reducing the noble gas releases, the carbon-14 release, or the airborne tritium release. The noble gases, carbon 14, and tritium discharged by the plant account for 4.67 person-rem in the thyroid population dose. Therefore, it would be impossible to achieve the necessary dose reduction, and this augment is not cost-beneficial. 600 ft3 Gas Decay Tank The TAC for this augment is $7,460. Thus, to be cost beneficial at $1,000 per person-rem, this augment must remove at least 7.46 person-rem (thyroid); that is, decrease the thyroid dose from an initial level of 9.80 person -rem to a final level of 2.34 person-rem. No iodine is released through the AP1000 waste gas system as shown in DCD Table 11.3-3. This augment would not affect the iodine discharged by the plant which accounts for 4.85 person-rem in the thyroid population dose. Therefore, it would be impossible to achieve the necessary dose reduction, and this augment is not cost-beneficial. Steam Generator Flash Tank Vent to Main Condenser The TAC for this augment is $6,320. Thus, to be cost beneficial at $1,000 per person-rem, this augment must remove at least 6.32 person-rem (thyroid); that is decrease the thyroid dose from an initial level of 9.80 person -rem to a final level of 3.48 person-rem. Addition of this augment presumes that the design already includes a steam generator flash tank; the augment being evaluated is the installation of vent piping and instrumentation from the tank to the main condenser. However, the AP1000 design does not include a steam generator flash tank. Therefore, the TAC of $6,320 for this augment is underestimated. As shown in DCD Figure 10.4.8-1, the AP1000 design includes steam generator blowdown heat exchangers that provide cooling of the blowdown fluid and prevent flashing prior to the blowdown flow entering the main condenser. Therefore, this augment would not provide any additional dose reduction, and this augment is not cost-beneficial. Conclusion Based on the above evaluation, none of the radwaste augments are cost-beneficial in reducing the annual thyroid dose from gaseous effluents for WLS.	
11060	WLS	Pt 02	FSAR 11	11.03.03.04.04	COLA Part 2, FSAR Chapter 11, Subsection 11.3.3.4.4, second paragraph is revised as follows: "WLS" is revised to read "Lee"; "(TAC)" is added following "Total Annual Cost"	Acronym update
11061	WLS	Pt 02	FSAR 11	11.03.03.04.04	COLA Part 2, FSAR Chapter 11, Subsection 11.3.3.4.4, under the sub-heading PWR Air Ejector Charcol/HEPA Filtration Unit, 1st paragraph is revised to replace "Total Annual Cost" with "TAC."	Acronym update
11062	WLS	Pt 02	FSAR 11	11.03.03.04.04	COLA Part 2, FSAR Chapter 11, Subsection 11.3.3.4.4, under the sub-heading Conclusion, replace "WLS" with "Lee"	Acronym update

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11020	WLS	Pt 02	FSAR 11	11.03.T / T11.3-201	COLA Part 2, FSAR Chapter 11, Table 11.3-201 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8, WLG2013.05-02
11021	WLS	Pt 02	FSAR 11	11.03.T / T11.3-202	COLA Part 2, FSAR Chapter 11, Table 11.3-202 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8, WLG2013.05-02
11022	WLS	Pt 02	FSAR 11	11.03.T / T11.3-203	COLA Part 2, FSAR Chapter 11, Table 11.3-203 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8, WLG2013.05-02
11023	WLS	Pt 02	FSAR 11	11.03.T / T11.3-204	COLA Part 2, FSAR Chapter 11, Table 11.3-204 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8, WLG2013.05-02
11024	WLS	Pt 02	FSAR 11	11.03.T / T11.3-205	COLA Part 2, FSAR Chapter 11, Table 11.3-205 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8, WLG2013.05-02
11411	WLS	Pt 02	FSAR 11	11.03.T / T11.3-206	COLA Part 2, FSAR Chapter 11, Table 11.3-206 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8, WLG2013.05-02

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11025	WLS	Pt 02	FSAR 11	11.03.T / T11.3-207	COLA Part 2, FSAR Chapter 11, Table 11.3-207 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8, WLG2013.05-02
11026	WLS	Pt 02	FSAR 11	11.03.T / T11.3-208	COLA Part 2, FSAR Chapter 11, Table 11.3-208 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 8, WLG2013.05-02
11063	WLS	Pt 02	FSAR 11	11.04.06	COLA Part 2, FSAR Chapter 11, Subsection 11.4.6 is revised to remove "(LLW)."	Acronym update
11064	WLS	Pt 02	FSAR 11	11.04.06.01	COLA Part 2, FSAR Chapter 11, Subsection 11.4.6.1, 1st paragraph is revised to remove "(WAC)."	Acronym update
11065	WLS	Pt 02	FSAR 11	11.04.06.01	COLA Part 2, FSAR Chapter 11, Subsection 11.4.6.1, last paragraph is revised to replace (WAC) with "waste acceptance criteria."	Acronym update
11219	WLS	Pt 02	FSAR 11	11.05.04.02	COLA Part 2, FSAR Chapter 11, Subsection 11.5.4.2, last paragraph is revised to read: Liquid samples are collected in polyethylene bottles to minimize adsorption of nuclides onto container walls.	Editorial
11066	WLS	Pt 02	FSAR 11	11.05.08	COLA Part 2, FSAR Chapter 11, Subsection 11.5.8, 1st paragraph is revised to replace "Offsite Dose Calculation Manual (ODCM)" with "ODCM."	Acronym update
11160	WLS	Pt 02	FSAR 12	12.01	COLA Part 2, FSAR Chapter 12, Subsection 12.1, remove "(ALARA)" from the section title.	Acronym update
11161	WLS	Pt 02	FSAR 12	12.03.04	COLA Part 2, FSAR Chapter 12, Subsection 12.3.4, under the subheading Airborne Radioactivity Surveys, 6th bullet, "(DAC-hr)" is removed.	Acronym update
11162	WLS	Pt 02	FSAR 12	12.03.04	COLA Part 2, FSAR Chapter 12, Subsection 12.3.4, under the subheading Airborne Radioactivity Surveys, 11th paragraph is revised to replace "DAC" with "derived air concentration" (2 instances).	Acronym update
11027	WLS	Pt 02	FSAR 12	12.04.01.09.03	COLA Part 2, FSAR Chapter 12, Subsection 12.4, Subsection 12.4.1.9.3, first paragraph is revised as follows: The determination of construction worker dose from Unit 1 operation depends on the airborne effluent release and the atmospheric transport to the worker location. The atmospheric dispersion calculation used the guidance provided in Regulatory Guide 1.111, meteorological data for the two years beginning December 1, 2005 and ending November 30, 2007, and downwind distances to the construction worker locations. The XOQDOQ computer code (NUREG/CR-2919) was used to determine the X/Q and D/Q values for the nearest location along the Unit 1 protected area fence in each direction as well as the nearest point of the Unit 2 shield building construction area. The plant vent is assumed for the normal gaseous effluent release location.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 9, WLG2013.05-02
11028	WLS	Pt 02	FSAR 12	12.04.01.09.04	COLA Part 2, FSAR Chapter 12, Subsection 12.4, Subsection 12.4.1.9.4, third paragraph is revised as follows: The 10 CFR 20.1301 limits annual doses from licensed operations to individual members of the public to 100 mrem TEDE. In addition, the dose from external sources to unrestricted areas must be less than 2 mrem in any one hour. This applies to the public both outside and within access controlled areas. The dose limits and estimated doses are given in Table 12.4-201. For an occupational year, i.e., 2080 hours on site, the dose due to routine gaseous effluents at the Unit 2 shield building, the principal construction area, would be 0.397 mrem	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1,

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
					TEDE. The use of 2080 hours assumes the worker works 40 hours per week for 52 weeks per year. The maximum hourly dose due to routine gaseous effluents was determined at the locations where the highest dose rates could be expected, the Unit 1 fence line. The limiting annual dose to a worker was determined to be 5.37 mrem per year in the southeast sector at the Unit 1 fence line. This assumes the worker stands at this point on the fence line for all working hours for the entire year. The hourly dose at this location, based on an occupational year, is 2.58E-03 mrem/hr. These values are less than the limits specified for members of the public. Therefore, construction workers can be considered to be members of the general public and do not require radiation monitoring.	Attachment 9, WLG2013.05-02
11029	WLS	Pt 02	FSAR 12	12.04.01.09.05	COLA Part 2, FSAR Chapter 12, Subsection 12.4, Subsection 12.4.1.9.5 is revised as follows: The collective dose is the sum of all doses received by all workers. It is a measure of population risk. The total worker collective dose is 0.834 person-rem. This estimate is based upon the construction workforce of 2100 and assumes 2,080 hours per year occupancy for each worker. This estimate evaluates the Unit 2 shield building as the average location of the workforce. This is reasonable because the shield building is near the center of the Unit 2 power block, which is the principal Unit 2 construction area.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 9, WLG2013.05-02
11030	WLS	Pt 02	FSAR 12	12.04.T / T12.4-201	COLA Part 2, FSAR Chapter 12, Table 12.4-201 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 9.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 9, WLG2013.05-02
11220	WLS	Pt 02	FSAR 12	12.AA.T / T12AA-201	COLA Part 2, FSAR Chapter 12, Appendix Table 12AA-201 is revised to remove "(VHRA)" from the title.	Acronym update
11518	WLS	Pt 02	FSAR 13	13.01.01	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1 is revised to read: Duke Energy has over 40 years of experience in the design, construction, and operation of nuclear generating stations. Duke Energy operates 12 nuclear units on seven sites: McGuire Units 1 and 2; Catawba Units 1 and 2; Oconee Units 1, 2, and 3; Harris Nuclear Plant Unit 1; Brunswick Nuclear Plant Units 1 and 2; H. B. Robinson Nuclear Plant Unit 2; and Crystal River Nuclear Plant Unit 3 (permanent shutdown/retired.) The Nuclear Generation organization includes, but is not limited to, nuclear engineering, nuclear operations, corporate governance and operations support, corporate organizational effectiveness, nuclear major projects, nuclear development, and nuclear oversight.	Duke Energy Organizational Update
11519	WLS	Pt 02	FSAR 13	13.01.01.01	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.1, first paragraph is revised to read: The responsibility for the licensing, development and construction of new nuclear generating plants for Duke Energy is assigned to the Vice President of Nuclear Development. The responsibility for the operation of the new nuclear generating plants is assigned to the Chief Nuclear Officer. Each of these individuals reports directly to the President - Duke Energy Nuclear. The division of responsibilities was made to allow the Chief Nuclear Officer and Nuclear Generation to remain focused on improving the performance of the operating fleet and minimize the distractions associated with the construction of new nuclear generating plants. Organizational control and responsibility for the newly constructed nuclear generating plants transfers from Nuclear Development to the Chief Nuclear Officer following the completion of construction activities and prior to loading of fuel. This transition point allows for the continued support by the Nuclear Development organization, while the Operational Readiness (OR) organization transitions to the final structure typical of the operating fleet.	Duke Energy Organizational Update

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
11477	WLS	Pt 02	FSAR 13	13.01.01.02	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2, first paragraph is revised to read: Before beginning preoperational testing, the executive - nuclear development, executive - corporate governance and operations support, the executive - corporate organizational effectiveness, and the executive - nuclear engineering establish the organization of managers, functional managers, supervisors, and staff sufficient to perform required functions for support of safe plant operation. These functions include the following:	Duke Energy Organizational Update
11186	WLS	Pt 02	FSAR 13	13.01.01.02.02	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.2 is revised with the removal of the first paragraph.	Duke Energy Organizational Update
11187	WLS	Pt 02	FSAR 13	13.01.01.02.02	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.2 is revised to remove the last paragraph.	Duke Energy Organizational Update
11188	WLS	Pt 02	FSAR 13	13.01.01.02.03	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.3 is revised to read: The nuclear oversight organization provides independent oversight of the nuclear plant activities, maintains the Quality Assurance Program Manual, and administers the employee concerns program. The executive - nuclear oversight reports directly to the CNO. However, the executive - nuclear oversight reports to the President - Duke Energy Nuclear on matters related to the development and deployment of new nuclear generating plants. Safety-related activities associated with the operation of the plant are governed by QA direction established in Chapter 17 of the FSAR and the QAPD. The requirements and commitments contained in the QAPD apply to activities associated with structures, systems, and components which are safety related and are mandatory and must be implemented, enforced, and adhered to by individuals and organizations. QA requirements are implemented through the use of approved procedures, policies, directives, instructions, or other documents which provide written guidance for the control of quality-related activities and provide for the development of documentation to provide objective evidence of compliance. QA is a corporate function under the executive - nuclear oversight and includes: • General QA Indoctrination and training for the nuclear station personnel. • Maintenance of the QAPD. • Coordination of the development of audit schedules. • Audit, surveillance, and evaluation of nuclear division suppliers. • Quality control (QC) inspection/testing activities. Oversight of safety review of station programs, procedures, and activities is performed by a plant safety review committee, a corporate safety review committee, and the QA organization. Review and audit activities are addressed in Chapter 17 and the QAPD. QA/QC management is independent of the station management line organization. Onsite personnel resources of the QA/QC organization are shared between units. QA and QC personnel report to the functional manager in charge of nuclear oversight at the Lee site. The functional manager in charge of nuclear oversight at the Lee site reports directly to the executive - nuclear oversight.	Duke Energy Organizational Update
11032	WLS	Pt 02	FSAR 13	13.01.01.02.03	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.3 is revised at the first bullet to read: * General QA Indoctrination and training for the nuclear station personnel.	Acronym update
11033	WLS	Pt 02	FSAR 13	13.01.01.02.03	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.3, second paragraph is revised to replace "WLS" with "the Lee site" (two instances).	Acronym update

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
11478	WLS	Pt 02	FSAR 13	13.01.01.02.07	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.7, first paragraph, first sentence is revised to read: The corporate organizational effectiveness support organization provides the standardization and support of the training programs at each site.	Duke Energy Organizational Update
11034	WLS	Pt 02	FSAR 13	13.01.01.02.07	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.7, first paragraph is revised at the second to last paragraph to replace "WLS" with "the Lee site".	Acronym update
11479	WLS	Pt 02	FSAR 13	13.01.01.02.11	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.11, first paragraph, first sentence is revised to read: The corporate organizational effectiveness support organization provides the standardization and support of the emergency response programs at each site.	Duke Energy Organizational Update
11520	WLS	Pt 02	FSAR 13	13.01.01.03.01.01	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.1 is revised to read: 13.1.1.3.1.1 Chairman, President and CEO The Duke Energy Chairman, President and CEO has the ultimate responsibility for the safe and reliable operation of each nuclear station owned and/or operated by the utility. The CEO is responsible for the overall direction and management of the corporation and the execution of the company policies, activities, and affairs. The CEO is assisted by the President - Duke Energy Nuclear and other nuclear executive staff. Also reporting to the Chairman, President and CEO are Group Executives responsible for providing support to Nuclear Generation for the following: electrical transmission; electrical distribution; laboratory services; switchyard maintenance and technical support; support for the emergency response communications; information technology services; document control and record management activities; support for contracts, engineering, and management related to new plant construction as requested.	Duke Energy Organizational Update
11521	WLS	Pt 02	FSAR 13	13.01.01.03.01.02	COLA Part 2, FSAR Chapter 13 is revised to add new Subsection 13.1.1.3.1.2 as follows: 13.1.1.3.1.2 President - Duke Energy Nuclear The President of Duke Energy Nuclear reports to the Chairman, President and Chief Executive Officer and is responsible for the Duke nuclear fleet, enterprise project management and construction, new plant development and decommissioning activities. The President - Duke Energy Nuclear has overall authority and responsibility for the QA Program. The President - Duke Energy Nuclear directs the following group executives: (1) chief nuclear officer (CNO); (2) nuclear development; (3) project management and construction; (4) nuclear oversight; and (5) site construction. There are two additional direct reports to the President - Duke Energy Nuclear. One is the functional director of nuclear policy and support. The other position is the functional director for the U.S. nuclear industry for Fukushima responses.	Duke Energy Organizational Update
11522	WLS	Pt 02	FSAR 13	13.01.01.03.01.03	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.2 is renumbered to 13.1.1.3.1.3 and revised to read: 13.1.1.3.1.3 Group Executive Chief Nuclear Officer The group executive - Nuclear Generation is the CNO. The CNO reports to the President - Duke Energy Nuclear of Duke Energy. The CNO directs the following executives for each nuclear site group in the operation of his applicable unit(s): (1) executive - nuclear engineering, (2) executive - corporate governance and operations support, (3) executive - corporate organizational effectiveness, (4) executive - nuclear major projects, (5) executive - nuclear oversight and (6) the three executives for nuclear operations. The CNO has responsibility for overall plant nuclear safety and takes the measures needed to provide acceptable performance of the staff in operating, maintaining, and providing technical support to the plant. The CNO delegates authority and responsibility for the operation and support of the sites to the executive - nuclear operations for each site group. It is the responsibility of the CNO to provide guidance and direction such that safety-related activities including engineering, testing, modifications, preoperational testing, operations, maintenance, and planning are	Duke Energy Organizational Update

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					performed following the guidelines of the QA program. The Independent Nuclear Oversight Committee reports directly to the CNO. The CNO has no ancillary responsibilities that might detract attention from nuclear safety matters.	
11523	WLS	Pt 02	FSAR 13	13.01.01.03.01.04	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.3 is renumbered to 13.1.1.3.1.4 and revised to read: 13.1.1.3.1.4 Executive - Nuclear Operations (Specified Duke Sites) The executive(s) in charge of nuclear operations is responsible for oversight of operations at each of the stations under his purview. Currently the sites are divided among three executives in charge of nuclear operations as follows: one responsible for Oconee and Robinson nuclear stations; one responsible for Catawba and McGuire nuclear stations; and one responsible for Brunswick and Harris nuclear stations. With the addition of future sites, responsibilities will be redistributed among the executives-nuclear operations to maintain proper focus and oversight. Reporting to each executive - nuclear operations are the site executives for the respective nuclear stations. The executives - nuclear operations report to the CNO.	Duke Energy Organizational Update
11524	WLS	Pt 02	FSAR 13	13.01.01.03.01.05	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.4 is renumbered to 13.1.1.3.1.5 and revised to read: 13.1.1.3.1.5 Site Executive(s) - Plant Management (McGuire, Catawba, Oconee, Harris, Brunswick, Robinson, and Future Lee Site) The site executive(s) in charge of plant management reports to the executive(s) in charge of nuclear operations. The site executive in charge of plant management is directly responsible for management and direction of activities associated with the efficient, safe, and reliable operation of the nuclear station, except for those functions delegated to the executive - corporate governance and the executive - corporate organizational effectiveness. The site executive in charge of plant management is assisted in management and technical support activities by the plant manager and managers in charge of organizational effectiveness, engineering, training, security, nuclear oversight, major projects, human resources, corporate communications, and finance. The site executive in charge of plant management is responsible for the site fire protection program through the engineer in charge of fire protection and engineering management. As Lee approaches startup, the site organization transitions to the Operating Plant Site Organization as shown in Figure 13.1-201 from the development focused organization shown in figure 13AA-201.	Duke Energy Organizational Update
11525	WLS	Pt 02	FSAR 13	13.01.01.03.01.06	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.5 is renumbered to 13.1.1.3.1.6 and revised to read: 13.1.1.3.1.6 Executive - Nuclear Development The executive in charge of nuclear development is responsible for development of the licensing actions needed in support of new nuclear site development. Responsibilities also include engineering oversight of contractors, licensing, construction, site layout, staffing, and program development. The executive in charge of nuclear development is assisted by a support staff and reports directly to the President - Duke Energy Nuclear. This position is supported by the functional managers in charge of engineering, licensing, project management, and operational readiness.	Duke Energy Organizational Update
11526	WLS	Pt 02	FSAR 13	13.01.01.03.01.07	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.6 is renumbered to 13.1.1.3.1.7 to read: 13.1.1.3.1.7 Executive - Major Projects	Duke Energy Organizational Update
11189	WLS	Pt 02	FSAR 13	13.01.01.03.01.08	COLA Part 2, FSAR Chapter 13, new Subsection 13.1.1.3.1.8 is added as follows: 13.1.1.3.1.8 Executive - Site Construction The executive for site construction reports directly to the president Duke Energy Nuclear. This reporting relationship allows the CNO and Nuclear Generation to remain focused on improving the performance of the operating fleet and minimize the distractions associated with the construction of new nuclear generating plants.	Duke Energy Organizational Update

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					This position will be filled in support of the start of construction activities for a new nuclear plant. This position is responsible for the control and oversight of all construction activities associated with a new nuclear unit. Reporting to this position will be the manager for construction; manager for site engineering; and the site plant manager as shown on Figure 13AA-201. This position will transfer responsibility for the constructed unit to the site executive reporting to the CNO at the completion of construction activities and prior to the loading of fuel in that unit. This position will retain responsibilities for other units under construction at a multi-unit site until construction activities for each unit are completed. This position is supported during these construction activities by other Duke Energy Nuclear organizations, as needed.	
11527	WLS	Pt 02	FSAR 13	13.01.01.03.01.09	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.7 is renumbered to 13.1.1.3.1.9 and revised to read: 13.1.1.3.1.9 Executive - Corporate Governance and Operations Support The executive for corporate governance and operations support reports to the CNO. Corporate governance and operations support provides support to help improve overall fleet performance. This centralized organization includes protective services (security and access services); nuclear support services; and operations support. The functional manager of nuclear operations, the functional manager of protective services, the functional manager of Fukushima responses, the functional manager of nuclear merger integration, and the functional manager of nuclear support services report to the executive in charge of corporate governance and operations support.	Duke Energy Organizational Update
11421	WLS	Pt 02	FSAR 13	13.01.01.03.01.10	COLA Part 2, FSAR Chapter 13 is revised to add new Subsection 13.1.1.3.1.10 as follows: 13.1.1.3.1.10 Executive - Corporate Organizational Effectiveness The executive for corporate organizational effectiveness reports to the CNO. The executive for corporate organizational effectiveness will support fleet performance through improving overall fleet effectiveness. Reporting to this position will be organizational effectiveness; regulatory affairs; training; leadership development; performance improvement and emergency preparedness.	Duke Energy Organizational Update
11528	WLS	Pt 02	FSAR 13	13.01.01.03.01.11	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.8 is renumbered to 13.1.1.3.1.11 to read: 13.1.1.3.1.11 Executive - Nuclear Engineering	Duke Energy Organizational Update
11529	WLS	Pt 02	FSAR 13	13.01.01.03.01.12	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.9 is renumbered to 13.1.1.3.1.12 and revised to read: 13.1.1.3.1.12 Executive - Nuclear Oversight The executive in charge of nuclear oversight provides support and leadership to the general office and stations with QA program audits, performance assessment, procurement quality, supplier verification, and QA, QC, NDE, and ISI, as applicable. In addition, nuclear oversight provides an advisory function to senior management through the NSRB. The executive - nuclear oversight has the authority and organizational freedom to identify quality problems; initiate, recommend, or provide solutions to quality problems through designated channels; verify the implementation of solutions to quality problems; and ensure cost and schedule do not influence decision-making involving quality. The executive - nuclear oversight has unfettered access to the CNO to communicate QA program concerns and issues. The executive - nuclear oversight is delegated primary ownership of the department QA program description and is responsible for day-to-day administration of the program and resolution of QA issues. If significant quality problems are identified by nuclear oversight personnel, the executive - nuclear oversight or designee has the responsibility and authority to stop work pending satisfactory resolution of the identified problem. The executive - nuclear oversight reports directly to the CNO. The executive - nuclear oversight is responsible for providing oversight of Nuclear Generation activities; administration of the employee concerns program; and maintenance of the Quality Assurance Program Manual. The executive - nuclear oversight is responsible for	Duke Energy Organizational Update

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					and reports to the President - Duke Energy Nuclear on all matters related to the independent monitoring and assessing of activities performed by or in support of the development and deployment of new nuclear generating plants, decommissioning activities, and project management and construction activities not controlled by the CNO. Assisting the executive - nuclear oversight is the functional manager in charge of corporate nuclear oversight and the functional manager(s) in charge of nuclear oversight for each nuclear plant site.	
11530	WLS	Pt 02	FSAR 13	13.01.01.03.01.12	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.10, Additional Reports to the CNO is removed. Subsection 13.1.1.3.11 is re-numbered to Subsection 13.1.1.3.1.13 as follows: 13.1.1.3.1.13 Functional Director - Nuclear Protective Services	Duke Energy Organizational Update
11192	WLS	Pt 02	FSAR 13	13.01.01.03.02.05	COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.5, last paragraph is revised to read: The functional manager in charge of security reports directly to the functional director - nuclear protective services and indirectly to the site exective - plant management.	Duke Energy Organizational Update
11038	WLS	Pt 02	FSAR 13	13.01.02.01	COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1, first and second bullets following the second paragraph are revised to replace "quality assurance" with "QA".	Acronym update
11039	WLS	Pt 02	FSAR 13	13.01.02.01.02.03	COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.2.3, third bullet is revised to replace "quality assurance" with "QA".	Acronym update
11040	WLS	Pt 02	FSAR 13	13.01.02.01.02.08	COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.2.8, last paragraph is revised to replace "senior reactor operator" with "SRO".	Acronym update
11041	WLS	Pt 02	FSAR 13	13.01.02.01.02.09	COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.2.9, third bullet is revised to replace "quality assurance" with "QA."	Acronym update
11042	WLS	Pt 02	FSAR 13	13.01.02.01.03	COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.3, first paragraph, first sentence is revised to replace "structures, systems, and components" with "SSCs."	Acronym update
11532	WLS	Pt 02	FSAR 13	13.01.F / F13.1-201	COLA Part 2, FSAR Chapter 13, Figure 13.1-201 is revised to reflect corporate merger organizational changes.	Duke Energy Organizational Update
11163	WLS	Pt 02	FSAR 13	13.01.F / F13.1-202	COLA Part 2, FSAR Chapter 13, Figure 13.1-202 is revised to reflect corporate merger organizational changes.	Organizational update
11164	WLS	Pt 02	FSAR 13	13.01.F / F13.1-203	COLA Part 2, FSAR Chapter 13, Figure 13.1-203 is revised to reflect corporate merger organizational changes.	Duke Energy Organizational Update
11165	WLS	Pt 02	FSAR 13	13.01.F / F13.1-204	COLA Part 2, FSAR Chapter 13, Figure 13.1-204 is revised to reflect corporate merger organizational changes.	Duke Energy Organizational Update
11531	WLS	Pt 02	FSAR 13	13.01.T / T13.1-201	COLA Part 2, FSAR Chapter 13, Table 13.1-201, Sheet 1 is revised, first entry Executive Management to add a Site-Specific Nuclear Plant Position for 'chief executive officer' to read: -------------- n/a President, Duke Energy Nuclear 1 -	Duke Energy Organizational Update
11425	WLS	Pt 02	FSAR 13	13.01.T / T13.1-201	COLA Part 2, FSAR Chapter 13, Table 13.1-201, Sheet 1 of 6 is revised under the Nuclear Function, Nuclear support to add the following entry: -------------- n/a Executive, Corporate Organizational Effectiveness 1 -	Duke Energy Organizational Update

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
11268	WLS	Pt 02	FSAR 13	13.04.T / T13.4-201	COLA Part 2, FSAR Chapter 13, Table 13.4-201, Sheet 1 of 9 is revised, Item 4, undert the Requirement column, 10 CFR 50.55a(g); ASME XI IWB-2200(a) (Reference 201).	Editorial
11257	WLS	Pt 02	FSAR 13	13.04.T / T13.4-201	COLA Part 2, FSAR Chapter 13, Table 13.4-201, Sheet 5 of 9 is revised, as reflected on Duke Energy Submittal on Final Rule on Enhancements to Emergency Preparedness Regulation, Enclosure 3.	Duke Energy Submittal on Final Rule on Enhancements to Emergency Preparedness Regulation, Enclosure 3, WLG2013.02-01
11044	WLS	Pt 02	FSAR 13	13.05.02.02.09	COLA Part 2, FSAR Chapter 13, Subsection 13.5.2.2.9 is revised at the title to remove "(SNM)" and to replace "special nuclear material" with "SNM" in the first paragrah (3 instances).	Acronym update
11045	WLS	Pt 02	FSAR 13	13.07	COLA Part 2, FSAR Chapter 13, Subsection 13.7, first paragraph is revised to read: The Fitness for Duty (FFD) Program is implemented and maintained in multiple and progressive phases dependent on the activities, duties, or access afforded to certain individuals at the construction site.	Acronym update
11046	WLS	Pt 02	FSAR 13	13.AA.01.01.01.01	COLA Part 2, FSAR Chapter 13, Appendix 13AA, Section 13AA.1.1.1.1, third paragraph is revised to replace "Quality assurance" with "QA".	Acronym update
11047	WLS	Pt 02	FSAR 13	13.AA.01.01.01.01.03	COLA Part 2, FSAR Chapter 13, Appendix 13AA, Section 13AA.1.1.1.1.3, second to last sentence is revised to add the acronym, "HFE".	Acronym update
11048	WLS	Pt 02	FSAR 13	13.AA.01.01.01.01.06	COLA Part 2, FSAR Chapter 13, Appendix 13AA, Section 13AA.1.1.1.1.6 is revised to replace "quality assurance" with "QA".	Acronym update
11049	WLS	Pt 02	FSAR 13	13.AA.01.01.01.01.07	COLA Part 2, FSAR Chapter 13, Appendix 13AA, Section 13AA.1.1.1.1.7 is revised to replace "quality assurance" with "QA".	Acronym update
11050	WLS	Pt 02	FSAR 13	13.AA.01.01.01.02.01	COLA Part 2, FSAR Chapter 13, Appendix 13AA, Section 13AA.1.1.1.2.1 is revised to replace "Human Factors Engineering" with "HFE" (two instances).	Acronym update
11166	WLS	Pt 02	FSAR 13	13AA.F / F13AA-201	COLA Part 2, FSAR Chapter 13, Figure 13AA-201is revised to reflect corporate merger organizational changes.	Duke Energy Organizational Update
11093	WLS	Pt 02	FSAR 14	14.02.02	COLA Part 2, FSAR Chapter 14, Subsection 14.2.2, 4th paragraph is revised to replace "initial test program" with "ITP."	Acronym update
11205	WLS	Pt 02	FSAR 14	14.02.02.01	COLA Part 2, FSAR Chapter 14, Subsection 14.2.2.1, first sentence is revised to replace "Initial Test Program" with "ITP."	Acronym update
11094	WLS	Pt 02	FSAR 14	14.02.02.02	COLA Part 2, FSAR Chapter 14, Subsection 14.2.2.2, last paragraph is revised to replace "initial test programs" with "ITPs."	Acronym update
11095	WLS	Pt 02	FSAR 14	14.02.02.03	COLA Part 2, FSAR Chapter 14, Subsection 14.2.2.3, 1st paragraph is revised to add "(AE)" after the words Architect Engineer.	Acronym update
11096	WLS	Pt 02	FSAR 14	14.02.03	COLA Part 2, FSAR Chapter 14, Subsection 14.2.3, 3rd bullet is revised to replace "architect-engineer" with "AE."	Acronym update
11097	WLS	Pt 02	FSAR 14	14.02.03.02.01	COLA Part 2, FSAR Chapter 14, Subsection 14.2.3.2.1, last paragraph is revised to replace "Architect Engineer" with "AE."	Acronym update

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
11098	WLS	Pt 02	FSAR 14	14.02.08	COLA Part 2, FSAR Chapter 14, Subsection 14.2.8, 2nd paragraph is revised to replace "initial test program" with "ITP."	Acronym update
11099	WLS	Pt 02	FSAR 14	14.02.08	COLA Part 2, FSAR Chapter 14, Subsection 14.2.8, 1st bullet, 1st paragraph is revised to replace "initial test program" with "ITP."	Acronym update
11100	WLS	Pt 02	FSAR 14	14.02.08	COLA Part 2, FSAR Chapter 14, Subsection 14.2.8, 2nd bullet, 1st paragraph is revised to replace "initial test program" with "ITP."	Acronym update
11101	WLS	Pt 02	FSAR 14	14.02.09.02.22	COLA Part 2, FSAR Chapter 14, Subsection 14.2.9.2.22, under sub-heading Purpose "Reactor Coolant System" is revised to add "(RCS)."	Acronym update
11102	WLS	Pt 02	FSAR 14	14.02.09.02.22	COLA Part 2, FSAR Chapter 14, Subsection 14.2.9.2.22, under subheading Prerequisites, "Reactor Coolant System" is replaced with "RCS."	Acronym update
11103	WLS	Pt 02	FSAR 14	14.02.09.02.22	COLA Part 2, FSAR Chapter 14, Subsection 14.2.9.2.22, under subheading General Test Methods and Acceptance Criteria "Reactor Coolant System" is replaced with "RCS."	Acronym update
11104	WLS	Pt 02	FSAR 14	14.02.09.02.22	COLA Part 2, FSAR Chapter 14, Subsection 14.2.9.2.22, under subheading General Test Methods and Acceptance Criteria, subparagraph c "Reactor Coolant System" is replaced with "RCS."	Acronym update
11105	WLS	Pt 02	FSAR 14	14.03.02.03	COLA Part 2, FSAR Chapter 14, Subsection 14.3.2.3 is revised to remove "(SS-ITAAC)" from the section title.	Acronym update
11106	WLS	Pt 02	FSAR 14	14.03.02.03	COLA Part 2, FSAR Chapter 14, Subsection 14.3.2.3, 1st paragraph is revised to replace "inspections, tests, analyses, and acceptance criteria (ITAAC)" with "ITAAC."	Acronym update
11107	WLS	Pt 02	FSAR 14	14.03.02.03	COLA Part 2, FSAR Chapter 14, Subsection 14.3.2.3, 3rd paragraph is revised to replace "inspections, tests, or analyses (ITA)" with "ITA."	Acronym update
11108	WLS	Pt 02	FSAR 14	14.03.02.03	COLA Part 2, FSAR Chapter 14, Subsection 14.3.2.3, 4th paragraph is revised to replace "SS-ITAAC" with "Site-specific ITAAC (SS-ITAAC)."	Acronym update
11109	WLS	Pt 02	FSAR 14	14.03.02.03	COLA Part 2, FSAR Chapter 14, Subsection 14.3.2.3, under Selection Criteria, 3rd bullet is revised to replace "inspection, test, or analysis" with "ITA."	Acronym update
11110	WLS	Pt 02	FSAR 14	14.03.02.03	COLA Part 2, FSAR Chapter 14, Subsection 14.3.2.3, under Selection Criteria, 4th bullet is revised to replace "inspections, tests, and analyses" with "ITA."	Acronym update
11111	WLS	Pt 02	FSAR 14	14.03.02.03.01	COLA Part 2, FSAR Chapter 14, Subsection 14.3.2.3.1 is revised to remove "(EP-ITAAC)" from the section title.	Acronym update
11112	WLS	Pt 02	FSAR 14	14.03.02.03.01	COLA Part 2, FSAR Chapter 14, Subsection 14.3.2.3.1, 1st paragraph is revised to replace "(EP-ITAAC)" with "Emergency Planning ITAAC (EP-ITAAC)."	Acronym update
11113	WLS	Pt 02	FSAR 14	14.03.02.03.02	COLA Part 2, FSAR Chapter 14, Subsection 14.3.2.3.2 is revised to remove "(PS-ITAAC)" from the section title.	Acronym update
11114	WLS	Pt 02	FSAR 14	14.03.02.03.02	COLA Part 2, FSAR Chapter 14, Subsection 14.3.2.3.2, 1st paragraph is revised to replace "PS-ITAAC" with "Physical Security ITAAC (PS-ITAAC)."	Acronym update
11206	WLS	Pt 02	FSAR 14	14.04.02	COLA Part 2, FSAR Chapter 14, Subsection 14.4.2, second paragraph is revised to replace "ITAACs" with "ITAAC."	Acronym update
11270	WLS	Pt 02	FSAR 17	17.01	COLA Part 2, FSAR Chapter 17, Subsection 17.01, fourth paragraph is revised to read: Implementation of the applicable portions of the Duke Energy Quality Assurance Topical Report for 10 CFR Part 52 Licenses, NGGM-PM-0033, discussed in Section 17.5 begins 30 days following the issuance of the first COL to Duke Energy. The program establishes the QA program requirements for the remaining portion of the design	Conforming change to the Duke Energy Quality Assurance Topical Report, NGGM-PM-0033, Revision 8.

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
					and construction phases and for operations; however, full implementation of the operations related requirements will be no later than as indicated in Table 13.4-201.	
11271	WLS	Pt 02	FSAR 17	17.05	COLA Part 2, FSAR Chapter 17, Subsection 17.05, first paragraph is revised to read: The Quality Assurance Program in place during the design, construction, and operations phases is described in the QAPD, which is maintained as a separate document. THE QAPD is included in the Lee COL application as Part 11 and is incorporated by reference (see Table 1.6-201). This QAPD is based on NEI 06-14A, "Quality Assurance Program Description" (Reference 203).	Conforming change to the Duke Energy Quality Assurance Topical Report, NGGM-PM-0033, Revision 8.
11272	WLS	Pt 02	FSAR 17	17.05	COLA Part 2, FSAR Chapter 17, Subsection 17.05, third paragraph is revised to read: The QAPD is NGGM-PM-0033, Duke energy Quality Assurance Topical Report for 10 CFR Part 52 Licenses.	Conforming change to the Duke Energy Quality Assurance Topical Report, NGGM-PM-0033, Revision 8.
11273	WLS	Pt 02	FSAR 17	17.08	COLA Part 2, FSAR Chapter 17, Subsection 17.08, Reference 201 is revised to read: 201. Enercon Services, Inc., "Enercon Quality Assurance project Planning Document," PPD No. DUK010, Revision 15, November 2012.	Editorial
11130	WLS	Pt 02	FSAR 18	18.08.03.05	COLA Part 2, FSAR Chapter 18, Subsection 18.8.3.5, 2nd paragraph is revised to replace "Technical Support Center (TSC)" with "TSC".	Acronym update
11131	WLS	Pt 02	FSAR 18	18.08.03.06	COLA Part 2, FSAR Chapter 18, Subsection 18.8.3.6, 2nd paragraph is revised to replace "Operations Support Center (OCS)" with "OSC".	Acronym update
11133	WLS	Pt 02	FSAR 19	19.55.06.03	COLA Part 2, FSAR Chapter 19, Subsection 15.55.6.3, 1st paragraph, replace "GMRS" with the words "ground motion response spectrum (GMRS)".	Acronym update
11134	WLS	Pt 02	FSAR 19	19.55.06.03	COLA Part 2, FSAR Chapter 19, Subsection 15.55.6.3, 1st paragraph, replace "FIRS" with the words "foundation input response spectra (FIRS)".	Acronym update
11135	WLS	Pt 02	FSAR 19	19.55.06.03	COLA Part 2, FSAR Chapter 19, Subsection 15.55.6.3, 1st paragraph, replace the words "Cerfified Seismic Design Response Spectrum (CSDRS)" with "CSDRS".	Acronym update
11136	WLS	Pt 02	FSAR 19	19.58.03	COLA Part 2, FSAR Chapter 19, Subsection 15.58.3, replace "WLS" with "Lee" (2 instances).	Acronym update
11139	WLS	Pt 02	FSAR 19	19.58.T / T19.58-201	COLA Part 2, FSAR Chapter 19, Subsection 15.58, Table 19.58-201, replace "WLS" with "Lee" (25 instances).	Acronym update
11031	WLS	Pt 02	FSAR 19	19.58.T / T19.58-201	COLA Part 2, FSAR Chapter 19, Table 19.58-201 is revised as reflected on Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 10.	Duke Energy Supplemental Response to Lee Units 1 and 2 Physical Locations, Enclosure 1, Attachment 10, WLG2013.05-02
11138	WLS	Pt 02	FSAR 19	19.59.10.05	COLA Part 2, FSAR Chapter 19, Subsection 19.59.10.5, Page 19.59-2, last paragraph, replace "WLS" with "Lee".	Acronym update
11137	WLS	Pt 02	FSAR 19	19.59.10.06	COLA Part 2, FSAR Chapter 19, Subsection 19.59.10.6, under subheading "PRA-Related Input to Other Programs and Processes replace "RTNSS" with "Regulatory treatment of non-safety systems".	Acronym update

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
Pt 05 (1 COLA Change)						
11223	WLS	Pt 05		Definitions	COLA Part 5, Definitions is revised as reflected on Duke Energy Submittal on Final Rule on Enhancements to Emergency Regulation, Enclosure 1 and detailed on Enclosure 5, WLG2013.02-01	Duke Energy Submittal on Final Rule on Enhancements to Emergency Preparedness Regulation, Enclosure 1, WLG2013.02-01
Pt 07 (3 COLA Changes)						
11222	WLS	Pt 07		A A.1	COLA Part 7, Section A is revised on the listing of Departures, add a new second line as follows: Departure Number Description WLS DEP 1.8-1 Departure to correct regulatory citation error in AP1000 DCD Section A.1, listing of Departures That Can Be Implemented Without Prior NRC Approval is revised to add a new second line as follows: WLS DEP 1.8-1 Departure to correct regulatory citation error in AP1000 DCD	Departure Update, WLS DEP 1.8-1 added
11197	WLS	Pt 07		A.1	COLA Part 7. Section A.1 is revised to add new WLS DEP immediately following STD DEP 1.1-1 to read: Departure Number: WLS DEP 1.8-1 Affected DCD/FSAR Sections: DCD Tier 2 Table 1.8-1 (Sheet 6 of 6), COLA Table 1.8-203 Item 13.1 (Sheet 7 of 9) Summary of Departure: In Table 1.8-203, Item 13.1, revise the interface description from "Features that may affect plans for coping with emergencies as specified in 10 CFR 50, Appendix O" to read "The information pertaining to design features that affect plans for coping with emergencies in the operation of the reactor facility or a major portion thereof as specified in 10 CFR 52.137(a)(11)." Scope/Extent of Departure: This departure is identified in FSAR Table 1.8-203 Item 13.1. Departure Justification: Appendix O was transferred from Part 50 to Part 52, effective May of 1989, although the NRC neglected to physically remove the Appendix O text from Part 50. Appendix O text was not physically removed from Part 50 until the reorganization of the regulations was published in August of 2007. In the August 2007 reorganization the content of Appendix O in Part 52 was relocated to the new Subpart E of Part 52. This relocation of the regulation impacts DCD Tier 2 Table 1.8-1 (Sheet 6 of 6). There is no change in requirements, only relocation to another regulation. Departure Evaluation: This Departure is a correction to a regulatory citation error in the DCD. The requirements are the same. Accordingly, it does not: 1. Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated	Departure Update, WLS DEP 1.8-1 added

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
					in the plant-specific DCD; 2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific DCD; 3. Result in more than a minimal increase in the consequence of an accident previously evaluated in the plant -specific DCD; 4. Result in more than a minimal increase in the consequence of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD; 5. Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD; 6. Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD; 7. Result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or 8. Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses. This Departure does not affect resolution of a severe accident issue identified in the plant-specific DCD. Therefore, this Departure has no safety significance. NRC Approval Requirements: This departure does not require NRC approval pursuant to 10 CFR Part 52, Appendix D, Section VIII.B.5.	
11266	WLS	Pt 07		A.1	COLA Part 7, Section A.1, departure 8.3-1 is revised to read: Departure Number: WLS DEP 8.3-1.	Editorial

Pt 09 (3 COLA Changes)

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
11217	WLS	Pt 09		09.01.T / T1.0-1	COLA Part 9, Section 9.1, Table 1.0-1 is revised to reflect changes to the Duke Energy 2013 Integrated Resource Plan.	Duke Energy 2013 Integrated Resource Plan
11262	WLS	Pt 09		09.01.T / T1.0-1	COLA Part 9, Table 1.0-1 is revised to reflect changes from Shaw Nuclear to Chicago Bridge and Iron.	Corporate merger between Shaw Nuclear and Chicago Bridge and Iron
11218	WLS	Pt 09		09.01.T / T1.0-2	COLA Part 9, Section 9.1, Table 1.0-2 is revised to reflect changes to the Duke Energy 2013 Integrated Resource Plan.	Duke Energy 2013 Integrated Resource Plan

Pt 10 (1 COLA Change)

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
11258	WLS	Pt 10		LC04	COLA Part 10, License Condition 4 is revised with the addition of the following last paragraph: At least two (2) years prior to scheduled initial fuel load, Duke Energy shall have performed an assessment of emergency response staffing in accordance with NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities", Revision 0.	Duke Energy Submittal on Final Rule on Enhancements to Emergency Preparedness Regulation, Enclosure 4, WLG2013.02-01

QB Change ID#	COLA REP	COLA Part A	Chapter A	Section / Page A	Complete Change Description	Basis for Change
Pt 11 (1 COLA Change)						
11067	WLS	Pt 11		QAPD	COLA Part 11, QAPD is replaced with NGG Program Manual, NGGM-PM-0033, Duke Energy Quality Assurance Topical Report for 10- CFR Part 52 Licenses, reflecting organizational changes. See Revision Summary on Page 1 of NGGM-PM-0033.	Duke Energy 2013 Organizational Update

SUMMARY

COLA Part A	Number of COLA Changes
Pt 01	12
Pt 02	562
Pt 05	1
Pt 07	3
Pt 09	3
Pt 10	1
Pt 11	1
Totals (7 groups)	**583**