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August 30, 2012

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

Subject: Duke Energy Carolinas, LLC (Duke Energy)
William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019
Update for William States Lee III Nuclear Station Units 1 and 2 Combined License Application and Roadmap
Ltr# WLG2012.08-02

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 April 16, 2012 (ML121230315)

This letter provides the Duke Energy updates to the William States Lee III Combined License (COL) application required by 10 CFR 50.71(e)(3)(iii) and 10 CFR Part 52, Appendix D, Subsections X.B.1 and X.B.3.b. This update includes the annual update of the docketed Final Safety Analysis Report and the semi-annual update of the Departures Report (COL application, Part 2 and Part 7, respectively). Additionally, Parts 1, 4, 5, 9, 10 and 11 of the COL application submitted by Duke Energy and accepted by the Nuclear Regulatory Commission (NRC) and updated as provided in the Reference are further updated in this submittal. Revisions to the COL application are identified by change bars positioned in the right hand margin for text and by the revision number for figures.

Enclosed is a "roadmap" of the changes included in the update, 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.

This update includes changes identified by previous correspondence, including responses to requests for additional information, through August 7, 2012, as well as various other updates such as miscellaneous errata items, standard and plant-specific changes necessary to reflect the incorporation by reference of some template revisions submitted by the Nuclear Energy Institute (NEI). NEI templates are updated after the final NRC approved version of the template is issued. In addition to the above mentioned changes, Part 1 has been revised to include changes related to corporate officers and cost information through July 26, 2012.

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The WLS COL application is comprised of several parts. Each of these is identified below along with indication of any revision contained in this document update.

Part 1 General and Financial Information (Revision 6, included)

Part 2 Final Safety Analysis Report (Revision 6, included)

Part 3 Environmental Report (Revision 1, March 30, 2009, not included in this update)

Part 4 Technical Specifications (Revision 6, included)

Part 5 Emergency Planning (Revision 4, included)

Part 6 [Not used in this application; reserved for applications requesting Limited Work Authorization]

Part 7 Departures and Exemption Requests (Revision 6, included)
There are no additions, deletions, or changes to the Lee Nuclear Station Departures Report during the associated reporting period.

Part 8 Safeguards / Security Plans (Revision 2, November 17, 2011, not included in this update)

Part 9 Withheld Information (Revision 7, included).

Part 10 Proposed License Conditions, including Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) (Revision 6, included)

Part 11 Enclosures (Revision 6, included)

A document identifying each change, as well as its source or basis, is being provided as an aid to the NRC reviewers and will be submitted by separate letter.

This application update contains no Restricted Data or other defense information requiring separation in accordance with 10 CFR 50.33(j). Part 9 of this application update contains the information that Duke Energy is requesting the NRC to withhold from public disclosure in accordance with the requirements of 10 CFR 2.390, including sensitive, unclassified, non-safeguards information (SUNSI). Appropriate affidavits are included with this letter.

A complete set of updated application documents (by Part as identified above) is provided in electronic file format on the enclosed disk (Enclosure 1). Application documents (by Part) that are not updated are not included on the enclosed disk. Appropriate pre-submission checks have been successfully performed on the files for the disk to ensure compliance with the guidelines provided on the NRC web site and they have been found acceptable for electronic submittal. The disk includes a "packing slip" describing its contents, pursuant to NRC instructions for electronic filing.

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

Christopher M. Fallon
Vice President
Nuclear Development

Enclosures:

1) Combined License Application Annual Update for William States Lee III Nuclear Station; Parts 1, 2, 4, 5, 7, 9, 10 and 11 (Electronic Submittal 9) (Non-Public).
2) William States Lee Units 1 and 2 Nuclear Station COLA Update Roadmap

AFFIDAVIT OF CHRISTOPHER M. FALLON

1. I am Vice President, Nuclear Development, and as such have the responsibility for reviewing the information sought to be withheld from public disclosure in connection with and am authorized to apply for its withholding on behalf of Duke Energy Carolinas, LLC (Duke).

2. I am making this affidavit in conformance with the provisions of 10 CFR 2.390 of the regulations of the Nuclear Regulatory Commission (NRC) and in conjunction with Duke's application for withholding which accompanies this affidavit.

3. I have knowledge of the criteria used by Duke in designating information as sensitive, proprietary, or confidential.

4. Pursuant to the provision of paragraph (a)(4) of 10 CFR 2.390, the following is furnished for consideration by the NRC in determining whether the information sought to be withheld from public disclosure should be withheld.

   a. The information sought to be withheld from public disclosure is owned by Duke and has been held in confidence by Duke and its consultants.

   b. The information sought to be protected is not available to the public to the best of our knowledge and belief.

   c. The information is of the type that would customarily be held in confidence by Duke. This financial information consists of Duke's projection for construction, fuel supply, and operating costs. Public disclosure of this information is likely to cause harm to Duke because it would allow contractors, vendors, and competitors to understand Duke's competitive position and schedule prior to securing the related contracts and services.

   d. The proprietary information sought to be withheld from public disclosure is identified in Part 9 of the COL application and is marked as proprietary as it appears in the application.

   e. The information was transmitted to the NRC in confidence and under the provisions of 10 CFR 2.390; it is to be received in confidence by the NRC.

Christopher M. Fallon

Christopher M. Fallon

(Continued)

AFFIDAVIT OF CHRISTOPHER M. FALLON

5. Pursuant to the provisions of paragraphs (a)(6) and (a)(9) of 10 CFR 2.390, the following information is furnished for consideration by the NRC in determining whether the information sought to be withheld from public disclosure should be withheld.

   a. The information is of the type that would customarily be held in confidence by Duke. The COL application contains geological and geophysical information and data, including maps, concerning wells. Some of the data concerning wells also contains associated personal identifiers.

   b. The proprietary information sought to be withheld from public disclosure is identified in Part 9 of the COL application and is marked as proprietary as it appears in the application.

   c. The information was transmitted to the NRC in confidence and under the provisions of 10 CFR 2.390; it is to be received in confidence by the NRC.

6. Pursuant to the provisions of paragraph (d)(1) of 10 CFR 2.390 and 10 CFR 9.17(a), the following information is furnished for consideration by the NRC in determining whether the information sought to be withheld from public disclosure should be withheld.

   a. The information is of the type that would customarily be held in confidence by Duke. The COL application contains sensitive, unclassified, non-safeguards physical security information. Public disclosure of this information is likely to cause harm to Duke because it would identify details or features of the plant that could be an aid to a potential adversary. In addition, through the course of developing the COL application in accordance with Regulatory Guide 1.206, "Combined License Application for nuclear Power Plants," Duke has identified certain information that might identify potential vulnerabilities to the critical infrastructure.

   b. The proprietary information sought to be withheld from public disclosure is identified in Part 9 of the COL application and is marked as proprietary as it appears in the application.

   c. The information was transmitted to the NRC in confidence and under the provisions of 10 CFR 2.390; it is to be received in confidence by the NRC.

Christopher M. Fallon

Christopher M. Fallon

(Continued)

AFFIDAVIT OF CHRISTOPHER M. FALLON

Christopher M. Fallon, being duly sworn, states that he is Vice President, Nuclear Development, Duke Energy Carolinas, LLC, that he is authorized on the part of said Company to sign and file with the U. S. Nuclear Regulatory Commission this combined license application for the William States Lee III Nuclear Station, and that all the matter and facts set forth herein are true and correct to the best of his knowledge.

Christopher M. Fallon (signature)
Christopher M. Fallon

Subscribed and sworn to me on August 30, 2012

Teresa D. Neely (signature)
Notary Public

My commission expires: 9/2/2015

SEAL

TERESA D. NEELY
NOTARY PUBLIC
GASTON COUNTY, NC
MY COMMISSION EXPIRES 09/02/2015

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

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

Enclosure 2
Duke Letter Dated: August 30, 2012

**William States Lee Units 1 and 2 Nuclear Station COLA Update Roadmap**

Lee Nuclear S-COLA Update Roadmap Explanation (by column)

QB Change ID# - unique identifier for tracking purposes

COLA REP – identifies the change as Standard (STD) or Plant Specific (WLS)

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 - a description of the change

Basis for Change – the source or reason for the change

**Attachment:**

Duke Energy WLS COLA Roadmap of Submittal 9 Update

## Attachment 1

## Duke Energy WLS COLA Roadmap of Submittal 9 Update

**APOG Tracking System : COLA Changes** | **WLS COLA Roadmap of Submittal 9** AUG-17-2012 12:18 PM

WLS COLA Roadmap of Submittal 9

**Technology** is not *'ESBWR'* AND ...

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| **Pt 01** | | | | | | **11 COLA Changes** |
| 10827 | | Pt 01 | | 01.00.T / T1.0-1 | COLA Part 1, Table 1.0-1 is revised to reflect changes to the Duke Energy 2012 Integrated Resource Plan. | Duke Energy 2012 Integrated Resource Plan |
| 10829 | | Pt 01 | | 01.00.T / T1.0-2 | COLA Part 1, Table 1.0-2 is revised to reflect changes to the Duke Energy 2012 Integrated Resource Plan. | Duke Energy 2012 Integrated Resource Plan |
| 10811 | | Pt 01 | | 01.01.01 | COLA Part 1, Subsection 1.1.1, third paragraph is revised to read:<br><br>On July 2, 2012, a merger occurred between Duke Energy Corporation and Progress Energy, Inc. Duke Energy Corporation, as the holding company of Duke Energy Carolinas, LLC, is now the largest electric power holding company in the United States with more than $100 billion in total assets. Duke Energy Corporation is duly organized and existing under the laws of the State of Delaware. The company's general office, and principal place of business, is located in Charlotte, North Carolina, and through its subsidiaries, also transacts business on a regular basis in South Carolina, Kentucky, Ohio, Florida, and Indiana. It is an investor-owned corporation focused on electric power and gas distribution operations, and other energy services in both North and South America. Through its regulated electric and gas utility operating companies, Duke Energy Carolinas, Duke Energy Ohio, Duke Energy Indiana, Duke Energy Kentucky, Progress Energy Carolinas and Progress Energy Florida,Duke Energy Corporation operates more than 58,000 MW of regulated electric generation and 8,100 MW of unregulated electric generation in the United States. A diverse fuel mix of nuclear, coal-fired, hydro-electric and combustion-turbine generation allows Duke Energy Corporation to provide this generating capacity to more than 7 million electric and 0.5 million gas customers located in the combined service territories of these operating companiesDuke Energy Corporation is a Fortune 250 company, and its shares are publicly held and listed for trading on the New York Stock Exchange under the symbol DUK. | Duke Energy 2012 Organizational Update: Duke/Progress Merger |
| 10812 | | Pt 01 | | 01.01.03.01 | COLA Part 1, Subsection 1.1.3.1, first paragraph is revised to read:<br><br>The business of Duke Energy Carolinas, LLC, is conducted by its own Board of Directors, although for internal governance purposes, the Duke Energy Corporation Board of Directors also has approval authority over certain types of transactions. Additionally, the Chief Nuclear Officer of Duke Energy Carolinas, LLC, reports to James E Rogers, President and Chief Executive Officer of Duke Energy Corporation and of Duke Energy Carolinas, LLC. | Duke Energy 2012 Organizational Update: Duke/Progress Merger |
| 10813 | | Pt 01 | | 01.01.03.01 | COLA Part 1, Subsection 1.1.3.1, listing of business address, names and citizenship of the current directors of Duke Energy Carolinas, LLC is revised to read:<br><br>Duke Energy Carolinas, LLC<br>526 South Church Street<br>Charlotte, North Carolina 28202<br><br>Name Citizenship<br>Good, Lynn J. US<br>Rogers, James E. US | Duke Energy 2012 Organizational Update: Duke/Progress Merger |
| 10814 | | 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 2012 Organizational Update: |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | Duke Energy Carolinas, LLC<br>526 South Church Street<br>Charlotte, North Carolina 28202<br><br>Name, Position, Citizenship<br>Donahue, Joseph W., Vice President, Nuclear Oversight, US<br>Duncan II, Robert J., Senior Vice President – Nuclear Operations, Catawba, Harris, McGuire, US<br>Good, Lynn J., Executive Vice President and Chief Financial Officer, US<br>Jamil, Dhiaa M., Executive Vice President and Chief Nuclear Officer, US<br>Lyash, Jeffrey J., Executive Vice President, Energy Supply,US<br>Manly, Marc E., ExecutiveVice President and Chief Legal Officer, US<br>Miller, Garry D., Senior Vice President, Nuclear Engineering, US<br>Pitesa, John W., Senior Vice President, Nuclear Operations, Brunswick & Robinson, US<br>Repko, Regis T., Senior Vice President- Nuclear Operations, Crystal River & Oconee, US<br>Rogers, James E., President and Chief Executive Officer, US<br>Weber, Jennifer L., Executive Vice President and Chief Human Resources Officer, US<br>Yates, Lloyd M., Executive Vice President, Customer Operations, US<br>Young, Steven K., Chief Accounting Officer and Controller, US | Duke/Progress Merger |
| 10752 | | Pt 01 | | 01.01.03.02 | COLA Part 1, Subsection 1.1.3.2, Duke Energy Corporation Board of Directors is revised to read:<br><br>Baker, II, John D. US<br>Barnet, III, William US<br>Bernhardt, Sr., George Alexander US<br>Browning, Michael G. US<br>Deloach, Jr., Harris E. US<br>DiMicco, Daniel R. US<br>Forsgren, John H. US<br>Gray, Ann Maynard US<br>Hance, Jr., James H. US<br>Hyler, Jr., James B. US<br>McKee, E. Marie US<br>Reinsch, E. James US<br>Rhodes, James Thomas US<br>Rogers, James E. US<br>Saladrigas, Carlos A. US<br>Sharp, Philip R. US<br>Stone, Theresa M. US | Duke Energy 2012 Organizational Update: Duke/Progress Merger |
| 10824 | | 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:<br><br>Duke Energy Corporation<br>550 South Tryon Street<br>Charlotte, North Carolina 28202<br><br>Name, Position, Citizenship<br>Good, Lynn J., Executive Vice President and Chief Financial Officer, US<br>Jamil, Dhiaa M., Executive Vice President and Chief Nuclear Officer, US<br>Lyash, Jeffrey J., Executive Vice President, Energy Supply, US<br>Manly, Marc E., Executive Vice President, Chief Legal Officer and Corporate Secretary, US<br>Rogers, James E., President and Chief Executive Officer, US<br>Trent, B. Keith, Executive Vice President Regulated Utilities, US<br>Weber, Jennifer L., Executive Vice President and Chief Human Resources Officer, US<br>Yates, Lloyd M., Executive Vice President, Customer Operations, US<br>Young, Steven K., Chief Accounting Officer and Controller, US | Duke Energy 2012 Organizational Update: Duke/Progress Merger |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| 10825 | | Pt 01 | | 01.01.06 | COLA Part 1, Subsection 1.1.6, last paragraph is revised to read:<br><br>Duke Energy Carolina, LLC's 2012 Integrated Resource Plan Plan is currently under development, and is scheduled for completion and submittal to both the North Carolina Utility Commission and the South Carolina Public Service Commission in September, 2012. For purposes of preparing the Integrated Resource Plan, a commercial operation date of 2022 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 2013. The construction schedule in FSAR Table 1.1-203 provides for completion of the plant in a timeframe supporting a 2022 commercial operation date. As noted this construction schedule requires regulatory certainty by 2013 to support Duke making a final decision to build. 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. | Duke Energy 2012 Integrated Resource Plan |
| 10751 | | Pt 01 | | 01.01.F / F1.1-1 | COLA Part 1, Figure 1.1-1 is reviesd to reflect the Duke Energy 2012 Organizational Update. | Duke Energy 2012 Organizational Update: Duke/Progress Merger |
| 10882 | | Pt 01 | | 01.06.01 | COLA Part 1, Subsection 1.6.1 is revised as follows:<br><br>1) The beginning of the first paragraph is revised to read:<br><br>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 December 31, 2011, Duke Energy Corporation's market capitalization was approximately $29 billion and its total assets were $62.5 billion.<br><br>2) Under the credit ratings for Duke Energy Corporation, the Corporate Credit Rating S&P Rating is revised to BBB+, and the Senior Unsecured S&P Rating is revised to BBB. A new column is added to include the Fitch rating: Corporate Credit Rating, BBB+, Issuer Rating, --, Senior Unsecured, BBB+, and Commercial Paper, F2.<br><br>3) The paragraph following the Duke Energy Corporation credit ratings is revised to read:<br><br>Duke Energy Carolinas, LLC's total outstanding long-term debt (as of December 31, 2011) was approximately $9.3 billion, including current maturities. As of June 30, the company had approximately $950 million of short term borrowing capacity under the Duke Energy Corporation $6.0 billion Master Credit Facility and 200 million Regional Credit Facility. Duke Energy Carolinas, LLC's standalone ratings at the time of this application are as follows:<br><br>4) Under the credit ratings for Duke Energy Carolinas, LLC the Senior Unsecured S&P rating is revised to BBB+. A new column is added to include the Fitch rating: Senior Secured, A+, Senior Unsecured, A. | Duke Energy 2012 Organizational Update: Duke/Progress Merger |
| **Pt 02** | | | | | | **214 COLA Changes** |
| 10770 | | Pt 02 | FSAR 01 | 01.01.05 | COLA Part 2, FSAR Chapter 1, Subsection 1.1.5, first and second paragraphs following numbered list items is revised to read:<br><br>Duke Energy's 2012 Annual Plan reflects a commercial operation date of 2022 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 2022, 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 | Conforming change to Duke Energy 2012 Integrated Resource Plan |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | provides for completion of the plant in a timeframe that would support commercial operation beginning in 2022. 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.<br><br>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 2022 does not affect the validity of the data or conclusions in the Final Safety Analysis Report. | |
| 10771 | | Pt 02 | FSAR 01 | 01.01.0T / T1.1-203 | COLA Part 2, FSAR Chapter 1, Table 1.1-203 is revised to reflect conforming changes to Duke Energy 2012 Integrated Resource Plan. | Conforming change to Duke Energy 2012 Integrated Resource Plan |
| 10608 | | Pt 02 | FSAR 01 | 01.01.F / F1.1-202 | COLA Part 2, FSAR Figure 1.1-202 is revised as reflected on Duke Energy Response to RAI LTR 104, RAI 02.02.03-004, Enclosure 1, Attachment 2. | SUPERSEDED by QB 10855<br>Duke Energy response to RAI LTR 104, RAI 02.03.03-004, Enclosure 1, Attachment 2, WLG2012.05-01 |
| 10855 | | Pt 02 | FSAR 01 | 01.01.F / F1.1-202 | COLA Part 2, FSAR Figure 1.1-202 is revised to reflect grading and contour changes discussed in Duke Energy RAI Response Letters 96S2 and 003S2. | SUPERSEDES QB 10608<br>Conforming change to Duke Energy responses to RAI LTR 96 S2, WLG2012.06-03 and RAI LTR 003 S2, WLG2012.06-10 |
| 10871 | | Pt 02 | FSAR 01 | 01.06.0T / T1.6-201 | COLA Part 2, FSAR Chapter 1, Table 1.6-201 is revised at the entry, QAPD (with LMA 'WLS SUP 1.6-1') to read:<br><br>QAPD, Nuclear Development Quality Assurance Program Description, 5, 17.5, August 2012 | Conforming change to Duke Energy QAPD Revision 5 |
| 10772 | | Pt 02 | FSAR 01 | 01.08.T / T1.8-202 Sheet 16 | COLA Part 2, FSAR Chapter 1, Table 1.8-202, Sheet 16 of 19 is revised at COL ITEM entry, 13.1-1 to remove FSAR SECTION 13.1.1.3.2.3 from the listing. | Conforming change to Duke Energy 2012 Organizational Update |
| 10775 | | Pt 02 | FSAR 01 | 01.08.T / T1.8-203 | COLA Part 2, FSAR Table 1.8-203, Sheet 6 of 9 is revised at Item No. 9.8, under the column heading 'Interface' to read:<br><br>Requirements for location and size of waste water retention basins and associated plant outfall. | DCD Rev. 19 conformance |
| 10773 | | Pt 02 | FSAR 01 | 01.AA RG 01.033 | COLA Part 2, FSAR Chapter 1, Appendix 1AA is revised at the entry for Regulatory Guide 1.33 to read:<br><br>Regulatory Guide 1.33, Rev. 2, 2/78 - Quality Assurance Program Requirements (Operation)<br><br>General Exception The QAPD identified in Section 17.5 follows NQA-1 and NEI 06-14A, August 2010, rather than the older standards referenced in Regulatory Guide 1.33. | Conformance with FSAR Chapter 17 and Part 11A, QAPD |
| 10774 | | Pt 02 | FSAR 01 | 01.AA | COLA Part 2, FSAR Chapter 1, Appendix 1AA is revised at the entry for Regulatory Guide 1.45 to read: | Conformance with |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | RG 01.045 | Regulatory Guide 1.45, Rev. 0, 5/73 – Reactor Coolant Pressure Boundary Leakage Detection Systems<br><br>Conformance with the design and operational aspects is as stated in the DCD. | FSAR Chapter 17 and Part 11A, QAPD |
| 10640 | | Pt 02 | FSAR 02 | 02.00.T / T2.0-201 | COLA Part 2, FSAR Chapter 2, Table 2.0-201, Sheets 5 and 7 are revised as reflected on Duke Energy second supplemental response to RAI LTR 003, RAI 10.04.05-02, Attachment 1, Item 1. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 1, Item 1, WLG2012.06-10 |
| 10836 | | Pt 02 | FSAR 02 | 02.01.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.1.3, last paragraph is revised to read:<br><br>The commercial operation date was initially estimated to be 2016, but has been revised to approximately 2022. The FSAR evaluations are based on 2016; however, Duke Energy has evaluated the change and has determined that it is not significant. | Conforming change to Duke Energy 2012 Integrated Resource Plan |
| 10610 | | Pt 02 | FSAR 02 | 02.02.03.01.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.2.3.1.3 is revised to read:<br><br>As stated in Subsection 2.2.3.1.1.4, analysis of site specific chemicals (stored onsite) requiring further evaluation is presented in Section 6.4. Accidents involving the release of toxic chemicals from nearby mobile and stationary sources are addressed in this section and in Subsection 6.4.4.2. | Duke Energy Supplemental Response to RAI LTR 019, RAI 06.04-001, Attachment 2, WLG2012.05-03 |
| 10611 | | Pt 02 | FSAR 02 | 02.02.03.01.03.01 | COLA Part 2, FSAR Chapter 2, Subsection 2.2.3.1.3.1, sixth paragraph is revised to read:<br><br>Regulatory Guide 1.78 specifies the use of HABIT software for evaluating control room habitability. The HABIT software consists of modules that evaluate radiological and toxic chemical transport and exposure. A hybrid modeling approach was developed using the ALOHA code, which incorporates a heavy gas model, in conjunction with the HABIT code which utilizes a Gaussian dispersion model, to model toxic chemical transport and model chemical exposure to control room personnel using control room design parameters. | Duke Energy Supplemental Response to RAI LTR 019, RAI 06.04-001, Attachment 2, WLG2012.05-03 |
| 10612 | | Pt 02 | FSAR 02 | 02.02.03.01.03.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.2.3.1.3.3, third paragraph is revised to read:<br><br>An analysis of a tractor-trailer based chlorine release at the closest point of passage of Route 329 was performed. Chlorine was deemed to be the worst case release of a toxic gas as it is commonly transported, is highly toxic with an IDLH of 10 PPM, and is heavier than air so it can travel laterally without significant dispersion under stable, light wind conditions. The model utilizes AP1000 HVAC parameters, worst-case meteorological conditions, and chemical characteristics of the modeled hazardous materials. | Duke Energy Supplemental Response to RAI LTR 019, RAI 06.04-001, Attachment 2, WLG2012.05-03 |
| 10883 | | Pt 02 | FSAR 02 | 02.02.03.01.03.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.2.3.1.3.3, third paragraph, last sentence is revised to read:<br><br>The model utilizes AP1000 HVAC parameters, worst-case meteorological conditions, and physical characteristics of the modeled chemical. | Editorial |
| 10613 | | Pt 02 | FSAR 02 | 02.02.03.01.03.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.2.3.1.3.3 is revised with the addition of a new seventh paragraph to read:<br><br>A hybrid modeling approach was developed to account for heavier-than-air chemical vapor transport using the ALOHA code. The HABIT code was then used to analyze the chemical spill at a reduced distance utilizing a Gaussian dispersion model. The distance that a heavier-than-air gas model is appropriate was first calculated using ALOHA based on a downwind distance required to reduce the chemical concentration to 10,000 ppm where the model transitions to a non-dense plume. The ALOHA analysis concluded the transition occurs at 615 meters from the spill. This distance is subtracted from the 5100 m minimum distance between a potential chemical | Duke Energy Supplemental Response to RAI LTR 019, RAI 06.04-001, Attachment 2, WLG2012.05-03 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | release site and the control room intake. Only the remaining distance of 4485 meters was credited in the HABIT analysis. | |
| 10614 | | Pt 02 | FSAR 02 | 02.02.03.01.03.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.2.3.1.3.3, newly renumbered eighth paragraph is revised to read:<br><br>The results of the analysis using this methodology indicate that under worst case meteorological conditions for the site, a pressurized liquid chlorine tractor-trailer burst type accident would elevate control room HVAC intake concentrations beyond IDLH values; however, the habitability analysis discussed in Section 6.4.4.2 concluded that the concentration in the control room would be less than the chlorine IDLH value. | Duke Energy Supplemental Response to RAI LTR 019, RAI 06.04-001, Attachment 2, WLG2012.05-03 |
| 10615 | | Pt 02 | FSAR 02 | 02.02.T / T2.2-209 | COLA Part 2, FSAR Chapter 2, Table 2.2-209 is revised as reflected on Duke Energy Supplemental Submittal of RAI LTR 019, RAI 06.04-001, Attachment 2. | Duke Energy Supplemental Response to RAI LTR 019, RAI 06.04-001, Attachment 2, WLG2012.05-03 |
| 10604 | | Pt 02 | FSAR 02 | 02.03.03.01 | COLA Part 2, FSAR Chapter 2, Subsection 2.3.3.1, excluding the last paragraph, is revised as follows:<br>2.3.3.1 Onsite Meteorological Monitoring Program<br>The meteorological monitoring for the pre-construction phase utilized the meteorological tower (Tower 2), located east of the planned Nuclear Island. Either prior to or during the construction phase, Tower 2 is expected to be terminated. The Permanent Meteorological (MET) Tower is installed and located for use during the construction and operational phases. The Permanent MET Tower was formerly named Tower 3.<br><br>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 X/Q modeling is based on the 24-month period from December 1, 2005 to November 30, 2007. However, the long-term X/Q modeling is based on the 12 month period of December 2005 through November 2006. Appendix 2CC evaluates and justifies the use of two years of onsite meteorological data (December 2005 through November 2007) in determining the short-term atmospheric dispersion of accident releases and the use of one year of onsite meteorological data (December 2005 through November 2006) in determining the long-term atmospheric dispersion of normal airborne effluent releases. As discussed in Appendix 2CC, direct comparison of the atmospheric dispersion values for the one-year and two-year data sets is not possible because of the large number of source and receptor pairs, with some atmospheric dispersion values decreasing while others increase when using the two different sets of data. Instead, a comparison of the maximum individual and population offsite doses resulting from postulated normal airborne effluent releases using these two sets of data was performed. Comparison of the maximum individual and population doses showed that, although the doses increased slightly when the two-year data set was used, the doses are still only a fraction of the 10 CFR Part 50, Appendix I limits. Therefore, the X/Q and D/Q values for normal airborne effluent releases based on one year of site meteorological data are retained.<br><br>The locations of meteorological Towers 1 and 2 relative to other preapplication structures are shown on Figure 2.3-247. The local topography for the Lee Nuclear Site is shown on Figure 2.3-245. These figures illustrate that the location of meteorological Tower 2 is sufficiently removed from any existing structures or significant topographic features. This ensures that the system provides adequate data to represent onsite meteorological conditions and to describe the local and regional atmospheric transport and diffusion characteristics prior to construction.<br><br>The Permanent MET Tower is located relative to permanent plant structures as shown in Figure 1.1-202. This figure illustrates that the location of the Permanent MET Tower is sufficiently removed from permanent plant structures and topographical features, meeting the "10L" guidance of Regulatory Guide 1.23, Revision 1. This ensures that the system provides adequate data to represent onsite meteorological conditions and to describe the local and regional atmospheric transport and diffusion characteristics during the operational phase. | Duke Energy Response to RAI LTR 104, RAI 02.03.03-004, Enclosure 1, Attachment 3, WLG2012.05-01 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | 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 the same elevation as 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.<br><br>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 22 ft. above the 589 ft. yard grade of the plant. Data collection from this meteorological tower began on December 1, 2005.<br><br>The Permanent MET Tower to be utilized during the operational phase of the plant is a 60-meter tower located north and west of Tower 2 as shown on Figure 1.1-202. The Permanent MET Tower is located at a base elevation of 595.5 ft. The tree line and vegetation around the Permanent MET Tower are periodically maintained to ensure an open exposure meeting the "10 obstruction heights" criterion.<br><br>Instrument Description<br>All instrumentation and measurements associated with Tower 2 and the Permanent MET Tower meet the guidance provided in Regulatory Guide 1.23, Revision 1 (March 2007). The specifications for the meteorological tower instrumentation are provided in Table 2.3-281.<br><br>Tower 2 serves as the representative meteorological tower at Lee Nuclear site for the preapplication phase. Tower 2 and the Permanent MET Tower are instrumented at two levels, 10 m and 60 m, and measure temperature, wind speed, wind direction, and vertical temperature gradient. Dewpoint is also measured at the 10-meter level. Station pressure and temperature are measured at the 2-meter level in addition to ground-level precipitation. See Table 2.3-281 for a complete listing of the instrumentation provided. Note that some parameters are optional. A system of lightning and surge protection circuitry with proper grounding is included in the facility design. Replacement sensors, which may be of a different manufacturer or model, satisfy the requirements of Regulatory Guide 1.23, Revision 1.<br><br>Trees and vegetation were cleared around Tower 2 and the Permanent MET Tower to ensure an open exposure, meeting the "10 obstruction heights" criterion. Instrument booms are oriented in the northwest direction (298 degrees relative to true north for Tower 2 and 300 degrees for the Permanent MET Tower) on the tower, with a boom length of 8 ft. | |
| 10607 | | Pt 02 | FSAR 02 | 02.03.03.01 | COLA Part 2, FSAR Chapter 2, Subsection 2.3.3.1, last paragraph is revised to read:<br>Data recovery from the Tower 2 instrumentation, based on evaluation of data from December 2005 to November 2006, was 96.5 percent for wind direction, wind speed, and delta temperature after screening the data using flagging criteria based on NUREG-0917, "Nuclear Regulatory Commission Staff Computer Programs for Use with Meteorological Data." Prior to this additional flagging, the data recovery for the Tower 2 meteorological quality-assured data was 99.2 percent for the same period. Data recovery for the second year of data (from December 2006 through November 2007) for the Tower 2 instrumentation was 95.7 percent for wind direction, wind speed, and delta temperature after screening the data using flagging criteria based on NUREG-0917. Prior to this additional flagging, the joint recovery for wind direction, wind speed, and delta temperature for the quality-assured data was 98.0 percent for the second year of data. Data recovery for the two-year combined data set was 96.1 percent for wind direction, wind speed, and delta temperature. | Duke Energy Response to RAI LTR 104, RAI 02.03.03-005, Enclosure 2, Attachment 1, WLG2012.05-01 |
| 10605 | | Pt 02 | FSAR 02 | 02.03.03.02.02 | COLA Part 2, FSAR Chapter 2, Subsection 2.3.3.2.2 is revised as follows:<br>2.3.3.2.2 Data Processing<br>The equipment processors and datalogger control data acquisition at each tower location. The output of each meteorological sensor is scanned periodically, scaled, and the data values are stored as one-minute averages and one-hour averages, or totals. For precipitation, the total accumulation for the minute and hour is recorded. The datalogger does not store one-minute data for the calculated parameters (i.e., delta-T and sigma-theta.). Digital data compiled as 15 minute averages, as detailed in Regulatory Guide 1.23, are provided for real time display in the appropriate emergency response facilities (e.g., control room, technical support center, and | Duke Energy Response to RAI LTR 104, RAI 02.03.03-004, Enclosure 1, Attachment 3, WLG2012.05-01 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | emergency operations facility).<br><br>Datalogger channels are sampled at a minimum of every second; sampling for measured parameters may be more frequent. For the measured data points, one-minute and one-hour averages are calculated and recorded. The quality of the samples is reflected in the quality of the averages. The time the average was calculated is recorded with each value. Software data processing routines within the dataloggers accumulate output and perform data calculations to generate the data sampling averages and totals. | |
| 10606 | | Pt 02 | FSAR 02 | 02.03.T / T2.3-281 | COLA Part 2, FSAR Chapter 2, Table 2.3-281 is revised as reflected on Duke Energy response to RAI LTR 104, RAI 02.03.03-004, Attachment 3. | Duke Energy Response to RAI LTR 104, RAI 02.03.03-004, Enclosure 1, Attachment 3, WLG2012.05-01 |
| 10641 | | Pt 02 | FSAR 02 | 02.04.01.02.02.05 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.1.2.2.5, second paragraph under the sub-heading 'Reservoir Characteristics' is revised to read:<br><br>From October 1998 to 2006, the USGS recorded a minimum pool elevation in the Ninety-Nine Islands Reservoir of 508.20 ft. on February 14, 2005 (Reference 293). Duke Power data from 1964 to 1973 indicate that the minimum pool elevation was 505.6 ft. during May 1965 (Reference 214). Low water considerations are discussed in Subsection 2.4.11. The maximum water surface elevation for the Broad River at the site is discussed in Subsections 2.4.2, 2.4.3 and 2.4.4. Based on the flood frequency curve generated from analysis of the USGS Gaffney gauge, the projected 100-yr flow is 97,900 cfs and the projected 500-year flow is 127,000 cfs. The corresponding elevations based on interpolation of the rating curve for Ninety-Nine Islands Dam and assuming flashboard failure are 520.95 ft. and 522.63 ft. for the 100-year and 500-year events, respectively. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 2, Item 1, WLG2012.06-10 |
| 10642 | | Pt 02 | FSAR 02 | 02.04.01.02.02.06 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.1.2.2.6, first paragraph, first sentence is revised to read:<br><br>The Lee Nuclear Site has three manmade impoundments: (1) Make-Up Pond B, including the Upper Arm feature (2) Make-Up Pond A, and (3) Hold-Up Pond A. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 2, Item 2, WLG2012.06-10 |
| 10692 | | Pt 02 | FSAR 02 | 02.04.01.02.02.06 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.1.2.2.6, fifth paragraph under the "Make-Up Pond B" heading is revised as follows:<br><br>A shoreline management program is established along the banks of Make-Up Pond B. The shoreline management program consists of removing all the trees from the water's edge at elevation 570 ft. msl to 50 ft. beyond the contour elevation 586 ft. msl around the perimeter of Make-Up Pond B. The shoreline management program also consists of removing all trees from the water's edge at elevation 575 ft. msl to 50 ft. beyond the contour elevation 592 ft. msl around the perimeter of the Upper Arm of Make-Up Pond B. These areas are paved, grassed, or other suitable alternative where appropriate, and are maintained in this manner throughout the operational life of the plant. Annual inspections of these areas will be conducted to ensure that these areas are maintained in this manner. Any tree saplings or other unwanted vegetation identified in the annual inspection will be removed and cut flush with the ground in a manner that minimizes land disturbance. | Duke Energy Supplemental Response to RAI LTR 069, RAI 02.04.03-010, Enclosure 1, Attachment 1, WLG2012.07-02 |
| 10643 | | 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 is revised and two new ending paragraphs are added to read:<br><br>The maximum flood level of surface water features at the Lee Nuclear Station is elevation 585.8 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 590 ft. msl. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 2, Item 3, WLG2012.06-10 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | An access road spanning across the Upper Arm Dam embankment was constructed in the late 1970's during Cherokee Nuclear Station construction. The result of this construction created a separate impoundment of Make-Up Pond B that takes surface water runoff from the east slope of McKowns Mountain, and from the west slope of ridge to east of Upper Arm. A 54 in. culvert pipe was placed to allow for positive drainage between the Upper Arm and Make-Up Pond B. The location of this dam is shown on Figure 2.4.1-209, Sheet 2.<br><br>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 occupies approximately 5 percent of the total drainage area of the Make-Up Pond B 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). | |
| 10644 | | Pt 02 | FSAR 02 | 02.04.01.F / F2.4.1-201 | COLA Part 2, FSAR Figure 2.4.1-201 is revised as reflected on Duke Energy second supplemental response to RAI LTR 103, RAI 10.04.05-02, Elosure 1, Attachment 2, Item #4. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 2, Item 4, WLG2012.06-10 |
| 10874 | | Pt 02 | FSAR 02 | 02.04.01.T / T2.4.1-201 SH02 | COLA Part 2, FSAR Table 2.4.2-201, Sheet 2 is revised as follows:<br><br>Under the Column Heading, Site Feature, Other Features, the entry for Heavy Haul Road is revised to Elevation (ft. msl) 587.<br><br>Under the Column Heading, Site Feature, Other Features, the entry for 'Cooling Tower Pads' is revised to read 'Cooling Tower'; the Elevation (ft. msl) is revised to 586. | Conforming changes to Duke Energy response to RAI LTR 003, S1 and S2, WLG2011.11-03 and WLG2012.03-10 |
| 10645 | | Pt 02 | FSAR 02 | 02.04.02.02 | COLA Part 2, Subsection 2.4.2.2, fourth paragraph is revised to read:<br><br>The maximum flood level at the Lee Nuclear Station is established as a maximum of calculated results from flooding events analyzed in Section 2.4. That maximum flood level is elevation 589.59 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 590 ft. msl. This maximum flood level is identified as a site characteristic in Table 2.0-201. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 3, Item 1, WLG2012.06-10 |
| 10646 | | Pt 02 | FSAR 02 | 02.04.02.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.2.3 is revised as follows:<br><br>2.4.2.3 Effects of Local Intense Precipitation<br><br>The Lee Nuclear Station drainage system was evaluated for a storm producing the PMP on the local area. For the purpose of the evaluation all subsurface drainage features (i.e., culverts, inlets, etc.) including the vehicle barrier system trench are assumed non-functional and all precipitation is assumed to be transformed to runoff.<br><br>Portions of the site are relatively flat; 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 through five-grass covered drainage channels. These channels, illustrated in Figure 2.4.2-202, are assumed to be the only flow paths for runoff from the site and establish the downstream boundary conditions for site runoff for modeling purposes. Runoff from a specific power block area flows through four graded channels per unit as described in the discussion below and then through the five site discharge channels to the receiving water body. Computed water surface elevations in the vicinity of safety-related structures are below plant elevation 590 ft. The site grading and drainage plan is shown in Figure 2.4.2 202.<br><br>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 590 ft. The areas immediately adjacent to the power blocks range in elevation from 589 ft. to 587 ft. The adjacent area is generally bounded by a roadway surrounding the power blocks. The power | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 3, Item 1, WLG2012.06-10 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | 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 gently slopes away from the roadway to the vehicle barrier system at elevation 586.5 ft. Beyond the vehicle barrier system, the site continues to gently slope away to a general elevation ranging from 586 ft. to 585 ft. before encountering the steeper slopes into the adjacent, downstream water bodies.<br><br>The effects of local intense precipitation are analyzed using a series of models, each establishing boundary conditions for additional modeling. Because the slopes across the site are generally very shallow, the overall site 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 idealized reservoir is defined by an elevation-discharge-storage relationship. An elevation storage relationship is developed based on the available storage areas across the site within the drainage area. Storage routing does not incorporate the entire area of the power block within the 588 ft. contour that loops around the two units. In addition, all other site structures are assumed to provide no storage.<br><br>The discharge relationship for this idealized reservoir is determined by steady state, open channel flow, backwater analysis, modeled using HEC-RAS version 4.1.0 computer software (Reference 303) developed by the U.S. Army Corps of Engineers. HEC-RAS steady state modeling is used with a standard step method to iteratively solve the energy equation to determine water surface profiles at each cross section of the five discharge channels. The boundary conditions for the evaluation of these discharge channels are based on the adjacent, downstream water bodies.<br><br>The five defined discharge channels (i.e., West, Southwest, North, East, and Southeast) for the idealized reservoir direct runoff either west or southwest to Make-Up Pond B, north or east to the Broad River, or southeast to Make-Up Pond A. The five discharge channels are modeled using standard-step, backwater analysis with HEC-RAS 4.1.0 software to establish the elevation-discharge relationship for overall site modeling of the idealized reservoir. The downstream boundary conditions for the West and Southwest discharge channels are based on the peak PMF water surface elevations for the receiving water body, Make-Up Pond B. The downstream boundary conditions for the North and East discharge channels are based on the peak PMF water surface elevation with dam failure and wind/wave run-up for the receiving water body, the Broad River. The downstream boundary condition for the Southeast discharge channel is also based on the Broad River instead of Make-Up Pond A since the Broad river inundates Make-Up Pond A during the dam failure event.<br><br>Cross sections for each of the five discharge channels are determined based on the site grading and drainage plan (Figure 2.4.2-202). Site structures are modeled to obstruct flow and are assumed to provide no storage. A Manning's roughness coefficient of n = 0.050 is used for all cross sections in the reservoir model, which bounds the ground cover used for site conditions (i.e., grass lined channels and/or paved-gravel areas). HEC-RAS modeling was performed using steady state analysis to establish an elevation-discharge relationship at the upstream cross section. The results for the five discharge channels are combined with the elevation-storage relationship to establish a complete elevation-discharge-storage relationship for the idealized reservoir.<br><br>The local intense PMP is defined by Hydrometeorological Report (HMR) Nos. 51 and 52. PMP values for durations from 6-hr. to 72-hr. are determined using the procedures as described in HMR No. 51 for areas of 10-sq. mi. (Reference 255). Using the Lee Nuclear Station location, the rainfall depth is read from the HMR No. 51 PMP charts for each duration.<br><br>The 1-sq. mi. PMP values for durations of 1-hour and less are determined using the procedures as described in HMR No. 52 (Reference 225). Using the Lee Nuclear Station location, the rainfall depth is read from the HMR No. 52 PMP charts for each duration. A smooth curve is fitted to the points. The derived PMP curve is detailed in Table 2.4.2-203. The corresponding PMP depth duration curve is shown in Figure 2.4.2-203.<br><br>HMR 52 guidance indicates that PMP rates for 10-sq. mi. areas are the same as point rainfall. Also indicated in HMR 52, the 1-sq. mi. PMP rates may also be considered the point rainfall for areas less than 1-sq. mi. Therefore, intensities for any drainage areas with durations longer than 1-hr. are derived from the PMP rates for 10-sq. mi. areas. Intensities for drainage areas with durations equal to or less than 1-hr. are derived from the | |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | PMP rates for 1-sq. mi. areas.<br><br>The AP1000 plant design is based on a PMP of 20.7 in/hr as provided in DCD Table 2-1. As shown in Figure 2.4.2-203, the site is within the plant design limits for PMP. The PMP is identified as a precipitation site characteristic in Table 2.0-201. Roofs are sloped to preclude ponding of water.<br><br>Two storms are modeled on the basis of the PMP curve detailed in Table 2.4.2 203 and Figure 2.4.2-203. A 72-hr. duration storm with a 1-hr. precipitation interval is examined along with a 6-hr. duration storm with a 5-min. precipitation interval to capture the effect of the short-term, high intensity on the peak flow. The local intense PMP is converted to runoff at each increment by multiplying the drainage area by the intensity of each increment and converting the units to cubic feet per second. This approach is essentially equivalent to the Rational Method (Reference 201) using a runoff coefficient of one. Therefore, all rainfall is converted to runoff instantaneously and no runoff losses are included.<br><br>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, 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 2.4.3 236.<br><br>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 also 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 587.72 ft. This elevation is applied to the overall site and used as the downstream boundary condition for the analysis of the power block areas immediately adjacent to the units.<br><br>As shown in Figure 2.4.2 204, runoff is directed away from the power block units to lower lying areas via four discharge channels. Under the assumption that all subsurface drainage features are non-functional, runoff would flow over roadways or other topographical features as the flow exits the areas immediately adjacent to the power block units. For each power block area shown in Figure 2.4.2 204, the peak runoff is determined using the maximum PMP intensity of 6.2 in/5 min from Table 2.4.2-203. The peak runoff is determined by multiplying the drainage area by the intensity and converting the units to cubic feet per second. This approach is essentially equivalent to the Rational Method using a runoff coefficient of one. Therefore, all rainfall is converted to runoff instantaneously and no runoff losses are included.<br><br>The power block drainage areas, shown in Figure 2.4.2 204, are evaluated using the maximum water surface elevation for the idealized reservoir as the downstream boundary condition. Therefore, the HEC-HMS modeling for the idealized reservoir becomes the downstream boundary condition for the power block areas' channel flow evaluation. The four discharge channels for the Unit 1 power block area and the four discharge channels for the Unit 2 power block area are evaluated by steady state, open channel flow, backwater analysis, modeled using HEC-RAS version 4.1.0 software.<br><br>Cross sections for each of the four discharge channels (A1, B1, C1, and D1), which discharge from the Unit 1 power block area, are determined based on the grading and drainage plan. Cross sections for each of the four Unit 2 related discharge channels (A2, B2, C2, and D2), are determined in the same manner. Site structures are modeled to obstruct flow and are assumed to provide no storage. A Manning's roughness coefficient of n = 0.026 is used for all of the power block cross sections, which bounds the ground cover used for site conditions (i.e., gravel lined channels). HEC-RAS modeling was performed using steady state analysis to establish a maximum water surface elevation at the upstream cross section.<br><br>The resulting water surface elevations are provided in Table 2.4.2-204. The maximum water surface elevation determined is 589.59 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 | |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | at plant elevation 590 ft.<br><br>Due to the temperate climate and relatively light snowfall, significant icing is not expected. Based on the site layout and grading, any potential ice accumulation on site facilities is not expected to affect flooding conditions or damage safety-related facilities. Ice effects are discussed in Subsection 2.4.7. | |
| 10648 | | Pt 02 | FSAR 02 | 02.04.02.F / F2.4.2-202 | COLA Part 2, FSAR Figure 2.4.2-202 is revised as reflected on Duke Energy second supplemental response to RAI LTR 103, RAI 10.04.05-02, Elosure 1, Attachment 3, Item #4. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 3, Item 4, WLG2012.06-10 |
| 10649 | | Pt 02 | FSAR 02 | 02.04.02.F / F2.4.2-204 | COLA Part 2, FSAR Figure 2.4.2-204 is revised as reflected on Duke Energy second supplemental response to RAI LTR 103, RAI 10.04.05-02, Elosure 1, Attachment 3, Item #4. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 3, Item 5, WLG2012.06-10 |
| 10647 | | Pt 02 | FSAR 02 | 02.04.02.T / T2.4.2-204 | COLA Part 2, FSAR Table 2.4.2-204 is revised as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 3, Item 3. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 3, Item 3, WLG2012.06-10 |
| 10650 | | Pt 02 | FSAR 02 | 02.04.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.3 is revised, under the sub-heading 'McKowns Creek/Make-Up Pond B,' to read:<br><br>The PMF for McKowns Creek and Make-Up Pond B is determined from the PMP for the 2.233-sq. mi. drainage basin of Make-Up Pond B and the 0.283 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. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 1, WLG2012.06-10 |
| 10651 | | Pt 02 | FSAR 02 | 02.04.03.01 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.1 is revised, under the sub-heading 'McKowns Creek /Make-Up Pond B,' as follows:<br><br>The PMP for McKowns Creek, Make-Up Pond B, and the Upper Arm, is defined in Subsection 2.4.2.3. Two storms were modeled on the basis of the PMP curve detailed in Table 2.4.2-203 and Figure 2.4.2-203. The total PMP depth of the 72 hr. duration storm is 46.8 in. A 6-hr. storm with a 5-min. precipitation interval was examined to capture the effect of the short-term, high intensity on the peak flow. In addition, a 72-hr. storm with a 1-hr. precipitation interval was examined to identify the total runoff volume of a PMP event.<br><br>Several time distributions were examined for both modeled events. For 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, a two-thirds peaking storm event was found to provide the greatest runoff and peak water surface elevation for the short term event.<br><br>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 two-thirds peaking storm was found to provide the greatest runoff, though 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 | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 2, WLG2012.06-10 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | Figure 2.4.3-235 and Figure 2.4.3-236 for the tail end peaking storm events. | |
| 10652 | | Pt 02 | FSAR 02 | 02.04.03.01 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.1 is revised, under the sub-heading 'London Creek /Make-Up Pond C,' third paragraph to read:<br><br>Several time distributions were examined for the PMP event using a 1-hr. precipitation interval. A tail end peaking storm event was found to provide the greatest discharge and water surface elevation at Make-Up Pond C. The hyetograph is provided in Figure 2.4.3-240. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 3, WLG2012.06-10 |
| 10653 | | 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,' to read:<br><br>For McKowns Creek/Make-Up Pond B and the Upper Arm, HEC-HMS modeling software was used for rainfall runoff and storage routing calculations. The watershed is shown in Figure 2.4.3-201. Methods adopted to account for nonlinear basin response at high rainfall rates include increasing the peak of the unit hydrograph by 20 percent and reducing the time to peak by approximately 33 percent. Topographic characteristics of the site and watershed are described in Subsection 2.4.1.2.1.<br><br>The Soil Conservation Service (SCS) unit hydrograph method was used as a basis for a modified unit hydrograph to transform rainfall to runoff. An equivalent SCS unit hydrograph was first determined using the equations and ratios of the SCS dimensionless unit hydrograph. The equivalent SCS unit hydrograph was then modified by increasing the peak of the unit hydrograph by 20 percent and reducing the time to peak by approximately 33 percent. The remaining ordinates of the modified unit hydrograph were adjusted to maintain a smooth unit hydrograph with the standard characteristic of 1 in. of runoff.<br><br>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 77 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.<br><br>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 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.<br><br>The drainage area, length of watercourse, and average slope of the Make-Up Pond B and Upper Arm watershed was determined from aerial topography created for the area. The lag time was determined using the standard SCS curve number regression equation:<br><br>Tlag = (L0.8 * (S+1)0.7) / (1900 * Y0.5)<br>Where<br>Tlag = lag time (hr.)<br>L = hydraulic length of the watershed (ft.)<br>S = maximum potential storage of the watershed (in.);<br>where S = 1000/CN -10 and CN = average curve number for the watershed<br>Y = average watershed land slope (percent)<br><br>The resulting characteristic parameters for the Make-Up Pond B watershed are as follows:<br>Drainage Area (sq. mi.) L (ft.) CN S (in.) Y (%) Tlag (hr.)<br>2.223 10,320 87 1.49 1.60 1.28 | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 4, WLG2012.06-10 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | The resulting characteristic parameters for the Upper Arm watershed are as follows:<br>Drainage Area (sq. mi.) L (ft.) CN S (in.) Y (%) Tlag (hr.)<br>0.283 3138 85 1.76 6.04 0.27<br><br>The curve number is used to determine the lag time only. During rainfall routing, the model does not use the curve number loss method, under the conservative assumption that precipitation losses do not occur. The curve number was developed using the NRCS Web Soil Survey (Reference 278) to determine the soil types in the watershed. About 95 percent of the soil belongs to Hydrologic Soil Group B, and the remaining 5 percent to Hydrologic Soil Group C. The land use is predominately wooded. Make-Up Pond B and the Upper Arm watersheds are modeled as impervious cover. Wet antecedent moisture conditions (AMC III) were also assumed.<br><br>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 1.81 cfs for the Make-Up Pond B watershed and 0.23 cfs for the Upper Arm watershed. Baseflow is applied to the model as a constant rate.<br><br>Make-Up Pond B outflow structure rating curve was developed using standard weir and orifice flow equations with coefficients of 3.5 and 0.8 respectively. The structure is a 35 ft. wide concrete ogee spillway with a crest elevation of 570 ft. The road along Make-Up Pond B crest restricts the opening of the structure to a height of 13.5 ft. The outlet empties into backwaters of the Broad River. The Make-Up Pond B rating curve is provided in Figure 2.4.3-222. Available storage was determined based on aerial topography. Figure 2.4.3-223 provides the storage capacity curve. Full pond elevation of 570 ft. was assumed for antecedent conditions.<br><br>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.<br><br>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 375 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 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 2.65. The Upper Arm Dam discharge rating curve is provided in Figure 2.4.3-247 and is presented as a combination of culvert flow and weir flow. 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 575.4 ft. based on historical observation. | |
| 10654 | | Pt 02 | FSAR 02 | 02.04.03.04 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.4 is revised under the sub-heading 'McKowns Creek/Make-Up Pond B' to read:<br><br>Applying the precipitation, described in Subsection 2.4.3.1, with no precipitation losses, described in Subsection 2.4.3.2 without considering Upper Arm Dam failure, to the runoff model, described in Subsection 2.4.3.3, the McKowns Creek and Make-Up Pond B peak PMF runoff was determined to be 19,993 cfs resulting from the 6-hr. two-thirds peaking storm event. The routed peak discharge is 6404 cfs.<br><br>However, the 72-hr. tail end peaking storm event resulting in a peak PMF runoff of 18,813 cfs and a routed discharge of 8219 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 3446 cfs with a peak discharge of 3381 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.<br><br>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. 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 Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 5, WLG2012.06-10 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| 10655 | | Pt 02 | FSAR 02 | 02.04.03.04 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.4 is revised under the sub-heading 'Intermittent Stream/Make-Up Pond A,' first two sentences are revised to read:<br><br>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 10,721 cfs resulting from the 6-hr. storm event. The routed peak discharge is 9108 cfs. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 5, WLG2012.06-10 |
| 10656 | | Pt 02 | FSAR 02 | 02.04.03.04 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.4 is revised under the sub-heading 'London Creek/Make-Pond C,' first sentence is revised to read:<br><br>Applying the precipitation, described in Subsection 2.4.3.1, and the precipitation losses, described in Subsection 2.4.3.2, to the runoff model, described in Subsection 2.4.3.3, the London Creek and Make-Up Pond C peak PMF runoff providing the highest water surface elevation from the 72-hr. tail end peaking storm event was determined to be 29,167 cfs. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 5, WLG2012.06-10 |
| 10657 | | 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 to read:<br><br>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 5-min. time step, was found to be 583.27 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 10-min. time step was found to be 584.09 ft., including discharge from the Upper Arm. The peak water surface elevation in the Upper Arm Dam for the 72-hr. tail end, peaking storm will be 592.13 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. Therefore, water surface elevations for the Upper Arm will not encroach upon site SSC's. The elevation hydrograph for Make-Up Pond B is provided in Figure 2.4.3-231. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 6, WLG2012.06-10 |
| 10884 | | 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,' second paragraph to read:<br><br>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. 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 discussed in Subsection 2.4.1.2.2.6. | Conforming change to Duke Energy Response to RAI LTR 069, S1, RAI 02.04.03-010, Enclosure 1, Attachment 1, WLG2012.07-02 |
| 10658 | | Pt 02 | FSAR 02 | 02.04.03.06 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.3.6 is revised under the sub-heading 'McKowns Creek/Make-Up Pond B' to read:<br><br>Coincident wind wave activity for Make-Up Pond B is addressed in Subsection 2.4.4.3. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 7, WLG2012.06-10 |
| 10661 | | Pt 02 | FSAR 02 | 02.04.03.F / F2.4.3-201 | COLA Part 2, FSAR Figure 2.4.3-201 is revised as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 10. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 10, WLG2012.06-10 |
| 10662 | | Pt 02 | FSAR 02 | 02.04.03.F / F2.4.3-227 | COLA Part 2, FSAR Figure 2.4.3-227 is revised as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 11. | Duke Energy Response to RAI |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | | LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 11, WLG2012.06-10 |
| 10663 | | Pt 02 | FSAR 02 | 02.04.03.F / F2.4.3-228 | COLA Part 2, FSAR Figure 2.4.3-228 is revised as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 12. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 12, WLG2012.06-10 |
| 10664 | | Pt 02 | FSAR 02 | 02.04.03.F / F2.4.3-230 | COLA Part 2, FSAR Figure 2.4.3-230 is revised as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 13. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 13, WLG2012.06-10 |
| 10665 | | Pt 02 | FSAR 02 | 02.04.03.F / F2.4.3-231 | COLA Part 2, FSAR Figure 2.4.3-231 is revised as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 14. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 14, WLG2012.06-10 |
| 10666 | | Pt 02 | FSAR 02 | 02.04.03.F / F2.4.3-233 | COLA Part 2, FSAR Figure 2.4.3-233 is revised as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 15. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 15, WLG2012.06-10 |
| 10667 | | Pt 02 | FSAR 02 | 02.04.03.F / F2.4.3-234 | COLA Part 2, FSAR Figure 2.4.3-234 is revised as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 16. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 16, WLG2012.06-10 |
| 10668 | | Pt 02 | FSAR 02 | 02.04.03.F / F2.4.3-237 | COLA Part 2, FSAR Figure 2.4.3-237 is revised as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 17. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 17, WLG2012.06-10 |
| 10669 | | Pt 02 | FSAR 02 | 02.04.03.F / F2.4.3-246 | COLA Part 2, FSAR Figure 2.4.3-246 is added as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 18. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | | Enclosure 1, Attachment 4, Item 18, WLG2012.06-10 |
| 10670 | | Pt 02 | FSAR 02 | 02.04.03.F / F2.4.3-247 | COLA Part 2, FSAR Figure 2.4.3-247 is revised as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 19. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 19, WLG2012.06-10 |
| 10671 | | Pt 02 | FSAR 02 | 02.04.03.F / F2.4.3-248 | COLA Part 2, FSAR Figure 2.4.3-248 is added as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 20. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 20, WLG2012.06-10 |
| 10672 | | Pt 02 | FSAR 02 | 02.04.03.F / F2.4.3-249 | COLA Part 2, FSAR Figure 2.4.3-249 is added as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 21. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 21, WLG2012.06-10 |
| 10659 | | Pt 02 | FSAR 02 | 02.04.03.T / T2.4.3-208 | COLA Part 2, Table 2.4.3-208 is revised as reflected on Duke Energy supplementary response to RAI Letter 3, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 8. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 8, WLG2012.06-10 |
| 10660 | | Pt 02 | FSAR 02 | 02.04.03.T / T2.4.3-209 | COLA Part 2, Table 2.4.3-209 is added as reflected on Duke Energy supplementary response to RAI Letter 3, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 8. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 4, Item 9, WLG2012.06-10 |
| 10673 | | Pt 02 | FSAR 02 | 02.04.04 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.4 is revised at the first sentence of the second paragraph as follows:<br><br>The Upper Broad River drainage basin upstream of Ninety-Nine Islands Dam derives water from several tributaries that contain a considerable number of dams. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 5, Item 1, WLG2012.06-10 |
| 10674 | | Pt 02 | FSAR 02 | 02.04.04 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.4 is revised with the addition of a new fourth paragraph as follows:<br><br>The Upper Arm Dam is located upstream of Make-Up Pond B southwest of the nuclear island. Failure of this dam would result in discharges directly to Make-Up Pond B. The resulting rapid increase of water volume would increase the peak water surface levels and discharge rates in Make-Up Pond B. The volume of discharge from the Upper Arm Dam is small compared to the volume of Make-Up Pond B. Failure of this reservoir will not affect the | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 5, Item |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | safety-related facilities. | 2, WLG2012.06-10 |
| 10675 | | Pt 02 | FSAR 02 | 02.04.04.01 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.4.1 is revised with the addition of a new sub-heading following the first paragraph to read:<br><br>Broad River<br><br>The considered upstream structures are described below. Reservoirs were modeled using normal water surface elevations with no turbine discharges. Additionally, the gates at Lake Lure were assumed to be closed. Antecedent conditions are discussed in Subsection 2.4.3.<br><br>Failure of the downstream structure, Ninety-Nine Islands Dam, would result in lowering the water surface elevation at the Lee Nuclear Station to some degree. Conservatively, Ninety-Nine Islands Dam has not been considered to fail during any of the dam failure scenarios. However, failure of the flashboards has been incorporated into the rating curve. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 5, Item 3, WLG2012.06-10 |
| 10876 | | 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 'Major Upstream Structures,' the equation following the ninth paragraph is revised to read:<br><br>Qmax=3.09*Wb*h1.5+2.48*S*h2.5 | Duke Energy Response to RAI LTR 003, S3 RAI 10.04.05-02, Enclosure 1, Attachment 1, Item 1, WLG2012.08-01 |
| 10877 | | 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 'Major Upstream Structures,' final paragraph is revised to read:<br><br>The multiple failures due to overtopping, coincident with the PMF, result in a peak flow of approximately 1,850,000 cfs. The peak flow is determined using the HEC-HMS model discussed in Subsectin 2.4.4.2. | Duke Energy Response to RAI LTR 003, S3 RAI 10.04.05-02, Enclosure 1, Attachment 1, Item 2, WLG2012.08-01 |
| 10676 | | Pt 02 | FSAR 02 | 02.04.04.01 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.4.1, is revised following the text under the subheading 'Major Upstream Structures' as follows:<br><br>McKowns Creek/ Make-Up Pond B<br><br>As described earlier in Subsection 2.4.4, the failure of the Upper Arm Dam would directly impact Make-Up Pond B. The dam crest is at 590 ft. Simulation of dam failure was performed in HEC-HMS. Embankment breach parameters were selected based on the USACE RD-13 (Reference 250) document. Failure development time for embankment sections is estimated to occur at 0.5 hr. from the onset of dam breach. Breach width for embankment sections is estimated to be 3 times the height of the Upper Arm Dam as described in Subsection 2.4.3.3. Side slopes for the embankment breach facing the Make-Up Pond B are set at 1:1. Dam breach parameters were selected to maximize the peak outflow.<br><br>The maximum peak PMF runoff from Make-Up Pond B, considering Upper Arm Dam failure, resulting from the 6 hr. two-thirds peaking storm event modeled with a 5-min. time step, was found to be 21,889 cfs. However, the controlling water surface elevation resulted from the 72-hr. tail end peaking storm event modeled with a 10-minute time step. The maximum peak runoff was found to be 21,163 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 3446 cfs with a dam failure peak discharge of 4309 cfs. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 5, Item 4, WLG2012.06-10 |
| 10878 | | 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 Make-Up Pond C Dam,' final paragraph is revised to read:<br><br>The Make-Up Pond C peak dam failure outflow was combined with the maximum historical flow recorded on the Broad River at Gaffney, identified in Table 2.4.2-201, to account for any coincidental flow in the Broad River. | Duke Energy Response to RAI LTR 003, S3 RAI 10.04.05-02, Enclosure 1, |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | However, the resulting combined peak outflow of 1,336,000 cfs does not exceed the critical dam failure event for the Broad River watershed previously described. Therefore, even if routed to the Lee Nuclear Station without attenuation, the resulting water surface elevation would not exceed the elevation determined from the critical multiple dam failure scenario coincident with the Broad River watershed PMF. | Attachment 1, Item 3, WLG2012.08-01 |
| 10677 | | Pt 02 | FSAR 02 | 02.04.04.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.4.3 is revised as follows:<br>The methods and models used to determine the resulting water surface elevation are described above and in Subsection 2.4.3. Model verification and reliability is also discussed above and in Subsection 2.4.3.<br><br>Broad River<br><br>The HEC-RAS model, as described above, was used to model a resulting steady state flow of 1,720,000 cfs to determine the water surface elevation at the station.<br><br>The resulting water surface elevation at the Lee Nuclear Station is 573.26 ft. The maximum flood elevation is well below the station's safety-related plant elevation of 590 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.<br><br>McKowns Creek/Make-Up Pond B<br><br>Using the HEC-HMS model, the maximum water surface elevation of Make-Up Pond B, considering Upper Arm Dam failure, resulting from the 6 hr. two-thirds peaking storm event modeled with a 5-min. time step, was found to be 583.67 ft. The elevation hydrograph is provided in Figure 2.4.4-204. The maximum water surface elevation of Make-Up Pond B resulting from the 72-hr. tail end peaking storm event modeled with a 10-min. time step was found to be 584.58 ft. 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 592.13 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. Therefore, water surface elevations for the Upper Arm will not encroach upon site SSC's. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 5, Item 5, WLG2012.06-10 |
| 10879 | | Pt 02 | FSAR 02 | 02.04.04.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.4.3 is revised to remove the sub-heading 'Broad River,' with the following text revised to read:<br><br>The HEC-RAS model, as described above, was used to model a resulting steady state flow of 1,850,000 cfs to determine the water surface elevation at the station.<br><br>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 590 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. | Duke Energy Response to RAI LTR 003, S3 RAI 10.04.05-02, Enclosure 1, Attachment 1, Item 4, WLG2012.08-01 |
| 10880 | | Pt 02 | FSAR 02 | 02.04.04.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.4.3 is revised under the second sub-heading 'Broad River,' is further revised to read:<br><br>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 590 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 | Duke Energy Response to RAI LTR 003, S3 RAI 10.04.05-02, Enclosure 1, Attachment 1, Item 5, WLG2012.08-01 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | activity for the Broad River is equal to the wind wave activity for Make-Up Pond A, as discussed below. | |
| 10881 | | Pt 02 | FSAR 02 | 02.04.04.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.4.3 is revised under the sub-heading 'Intermittent Stream/Make-Up Pond A,' last two paragraphs are revised to read:<br><br>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 2.7 sec.<br><br>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 9.06 ft. The maximum wind setup is estimated to be 0.08 ft. Therefore, the total wind wave activity is estimated to be 9.14 ft. The PMF including effects of dam failures and the coincident wind wave activity results in a flood elevation of 585.64 ft. msl for Make-Up Pond A and the Broad River. The Lee Nuclear Station safety-related plant elevation is 590 ft. msl and is unaffected by flood conditions and coincident wind wave activity. | Duke Energy Supplemental Update to Information Addressing Hydrology Associated with Off-Site Water Storage, Enclosure 1, Attachment 6, WLG2012.08-01 |
| 10678 | | Pt 02 | FSAR 02 | 02.04.04.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.4.3 is revised under the sub-heading, 'McKowns Creek/Make-Up Pond B,' to read:<br><br>McKowns Creek/Make-Up Pond B<br><br>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 1.47 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.<br><br>Significant wave height (average height of the maximum one-third of waves) is estimated to be 2.07 ft., crest to trough. The maximum wave height (average height of the maximum 1 percent of waves) is estimated to be 3.44 ft., crest to trough. The corresponding wave period is 2.2 sec.<br><br>The slopes approaching the units are not constant. The slopes above the PMF elevation are steep up to elevation 585.5 ft., then level out to an average of 0.40 percent. To represent a conservative approach, runup is calculated using the higher base elevation of 585.5 ft. instead of the PMF elevation. The 0.40 percent slopes along the banks of Make-Up Pond B adjacent to the site are used to determine the wave setup and runup. The maximum runup, including wave setup, is estimated to be 0.20 ft. The maximum wind setup is estimated to be 0.08 ft. Therefore, the total wind wave activity is estimated to be 0.28 ft. The PMF and the coincident wind wave activity results in a flood elevation of 585.8 ft. msl. The Lee Nuclear Station safety-related plant elevation is 590 ft. msl and is unaffected by flood conditions and coincident wind wave activity. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 5, Item 6, WLG2012.06-10 |
| 10679 | | Pt 02 | FSAR 02 | 02.04.04.F / F2.4.4-203 | COLA Part 2, FSAR Figure 2.4.4-203 is added as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 5, Item 7. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 5, Item 7, WLG2012.06-10 |
| 10680 | | Pt 02 | FSAR 02 | 02.04.04.F / F2.4.4-204 | COLA Part 2, FSAR Figure 2.4.4-204 is added as reflected on Duke Energy Supplemental Response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 5, Item 8. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 5, Item 8, WLG2012.06-10 |
| 10681 | | Pt 02 | FSAR 02 | 02.04.04.F / F2.4.4- | COLA Part 2, FSAR Figure 2.4.4-205 is added as reflected on Duke Energy Supplemental Response to RAI LTR | Duke Energy |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | 205 | 003, RAI 10.04.05-02, Enclosure 1, Attachment 5, Item 9. | Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 5, Item 9, WLG2012.06-10 |
| 10875 | | Pt 02 | FSAR 02 | 02.04.04.T / T2.4.4-201 | COLA Part 2, FSAR Table 2.4.4-201, the following entries are revised to read:<br><br>Major upstream structures failures coincident with the PMF(b), HEC-HMS, 1,850,000, (a), 560.10<br><br>Major upstream structures failures coincident with the PMF(b), HEC-RAS (steady state), 1,850,000, 576.50, 564.93 | Duke Energy Response to RAI LTR 003, S3 RAI 10.04.05-02, Enclosure 1, Attachment 1, Item 7, WLG2012.08-01 |
| 10682 | | Pt 02 | FSAR 02 | 02.04.05 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.5 is revised under the sub-heading 'Make-Up Pond A' as follows:<br><br>Make-Up Pond A surge flooding is evaluated coincident with the 100-yr. water surface elevation of 556.07 ft. The critical fetch length is 0.36 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 10 min. The adjusted wind speed is 97.4 mph.<br><br>Significant wave height (average height of the maximum 33-1/3 percent of waves) is estimated to be 2.33 ft., crest to trough. The maximum wave height (average height of the maximum 1 percent of waves) is estimated to be 3.90 ft., crest to trough. The corresponding wave period is 1.8 sec.<br><br>The slopes along the banks of Make-Up Pond A adjacent to the site area are approximately 67 percent at most and are used to determine the wave setup and runup. The maximum runup, including wave setup, is estimated to be 7.35 ft. The maximum wind setup is estimated to be 0.08 ft. Therefore, the total water surface elevation increase due to high speed wind wave activity is estimated to be 7.43 ft. The resulting flood elevation is 563.50 ft. The Lee Nuclear Station safety-related plant elevation is 590 ft. and is unaffected by high speed wind wave activity flooding conditions. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 6, Item 1, WLG2012.06-10 |
| 10683 | | Pt 02 | FSAR 02 | 02.04.05 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.5 is revised, under the sub-heading 'Make-Up Pond B,' third paragraph as follows:<br><br>The slopes along the banks of Make-Up Pond B adjacent to the site area are approximately 5 percent and are used to determine the wave setup and runup. The maximum runup, including wave setup, is estimated to be 2.13 ft. The maximum wind setup is estimated to be 0.25 ft. Therefore, the total water surface elevation increase due to high speed wind wave activity is estimated to be 2.38 ft. The resulting flood elevation is 578.60 ft. The Lee Nuclear Station safety-related plant elevation is 590 ft. and is unaffected by high speed wind wave flooding conditions. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 6, Item 2, WLG2012.06-10 |
| 10684 | | Pt 02 | FSAR 02 | 02.04.05 | COLA Part 2, FSAR Chapter 2, Subsection 2.4.5 is revised, under the sub-heading 'Make-Up Pond B,' fifth paragraph as follows:<br><br>Based on bathymetry mapping, an average depth of 29.81 ft. is determined for Make-Up Pond A and used as the depth of water. The resulting natural fundamental period is 2.0 min. The Make-Up Pond B average depth is 30.44 ft. The resulting natural fundamental period is 7.3 min. The wave periods determined above (1.8 sec. and 2.6 sec.) are much shorter than the natural fundamental period for both water bodies (2.0 min. and 7.3 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. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 6, Item 3, WLG2012.06-10 |
| 10685 | | Pt 02 | FSAR 02 | 02.04.05.F / F2.4.5- | COLA Part 2, FSAR Figure 2.4.5-201 is revised as reflected on Duke Energy second supplemental response to | Duke Energy |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | 201 | RAI LTR 103, RAI 10.04.05-02, Elosure 1, Attachment 6, Item #4. | Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 6, Item 4, WLG2012.06-10 |
| 10686 | | Pt 02 | FSAR 02 | 02.04.05.F / F2.4.5-202 | COLA Part 2, FSAR Figure 2.4.5-202 is revised as reflected on Duke Energy second supplemental response to RAI LTR 103, RAI 10.04.05-02, Elosure 1, Attachment 6, Item #5. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 6, Item 5, WLG2012.06-10 |
| 10637 | | 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 Second Supplemental Response to RAI LTR 096, RAI 02.04.12-020, Attachment 1. | Duke Energy Response to RAI LTR 096, S2, RAI 02.04.12-020, Attachment 1, WLG2012.06-03 |
| 10638 | | 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 Second Supplemental Response to RAI LTR 096, RAI 02.04.12-020, Attachment 1. | Duke Energy Response to RAI LTR 096, S2, RAI 02.04.12-020, Attachment 1, WLG2012.06-03 |
| 10639 | | 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 Second Supplemental Response to RAI LTR 096, RAI 02.04.12-020, Attachment 1. | Duke Energy Response to RAI LTR 096, S2, RAI 02.04.12-020, Attachment 1, WLG2012.06-03 |
| 10687 | | Pt 02 | FSAR 02 | 02.04.14 | COLA Part 2, Subsection 2.4.14, first paragraph is revised to read:<br><br>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 589.59 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 structures have a plant elevation of 590 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. | Duke Energy Response to RAI LTR 003, S2, RAI 10.04.05-02, Enclosure 1, Attachment 7, Item 1, WLG2012.06-10 |
| 10784 | | 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 to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10. |
| 10841 | | Pt 02 | FSAR 02 | 02.05.04.02.04.01 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.4.1, last sentence is revised to read:<br><br>Also added to the model is the granular backfill material placed around the nuclear islands and beneath Seismic | Duke Energy Response to RAI LTR 067, S1, RAI |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | Category II structures adjacent to the nuclear islands. | 03.07.01-004, Attachment 38, WLG2012.07-04 |
| 10826 | | Pt 02 | FSAR 02 | 02.05.04.02.04.01.07 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.4.1.7 is revised to read:<br><br>The parent bedrock materials underlie the residual soil, saprolite, and partially weathered rock throughout the site. The Cherokee Nuclear Station Preliminary Safety Analysis Report describes the rock as felsic and mafic gneiss, a metamorphic crystalline rock that is often closely banded and jointed. The Lee Nuclear Station Site exploration identifies rock as being made up of predominant rock types as described in Subsection 2.5.4.1.2.2. The rock is fine to medium grained. Moderately dipping joints are healed with quartz and very thinly healed joints with calcite and epidote. The rock surface is uneven due to the differential depth to which weathering has advanced into the mass. The rock forms the foundation support for the Unit 1 and Unit 2 nuclear islands at the Lee Nuclear Station. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10842 | | Pt 02 | FSAR 02 | 02.05.04.02.04.01.08 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.2.4.1.08, is revised with a new last sentence:<br><br>FSAR Subsection 3.7.2.8.4 describes the material property characteristics of the granular fill used to support Seismic Category II structures adjacent to the nuclear island. | Duke Energy Response to RAI LTR 067, S1, RAI 03.07.01-004, Attachment 38, WLG2012.07-04 |
| 10828 | | Pt 02 | FSAR 02 | 02.05.04.03.05 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.3.5, fourth paragraph is revised to read:<br><br>A detailed description of the site geology is presented in Subsections 2.5.1 and 2.5.4.1. Material properties are discussed in Subsection 2.5.4.2. Groundwater is discussed in Subsection 2.5.4.6. Continuous rock is discussed in<br><br>Subsections 2.5.4.7.3 and 2.5.4.7.4. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10831 | | Pt 02 | FSAR 02 | 02.05.04.05 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5 is revised to read:<br><br>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 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 Elevation 589 feet which is 1.0 feet below the building floor slab elevation (AP1000 Grade El. 100'-00").<br><br>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 approximately 590 feet (AP1000 Grade El. 100'-00"). Below grade portions of the nuclear island extend approximately 39.5 feet below building slab elevation, to Elevation 550.5 feet (AP1000 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 550.5 feet (AP1000 El. 60'-6") to bring that surface up to the Lee Nuclear Station base of foundation elevation. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10843 | | Pt 02 | FSAR 02 | 02.05.04.05.01 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.1, is revised with a new last sentence:<br><br>FSAR Subsection 3.7.2.8.4 describes the material property characteristics of the granular fill used to support Seismic Category II structures adjacent to the nuclear island. | Duke Energy Response to RAI LTR 067, S1, RAI 03.07.01-004, Attachment 38, WLG2012.07-04 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| 10833 | | Pt 02 | FSAR 02 | 02.05.04.05.02 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.5.2 is revised as follows:<br><br>Second paragraph, first sentence is revised to read:<br><br>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.<br><br>The last paragraph, last sentence is revised to read:<br><br>Excavation slopes are backfilled to yard grade during placement of fill materials around the below-grade nuclear island structures. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10624 | | 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 following the fourth paragraph bulleted items to read:<br><br>• The granular fill is obtained from a quarry and will conform to SCDOT gradation limits (Reference 224, SCDOT, 2007). Anticipated material types are Macadam Base Course and Washed Screenings.<br>• The material is from an approved source (e.g., a quarry) and meets the assigned gradation requirements after the material is hauled and placed (before compaction).<br>• The coarse particles (materials retained on and above the No. 4 sieve) have an abrasion loss no more than 65 percent (Reference 224) when subjected to the Los Angeles Abrasion Test (ASTM C 131) and has an apparent specific gravity (ASTM C 127) that is greater than or equal to approximately 2.65.<br>• The material has a defined moisture-density relationship to allow a maximum dry density to be determined in accordance with ASTM D 1557 (modified Proctor) for compaction control.<br>• Care is taken to prevent segregation of the materials during handling and placement.<br>• The moisture content is maintained generally within 3 percentage points above or below the optimum moisture content as determined by the modified Proctor (ASTM D 1557) laboratory compaction test. Moisture contents outside this range do not cause rejection of the constructed material providing compaction requirements are achieved.<br>• 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 inches for hand-guided compactors. Lift thicknesses may vary from the above values depending on the capability of the equipment being used.<br>• Steel wheel tandem drum rollers weighing on the order of 10 tons are generally effective for compacting granular fill materials.<br>• Within confined areas, or within 5 feet of the nuclear island walls, hand-guided 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.<br>• The granular fill is compacted to a minimum of 96 percent of the maximum dry density determined in accordance with the modified Proctor test method (ASTM D 1557) with a moisture content that is generally within 3 percentage points above or below the optimum moisture content. If the compacted density meets the requirements, moisture present during compaction is controlled only for compaction efficiency and not as an engineering requirement. Nonconformance to recommended compaction moisture content does not alter the engineering properties of the cohesionless fill and should not form the basis for rejection of the constructed material. This relative compaction is selected to produce a granular fill equivalent to a relative density of 80 percent (Reference 225), and thus highly resistant to liquefaction. | Duke Energy Response to RAI LTR 106, RAI 02.05.04-017, Enclosure 1, Attachment 2, WLG2012.06-07 |
| 10835 | | Pt 02 | FSAR 02 | 02.05.04.07.04.01 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.7.4.1, the beginning of the fourth paragraph is revised to read:<br><br>Rock conditions change beneath the northwest corner of the Lee Nuclear Station Unit 1 nuclear island. In this area, the Lee Nuclear Station Unit 1 nuclear island overlies a localized zone of weathered and fractured rock, extending approximately 15 to 25 feet deep, below the Unit 1 basemat footprint Elevation 550.5 feet (AP1000 El. 60'-6"), as shown in Figures 2.5.4-239 and 2.5.4-240. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| 10837 | | Pt 02 | FSAR 02 | 02.05.04.08 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.8, second and third paragraphs are revised to read:<br><br>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 550.5 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 Lee Nuclear Station Unit 2. Therefore, a liquefaction hazard does not exist that could affect the Category I plant structures and facilities.<br><br>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, 2.5.4 246, 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 30 to 40 feet with a maximum thickness of about 80 feet. 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. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10838 | | Pt 02 | FSAR 02 | 02.05.04.10.01.02 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.10.1.2, paragraphs seven through 11 are revised to read:<br><br>Peck, Hanson, and Thornburn (Reference 213) thus determines the allowable foundation loading which, if not exceeded, will result in settlements not to exceed 1 inch for smaller footings and not to exceed 2 inches for larger foundation areas (e.g., mat foundations). If the safety factor against exceeding the ultimate bearing capacity as calculated earlier herein is adequate, the maximum applied bearing pressure to cause settlement not to exceed 1 or 2 inches according to Peck, Hanson, and Thornburn (Reference 213) is:<br>qallowable_1 inch = 0.11 (N1)60 x Cw (tsf), and<br>qallowable_2 inches = 0.22 (N1)60 x Cw (tsf)<br>where Cw is the effect of the water table, as discussed below.<br><br>The chart on Peck, Hanson, and Thornburn (Reference 213) Figure 19.3 is for the conditions where the supporting granular material remains above the water table. If the depth of the groundwater table (Dw) will be less than the sum of the foundation depth (Df) and the width (B), then the allowable bearing pressure to limit total settlement is adjusted for water table depth using the water table correction factor (Cw):<br>$Cw = 0.5 + \frac{0.5Dw}{Df + B}$<br>where:<br>Dw = depth to groundwater measured from the ground surface surrounding the foundation; and<br>Cw = adjustment factor for depth of the groundwater table (Dw) if less than the sum of the foundation depth below the ground surface (Df) and smallest foundation dimension (B); the minimum value is 0.5; the maximum value is 1.0.<br>Note: If Dw (less than or equal to) Df, Cw = 0.5.<br><br>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 5 ft below the yard surface at the perimeter of the buildings. For example, for a depth to the bottom of the mat equal to 3.5 ft, this would place the future water table at a depth of 1.5 ft below the bottom of the perimeter foundation for computing Cw. This depth of water table, about 1.5 ft below the bottom of the foundation, 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. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | The ultimate bearing capacity calculation utilizes the unit weight and shear strength parameters of the potential granular fill materials found in Table 2.5.4-211 in conjunction with the bearing capacity equations by Hanson as found in Bowles (5th ed., Reference 216).<br><br>The radwaste buildings, annex buildings (Category II portion), and turbine buildings have mat foundations that occupy the entire building area. Therefore, the case for limiting settlement equal to 2 inches is applicable for these buildings. The annex building (non-Category II portion) may have individual spread footing foundations.<br><br>Building dimensions in Table 2.5.4-230 are based on Reference 235; the foundation base elevations in Table 2.5.4-230 are based on Reference 237; the best estimates of loading of the building foundations in Table 2.5.4-230 are based on Reference 236. The calculated allowable bearing pressures (with a factor of safety of 3 against the ultimate bearing capacity) on the granular fill are shown in Table 2.5.4-228. The calculated allowable bearing pressures for settlements not to exceed 2 inches for mats are shown in Table 2.5.4-229. The results show the maximum safe bearing pressures based on the factor of safety are significantly greater than the applied pressures (Table 2.5.4-230). The allowable pressures to limit settlement are also greater than the applied pressures. | |
| 10839 | | Pt 02 | FSAR 02 | 02.05.04.10.03 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.10.3 is revised to add the following at the end of the subsection:<br><br>The lateral earth pressure is calculated for a ground surface associated with the presence of the adjacent buildings; this is not affected by changes to the ground surface contour elevations beyond the outside walls of these buildings. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10840 | | Pt 02 | FSAR 02 | 02.05.04.13 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4.13 is revised to read:<br><br>236. Westinghouse Electric Company LLC, 2012. APC/WLG000108, Letter to Mr. John McConaghy, Duke Energy, Subject: "Transmittal of Table 5-Surcharge Pressure from APP-1000-CCC-005, Revision 4", dated June 19.<br><br>237. Westinghouse Electric Company LLC. AP1000 Plant Grid Coordinates and Column Line Identification Plan, Drawing APP-0000-X4-001, Revision A | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10785 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-201 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-201 is revised to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10786 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-202 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-202 is revised to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10787 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-208 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-208 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | | revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10788 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-209 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-209is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10789 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-210 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-210is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10790 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-211 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-211 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10791 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-212 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-212 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10792 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-213 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-213 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10793 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-214 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-214 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | | Letter 003, S2, WLG2012.06-10 |
| 10794 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-215 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-215 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10795 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-216 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-216 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10858 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-234 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-234 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10859 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-240 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-240 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10796 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-241 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-241 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10860 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-245 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-245 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10861 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4- | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-246 is revised to to reflect conforming changes as | Conforming |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | 246 | shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10797 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-247 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-247 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10798 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-248 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-248 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10799 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-249 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-249 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10800 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-250 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-250 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10801 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-251a | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-251a is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10802 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-251b | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-251b is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | | on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10803 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-251c | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-251c is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10804 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-252 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-252 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10805 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-256a | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-256a is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10806 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-256b | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-256b is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10807 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-260 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-260 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10808 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-262 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-262 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | | WLG2012.06-10 |
| 10809 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-263 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-263 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10810 | | Pt 02 | FSAR 02 | 02.05.04.F / F2.5.4-264 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Figure 2.5.4-264 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10625 | | 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 response to RAI LTR 106, RAI 2.5.4-17, Enclosure 1, Attachment 2. | Duke Energy response to RAI LTR 106, RAI 02.05.04-017, Enclosure 1, Attachment 2, WLG2012.06-07 |
| 10815 | | Pt 02 | FSAR 02 | 02.05.04.T / T2.5.4-224A | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Table 2.5.4-224A is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10816 | | Pt 02 | FSAR 02 | 02.05.04.T / T2.5.4-224B | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Table 2.5.4-224B is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10817 | | Pt 02 | FSAR 02 | 02.05.04.T / T2.5.4-224C | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Table 2.5.4-224C is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10818 | | Pt 02 | FSAR 02 | 02.05.04.T / T2.5.4-226 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Table 2.5.4-226 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | | on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10819 | | Pt 02 | FSAR 02 | 02.05.04.T / T2.5.4-227 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Table 2.5.4-227 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10820 | | Pt 02 | FSAR 02 | 02.05.04.T / T2.5.4-228 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Table 2.5.4-228 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10821 | | Pt 02 | FSAR 02 | 02.05.04.T / T2.5.4-229 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Table 2.5.4-229 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10822 | | Pt 02 | FSAR 02 | 02.05.04.T / T2.5.4-230 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.4, Table 2.5.4-230 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10777 | | Pt 02 | FSAR 02 | 02.05.05 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.5, third paragraph, first sentence is revised to read:<br>The plants are centrally sited within a backfilled excavation forming a broad, relatively level yard grade at approximate elevation 589 feet, for a distance of approximately 300 feet from the perimeter of the excavation. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10778 | | Pt 02 | FSAR 02 | 02.05.05.01.01 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.5.1.1 is revised, beginning at the fourth paragraph to read:<br><br>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 rises approximately 100 feet above the yard elevation. The hill has a slope of approximately 2.5 horizontal to 1 vertical and is located greater than 900 feet from the Unit 1 nuclear island. The closest distance to the toe of the slope is approximately 9 times the height of the slope. No credible | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | 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.<br><br>The next permanent slope that ascends above the Lee Nuclear Station nuclear island area is an engineered slope at the switchyard located south of Units 1 and 2 (Slope 6). The switchyard pad was constructed using engineered earthen (Group I) fill during site preparation for Cherokee Nuclear Station. The pad is constructed to an elevation of approximately 605 feet, which is approximately 15 feet above the yard elevation. The toe of this slope is at least 1100 feet away from the nearest safety related structure. The switchyard pad is constructed at a slope of approximately 2 horizontal to 1 vertical or shallower. No credible mechanism of slope failure would predict movement of the slope failure material over such a large distance. On the basis of engineering judgment and past performance, slope height, inclination, and distance from the nuclear island, this switchyard slope (Slope 6) does not pose a hazard to the Lee Nuclear Station safety related structures due to the limited height, significant distance to the nuclear island, and the existing slope angle.<br><br>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 greater than 1100 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 800 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. | WLG2012.06-10 |
| 10779 | | Pt 02 | FSAR 02 | 02.05.05.01.04 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.5.1.4, first paragraph, last sentence is revised to read:<br><br>Permanent slopes will not affect seismic Category I structures, and therefore the selection of material properties is not necessary. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10780 | | Pt 02 | FSAR 02 | 02.05.05.01.04 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.5.1.4, third paragraph, last sentence is revised to read:<br><br>In any event, the long-term static stability of permanent slopes located within the one-quarter mile evaluation distance does not pose a hazard to the safety related structures. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10781 | | Pt 02 | FSAR 02 | 02.05.05.02 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.5.2, first paragraph is revised to read:<br><br>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 900 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. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10783 | | Pt 02 | FSAR 02 | 02.05.05.F / F2.5.5-201 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.5, Figure 2.5.5-201 is revised to to reflect conforming changes as shown on Duke Energy's response to RAI LTR 003, S2, RAI 10.04.05-002. | Conforming changes to grading and drainage revisions reflected on Duke Energy's |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | | response to RAI Letter 003, S2, WLG2012.06-10 |
| 10782 | | Pt 02 | FSAR 02 | 02.05.05.T / T2.5.5-201 | COLA Part 2, FSAR Chapter 2, Subsection 2.5.5, Table 2.5.5-201 is revised to delete the first four rows of information. | Conforming changes to grading and drainage revisions reflected on Duke Energy's response to RAI Letter 003, S2, WLG2012.06-10 |
| 10844 | | Pt 02 | FSAR 03 | 03.07.02.08.04 | COLA Part 2, FSAR Chapter 3, Subsection 3.7.2.8.4, is revised following the fifth paragraph through the end of the subsection to read:<br><br>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.<br><br>Westinghouse has performed a 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 calculated site-specific relative displacements of adjacent buildings are less than the building separation, so there is no contact between the nuclear island and adjacent buildings. The calculated foundation input response spectra at the base of the Annex Building and at the base of the first bay of the Turbine Building are less than those considered in the AP1000 standard design of those structures. The maximum site-specific bearing demand (approximately 13.06 ksf for the Annex Building and 7.75 ksf for the Turbine Building) is significantly less than the site-specific allowable bearing pressure shown in FSAR Table 2.5.4-228 (approximately 32.05 ksf for the Annex Building and 43.74 ksf for the Turbine Building). The base shears and moments for those two structures are also significantly less than those considered in the AP1000 standard design of the Seismic Category II structures for the CSDRS.<br><br>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.<br><br>The site-specific analysis presented in Reference 205 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; and the site specific seismic demands on the Seismic Category II buildings are less than those considered in the AP1000 standard design. | Duke Energy response to RAI LTR 067, S1, RAI 03.07.01-004, Attachment 38, WLG2012.07-04 |
| 10845 | | Pt 02 | FSAR 03 | 03.07.06 | COLA Part 2, FSAR Chapter 3, Subsection 3.7.6 is revised with the addition of Reference 205:<br><br>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 response to RAI LTR 067, S1, RAI 03.07.01-004, Attachment 38, WLG2012.07-04 |
| 10602 | | Pt 02 | FSAR 03 | 03.08.05.01 | COLA Part 2, FSAR Chapter 3, Subsection 3.8.5.1 is revised with the addition of a new last sentence as follows: Both selection and testing milestones will be added to the detailed construction schedule to ensure tracking and closure of ITAAC 14.3.3.1. | Duke Energy supplemental response to RAI LTR 102, RAI 3.8.5-6, WLG2012.05-002 |
| 10616 | | Pt 02 | FSAR 06 | 06.04.04.02 | COLA Part 2, FSAR Chapter 6, Subsection 6.4.4.2, first, second, and third paragraphs are revised to read: | Duke Energy |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | 6.4.4.2 Toxic Chemical Habitability Analysis<br><br>Regulatory Guide 1.78 establishes the Occupational Safety and Health Association (OSHA) National Institute for Occupational Safety and Health (NIOSH) Immediately Dangerous to Life and Health (IDLH) guidelines for 30 minute exposure as the required screening criteria for airborne hazardous chemicals. See Subsection 2.2.3.1.3.1 for discussion of screening of chemicals for potential impact to control room habitability.<br><br>Subsection 2.2.3 indicates that a release of chlorine could potentially result in elevated concentrations at the control room intake. Therefore, an analysis of chlorine concentrations inside the control room was conducted using the methodology described in subsection 2.2.3.1.3.3, which discusses the hybrid modeling approach developed using the ALOHA and HABIT codes. | supplemental response to RAI LTR 019, RAI 06.04-005, Attachment 1, WLG2012.05-03 |
| 10618 | | Pt 02 | FSAR 06 | 06.04.F / F6.4-201 | COLA Part 2, FSAR Chapter 6, Figure 6.4-201 is revised as reflected on Duke Energy Supplemental Response to RAI LTR 019, RAI 06.04-005, Attachment 1. | Duke Energy supplemental response to RAI LTR 019, RAI 06.04-005, Attachment 1, WLG2012.05-03 |
| 10862 | | Pt 02 | FSAR 06 | 06.04.F / F6.4-201 | COLA Part 2, FSAR Chapter 6, Figure 6.4-201 is revised to reflect different line types and line colors. | Editorial, for clarity |
| 10617 | | Pt 02 | FSAR 06 | 06.04.T / T6.4-201 | COLA Part 2, FSAR Chapter 6, Table 6.4-201 is revised as reflected on Duke Energy Supplemental Response to RAI LTR 019, RAI 06.04-005, Attachment 1. | Duke Energy supplemental response to RAI LTR 019, RAI 06.04-005, Attachment 1, WLG2012.05-03 |
| 10603 | | Pt 02 | FSAR 09 | 09.02.09.02.02 | COLA Part 2, FSAR Chapter 9, Subsection 9.2.9.2.2 is revised under the sub-heading 'Basin Transfer Pumps' to read:<br>Two 750 gpm capacity transfer pumps send the waste water from the retention basin to the common blowdown sump. Operation of both pumps will transfer at least 75% of the basin's full level in one compartment (2,500,000 gallons) in 24 hours. Each basin has two compartments. In the event of oily waste leakage into the basin, the oil will be removed manually (as by skimming or vacuuming). Controls are provided for automatic or manual operation of the pumps based on the level in the retention basin. | Revised to clarify pumping capability. |
| 10693 | | Pt 02 | FSAR 13 | 13.01.01 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1 is revised to read:<br><br>13.1.1 MANAGEMENT AND TECHNICAL SUPPORT ORGANIZATION<br><br>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. The Nuclear Generation organization includes, but is not limited to, nuclear engineering, nuclear operations, corporate governance and operations support, nuclear major projects, nuclear development, and nuclear oversight. | Duke Energy 2012 Organizational Update |
| 10721 | | Pt 02 | FSAR 13 | 13.01.01.01 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.1 is revised to read:<br><br>13.1.1.1 Design, Construction, and Operating Responsibilities<br><br>The Duke Energy chief executive officer (CEO) has overall responsibility for functions involving design, construction, and operation of Duke Energy's nuclear plants. Line responsibilities for those functions are assigned to the group executive - Nuclear Generation's group chief nuclear officer (CNO). The CNO directs the executives for each nuclear site group in the operation of his applicable unit(s): executive - nuclear engineering, executive - corporate governance and operations support, executive - nuclear major projects, executive - nuclear | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | development, and executive - nuclear oversight in the support of the nuclear fleet. The CNO directs the executive - nuclear development in the preparation and integration of new plants into the Nuclear Generation operating fleet. The executive vice president - energy supply provides support for new nuclear construction as requested by the CNO via an interface agreement with Nuclear Generation.<br><br>The first priority and responsibility of each member of the nuclear staff throughout the life of the plant is nuclear safety. Decision making for station activities is performed in a conservative manner with expectations of this core value regularly communicated to appropriate personnel by management interface, training, and station directives.<br><br>Lines of authority, decision making, and communication are clearly and unambiguously established to enable the understanding of the various project members, including contractors, that utility management is in charge and directs the project.<br><br>Key executive and corporate management positions, functions, and responsibilities are discussed in Subsection 13.1.1.3.1. Corporate and construction management organizations are shown in Figures 13.1-203 and 13AA-201. The management and technical support organization for design, construction, and preoperational activities is addressed in Appendix 13AA. | |
| 10722 | | Pt 02 | FSAR 13 | 13.01.01.02 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2 is revised as follows:<br><br>First paragraph is revised to read:<br><br>Before beginning preoperational testing, the executive - nuclear development, executive - corporate governance and operations support, 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:<br><br>The third bullet following the first paragraph is revised to add a comma to read:<br><br>• Quality assurance, audit, and surveillance<br><br>The third paragraph is revised to read:<br><br>Figure 13.1-201 illustrates the management and technical support organizations supporting operation of the plant. Section 13.1.2 describes the responsibilities and authorities of management positions for organizations providing technical support. Table 13.1-201 shows the estimated number of positions required for each function. | Duke Energy 2012 Organizational Update |
| 10723 | | Pt 02 | FSAR 13 | 13.01.01.02.01 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.1 is revised as follows:<br><br>13.1.1.2.1 Nuclear Engineering<br><br>The nuclear engineering department consists of plant engineering, design engineering, engineering programs, nuclear fuel management, and safety and engineering analysis. These groups are responsible for performing the classical design activities as well as providing engineering expertise in other areas of new plant sites and license renewal at the current plant sites. They are also responsible for probabilistic safety assessment and other safety issues, plant system reliability analysis, performance and technical support, core management and periodic reactor testing, and for programs, such as inservice inspection/inservice testing (ISI/IST), fire protection, snubbers, and valves.<br><br>Each of the engineering groups has a functional manager who reports to the executive - nuclear engineering (Figure 13.1-203).<br><br>The nuclear engineering department is responsible for:<br><br>• Support of plant operations in the engineering areas of mechanical, structural, electrical, thermal-hydraulic, | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | metallurgy and materials, electronic, instrument and control, and fire protection. Priorities for support activities are established based on input from the plant manager with emphasis on issues affecting safe operation of the plant.<br>• Engineering programs.<br>• Major engineering projects for the nuclear fleet.<br>• Support of procurement, chemical and environmental analysis, and maintenance activities in the plant as requested by the plant manager.<br>• Performance of design engineering of plant modifications.<br>• Maintenance of the design basis by updating the record copy of design documents as necessary to reflect the actual as-built configuration of the plant.<br>• Accident and transient analyses.<br>• Human Factors Engineering design process<br><br>Reactor engineering, led by the functional manager in charge of nuclear fuels and analysis engineering, provides technical assistance in the areas of core design, core operations, core thermal limits, and core thermal hydraulics.<br><br>Engineering work may be contracted to and performed by outside companies in accordance with the quality assurance program description (QAPD).<br><br>Engineering resources are shared between units. A single management organization oversees the engineering work associated with the station units. Physical separation of units helps to minimize wrong-unit activities. | |
| 10724 | | Pt 02 | FSAR 13 | 13.01.01.02.02 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.2 is revised to read:<br><br>13.1.1.2.2 Nuclear Safety Assurance<br><br>The nuclear oversight section provides independent oversight of the nuclear plant activities, maintains the Quality Assurance Program Manual, and administers the employee concerns program. Review and audit activities are covered in Chapter 17 and the QAPD. The executive - nuclear oversight reports directly to the CNO Nuclear Generation on all matters related to the independent monitoring and assessing of activities during new nuclear plant construction.<br><br>Plant licensing, regulatory compliance, corrective actions and performance improvement, and emergency preparedness each have a functional manager who reports to and receives direction from the manager in charge of organizational effectiveness.<br><br>The nuclear safety assurance (NSA) organization, through the licensing department, is the normal contact point for the station with the Nuclear Regulatory Commission (NRC) in matters concerning licensing and is responsible for addressing NRC bulletins and orders. Typical duties include:<br><br>• Developing licensee event reports (LERs) and responding to notices of violations.<br>• Writing/submitting operating license and technical specification amendments and updating the FSAR.<br>• Tracking commitments and answering generic letters.<br>• Analyzing operating experience data and monitoring industry issues.<br>• Preparing station for special NRC inspections, interfacing with NRC inspectors, and interpreting NRC regulations.<br>• Maintaining the licensing basis.<br><br>The organizational effectiveness organization administers the corrective action program and the station's emergency preparedness program.<br><br>Personnel resources of the NSA organization are shared between units. A single management organization oversees the NSA organization for the station units.<br><br>Oversight of safety review of station programs, procedures, and activities is performed by a plant safety review | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | committee, a corporate safety review committee, and the NSA organization. Review and audit activities are addressed in Chapter 17. | |
| 10725 | | 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:<br><br>13.1.1.2.3 Quality Assurance<br><br>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 manager in charge of nuclear QA oversight and includes:<br><br>• General quality assurance indoctrination and training for the nuclear station personnel.<br>• Maintenance of the QAPD.<br>• Coordination of the development of audit schedules.<br>• Audit, surveillance, and evaluation of nuclear division suppliers.<br>• Quality control (QC) inspection/testing activities.<br><br>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 WLS. The functional manager in charge of nuclear oversight at WLS reports directly to the executive – nuclear oversight. | Duke Energy 2012 Organizational Update |
| 10726 | | Pt 02 | FSAR 13 | 13.01.01.02.04 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.4 is revised to read:<br><br>13.1.1.2.4 Chemistry<br><br>The corporate governance and operations support organization provides the standardization and support of the chemistry program at each site. A chemistry department is established to monitor and control the chemistry of various plant systems such that corrosion of components and piping is minimized and radiation from corrosion byproducts is kept to levels that allow operations and maintenance with radiation doses as low as reasonably achievable.<br><br>The functional manager in charge of environmental and chemistry is responsible to the plant general manager for maintaining chemistry programs and for monitoring and maintaining the water chemistry of plant systems. The staff of the chemistry department consists of laboratory technicians, support personnel, and supervisors who report to the functional manager in charge of environmental and chemistry.<br><br>Personnel resources of the chemistry organization are shared between units. A single management organization oversees the chemistry group for the station units. | Duke Energy 2012 Organizational Update |
| 10727 | | Pt 02 | FSAR 13 | 13.01.01.02.05 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.5 is revised to read:<br><br>13.1.1.2.5 Radiation Protection<br><br>The corporate governance and operations support organization provides the standardization and support of the radiation protection programs at each site. A radiation protection program is established to protect the health and safety of the surrounding public and personnel working at the plant. The radiation protection program is described in Chapter 12 of the FSAR. The program includes:<br><br>• Respiratory Protection<br>• Personnel Dosimetry | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | • Bioassay<br>• Survey Instrument Calibration and Maintenance<br>• Radioactive Source Control<br>• Effluents and Environmental Monitoring and Assessment<br>• Radioactive Waste Shipping<br>• Radiation Work Permits<br>• Job Coverage<br>• Radiation Monitoring and Surveys<br><br>The radiation protection department is staffed by radiation protection technicians, support personnel, and supervisors who report to the functional manager in charge of radiation protection. To provide sufficient organizational freedom from operating pressures, the functional manager in charge of radiation protection reports directly to the plant manager.<br><br>Personnel resources of the radiation protection organization are shared between units. A single management organization oversees the radiation protection group for both units. | |
| 10728 | | Pt 02 | FSAR 13 | 13.01.01.02.06 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.6 is revised to read:<br><br>13.1.1.2.6 Fueling and Refueling Support<br><br>The corporate governance and operations support organization provides the standardization and support of the refueling programs at each site. The function of fueling and refueling is performed by a combination of personnel from various departments including operations, maintenance, radiation protection, engineering, and reactor technology vendor or other contractor staff. Initial fueling and refueling operations are a function of the work control organization. The functional manager in charge of outage and scheduling is responsible for planning and scheduling outages and for refueling support and reports to the plant manager.<br><br>Personnel resources of the work control organization are shared between units. A single management organization oversees the work control associated with both units. | Duke Energy 2012 Organizational Update |
| 10729 | | Pt 02 | FSAR 13 | 13.01.01.02.07 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.7 is revised to read:<br><br>13.1.1.2.7 Training and Development<br><br>The corporate governance and operations support organization provides the standardization and support of the training programs at each site. The training department is responsible for providing training programs that are established, maintained, and implemented in accordance with applicable plant administrative directives, regulatory requirements, and company operating policies so that station personnel can meet the performance requirements of their jobs in operations, maintenance, technical support, and emergency response. The objective of training programs is to provide qualified personnel to operate and maintain the plant in a safe and efficient manner and to provide compliance with the license, technical specifications, and applicable regulations. The training department's responsibilities encompass operator initial license training, requalification training, and plant staff training as well as the plant access training (general employee training) and radworker training. The functional manager in charge of training at WLS is independent of the operating line organization to provide for independence from operating pressures. Nuclear plant training programs are described in Section 13.2 of the FSAR.<br><br>Personnel resources of the training department are shared between units. A single management organization provides oversight of station training activities. | Duke Energy 2012 Organizational Update |
| 10730 | | Pt 02 | FSAR 13 | 13.01.01.02.08 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.8, first paragraph is revised to read:<br><br>13.1.1.2.8 Maintenance Support<br><br>The corporate governance and operations support organization provides the standardization and support of the | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | maintenance programs at each site. In support of maintenance activities, planners, schedulers, and parts specialists prepare work packages, acquire proper parts, and develop procedures that provide for the successful completion of maintenance tasks. Maintenance tasks are integrated into the station schedule for evaluation of operating or safe shutdown risk elements and to provide for efficient and safe performance. Personnel of the maintenance support organization receive direction from the functional manager in charge of maintenance who reports to the plant manager. | |
| 10731 | | Pt 02 | FSAR 13 | 13.01.01.02.09 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.9 is revised to read:<br><br>13.1.1.2.9 Operations Support<br><br>The corporate governance and operations support organization provides the standardization and support of the operations programs at each site. The operations support function is provided under the direction of the functional manager in charge of operations. Operations support includes the following programs:<br><br>• Operations procedures<br>• Operations surveillances<br>• Equipment tagging<br>• Fire protection testing and surveillance<br>• Radwaste system operation | Duke Energy 2012 Organizational Update |
| 10732 | | Pt 02 | FSAR 13 | 13.01.01.02.10 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.10, first paragraph is revised to read:<br><br>13.1.1.2.10 Fire Protection<br><br>The station is committed to maintaining a fire protection program as described in DCD Subsection 9.5.1. The site executive in charge of plant management is responsible for the fire protection program. Assigning the responsibilities at that level provides the authority to obtain the resources and assistance necessary to meet fire protection program objectives, resolve conflicts, and delegate appropriate responsibility to fire protection staff. The relationship of the site executive in charge of plant management to other staff personnel with fire protection responsibilities is shown on Figure 13.1-201. Fire protection for the facility is organized and administered by the engineer in charge of fire protection. The site executive in charge of plant management, through the engineer in charge of fire protection, is responsible for development and implementation of the fire protection program including development of fire protection procedures and inspections of fire protection systems and functions. Fire brigade training, drills, and practice are organized by the functional supervisor in charge of emergency preparedness in consultation with the engineer in charge of fire protection. Fire protection trainers are qualified to perform classroom instruction or practical training as discussed in FSAR Subsection 9.5.1.8.2.2. The engineer in charge of fire protection reports to the site executive in charge of plant management through engineering department management and coordinates operations related fire protection program activities with the manager in charge of operations. Functional descriptions of position responsibilities are included in appropriate procedures. Station personnel are responsible for adhering to the fire protection/prevention requirements detailed in DCD Subsection 9.5.1. The site executive in charge of plant management has the lead responsibility for the overall site fire protection during construction of new units. | Duke Energy 2012 Organizational Update |
| 10733 | | Pt 02 | FSAR 13 | 13.01.01.02.11 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.11, first paragraph is revised to read:<br><br>13.1.1.2.11 Emergency Organization<br><br>The corporate governance and operations support organization provides the standardization and support of the emergency response programs at each site. The emergency organization is a matrixed organization composed of personnel who have the experience, training, knowledge, and ability necessary to implement actions to protect the public in the case of emergencies. Managers and station personnel assigned positions in the emergency organization are responsible for supporting the emergency preparedness organization and emergency plan as required. The staff members of the emergency planning organization orchestrate drills and training to maintain qualification of personnel and develop procedures to guide and direct the emergency organization during an emergency. The functional supervisor in charge of emergency preparedness reports to the functional manager in | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | charge of organizational effectiveness. The site emergency plan organization is described in the Emergency Plan. | |
| 10734 | | Pt 02 | FSAR 13 | 13.01.01.02.12 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.2.12, first paragraph is revised to read:<br><br>13.1.1.2.12 Outside Contractual Assistance<br><br>Contract assistance with vendors and suppliers of services not available from organizations established as part of utility staff is provided by the materials, purchasing, and contracts organization. Personnel in the materials, purchasing, and contracts organization perform the necessary functions to contract vendors of special services to perform tasks for which utility staff does not have the experience or equipment required. The functional manager in charge of Nuclear Generation - supply chain reports to the vice president - supply chain. | Duke Energy 2012 Organizational Update |
| 10735 | | 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:<br><br>13.1.1.3.1.1 President and CEO<br><br>The Duke Energy 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 CNO and other executive staff in the Nuclear Generation and energy supply departments of the corporation. | Duke Energy 2012 Organizational Update |
| 10736 | | Pt 02 | FSAR 13 | 13.01.01.03.01.02 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.2 is revised to read:<br><br>13.1.1.3.1.2 Group Executive - Nuclear Generation/Chief Nuclear Officer (CNO)<br><br>The group executive - Nuclear Generation is the CNO. The CNO reports to the CEO of Duke Energy. 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, construction, operations, maintenance, and planning are 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. | Duke Energy 2012 Organizational Update |
| 10737 | | Pt 02 | FSAR 13 | 13.01.01.03.01.03 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.3 is revised to read:<br><br>13.1.1.3.1.3 Executive - Nuclear Operations (Specified Duke Sites)<br><br>The executive(s) in charge of nuclear operations is responsible for oversight of operations at each of the stations under his purview. The sites are divided among three executives in charge of nuclear operations as follows: one responsible for Oconee and Crystal River nuclear stations; one responsible for Catawba, McGuire, and Shearon Harris nuclear stations; and one responsible for Brunswick and Robinson nuclear stations. 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 2012 Organizational Update |
| 10738 | | Pt 02 | FSAR 13 | 13.01.01.03.01.04 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.4 is revised to read:<br><br>13.1.1.3.1.4 Site Executive(s) - Nuclear Operations (McGuire, Catawba, Oconee, Harris, Brunswick, Crystal River, Robinson, and Future WLS Site)<br><br>The site executive(s) in charge of nuclear operations reports to the executive(s) in charge of nuclear operations. The site executive in charge of nuclear operations 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. 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, | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | 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. | |
| 10739 | | Pt 02 | FSAR 13 | 13.01.01.03.01.05 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.5 is revised to read:<br><br>13.1.1.3.1.5 Executive - Nuclear Plant Development<br><br>The executive in charge of nuclear plant 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 plant development is assisted by a support staff and reports directly to the CNO. This position is supported by the functional managers in charge of engineering, licensing, project management, and operational readiness. | Duke Energy 2012 Organizational Update |
| 10740 | | Pt 02 | FSAR 13 | 13.01.01.03.01.06 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.6 is revised to read:<br><br>13.1.1.3.1.6 Executive - Major Projects<br><br>The executive in charge of major projects provides project management, engineering, and vendor oversight for selected large projects at the nuclear sites. Providing oversight for these significant projects provides more focus and continuity for upgrades and eliminates distractions for site management. Nuclear major projects is responsible for contracts, engineering, and management related to fleet and nuclear site major projects. The executive in charge of major projects reports to the CNO. | Duke Energy 2012 Organizational Update |
| 10741 | | Pt 02 | FSAR 13 | 13.01.01.03.01.07 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.7 is revised to read:<br><br>13.1.1.3.1.7 Executive - Corporate Governance and Operations Support<br><br>The executive in charge of corporate governance and operations support has the responsibility for support functions including licensing, quality assurance and oversight, technical services, emergency planning, performance improvement, and workforce in-processing. The functional manager of nuclear operations, the functional manager of protective services, the functional manager of organizational effectiveness, the functional manager of training for corporate governance and operations support, the functional manager of Fukushima responses, the functional manager of regulatory affairs, 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. Corporate governance and operations support provides assistance to help improve overall fleet performance. This centralized organization includes protective services (security and access services); regulatory affairs; central training; nuclear support services; operations support; and organizational effectiveness. The executive in charge of corporate governance and operations support reports to the CNO. | Duke Energy 2012 Organizational Update |
| 10742 | | Pt 02 | FSAR 13 | 13.01.01.03.01.08 | COLA Part 2, FSAR Chapter 13, Subsections 13.1.1.3.1.8 is replaced with the following:<br><br>13.1.1.3.1.8 Executive - Nuclear Engineering<br><br>The executive in charge of nuclear engineering provides support to the stations in severe accident analysis, safety analysis, nuclear design, core mechanical and thermal hydraulic analysis, fuel management, switchyard support, metallurgical laboratory services, material aging program, steam generator maintenance, ISI program support, QC inspector training and certification, procurement engineering, welding, and radiological engineering.<br><br>The executive - nuclear engineering reports to the CNO. Nuclear engineering provides broad engineering leadership and technical support to the nuclear sites, with emphasis on generic issues and consistent practices. This includes providing expertise in safety assessment with technical support in the areas of risk as-sessment, radiological engineering, and safety analysis; fuel management with leadership and technical support in the areas of fuel supply, spent fuel manage-ment, and reactor core mechanical and thermal hydraulic analysis; fleet electrical and procurement engineering with technical support in the areas of procurement engineering, nuclear process systems, and electrical systems and analysis; and programs and components support in the areas of steam generator inspections and maintenance, engineering programs, component engineering, material failure | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | analysis and materials science, equipment reliability, and ASME code inspections and testing.<br><br>Nuclear engineering provides record storage and document management ser-vices, technology planning, project control, and technical support for information technology applications and systems such as equipment databases, applications, infrastructure, and plant process information systems. | |
| 10743 | | Pt 02 | FSAR 13 | 13.01.01.03.01.09 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.9 is replaced with the following:<br><br>13.1.1.3.1.9 Executive - Nuclear Oversight<br><br>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.<br><br>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 the Nuclear Generation and new nuclear plant construction; administration of the employee concerns program; and maintenance of the Quality Assurance Program Manual. 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. | Duke Energy 2012 Organizational Update |
| 10744 | | Pt 02 | FSAR 13 | 13.01.01.03.01.10 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.10 is replaced with the following:<br><br>13.1.1.3.1.10 Additional Direct Reports to the CNO<br><br>There are two additional direct reports to the CNO. 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 2012 Organizational Update |
| 10745 | | Pt 02 | FSAR 13 | 13.01.01.03.01.11 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.1.11 is replaced with the following:<br><br>13.1.1.3.1.11 Functional Director - Nuclear Protective Services<br><br>The functional director in charge of nuclear protective services is responsible for providing guidance and direction to the functional manager - security at each site on the nuclear security, access authorization, and fitness for duty programs. The director - nuclear protective services reports to the executive - corporate governance and operations support. | Duke Energy 2012 Organizational Update |
| 10694 | | Pt 02 | FSAR 13 | 13.01.01.03.02.01 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.1 is revised to read:<br><br>13.1.1.3.2.1 The Functional Manager - Engineering<br><br>The functional manager in charge of engineering reports to the executive - nuclear engineering. The functional manager in charge of engineering is responsible for engineering activities related to the operation or maintenance of the plant and design change implementation support activities and other functions described in Section 13.1.1.2.1.<br><br>The functional manager in charge of engineering directs functional discipline engineers responsible for system engineering, design engineering, and engineering programs. | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | A single management organization oversees the engineering support for the station units. | |
| 10695 | | Pt 02 | FSAR 13 | 13.01.01.03.02.01.01 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.1.1 is revised to read:<br><br>13.1.1.3.2.1.1 Functional Manager - Plant Engineering<br><br>The functional manager in charge of plant engineering reports to the functional manager in charge of engineering and supervises a technical staff of engineers and other engineering specialists and coordinates their work with that of other groups. System engineering staff includes reactor engineering as discussed in Section 13.1.1.2.1. The functional manager in charge of plant engineering is responsible for providing direction and guidance to system engineers as follows:<br>• Monitoring the efficiency and proper operation of balance of plant and reactor systems.<br>• Planning programs for improving equipment performance, reliability, or work practices.<br>• Conducting operational tests and analyzing the results.<br>• Identification of plant spare parts for systems. | Duke Energy 2012 Organizational Update |
| 10696 | | Pt 02 | FSAR 13 | 13.01.01.03.02.01.02 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.1.2 is revised at the title and first paragraph to read:<br><br>13.1.1.3.2.1.2 Functional Manager - Design Engineering<br><br>The functional manager in charge of design engineering reports to the functional manager in charge of engineering and is responsible for: | Duke Energy 2012 Organizational Update |
| 10697 | | Pt 02 | FSAR 13 | 13.01.01.03.02.01.03 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.1.3 is revised at the title and first paragraph to read:<br><br>13.1.1.3.2.1.3 Functional Manager - Engineering Programs<br><br>The functional manager in charge of engineering programs reports to the functional manager in charge of engineering and is responsible for programs such as: | Duke Energy 2012 Organizational Update |
| 10698 | | Pt 02 | FSAR 13 | 13.01.01.03.02.02 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.2 is revised to read:<br><br>13.1.1.3.2.2 Functional Manager - Organizational Effectiveness<br><br>The functional manager in charge of - organizational effectiveness is responsible for those functions described in Subsection 13.1.1.2.2 and reports to the site executive in charge of plant management. The responsibilities of the manager in charge of nuclear safety assurance are fulfilled through the functional supervisors in charge of plant licensing and regulatory compliance, corrective actions and performance improvement, emergency preparedness. | Duke Energy 2012 Organizational Update |
| 10699 | | Pt 02 | FSAR 13 | 13.01.01.03.02.02.01 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.2.1 is revised to read:<br><br>13.1.1.3.2.2.1 Functional Supervisor In Charge of Plant Licensing and Regulatory Compliance<br><br>The responsibility of the functional supervisor in charge of plant licensing and regulatory compliance is to provide a coordinated focus for interface with the NRC and technical direction and administrative guidance for the licensing staff for those activities listed in Subsection 13.1.1.2.2. The functional supervisor in charge of plant licensing and regulatory compliance reports directly to the functional manager in charge of organizational effectiveness. | Duke Energy 2012 Organizational Update |
| 10700 | | Pt 02 | FSAR 13 | 13.01.01.03.02.02.02 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.2.2 is revised to read:<br><br>13.1.1.3.2.2.2 Functional Supervisor In Charge of - Corrective Actions and Performance Improvement<br><br>The responsibilities of the functional supervisor in charge of corrective actions and performance improvement includes establishing processes and procedures to facilitate identification and correction of conditions adverse to quality and implement corrective actions. The functional supervisor in charge of corrective actions and | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | performance improvement reports directly to the functional manager in charge of organizational effectiveness. | |
| 10701 | | Pt 02 | FSAR 13 | 13.01.01.03.02.02.03 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.2.3 is revised to read:<br><br>13.1.1.3.2.2.3 Functional Supervisor In Charge of - Emergency Preparedness<br><br>The functional supervisor in charge of emergency preparedness is responsible for:<br><br>• Coordinating and implementing the plant emergency response plan with state and local emergency plans.<br>• Developing, planning, and executing emergency drills and exercises including coordination of fire brigade training exercises with the engineer in charge of fire protection.<br>• Emergency action level development.<br>• NRC reporting associated with 10CFR50.54(q).<br><br>The functional supervisor in charge of emergency preparedness reports directly to the functional manager in charge of organizational effectiveness. | Duke Energy 2012 Organizational Update |
| 10702 | | Pt 02 | FSAR 13 | 13.01.01.03.02.02.04 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.2.4 to relocate 'Functional Manager In Charge of Security' to Subsection 13.1.3.2.4 and is replaced with the following:<br><br>13.1.1.3.2.2.4 Additional Organizational Effectiveness Support<br><br>A functional supervisor in charge of procedures develops quality site procedures and reports to the organizational effectiveness manager. In addition, a functional supervisor in charge of human performance works with the site to improve human performance on behalf of the organizational effectiveness manager. | Duke Energy 2012 Organizational Update |
| 10703 | | Pt 02 | FSAR 13 | 13.01.01.03.02.03 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.3 is revised to read:<br><br>13.1.1.3.2.3 Functional Manager - Finance<br><br>The manager in charge of finance is responsible for planning, scheduling, and implementing special projects and financial programs, and for providing oversight of accounting and payroll processes for the site. The manager in charge of finance reports to the site executive in charge of plant management. | Duke Energy 2012 Organizational Update |
| 10704 | | Pt 02 | FSAR 13 | 13.01.01.03.02.04 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.4, Functional Manager in Charge of Environment, Safety, and Health is removed and replaced with the former Subsection 13.1.1.3.2.5 and revised to read:<br><br>13.1.1.3.2.4 Functional Manager - Training and Development<br><br>The functional manager in charge of training and development is responsible for training programs at the site required for the safe and proper operation and maintenance of the plant including:<br><br>• Operations training programs<br>• Plant staff training programs<br>• Plant access training<br>• Emergency plan training<br>• Radiation worker training<br><br>The functional manager in charge of training may seek assistance from other departments within the company or outside specialists, such as educators and manufacturers. The manager in charge of training supervises a staff of training supervisors who coordinate the development, preparation and presentation of training programs for nuclear plant personnel and reports to the site executive in charge of plant management. | Duke Energy 2012 Organizational Update |
| 10705 | | Pt 02 | FSAR 13 | 13.01.01.03.02.05 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.5 is renumbered to Subsection 13.1.1.3.2.4. New Subsection 13.1.1.3.2.5 is added as follows:<br><br>13.1.1.3.2.5 Functional Manager In Charge of Security | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | The functional manager in charge of security is responsible for:<br><br>• Implementation and enforcement of security directives, procedures and instructions received from appropriate authorities.<br>• Day-to-day supervision of the security guard force.<br>• Administration of the security program.<br><br>The functional manager in charge of security reports directly to the functional director - nuclear protective services and indirectly to the site executive - nuclear operations. | |
| 10720 | | Pt 02 | FSAR 13 | 13.01.01.03.02.06 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.1.3.2.6 is removed. | Duke Energy 2012 Organizational Update |
| 10706 | | Pt 02 | FSAR 13 | 13.01.02.01.01.01 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.1.1 to read:<br><br>13.1.2.1.1.1 Functional Manager - Maintenance<br><br>Maintenance of the plant is performed by the maintenance department mechanical, electrical, and instrumentation and control disciplines. The functions of this department are to perform preventive and corrective maintenance, equipment testing, and implement modifications as necessary.<br><br>The manager in charge of maintenance is responsible for the performance of preventive and corrective maintenance and modification activities required to support operations, including compliance with applicable standards, codes, specifications, and procedures. The manager in charge of maintenance reports to the plant manager and provides direction and guidance to the maintenance discipline functional managers and maintenance support staff. | Duke Energy 2012 Organizational Update |
| 10707 | | Pt 02 | FSAR 13 | 13.01.02.01.01.04 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.1.4 to read:<br><br>13.1.2.1.1.4 Functional Manager - Work Control<br><br>The functional manager in charge of work control is responsible for planning, scheduling, and coordinating maintenance, modification, and testing activities during power operations and shutdown periods. This includes taking necessary measures to minimize risk to the plant and personnel during the above activities.<br><br>The functional manager in charge of work control reports to the plant manager. | Duke Energy 2012 Organizational Update |
| 10708 | | Pt 02 | FSAR 13 | 13.01.02.01.01.05 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.1.5 is revised as follows:<br><br>Subsection title is revised to read:<br><br>13.1.2.1.1.5 Functional Manager - Radiation Protection<br><br>The last paragraph is revised to read:<br><br>The functional manager in charge of radiation protection reports indirectly to and receives support from the corporate functional manager in charge of nuclear support. | Duke Energy 2012 Organizational Update |
| 10709 | | Pt 02 | FSAR 13 | 13.01.02.01.01.06 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.1.6 is revised at the Subsection title and the first paragraph as follows:<br><br>13.1.2.1.1.6 Functional Supervisor(s) In Charge of Radiation Protection<br><br>The functional supervisors in charge of radiation protection are responsible for carrying out the day-to-day operations and programs of the radiation protection department as listed in Subsection 13.1.1.2.5. | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| 10710 | | Pt 02 | FSAR 13 | 13.01.02.01.01.07 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.1.7 is revised at the first bulleted item to read:<br><br>• As delegated authority by the functional manager in charge of radiation protection, stop work or order an area evacuated (in accordance with approved procedures) when, in his or her judgment, the radiation conditions warrant such an action and such actions are consistent with plant safety. | Duke Energy 2012 Organizational Update |
| 10711 | | Pt 02 | FSAR 13 | 13.01.02.01.01.08 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.1.8 is revised to read:<br><br>13.1.2.1.1.8 Functional Manager - Chemistry<br><br>The functional manager in charge of chemistry is responsible for development, implementation, and direction and coordination of the chemistry, radiochemistry and nonradiological environmental monitoring programs. The chemistry department has charge of overall operation of the hot lab, cold lab, emergency offsite facility lab, and non-radiological environmental monitoring. The functional manager in charge of chemistry is responsible for the development, administration, and implementation of procedures and programs which provide for effective compliance with environmental regulations. The functional manager in charge of chemistry reports to the plant manager and directly supervises the chemistry supervisors and chemistry technicians as assigned. The functional manager in charge of chemistry reports indirectly to and receives support from the corporate located functional manager in charge of nuclear support services. Three functional supervisors over chemistry disciplines assist the functional manager in charge of chemistry. | Duke Energy 2012 Organizational Update |
| 10712 | | Pt 02 | FSAR 13 | 13.01.02.01.01.09 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.1.9 is relocated to Subsection 3.1.2.1.2.10. | Duke Energy 2012 Organizational Update |
| 10713 | | Pt 02 | FSAR 13 | 13.01.02.01.02.01 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.2.1 is revised to read:<br><br>13.1.2.1.2.1 Functional Manager - Operations<br><br>The functional manager in charge of operations has overall responsibility for the day-to-day operation of the plant. The functional manager in charge of operations reports to the plant manager and is assisted by the assistant functional manager in charge of operations and assistant functional manager in charge of operations support. The functional manager in charge of operations receives support from the engineer in charge of fire protection for coordination of operations related fire protection activities. The functional manager in charge of operations or the assistant functional manager of operations is SRO licensed. | Duke Energy 2012 Organizational Update |
| 10714 | | Pt 02 | FSAR 13 | 13.01.02.01.02.02 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.2.2 is revised to read:<br><br>13.1.2.1.2.2 Assistant Functional Manager - Operations<br><br>The assistant functional manager in charge of operations, under the direction of the functional manager in charge of operations, is responsible for:<br><br>• Shift plant operations in accordance with the operating license, technical specifications, and written procedures.<br>• Providing supervision of operating shift personnel for operational shift activities including those of emergency and firefighting teams.<br>• Coordinating with the assistant functional manager in charge of operations support and other plant staff sections.<br>• Verifying that nuclear plant operating records and logs are properly prepared, reviewed, evaluated and turned over to the assistant functional manager in charge of operations support.<br><br>The assistant functional manager in charge of operations is assisted in these areas by the managers in charge on-shift who direct the operating shift personnel. The assistant functional manager in charge of operations reports to the functional manager in charge of operations and in the absence of the manager in charge of operations or assistant functional manager in charge of operations support may assume the duties and responsibilities of either of these positions. | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| 10715 | | Pt 02 | FSAR 13 | 13.01.02.01.02.03 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.2.3 is revised to read:<br><br>13.1.2.1.2.3 Assistant Functional Manager In Charge of Operations Support<br><br>The assistant functional manager in charge of operations support, under the direction of the functional manager in charge of operations, is responsible for:<br><br>• Directing and guiding plant operations support activities in accordance with the operating license, technical specifications, and written procedures.<br>• Providing supervision of operating support personnel, for operations support activities, and coordination of support activities.<br>• Providing for nuclear plant operating records and logs to be turned over to the nuclear records group for maintenance as quality assurance records.<br><br>The assistant functional manager in charge of operations support is assisted by the supervisors of work management, operations procedures group, and other support personnel. In the absence of the functional manager in charge of operations or assistant functional manager in charge of operations, the assistant functional manager in charge of operations support may assume the duties and responsibilities of either of these positions. | Duke Energy 2012 Organizational Update |
| 10716 | | Pt 02 | FSAR 13 | 13.01.02.01.02.04 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.2.4, last paragraph is revised to read:<br><br>The manager in charge on-shift is assisted in carrying out the above duties by the supervisors in charge on shift and the operating shift personnel. The manager in charge on-shift reports to the assistant functional manager in charge of operations. | Duke Energy 2012 Organizational Update |
| 10717 | | Pt 02 | FSAR 13 | 13.01.02.01.02.09 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.2.9, subsection title is revised to read:<br><br>13.1.2.1.2.9 Engineer - Fire Protection | Duke Energy 2012 Organizational Update |
| 10718 | | Pt 02 | FSAR 13 | 13.01.02.01.02.10 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.2.10, relocated from Subsection 13.1.2.1.1.9, is revised to read:<br><br>13.1.2.1.2.10 Radwaste Operations Lead<br><br>The Radwaste Operations lead is responsible for the development , implementation, direction, and coordination of radwaste activities. The Radwaste Operations Lead reports to the operations manager in charge on-shift. The Radwaste Operations lead supervises radwaste operators assigned to the radwaste area. | Duke Energy 2012 Organizational Update |
| 10719 | | Pt 02 | FSAR 13 | 13.01.02.01.03 | COLA Part 2, FSAR Chapter 13, Subsection 13.1.2.1.3, first paragaph is revised to add a comma following 'Regulatory Guide 1.114.' | Duke Energy 2012 Organizational Update |
| 10769 | | Pt 02 | FSAR 13 | 13.01.04 | COLA Part 2, FSAR Chapater 13, Subsection 13.1.4 is revised to remove Subsection 13.1.1.3.2.6 from the listing of Subsections addressing WLS COL 13.1-1. | Duke Energy 2012 Organizational Update |
| 10747 | | Pt 02 | FSAR 13 | 13.01.F / F13.1-201 | COLA Part 2, FSAR Figure 13.1-201 is revised to reflect the Duke Energy 2012 Organizational Update. | Duke Energy 2012 Organizational Update |
| 10748 | | Pt 02 | FSAR 13 | 13.01.F / F13.1-203 | COLA Part 2, FSAR Figure 13.1-203 is revised to reflect the Duke Energy 2012 Organizational Update. | Duke Energy 2012 Organizational Update |
| 10749 | | Pt 02 | FSAR 13 | 13.01.F / F13.1-204 | COLA Part 2, FSAR Figure 13.1-204 is revised to reflect the Duke Energy 2012 Organizational Update. | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| 10746 | | Pt 02 | FSAR 13 | 13.01.T / T13.1-201 | COLA Part 2, FSAR Table 13.1-201 is revised to reflect the Duke Energy 2012 Organizational Update. | Duke Energy 2012 Organizational Update |
| 10750 | | Pt 02 | FSAR 13 | 13AA.F / F13AA-201 | COLA Part 2, FSAR Figure 13AA-201 is revised to reflect the Duke Energy 2012 Organizational Update. | Duke Energy 2012 Organizational Update |
| 10872 | | Pt 02 | FSAR 17 | 17.05 | COLA Part 2, FSAR Chapter 17, Section 17.5 is revised at the first and third paragraphs to remove 'Plant' from title of QAPD to read:<br><br>First Paragraph:<br>The Quality Assurance Program in place during the design, construction, and operations phases is described in the "Nuclear Development Quality Assurance Program Description (QAPD)", which is maintained as a separate document.<br><br>Third paragraph:<br>The QAPD is the Duke Energy Nuclear Development Quality Assurance Program Description. | Conforming Change to Part 11.A, QAPD, "Nuclear Development Quality Program Description." |
| 10857 | | Pt 02 | FSAR 17 | 17.08<br>201 | COLA Part 2, FSAR Chapter 17, subsection 17.8, Reference #201 is revised to read:<br>201. Enercon Services, Inc., "Enercon Quality Assurance Project Planning Document," PPD No. DUK010, Revision 14, June, 2012. | Editorial to reflect the correct revision and date. |
| 10636 | | Pt 02 | FSAR 17 | 17.08<br>203 | COLA Part 2, FSAR Chapter 17, subsection 17.8, Reference #203 is revised to read:<br>203. Nuclear Energy Institute, Technical Report NEI 06-14A, "Quality Assurance Program Description," Revision 7, August 2010." | Editorial to reflect the correct date |
| 10688 | | Pt 02 | FSAR 19 | 19.58.T / T19.58-201<br>SH03<br>SH04 | COLA Part 2, FSAR Table 19.58-201, Sheets 3 and 4 are revised as reflected on Duke Energy supplemental response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 8, Item 1. | Duke Energy supplemental response to RAI LTR 003, RAI 10.04.05-02, Enclosure 1, Attachment 8, Item 1, WLG2012.06-10 |
| 10873 | | Pt 02 | FSAR 19 | 19.58.T / T19.58-201<br>SH04 | COLA Part 2, FSAR Table 19.58-201, Sheet 4 is revised at the entry 'External Flood' under the column heading 'Explanation of Applicability Evaluation,' fifth paragraph to read:<br><br>As discussed in Subsection 2.4.4.3, the PMF event on the Broad River, and inundated Make-Up Pond A, including effects of dam failures and the coincident wind wave activity, results in a flood elevation of 585.64 ft. Thus, the Make-Up Pond B event described above remains the bounding event for external flooding and provides reasonable assurance that the plant has adequate protection from external flooding. | Duke Energy Supplemental Update to Information Addressing Hydrology Associated with Off-Site Water Storage, Enclosure 1, Attachment 1, WLG2012.08-01 |
| **Pt 05** | | | | | | **4 COLA Changes** |
| 10620 | | Pt 05 | | APP09 | COLA Part 5, Emergency Plan, Appendix 9 is revised under the sub-heading 'Communications,' second paragraph following the bulleted items to read:<br><br>Existing commercial telephone service will serve as the designated backup means of communications in the event of a Selective Signaling System or Decision Line failure. Duke Energy has telecommunications capabilities that can provide access to long distance networks without having to go through a local telephone company switch. Long distance calls from the EOF are routed through Duke's corporate Private Branch Exchange (PBX) in Charlotte directly to either a primary or backup long distance carrier. telephones are provided for the respective | Duke Energy Response to RAI 13.03-87, Attachment 1, WLG2012.06-01 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | Federal and State representatives, including lines for faxes. Also, telephones for the NRC Emergency Telecommunications System, the Emergency Notification System (ENS) and Health Physics Network (HPN), are available. Fax machines are available in the EOF to support the transmission of information between the Emergency Response Facilities and with State, local, and Federal authorities. | |
| 10621 | | Pt 05 | | APP09 | COLA Part 5, Emergency Plan, Appendix 9 is revised under the sub-heading 'Local Recovery Center' to add a new second paragraph as follows:<br><br>Space is also provided for accommodating NRC and offsite responders at the Duke Energy In-Processing Facility (named the Kings Mountain Generation Support Facility) located approximately 15.5 miles (straight line distance) from the Lee Facility. The space is sufficient for members of an NRC site team and Federal, State, and local responders; includes an area for briefing emergency response personnel, communication capability with other licensee and off site response facilities, access to plant data and radiological information and access to copying equipment and supplies. | Duke Energy Response to RAI 13.03-87, Attachment 1, WLG2012.06-01 |
| 10622 | | Pt 05 | | APP09 | COLA Part 5, Emergency Plan, Appendix 9 is revised under the sub-heading 'Conclusion' to read:<br><br>The EOF meets all functional and design criteria provided in NUREG-0696 for an Emergency Operations Facility with the exception that it is located more than 25 miles from the Lee Nuclear Site. This document describes Duke's approach to assuring that these functional and design criteria are met and maintained. The consolidation of Duke corporate emergency response functions into a centralized facility will facilitate a timely and effective response to a radiological emergency at the Lee Nuclear Station. | Duke Energy Response to RAI 13.03-87, Attachment 1, WLG2012.06-01 |
| 10609 | | Pt 05 | | II.T / TII-2 | COLA Part 5, Emergency Plan Section II, Table II-2 Sheet 2 of 2 is revised to include the following bullet following Footnote 3:<br>* a Radiation Protection (RP) qualified individual assigned other duties is required to be on-shift with the qualification to perform off-site dose projections until relieved by staff augmentation of the dose assessor position. | Duke Energy Response to RAI 13.03-77, Attachment 1, WLG2012.06-01 |
| **Pt 09** | | | | | | **2 COLA Changes** |
| 10832 | | Pt 09 | | 09.01 01.00.T / T1.0-1 | COLA Part 9, Section 9.1, Table 1.0-1 is revised to reflect changes to the Duke Energy 2012 Integrated Resource Plan. | Duke Energy 2012 Integrated Resource Plan |
| 10830 | | Pt 09 | | 09.01 01.00.T / T1.0-2 | COLA Part 9, Section 9.1, Table 1.0-2 is revised to reflect changes to the Duke Energy 2012 Integrated Resource Plan. | Duke Energy 2012 Integrated Resource Plan |
| **Pt 10** | | | | | | **4 COLA Changes** |
| 10689 | | Pt 10 | | LC06 | COLA Part 10, Lee Nuclear Station Proposed License Conditions, License Condition No. 6, schedule item 'e' is revised to read:<br><br>e. an emergency response data system (ERDS) implementation program plan consistent with 10 CFR Part 50, Appendix E, Section VI. | Editorial |
| 10623 | | Pt 10 | | LC12 | COLA Part 10, Lee Nuclear Station Proposed License Conditions, is revised to add the following License Condition related to Fukushima actions:<br><br>12. FUKUSHIMA ACTIONS:<br><br>A. MITIGATION STRATEGIES<br>PROPOSED LICENSE CONDITION:<br>Prior to initial fuel load, the licensee shall fully implement the following actions associated with mitigation strategies including procedures, guidance, training, and acquisition, staging, or installing of equipment needed for the strategies: | Duke Energy response to RAI LTR 105 S1, RAI No. 01.05-02, -03, and -04, Enclosure 4, WLG2012.06-02 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | 1. Develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment and spent fuel pool (SFP) cooling capabilities following a beyond-design-basis external event. These strategies must:<br>• Be capable of mitigating a simultaneous loss of all ac power and loss of normal access to the normal heat sink and,<br>• Have adequate capacity to address challenges to core cooling, containment, and SFP cooling capabilities at all units on the Lee site and,<br>• Have the capability to be implemented in all modes.<br>2. Provide reasonable protection for the associated equipment from external events. Such protection must demonstrate that there is adequate capacity to address challenges to core cooling, containment, and SFP cooling capabilities at all units on the Lee site.<br>3. The licensee shall within one (1) year after issuance of the Lee COL, submit to the NRC an overall integrated plan, including a description of how compliance with the requirements described in this license condition will be achieved.<br>4. The licensee shall provide to the NRC an initial status report sixty (60) days following issuance of the Lee COL and updates at six (6) month intervals following submittal of the overall integrated plan described above which delineates progress made in implementing the requirements of this license condition.<br><br>B. RELIABLE SPENT FUEL POOL LEVEL INSTRUMENTATION<br>PROPOSED LICENSE CONDITION:<br><br>Prior to initial fuel load, the licensee shall fully implement the following requirements for SFP level indication:<br>1. The SFP level instrumentation shall include the following design features:<br>• Arrangement: The SFP level instrument channels shall be arranged in a manner that provides reasonable protection of the level indication function against missiles that may result from damage to the structure over the spent fuel pool. This protection may be provided by locating the safety-related instruments to maintain instrument channel separation within the spent fuel pool area, and to utilize inherent shielding from missiles provided by existing recesses and corners in the spent fuel pool structure.<br>• Qualification: The level instrument channels shall be reliable at temperature, humidity, and radiation levels consistent with the SFP water at saturation conditions for an extended period.<br>• Power supplies: Power for instrumentation channels shall be supplied from sources independent of the plant alternating current (ac) and direct current (dc) power distribution systems, such as portable generators or replaceable batteries. Power supply designs should provide for quick and accessible connection of sources independent of the plant ac and dc power distribution systems. Onsite generators used as an alternate power source and replaceable batteries used for instrument channel power shall have sufficient capacity to maintain the level indication function until offsite resource availability is reasonably assured.<br>• Accuracy: The instrumentation shall maintain its designed accuracy following a power interruption or change in power source without recalibration.<br>• Display: The display shall provide on-demand or continuous indication of spent fuel pool water level.<br>2. The SFP level instrumentation shall be maintained available and reliable through appropriate development and implementation of a training program. Personnel shall be trained in the use and the provision of alternate power to the safety-related level instrument channels.<br>3. The licensee shall within one (1) year after issuance of the Lee COL, submit to the NRC an overall integrated plan, including a description of how compliance with the requirements described in this license condition will be achieved.<br>4. The licensee shall provide to the NRC an initial status report sixty (60) days following issuance of the Lee COL and updates at six (6) month intervals following submittal of the overall integrated plan described above which delineates progress made in implementing the requirements of this license condition.<br><br>C. EMERGENCY PLANNING ACTIONS<br>PROPOSED LICENSE CONDITION:<br>1. Staffing – At least two (2) years prior to scheduled initial fuel load, the licensee shall have performed an assessment of the onsite and augmented staffing capability to satisfy the regulatory requirements for response to a multi-unit event. The staffing assessment will be performed in accordance with NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities", or other NRC | |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | endorsed guidance in effect six months prior to commencement of the assessment.<br>At least two (2) years prior to scheduled initial fuel load, the licensee shall revise the Lee Emergency Plan to include the following:<br>• Incorporation of corrective actions identified in the staffing assessment described above.<br>• Identification of how the augmented staff will be notified given degraded communications capabilities.<br>2. Communications - At least two (2) years prior to scheduled initial fuel load, the licensee shall have performed an assessment of on-site and off-site communications systems and equipment required during an emergency event to ensure communications capabilities can be maintained during prolonged station blackout conditions. The communications capability assessment will be performed in accordance with NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," or other NRC approved guidance in effect six months prior to commencement of the assessment.<br>At least one hundred eighty (180) days prior to scheduled initial fuel load, the licensee shall complete implementation of corrective actions identified in the communications capability assessment described above, including any related emergency plan and implementing procedure changes and associated training. | |
| 10690 | | Pt 10 | | LC12 | COLA Part 10, Lee Nuclear Station Proposed License Conditions, License Condition 12 is further revised as follows:<br><br>Under the subheading A, Mitigation Strategies, the PROPOSED LICENSE CONDITION is revised to read:<br><br>1. Prior to initial fuel load, the licensee shall address the following requirements:<br>a. The licensee shall develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment and spent fuel pool (SFP) cooling capabilities following a beyond-design-basis external event.<br>b. These strategies must be capable of mitigating a simultaneous loss of all ac power and loss of normal access to the normal heat sink and have adequate capacity to address challenges to core cooling, containment, and SFP cooling capabilities at all units on the Lee site.<br>c. The licensee must provide reasonable protection for the associated equipment from external events. Such protection must demonstrate that there is adequate capacity to address challenges to core cooling, containment, and SFP cooling capabilities at all units on the Lee site.<br>d. The licensee must be capable of implementing the strategies in all modes.<br>e. Full compliance shall include procedures, guidance, training, and acquisition, staging, or installing of equipment needed for the strategies.<br>2. The licensee shall within one (1) year after issuance of the Lee COL, submit to the NRC an overall integrated plan, including a description of how compliance with the requirements described in this license condition will be achieved.<br>3. The licensee shall provide to the NRC an initial status report sixty (60) days following issuance of the Lee COL and updates at six (6) month intervals following submittal of the overall integrated plan described above which delineates progress made in implementing the requirements of this license condition. | Conformance with NRC EA-049 |
| 10691 | | Pt 10 | | LC12 | COLA Part 10, Lee Nuclear Station Proposed License Conditions, License Condition 12 is further revised as follows:<br><br>Under the subheading C, Emergency Planning Actions, the PROPOSED LICENSE CONDISTION is revised to read:<br><br>1. Staffing – At least two (2) years prior to scheduled initial fuel load, the licensee shall have performed assessments of the onsite and augmented staffing capability to satisfy the regulatory requirements for response to a multi-unit event. The staffing assessments will be performed in accordance with NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0.<br>At least two (2) years prior to scheduled initial fuel load, the licensee shall revise the Lee Emergency Plan to include the following:<br>• Incorporation of corrective actions identified in the staffing assessments described above.<br>• Identification of how the augmented staff will be notified given degraded communications capabilities.<br>2. Communications - At least two (2) years prior to scheduled initial fuel load, the licensee shall have performed an assessment of on-site and off-site communications systems and equipment required during an emergency event to ensure communications capabilities can be maintained during prolonged station blackout | Conformance with NEI 12-01, Rev. 0 |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | conditions. The communications capability assessment will be performed in accordance with NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0.<br>At least one hundred eighty (180) days prior to scheduled initial fuel load, the licensee shall complete implementation of corrective actions identified in the communications capability assessment described above, including any related emergency plan and implementing procedure changes and associated training. | |
| **Pt 11** | | | | | | **30 COLA Changes** |
| 10864 | | Pt 11 | | 11.A<br>QAPD<br>Cover page | COLA Part 11, QAPD Cover page is revised as follows:<br><br>Title: Nuclear Development Quality Assurance Program Description<br><br>Process/Program Owner: Vice-President, Nuclear Oversight Department<br><br>Prepared by: Nuclear Development QA<br><br>Reviewed by: Corporate manager responsible for Audits and Programs<br><br>Approved by: Vice President Nuclear Oversight<br><br>Approved by: Executive Vice President Nuclear Generation and Chief Nuclear Officer | Duke Energy 2012 Organizational Update |
| 10865 | | Pt 11 | | 11.A<br>QAPD<br>Cover/Policy Statement | COLA Part 11, QAPD Policy Statement is revised as follows:<br><br>Title: Duke Energy Carolinas POLICY STATEMENT<br><br>COLA Part 11, QAPD Policy Statement is revised as follows:<br><br>Title: Duke Energy Carolinas POLICY STATEMENT<br><br>Second paragraph, first sentence is revised to remove 'Plant' to read:<br><br>The Duke Nuclear Plant Development Quality Assurance Program (QAP) is the Quality Assurance Program Description (QAPD) provided in this document and the associated implementing documents.<br><br>The signature line is revised to add a date field, and the written title is revised to read:<br>Jim Rogers<br>Chairman, President an Chief Executive Officer<br>Duke Energy Corporation | Duke Energy 2012 Organizational Update |
| 10866 | | Pt 11 | | 11.A<br>QAPD<br>I.01.00 | COLA Part 11, QAPD Section 1.0, Introduction is revised to remove 'Plant' from 'Nuclear Plant Development' to read 'Nuclear Development' (3 instances) | Duke Energy 2012 Organizational Update |
| 10753 | | Pt 11 | | 11.A<br>QAPD<br>I.01.01 | COLA Part 11, QAPD Section 1.1, last paragraph is revised to read:<br><br>The definitions provided in ASME NQA-1-1994, Part I, Section 1.4 apply to select terms as used in this document. | Duke Energy 2012 Organizational Update |
| 10754 | | Pt 11 | | 11.A<br>QAPD<br>II.01.00 | COLA Part 11, Part II, Section 1.0, third paragraph is revised to read:<br><br>The Duke Energy Nuclear Development organization is responsible for new nuclear plant licensing, engineering, procurement, construction, startup and operations development activities. There are several organizations within Duke Energy that implement and support the QAPD. These organizations include, but are not limited to Nuclear Development, Nuclear Supply Chain and Nuclear Oversight. | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| 10846 | | Pt 11 | | 11.A QAPD II.01.00 | COLA Part 11, Part II, Section 1.0, first paragraph, is revised to read:<br><br>This Section describes the Duke Energy Corporation organizational structure, functional responsibilities, levels of authority and interfaces for establishing, executing, and verifying QAPD implementation. The organizational structure includes corporate support, offsite and onsite functions for Nuclear Development including interface responsibilities for multiple organizations performing quality-related functions. Implementing documents assign more specific responsibilities and duties, and define the organizational interfaces involved in conducting activities and duties within the scope of this QAPD. Management gives careful consideration to the timing, extent and effects of organizational structure changes. | Duke Energy 2012 Organizational Update |
| 10847 | | Pt 11 | | 11.A QAPD II.01.00 | COLA Part 11, Part II, Section 1.0, fifth and sixth paragraphs are revised to read:<br><br>Design, engineering and environmental services are provided to the Duke Energy Nuclear Development organization by a contract that identifies the Engineer and Constructor and invokes the applicable quality program requirements described in this document to applicable contractors and subcontractors.<br><br>The following sections describe the reporting relationships, functional responsibilities and authorities for organizations implementing and supporting the Nuclear Development QA Program. | Duke Energy 2012 Organizational Update |
| 10848 | | Pt 11 | | 11.A QAPD II.01.01 | COLA Part 11, Part II, Section 1.1, the beginning of the first paragraph is revised to read:<br><br>The Chairman, President and Chief Executive Officer has overall responsibility for Design, Construction, and Operation of generation and transmission facilities. Reporting to the Chairman, President and Chief Executive Officer is the Chief Nuclear Officer (CNO) who has the overall authority and responsibility for the QAP and directs several activities including the operation of the nuclear sites through the Senior Vice Presidents, Nuclear Operations. Also reporting to the Chairman, President and Chief Executive Officer 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; and support for contracts, engineering and management related to new plant construction as requested; and administration of the Access Authorization, Fitness for Duty, and Fatigue Rule programs. The interface with organizations providing those activities are described in Section 1.3. As such, the attainment of quality rests with those assigned the responsibility of performing the activity. The verification of quality is assigned to the qualified personnel independent of the responsibility for performance or direct supervision of the activity. The degree of independence varies commensurate with the activity's importance to safety. | Duke Energy 2012 Organizational Update |
| 10755 | | Pt 11 | | 11.A QAPD II.01.02 | COLA Part 11, Part II, Section 1.2 is revised to read:<br><br>Nuclear Generation has direct line responsibility for all Duke Energy nuclear station operations. Nuclear Generation is responsible for achieving quality results during engineering, preoperational testing, operation, testing, maintenance and modification of the Corporation's nuclear stations and with complying with applicable codes, standards and NRC regulations. The functions of Nuclear Generation are directed by the CNO.<br><br>The CNOformulates, recommends, and carries out plans, policies, and programs related to the nuclear generation of electric power. The CNOis informed of significant problems or occurrences relating to safety and QA through established administrative procedures, and participates directly in their resolution, when necessary.<br><br>Nuclear Generation is organized into eight divisions. The activities of each division are directed by an executive who reports to the CNO. Three of those divisions are headed by the three executives of Nuclear Operations, which are discussed in the Nuclear Site description. The remaining five divisions, which comprise the Nuclear General Office (NGO), are: Nuclear Engineering, Nuclear Major Projects, Nuclear Development, Nuclear Oversight, and Corporate Governance and Operations Support. | Duke Energy 2012 Organizational Update |
| 10850 | | Pt 11 | | 11.A QAPD II.01.02.01 | COLA Part 11, QAPD Part II, Section 1.2.1 is revised to read:<br><br>There are three executives of Nuclear Operations, each reporting directly to the CNO and located in the NGO. Each Senior Vice President – Nuclear Operations is responsible for oversight of the management and operation | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | of activities associated with the efficient, safe, and reliable operation of his designated nuclear stations. Reporting to each executive are the Site executives for the respective nuclear station. Reporting to the Site executive for each nuclear station is a Nuclear Manager who is assigned the direct responsibility for the safe operation of the facility including operations, maintenance, work management, radiation protection, and chemistry. Also reporting to the Site executive is an Organizational Effectiveness manager, who is responsible for regulatory affairs, emergency preparedness, performance improvement, human performance, environmental services, health and safety, and a Site Training manager. Each Site executive also has an Engineering manager, a Security manager, and a Major Projects manager matrixed to provide services to the site. Figure 2 shows a typical nuclear site organization. | |
| 10756 | | Pt 11 | | 11.A QAPD II.01.02.02 | COLA Part 11, Part II, Section 1.2.2 is revised to read:<br><br>Nuclear Generation, Nuclear General Office (NGO) is organized into five divisions. The activities of each division are directed by an executive who reports to the CNO. The five divisions within the Nuclear General Office are: Nuclear Development, Nuclear Engineering, Nuclear Major Projects, Nuclear Oversight, and Corporate Governance and Operations Support.<br><br>1. Nuclear Development<br><br>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, site layout, staffing and program development. The executive in charge of Nuclear Development is assisted by a support staff and reports directly to the CNO. Nuclear Development responsibilities include the establishment and execution of a contract or contracts for the engineering, procurement, construction, and startup activities of new nuclear plants up to the transition point when a Site Executive is named to assume those responsibilities. Figure 3 shows the Nuclear Development/ Construction Organization. As a new nuclear plant approaches startup, the site organization transitions from the development focused organization in Figure 3 to the Operating Plant Site Organization shown in Figure 2.<br><br>2. Nuclear Engineering<br><br>The executive for Nuclear Engineering reports to the CNO. Nuclear Engineering provides broad engineering leadership and technical support to the nuclear sites with emphasis on generic issues and consistent practices, providing expertise in safety assessment with technical support in the areas of risk assessment, radiological engineering, and safety analysis; fuel management with leadership and technical support in the areas of fuel supply, spent fuel management, reactor core mechanical and thermal hydraulic analysis; the fleet electrical and procurement engineering with technical support in the areas of procurement engineering, nuclear process systems, and electrical systems and analysis; and programs and components support in the areas of steam generator inspections and maintenance, engineering programs, component engineering, material failure analysis and materials science, equipment reliability, and ASME Code inspections and testing.<br><br>Nuclear Engineering provides record storage and document management services, technology planning, project control and technical support for information technology applications and systems such as equipment databases, applications, infrastructure, and plant process information systems.<br><br>3. Nuclear Major Projects<br><br>The executive for Nuclear Major Projects reports to the CNO. Nuclear Major Projects is responsible for contracts, engineering and management related to fleet and nuclear site major projects.<br><br>4. Nuclear Oversight (NOS)<br><br>The executive for Nuclear Oversight (NOS) reports to the CNO. NOS provides oversight of the general office and nuclear sites with QA program audits, performance assessment, procurement quality, supplier verification, and quality control. In addition, NOS provides an advisory function to senior management through the Nuclear Safety Review Board (NSRB). The NOS executive has the authority and organizational freedom to: identify | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | 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.<br><br>The NOS executive 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, NOS personnel have the authority to stop work as discussed in Section 1.5 pending satisfactory resolution of the identified problem.<br><br>Also reporting to the executive for Nuclear Oversight is Employee Concerns, which investigates concerns identified through the Employee Concerns Programs to determine their validity and initiate corrective actions as appropriate. Employee Concerns also promotes the Safety Conscious Work Environment (SCWE) Program and is sensitive to SCWE concerns during investigations performed.<br><br>5. Corporate Governance and Operations Support<br><br>The executive for Corporate Governance and Operations Support reports to the CNO. Corporate Governance and Operations Support provides assistance to help improve overall fleet performance. This centralized organization includes Protective Services (Security and Access Services); Regulatory Affairs; Central Training; Nuclear Support Services; Operations Support; and Organizational Effectiveness. | |
| 10757 | | Pt 11 | | 11.A QAPD II.01.02.03 | COLA Part 11, QAPD Part II, Section 1.2.3 is removed. | Duke Energy 2012 Organizational Update |
| 10867 | | Pt 11 | | 11.A QAPD II.01.03.02 | COLA Part 11, Part II, Section 1.3.2 is revised to read:<br><br>1.3.2 Environmental Services<br><br>Environmental, Health and Safety will provide environmental and laboratory support services. | Duke Energy 2012 Organizational Update |
| 10851 | | Pt 11 | | 11.A QAPD II.01.03.03 | COLA Part 11, Part II, QAPD Section 1.3.3 is revised to read:<br><br>1.3.3 Nuclear Finance<br><br>Nuclear Finance provides support for the nuclear sites in the areas of decommissioning, workforce planning and development. | Duke Energy 2012 Organizational Update |
| 10852 | | Pt 11 | | 11.A QAPD II.01.03.04 | COLA Part 11, QAPD Part II, Section 1.3.4 is revised to read:<br><br>1.3.4 Customer Operations<br>Customer Operations provides electrical transmission, distribution, and switchyard engineering, as well as providing electrical maintenance and testing support. | Duke Energy 2012 Organizational Update |
| 10853 | | Pt 11 | | 11.A QAPD II.01.03.05 | COLA Part 11, QAPD Part II, Section 1.3.5 is revised to read:<br><br>1.3.5 Human Resources<br><br>Human Resources provides support for the nuclear sites Access Authorization, FFD, and Fatigue Rule programs. | Duke Energy 2012 Organizational Update |
| 10758 | | Pt 11 | | 11.A QAPD II.01.03.06 | COLA Part 11, QAPD Part II, Section 1.3.6, last sentence is revised to read:<br><br>They are also responsible for the development and maintenance of selected information technology services and support, including electronic document management, some of which support QA related activities. | Duke Energy 2012 Organizational Update |
| 10854 | | Pt 11 | | 11.A QAPD II.01.03.07 | COLA Part 11, QAPD Part II, Section 1.3.7 is revised to read:<br><br>1.3.7 Supply Chain | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
|---|---|---|---|---|---|---|
| | | | | | Nuclear Supply Chain provides procurement services, storage, inventory control, and receipt inspection/testing. | |
| 10868 | | Pt 11 | | 11.A QAPD II.01.03.08 | COLA Part 11, Part II, Sections 1.3.8 is revised to read:<br><br>1.38 Project Management and Construction<br><br>Project Management and Construction is responsible for contracts, engineering, and management related to new plant construction as requested. | Duke Energy 2012 Organizational Update |
| 10856 | | Pt 11 | | 11.A QAPD II.01.03.09 | COLA Part 11, Part II, Section 1.3.9 is removed. | Duke Energy 2012 Organizational Update |
| 10760 | | Pt 11 | | 11.A QAPD II.01.F / F01 | COLA Part 11, QAPD Part II, Section 1, Figure 1 is revised to reflect the Duke Energy 2012 Organizational Update. | Duke Energy 2012 Organizational Update |
| 10761 | | Pt 11 | | 11.A QAPD II.01.F / F03 | COLA Part 11, QAPD Part II, Section 1, Figure 3 is revised to reflect the Duke Energy 2012 Organizational Update. | Duke Energy 2012 Organizational Update |
| 10869 | | Pt 11 | | 11.A QAPD II.02.00 | COLA Part 11, Part II, Section 02.00, fifth and sixth paragraphs are revised to remove 'Plant' from 'Nuclear Plant Development' to read 'Nuclear Development'. | Duke Energy 2012 Organizational Update |
| 10763 | | Pt 11 | | 11.A QAPD II.02.05 | COLA Part 11, QAPD Part II, Section 2.5, first paragraph is revised to read:<br><br>Administrative control of the QAPD will be in accordance with 10 CFR 50.55(f) and 10 CFR 50.54(a), as appropriate. Changes to the QAPD are evaluated by the manager responsible for Nuclear Oversight to ensure that such changes do not degrade previously approved quality assurance controls specified in the QAPD. This document shall be revised as appropriate to incorporate additional QA commitments that may be established during the COL application development process. New revisions to the document will be reviewed, at a minimum, by the Nuclear Oversight corporate manager responsible for Audits and Programs and approved by the Vice President Nuclear Oversight, and the Executive Vice President Nuclear Generation and the CNO. | Duke Energy 2012 Organizational Update |
| 10764 | | Pt 11 | | 11.A QAPD II.02.06 | COLA Part 11, QAPD Part II, Section 2.6, second paragraph, first sentence is revised to read:<br><br>The minimum qualifications of the corporate manager Audits and Programs and Manager of Site Nuclear Oversight at the new nuclear generating plants are that each holds an engineering or related science degree and a minimum of four years of related experience, including two years of nuclear power plant experience, one year of supervisory or management experience, and one year of experience performing quality verification activities. | Duke Energy 2012 Organizational Update |
| 10765 | | Pt 11 | | 11.A QAPD II.06.01 | COLA Part 11, QAPD Part II, Section 6.1, first paragraph is revised to read:<br><br>Documents are reviewed for adequacy by qualified persons other than the preparer. During the construction phase, procedures for design, construction, and installation are also reviewed by the Nuclear Oversight organization or a contractor quality assurance organization, as assigned by contract, to ensure quality assurance measures have been appropriately applied. The documented review signifies concurrence. | Duke Energy 2012 Organizational Update |
| 10766 | | Pt 11 | | 11.A QAPD II.10.03 | COLA Part 11, QAPD Part II, Section 10.3, last bulleted item is removed. | Duke Energy 2012 Organizational Update |
| 10767 | | Pt 11 | | 11.A QAPD II.18.01 | COLA Part 11, Part II, Section 18.1 is revised as follows:<br><br>First paragraph, second sentence 'Plant' is removed from 'Nuclear Plant Development' to read 'Nuclear Development'. | Duke Energy 2012 Organizational Update |

| QB Change ID# | COLA REP | COLA Part A | Chapter A | Section / Page A | Complete Change Description | Basis for Change |
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| | | | | | Second paragraph, last sentence is revised to read:<br><br>These audits are conducted by trained personnel not having direct responsibilities in the area being audited and in accordance with preplanned and approved audit plans or checklists, under the direction of a qualified lead auditor and the cognizance of the manager responsible for Nuclear Oversight. | |
| 10870 | | Pt 11 | | 11.A QAPD II.18.02 | COLA Part 11, Part II, Section 18.2 is revised at list item 5 to read:<br><br>(5) Other activities and documents considered appropriate by Nuclear Development, Nuclear Operations, or the CNO. | Duke Energy 2012 Organizational Update |
| 10768 | | Pt 11 | | 11.A QAPD IV.RG01.33 | COLA Part 11, QAPD Part IV, Regulatory Guide 1.33,is revised to read:<br><br>Regulatory Guide 1.33, Rev.2, February 1978, Quality Assurance Program Requirements (Operations)<br><br>Regulatory Guide 1.33 describes a method acceptable to the NRC staff for complying with the Commission's regulations with regard to overall quality assurance program requirements for the operation phase of nuclear power plants.<br><br>Duke identifies conformance and exceptions for the applicable regulatory position guidance provided in the regulatory guide in the following paragraphs:<br><br>This Regulatory Guide endorses ANSI N18.7-1976/ANS-3.2 for complying with the quality assurance program requirements for the operation phase of nuclear power plants, subject to five regulatory positions. Attachment 2 to NEI 06-14, Rev. 8 provides a comparison of QA requirements established within NQA-1-1994 and the template to provide an alternate method of meeting 10 CFR 50, Appendix B during the operational phase in lieu of committing to the requirements of ANSI N18.7-1976/ANS-3.2.<br>Regulatory Position C.1 addresses "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors." QAPD Part II, Sections 5 and 6, and Part V, Section 3 address requirements for procedures consistent with requirements addressed in SRP 17.5 section II.F and ANSI N18.7-1976.<br>In meeting the intent of Regulatory Position C.2, Duke's commitment to Regulatory Guides governing QA is specified in Part II, IV, and V.<br>Regulatory Position C.3 identifies a position related to Independent Review. The QAPD provides an alternative for this position by addressing Independent Review requirements specifically in Part V, Section 2.2 consistent with SRP 17.5 Section II.W rather than referencing ANSI N18.7. Item 2.2 c. specifically relates to the concern of this regulatory position.<br>In meeting the intent of Regulatory Position C.4, Duke describes the internal audit function, scheduling and frequency in Part II, Section 18. The audit scheduling process takes into consideration the need for increased auditing in areas that indicate ineffective performance.<br>Regulatory Position C.5 identifies concerns of the NRC with the usage of the verbs "should" and "shall" in ANSI N18.7-1976. The QAPD provides an alternative to this position by providing adequate guidance for establishing a quality assurance program that complies with Appendix B to 10 CFR Part 50 by using ASME NQA standard NQA-1994, as supplemented by the QAPD provisions in NEI 06-14, Rev. 8. | Duke Energy 2012 Organizational Update |

SUMMARY

| COLA Part A | Number of COLA Changes |
|---|---|
| Pt 01 | 11 |
| Pt 02 | 214 |
| Pt 05 | 4 |

| COLA Part A | Number of COLA Changes |
|---|---|
| Pt 09 | 2 |
| Pt 10 | 4 |
| Pt 11 | 30 |
| **TOTALS (6 groups)** | **265** |