Duke Energy Carolinas, LLC
Response to Department of Energy
Federal Loan Guarantee Application

PART I and II– SECTION D
Business Plan
I-D-1 and II-D-1

Business Plan: Section D – Part II

The applicant shall provide a business plan demonstrating its expertise, financial strength and management capability to undertake and operate the project as proposed. The business plan shall also present a detailed analysis of the construction and performance-related risks associated with the project (e.g., cost escalation or overruns, obtaining approvals and litigation) and safeguards/risk mitigation strategies (e.g., fixed price contracts, liquidated damages, warranties or other incentive/disincentive arrangements) to be employed, as well as a comprehensive project implementation plan for integrating and monitoring the various phases of the project. Taken together, the components of the business plan shall provide analyses demonstrating that, at the time of the application, there is reasonable prospect that the applicant will be able to repay the guaranteed portion of the Guaranteed Obligation (including interest) according to their terms, and a complete description of the operational and financial assumptions and methodologies on which this demonstration is based. The conclusions of the business plan shall include a statement from the applicant that it believes there is a reasonable prospect that the guaranteed portion of the Guaranteed Obligation will be fully paid from project revenue according to the terms proposed in the application.

The data contained in all schedules of the financial model used in response to WLS/II/D/1 Financial Analysis and the data contained on page D-16 of this document or electronic file which hereby forms a part of the Application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes; provided that, if this applicant is issued a loan guarantee under Title XVII of the Energy Policy Act of 2005 as a result of or in connection with the submission of this Application, DOE shall have the right to use or disclose the data herein, other than such data that have been properly reasserted as being trade secret or proprietary in the loan guarantee agreement. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant.

WLS/I/D/1/Potential Project Offtake

D.I.1 Potential Project Offtake: Provide your forecast for nuclear power plant capacity. Describe any potential offtake or other revenue-generating agreements that will provide a primary source of revenues for the project including repayment of debt obligations. Discuss whether the facility will be a rate base facility and any provisions in state or other law regarding cost recovery, rate treatment or other financial matters with respects to the facility.

Response:

The project timeline anticipates that Unit 1 (1117MWe – net generation) and common facilities will be commercially available by July, 2018 generating at full power to supply the system summer peak load requirements. Unit 2 (1117MWe – net) will likewise be available by July, 2019. These capacity additions are consistent with the Integrated Resource Plan (IRP) that was filed with ~~will be filed with~~ the public service commissions of NC and SC and substantiates the need for such capacity to serve the projected demand of the Duke Energy Carolinas service territory.

The ownership of the plant will be by a special-purpose entity~~vehicle~~ ("SPE~~V~~"), itself wholly or partially owned by Duke Energy Carolinas and will finance the project on a non-recourse, project basis. The project company will contract with Duke Energy Carolinas (and potentially other, credit-worthy purchasers) to sell substantially all of the output of the plant under one or more long-term contracts. The structure of the contract is likely to consist of (i) fixed, scheduled capacity payments that fully recover the capital cost of the project (return-of and return-on investment) over an extended term (~~3~~40 years ~~or more~~), (ii) fixed ~~O&M~~ payments based on estimated costs to operate the facility (these costs include ~~including~~ operations and maintenance, G&A, insurance and decommissioning payments ~~and~~ as well as accruals for scheduled major maintenance and outage costs) and, (iii) ~~a separate~~ variable energy component to cover actual fuel and estimated variable operating costs. The fixed/variable ~~O&M~~ operating and maintenance components will be subject to periodic adjustment for cost escalation (in accordance with published indexes) with annual "true-up" to reconcile actual with estimated costs. ~~and p~~Purchased fuel costs will be a "pass-thru" of actual costs. ~~so that~~As a result, the project is assured of generating sufficient revenues to cover its actual costs over the full term of the contract. The capacity payments would be due as scheduled regardless of actual energy delivered to Duke Energy Carolinas, who would have the right to "dispatch" the plant according to its requirements (a "take-or-pay" obligation). The contract would contain provisions limiting Duke Energy Carolinas rights to reduce or suspend these payments or terminate the contract only to situations such as a continuing performance default by the Seller that is uncured (or not waived) after an extended period (12-18 months).

~~A variation of the contract pricing might involve a single "energy-only" charge for actual energy delivered ($/Mwh) that includes all of the costs discussed above (including capital recovery). While this shifts some volumetric revenue risk to the Seller, this may be acceptable due to the fact that the project is expected to be operated as a "must-run" plant in Duke Energy Carolinas' system and it would be obligated to "take-and-pay" for all of the delivered plant output. Except for scheduled and unscheduled (forced) outages, the revenue stream should be substantially~~

~~constant and funded reserves would be available to protect the Lenders against such interruptions. Also, Duke Energy Carolinas will operate the plant under a separate O&M agreement, insuring close coordination with system operations and will provide insurance coverage to the SPV on terms similar to its other operating nuclear plants.~~

The power purchase agreement ("PPA") may include an early termination option at any time after 15 years through the initial term of the contract that would provide for a lump-sum payment sufficient to fully repay any outstanding debt obligations of the venture (including breakage and tax costs) and a negotiated return to the non-affiliated investors. There may be as well a series of fixed- renewal options allowing Duke Energy Carolinas to extend the term of the contract to the end of the initial operating license (40 years) or any license extension (20 years).

It is currently not expected that there will be multiple off-takers (other than Duke Energy Carolinas). However, if this were to occur, the primary terms of each off-take agreement would be similar, such as level of payments, ~~and~~ and ~~and the~~ type of payment structure. ~~Energy/Capacity or Energy Only, and principalcertain terms (such as early termination rights) may no longer be appropriate~~. Finally, the credit of any (non-affiliated) off-takers would have to be reasonably acceptable to Duke Energy Carolinas, and the Lenders ~~and the Guarantor~~ before the project enters into such agreements.

The facility will not ~~likely~~ be rate-based in the traditional sense due to the legal separation of the project and its assets from the business and assets of Duke Energy Carolinas and it will not be subject to the mortgage that secures all of Duke Energy Carolinas' other principal assets. However, it is contemplated that the facility will be operated as one of Duke Energy Carolinas' owned assets and the PPA ensures that the facility will have the financial resources necessary at all times to operate and discharge its financial obligations. Duke Energy Carolinas plans to work with state regulators and policymakers in both North Carolina and South Carolina to effectuate the ownership and ratemaking treatment contemplated for the Lee Nuclear Station.

WLS/I/D/2/Summary Business Plan

D.I.2 Summary Business Plan: Provide a top level review of the following elements of your business plan:

a. Financing Plan, including timing and amount of expected equity and debt funding
b. Market Analysis
c. Management Planning
d. Operational Risks and Mitigation Strategies

Response:

This response, in its entirety, is replaced by WLS/II/D/Business Plan. The updated Part II response has no impact on Duke Energy Carolinas Loan Guarantee Application proposed financing structure or Lee Nuclear Station COD.

WLS/II/D/1 Financial Analysis

D.II.1 Financial Analysis: Provide a detailed description of the overall financial plan for the proposed project, including quarterly sources and uses of funding, equity and debt statement for the construction period, prepared in accordance with U.S. GAAP, showing the timing and amount of expected equity and debt funding by institution, as well as a full set of financial projections (income statements, balance sheets and cash flow statements) prepared according to U.S. GAAP for the tenor of the proposed guaranteed portion of the Guaranteed Obligation. List the major assumptions in a separate worksheet of the model. Calculate at a minimum the current, leverage and debt service coverage ratios of the parties associated with the project based on the expected tenor of the guaranteed portion of the Guaranteed Obligation. Discuss the principal factors that could impair the project's ability to meet its debt service obligations.

Response:

Duke Energy Carolinas currently proposes to fund the project using the FFB-option for 80% of eligible costs over a 30 year term. The balance of plant costs will be funded with sponsor equity from Duke Energy Carolinas (and possibly other owners). Duke Energy Carolinas currently intends to proceed with the project with or without third-party equity (i.e.- this proposal is not conditioned upon the investment by third-parties). Duke Energy Carolinas investment in the project will be assigned to the special purpose owner-entity, Newco, when it is created, which will be on or prior to funding under the FFB loan. Subsequent to Newco's formation, Duke Energy Carolinas will make capital contributions or subordinated loans in respect of its equity commitment.

Duke Energy Carolinas expects to fund a large portion of the equity prior to meeting the conditions for funding under the FFB loan (which cannot occur prior to receipt of the COL) and will assume the associated permitting risk. The balance of equity will fund proportionately with the debt thereafter until the equity commitment is fully funded. The total proportion of equity to final project costs (eligible and ineligible), is expected to be approximately 25%. Duke Energy Carolinas plans to work with state regulators and policymakers to ensure that appropriate regulatory frameworks are in place to address the unique aspects of this financing plan.

Duke Energy Carolinas' application assumes that part of the state regulatory agreements will include a provision for recovery of construction work in progress (CWIP) financing costs. This will enable the project to service its debt obligations and pay a dividend to the equity owner(s) during the construction period and will further lower the installed cost of the project (and associated revenue requirement during the operating phase) by eliminating capitalization of interest and reducing (equity) allowance for funds used during construction ("AFUDC"). South Carolina has a mechanism in place for the recovery of such costs outside of a rate case for such early-recovery, while similar legislation is being considered for North Carolina (North Carolina does permit recovery subject to a rate case under current law).

As contemplated, Duke Energy Carolinas will act as a "Receivable Servicer" under a separate Receivable Servicing Agreement to segregate the applicable portion of revenues received from customers designated to cover Newco's CWIP financing costs and remit these funds to a trustee

acting on behalf of the project lenders. These funds will be used to pay interest on the debt financing used for construction, while remitting the balance periodically to the equity owner(s) after fully funding all required reserves. Duke Energy Carolinas already has accounting systems in-place to perform this function, which it does currently for an outstanding receivables financing (known as Duke Energy Receivables Financing, or DERF) arranged with Citibank. Upon commercial operation of each Unit, this arrangement will cease as the PPA for that Unit commences, ensuring that the project has sufficient revenues to cover its operating costs and debt service obligations, with any surplus paid to the equity owner(s) on or after each debt service payment date during the operational period.

Consistent with standard project finance practice, it is expected that a number of reserve accounts maintained and disbursed in accordance with the loan agreements, will be funded from proceeds of debt and equity issuance (pre-funded) or from project cash flow. These include a Debt Service Reserve Account (equal to the current period's scheduled principal and interest), Debt Service Account (equal to the following full period principal/interest), a Major Maintenance (or scheduled outage) Reserve Account and an Insurance Proceeds Account, among others. The equity owners(s) may post "substitute collateral" (a corporate guarantee or bank letter-of-credit) in lieu of funding these accounts with project cash flow, subject to the terms of such substitute collateral being acceptable to the Lender.

Duke Energy Corp. will be the "consolidated tax-payer" in the base case where its affiliate, Duke Energy Carolinas is the sole owner of the Borrower. As such, all tax attributes such as production tax credits ("PTC's") and depreciation deductions will be for the account of Duke Energy Corp. which will "monetize" these benefits through an existing tax-sharing agreement with Duke Energy Carolinas so that ratepayer costs associated with operation of the plant are reduced accordingly. In the case of a joint-venture, these benefits may be allocated to Duke Energy Corp. and the joint venture owners in accordance with the partnership agreement and Section 704 of the Internal Revenue Code of 1986, as amended.

Duke Energy will explore the potential for a shorter term loan (such as 15 years) if the associated refinancing risk is acceptable to the lender (FFB) and the project rating assessment is not adversely impacted. The proposed term of the PPAs (40 years) should support a refinancing in the traditional capital markets. Scheduled amortization on the loan will target a conservative debt balance outstanding at the end of 15 years of 50% or less of total capitalization which would support a refinancing, either as a merchant plant entitled to at least 25 more years of revenues under the PPA, or as a regulated asset of Duke Energy Carolinas in the event that it exercises its purchase option and early termination right in the PPAs.

Duke Energy Carolinas financial model has been enhanced from the version submitted in Part I to reflect:

1. A more complete set of GAAP financial statements (income statement, balance sheet, cash flow statement).
2. Refined treatment of post in-service capital additions to reflect full capitalization and depreciation.

3. Conversion of the PPA capacity payment revenues to a standard rate recovery trajectory (rather than a level annual amount), and correspondingly setting principal and interest payments to reflect a constant annual principal payment.
4. A higher equity return for the recovery of CWIP financing in rates during the construction period to better reflect project risk.
5. A 15% equity return during the commercial operation period to better reflect project risk and market conditions.
6. A refinement to the construction cost estimate to capture inflated construction cost dollars for 2009 correctly.
7. A refinement to construction period equity distributions to incorporate an annual setting of CWIP financing in rates.
8. Scheduling of refueling outages every 18th month after initial operation, and the calculation of annual capacity factors reflecting this outage cycle.
9. A refinement to variable O&M costs to capture the impact of outage months.
10. A higher level of capital additions beginning in the 20th year of operation.
11. A refinement to the nuclear fuel cost estimate.
12. Modification of the model to allow for sensitivity analyses related to:
    a. Delays in commercial operation dates,
    b. Increases in construction costs,
    c. Changes in fixed and variable O&M cost escalations,
    d. Changes in annual capacity factors,
    e. Potential regulatory disallowances of capacity payments,
    f. Level and non-level capacity payments,
    g. Differing AFUDC rates during construction, and
    h. Timing of the funding of debt upon COL approval.
13. Inclusion of an alternative monthly equity cash flow calculation assuming the sponsor posts collateral in lieu of funding reserves.
14. A refinement to the allocation of construction expenditures to MACRS property class.

The latest version of the model is contained in **Appendix 13 [File name: Lee Nuclear Project Model – Part II.xls**]. The list of major assumptions is contained in **Appendix 33 [File name: 44 Appendix 33 Financial Model Overview and Major Assumptions – Part II.doc]**. Annual debt service coverage ratios and other key financial parameters are calculated in the project model (please see the "Combined Pro Forma sheet for the debt service coverage ratios). The data contained in all schedules of the financial model file which hereby forms a part of the Application have been submitted in confidence and contain trade secrets or proprietary information.

Principal factors that could impair the Project's ability to meet its debt service obligations include:

1. Disallowance of significant costs incurred to construct the project by the NCUC/PSCSC.
2. Failure to obtain necessary permits or achieve compliance with testing requirements of the COL (ITAAC).

3. Financial inability of the Off-taker(s) to fulfill the payment obligations under the PPA.
4. Failure by the contractor to complete the plant in accordance with the performance requirements of the EPC Agreement.
5. Major equipment failure resulting in a prolonged period of non-performance.

WLS/II/D/2 Market Analysis

D.II.2 Market Analysis: 1) Include an analysis of the market for each product to be produced or sold by the project. Also discuss the prevailing economic and demographic trends in the target market, justification for revenue projections (price and volume), and potential competitors/substitutes. Provide evidence that a market exists for the products and an assessment of the market potential for the proposed technology beyond the project currently being proposed by the applicant. 2) Describe any sales arrangements (e.g., off-take agreements) that exist or are contemplated, including summaries of their key terms and conditions and executed letters of intent, as applicable. 3) Discuss whether the facility will be a rate base facility and any provisions in state or other law regarding the cost recovery, rate treatment or other financial matters with respect to the facility. DOE will conduct its own market analysis of the project.

Response:

1) **Discussion of Duke Energy Carolinas' 2008 Integrated Resource Planning Results** - Duke Energy Carolinas' filed its' 2008 Integrated Resource Plan with the North Carolina Utilities Commission, pursuant to Commission Rules R8-60 and R8-62(p), in Docket No. E-100, Sub 118; and with the Public Service Commission of South Carolina in Docket No. 2005-356-E on November 3, 2008. A copy of the filing is provided in **Appendix 16 [File name: 27 Appendix 16 WLS/II/D/2 DEC 2008 IRP.pdf].** For a complete description of the Integrated Resource Planning process please refer to Chapter 8 of Duke Energy Carolinas' Environmental Report submitted with the Part I application. A brief summary of 2008 IRP results is provided below.

Duke Energy Carolinas' need for new base load generation resources over the next decade, combined with the need for greater fuel diversity and a commitment to reducing Duke Energy Carolinas' carbon footprint, make the continued evaluation and development of new nuclear generation an essential part of future resource planning. In the 2008 Annual Plan, Duke Energy Carolinas' resource needs increase significantly over the 20-year planning horizon. By 2012, approximately 2,890 MW of additional resources are needed; by 2028, that number grows to 9,010 MW. The factors that influence this are:

- Future load growth projections;
- Reduction of available capacity and energy resources (for example, due to unit retirements and expiration of purchased power agreements); and
- A 17 percent target planning reserve margin over the 20-year horizon.

The current 20-year forecast, which does not include the impact of new EE programs, reflects a 1.6 percent average annual growth in summer peak demand, while winter peaks are forecasted to grow at an average annual rate of 1.4 percent. The forecast for average annual territorial energy need is 1.5 percent. The growth rates use projected 2008 information as the base year with a 18,011 MW summer peak, a 16,161 MW winter peak and a 94,282 GWh average annual territorial energy need.

The quantitative analyses suggest that a combination of additional baseload, intermediate and peaking generation, renewable resources, energy efficiency, and demand-side management programs is required over the next twenty years to meet customer demand reliably and cost-effectively. The optimal resource mix is different under different sensitivities.

With regard to the timeframe for new nuclear capacity, installation of one to two nuclear units in the 2018/2019 timeframe is the best option in the Higher Carbon scenario, (i.e., based on S. 2191 introduced by Senators Lieberman and Warner in October of 2007), as compared to meeting the generation need with natural gas generation. The selection of one or two nuclear units is dependent on the impact of greenhouse gas regulation, the commercial life of the nuclear asset, the ability to secure favorable financing and the installed price of the generation.

Significant challenges remain for Duke Energy Carolinas to implement its overall resource plan, such as obtaining the necessary regulatory approvals to implement the demand-side, energy efficiency, and supply-side resources, finding sufficient cost-effective, reliable renewable resources to meet the standard, integrating renewables into the resource mix, and ensuring sufficient transmission capability for these resources. While potential new nuclear plant capacity could not go in service until 2018 at the earliest, decisions concerning continuing to pursue this alternative are needed to preserve this option. The use of a 2018 date is for modeling purposes only and the actual planned operational date may be delayed as additional information becomes available on critical issues such as enactment of carbon legislation.

Because of these uncertainties, Duke Energy Carolinas' action plan includes licensing for two nuclear units. In light of the quantitative issues such as the importance of fuel diversity, Duke Energy Carolinas' environmental profile, the stage of technology deployment and regional economic development, Duke Energy Carolinas has developed a strategy to ensure that the Company can meet customers' energy needs reliably and economically while maintaining flexibility pertaining to long-term resource decisions. Duke Energy Carolinas is seeking regulatory approval for up to 2,234 MW of new nuclear generating capacity through the filing of an application with the Nuclear Regulatory Commission ("NRC") for a Combined Construction and Operating License, with the objective of potentially bringing a new plant on line during the next decade. In addition, in the 2010 timeframe the Company anticipates filing a combined application for a combined Certificate of Environmental Compatibility and Public Convenience and Necessity and Base Load Review Order with the PSCSC and an application for determination of need and cost with the NCUC.

The 2008 Integrated Resource Plan has indicated that it is prudent to preserve the option of bringing Lee Nuclear Station on-line in the next decade. Duke Energy Carolinas will continue to assess the optimal mix of available resources on an annual basis and will be updating this Section of the Part II – Section D Application as appropriate. In addition, as discussed elsewhere in this Subsection D.II.2, Duke Energy Carolinas intends to obtain 1) a Certificate of Environmental Compatibility, Public and Convenience and Necessity and a Baseload Review Order from PSCSC in the fourth quarter of 2010 and 2) a Companion Order from the NCUC in the first quarter of 2011 with (i) a determination that the Lee Nuclear Station is needed and (ii) approval of the construction schedule for Lee Nuclear Station. The combination of that PSCSC Certificate and Order and that NCUC Order will demonstrate that those state regulatory authorities have determined that there is a need for the power produced by the Lee Nuclear

Station to serve the ratepayers of Duke Energy Carolinas in North Carolina and South Carolina as of the dates of the respective orders.

Also, as discussed elsewhere in this Subsection D.II.2, Newco would enter into two PPAs with Duke Energy Carolinas pursuant to which Duke Energy Carolinas would be obligated to purchase 100% of the capacity, energy and other products produced at Lee Nuclear Station Units 1 and 2, respectively, from Newco. The Selected Proposed Commercial Terms for the PPAs contemplate execution of the PPAs in the same timeframe as the transfer of the NRC COL for Lee Nuclear Station from Duke Energy Carolinas to Newco, soon after the NRC COL is issued originally to Duke Energy Carolinas. Consequently, at that time, Duke Energy Carolinas will have obtained the respective determinations of need from the PSCSC and the NCUC to serve its ratepayers in those states and also will have executed the PPAs with Newco to purchase the power from Lee Nuclear Station required to provide that service to all of its ratepayers.

2) **Proposed Project Structure** - The Lee Nuclear Station is intended to be owned by a yet-to-be-formed special purpose entity ("Newco"), expected at this time to be wholly-owned, directly or indirectly, by Duke Energy Carolinas. Newco would enter into power purchase and sale agreements with Duke Energy Carolinas (one agreement for each unit of the Lee Nuclear Station, which would be virtually identical) under which Duke Energy Carolinas would be obligated to purchase 100% of the capacity, energy and other products from Newco ("the PPAs"), essentially pursuant to cost based rates tied to Newco's all in costs of developing and constructing the Lee Nuclear Station. Duke Energy Carolinas ultimately may choose to have other load serving entities or other entities which may be non-load serving entities become equity owners in Newco. In such event, it likely would be the case that those other load serving entities would have "mirror" PPAs with Newco in proportion to their equity interests in Newco. However, the current structure is based upon the assumption that Duke Energy Carolinas will be the 100% off-taker from the Lee Nuclear Station. The Term Sheet for the PPA provides for the long-term sale by Newco and purchase by Duke Energy Carolinas of all of the capacity, energy, ancillary services and other energy products produced by the Lee Nuclear Station, with such pricing generally tied to the capital and operating costs incurred by Newco for the Lee Nuclear Station. Please see the "Proposed Commercial Terms for the Power Purchase and Sale Agreement between Nuclear Newco, LLC and Duke Energy Carolinas, LLC" contained in **Appendix 17 [File name: 28 Appendix 17 WLS/II/D/2 PPA Term Sheet.doc].** Please note that while this document contains a summary of key terms and conditions of the PPA for Unit #1 of the Lee Nuclear Station (a second virtually identical PPA would be entered into for the output of Unit 2), the final agreement has not been fully negotiated and the Term Sheet only represents Duke Energy Carolinas reasonable opinion of what terms the PPA may contain.

3) Summary of Current State and Federal Regulatory Framework

(a) State Commission pre-approval of the utility's decision to incur project development costs

- ***North Carolina***: North Carolina statute allows a utility to seek the North Carolina Utility Commission's ("NCUC") approval of the utility's decision to incur project development costs associated with a potential nuclear generating facility that is intended to serve North Carolina retail customers. Project development costs include all costs incurred prior to the receipt of a certificate from the host state where the

facility is to be located. The NCUC approves the utility's decision to incur the costs (i.e., the approval is an affirmation that it is prudent to incur costs to continue to preserve the new nuclear option), but the approval does not represent a ruling on the reasonableness or prudence of specific development costs (i.e., the prudence determination is made at a later date, either during construction or at the time of project completion or cancellation, as explained in other facets of the regulatory framework summarized below in sub-sections (c), (f) and (g) of this section). By law, the NCUC shall issue an order within six months after a utility files its request. On June 11, 2008, the NCUC issued its approval of Duke Energy Carolinas' decision to incur up to $230MM in cumulative project development costs through December 31, 2009 for Lee Nuclear Station.

- ***South Carolina***: South Carolina statute is generally consistent with the North Carolina summary immediately above. On June 9, 2008, the Public Service Commission of South Carolina ("PSCSC") issued its approval of Duke Energy Carolinas' decision to incur up to $230MM in cumulative project development costs through December 31, 2009 for Lee Nuclear Station.

(b) State Commission pre-approval of the need to construct the plant and the estimated construction schedule/cost

- ***North Carolina***: Since the Lee Nuclear Station will be built in South Carolina, Duke Energy Carolinas is not required to obtain a certificate from the NCUC authorizing its construction. However, as a result of legislation passed in North Carolina in 2007, a utility has the option to request that the NCUC a) determine the need for an out-of-state generating facility that is intended to serve North Carolina retail customers, and b) approve an estimate of the construction costs and construction schedule for the proposed generating facility. Duke Energy Carolinas will request that the NCUC perform such a review for Lee Nuclear Station, and the timing of such a request is expected to be approximately three to six months after Duke Energy Carolinas files an application for a certificate with the PSCSC (explained in the South Carolina paragraph below). Once Duke Energy Carolinas makes such a request, the NCUC shall issue its order within six months. The NCUC's a) determination that Lee Nuclear Station is needed and b) approval of the construction cost/schedule estimate would represent affirmation that the NCUC supports the construction of Lee Nuclear Station; however, this ruling in and of itself would not provide approval of the construction costs for ratemaking purposes (i.e., the prudence determination is made at a later date, either during construction or at the time of project completion or cancellation, as explained in other facets of the regulatory framework summarized below in sub-sections (c), (f) and (g) of this section).
- ***South Carolina***: Since Lee Nuclear Station will be built in South Carolina, Duke Energy Carolinas will be required to obtain a certificate from the PSCSC authorizing the construction of the plant. The filing for a certificate will be combined with a filing for a "baseload review order" for Lee Nuclear Station. The certificate authorizes the utility to construct the plant, and the baseload review order provides the utility with upfront assurance that prudently incurred construction costs will be recoverable in rates so long as the plant is constructed within the parameters of the construction schedule (including contingencies) and construction cost estimate

(including contingencies) approved in the baseload review order. Duke Energy Carolinas expects to file a combined certificate and baseload review application with the PSCSC in the 2010 timeframe. Once Duke Energy Carolinas files such an application, the PSCSC shall issue its order within nine months.

(c) State Commission's ongoing review of construction costs

- ***North Carolina***: Upon the request of a utility, or upon the NCUC's own motion, the NCUC can conduct an ongoing review of the construction of a generating facility. For an out-of-state generating facility such as Lee Nuclear Station, the NCUC must have approved the cost estimate for the facility (see sub-section (b) above) in order for it to be eligible for an ongoing review during construction. Reasonable and prudent costs approved by the NCUC during the ongoing review (which will be done on an annual basis) shall not be subject to further review by the NCUC. Specifically, costs deemed to be reasonable and prudent during a particular annual review shall not be reviewed again in either subsequent annual reviews or during a rate case when the costs are considered for ratemaking purposes. While the ongoing review enables the utility to obtain cost recovery assurance as a facility is built, it does not enable the utility to commence the recovery of financing costs without a rate case (see sub-section (e) below for an explanation of the recovery of financing costs). At the appropriate time in the future, Duke Energy Carolinas will request that the NCUC perform an ongoing review of the construction of Lee Nuclear Station. Upon the filing of a request for an ongoing review, the NCUC shall establish a schedule of hearings, to be held no more often than every 12 months.
- ***South Carolina***: After issuance of a baseload review order (as described in sub-section (b) above), the utility shall file quarterly reports with the South Carolina Office of Regulatory Staff (a state agency whose mission is to represent the public interest in utility regulation) until the plant begins commercial operation. The South Carolina Office of Regulatory Staff shall conduct on-going monitoring of the construction of the plant and expenditure of capital through review and audit of the quarterly reports.

(d) State Commission's treatment of project delays or cost over-runs

- ***North Carolina***: As part of the ongoing review of construction discussed in sub-section (c) above, the utility would communicate any revision in the construction cost estimate previously approved by the NCUC. In the event of such a revised cost estimate, the NCUC has the authority to either approve or disapprove the revised estimate. In the event that the NCUC disapproves the revised cost estimate, the NCUC has the authority to modify or revoke the need determination and cost estimate approval for an out-of-state generating facility such as Lee Nuclear Station (i.e., depending on the applicable facts and circumstances). If this ultimately resulted in a project cancellation, refer to sub-section (g) below for a summary of ratemaking treatment associated with cancelled projects.
- ***South Carolina***: As circumstances warrant, during construction of a facility that received a baseload review order (see sub-section (b) above), a utility may petition the PSCSC for an order modifying any of the cost or schedule estimates included in the baseload review order. The PSCSC shall grant the relief requested if the utility provides evidence that justifies a finding that the changes in schedule and/or cost

estimate are not the result of imprudence on the part of the utility. The PSCSC's order shall be issued within six months of the date of the filing.

(e) State Commission's approval of the recovery of financing costs incurred during construction:

- ***North Carolina***: Under the current statute, the utility must file a general rate case in order to incorporate financing costs into rates (note that in such a rate case, any construction costs already determined to be reasonable and prudent as part of an ongoing review would not be subject to further review by the NCUC during the rate case for purposes of determining the financing costs to be recovered). This is an improvement from the statute that existed prior to 2007. Prior to 2007, financing costs could be recovered in rates during the construction phase only if the NCUC determined that such treatment was both in the public interest and necessary to the financial stability of the utility.
- **South Carolina**: For a nuclear generating facility that receives both a certificate and a baseload review order, financing costs incurred during construction shall be recovered in rates. This recovery is in the form of an adjustment to base rates, but the utility is not required to file a general rate case to initiate or update the recovery. The recovery mechanism is updated each year during construction to reflect incremental construction costs.

(f) State Commission's approval of rate adjustment upon completion of the plant

- ***North Carolina***: The utility will file a general rate case to update rates to reflect the recovery of costs associated with the completed plant. Note that in such a rate case, any construction costs already determined to be reasonable and prudent as part of an ongoing review (see sub-section (c) above) would not be subject to further review by the NCUC during the rate case.
- ***South Carolina***: For a nuclear generating facility that receives both a certificate and a baseload review order (see sub-section (b) above), the costs associated with the completed plant (i.e., "costs" reflect all incremental revenue requirements – depreciation, O&M, taxes, return on rate base) will be reflected in base rates upon commercial operation. The utility seeks this rate adjustment through a filing for a "final set of revised rates." This filing/proceeding is not conducted as a general rate case; however, after the completion of the plant the South Carolina Office of Regulatory Staff will conduct an audit of the utility's revenues, expenses, and rates based on a twelve-month test period. Refer to sub-section (d) above for information regarding cost over-runs (relative to the original cost estimate approved in the baseload review order).

(g) State Commission's treatment of project abandonment/cancellation

- ***North Carolina***: If the construction of a facility is cancelled, the utility shall recover through rates in a general rate case the costs of construction that were incurred prior to the cancellation and are found to be reasonable and prudent (note that costs already reviewed as part of an ongoing review would not be subject to further review by the NCUC). The abandoned costs recovered from customers through rates will be

adjusted to reflect debt to be serviced by a third-party guarantor. For ratemaking purposes, the costs would be amortized over a reasonable period of time as determined by the NCUC. Note that prior to cancelling a nuclear project under construction in another state (i.e., South Carolina), Duke Energy Carolinas would consider seeking a ruling from the NCUC that the construction of the facility is no longer in the public interest (though such a determination is not required by North Carolina state law for an out-of-state generating facility).

- ***South Carolina***: The utility has the burden of proof to demonstrate that the decision to cancel the project was prudent. If this burden of proof is met (by a preponderance of evidence), the utility shall recover the capital costs (including any accrued AFUDC) related to the plant. The abandoned costs recovered from customers through rates will be adjusted to reflect debt to be serviced by a third-party guarantor. The PSCSC shall order the amortization and recovery through rates of the investment in the abandoned plant as part of an order adjusting rates in accordance with the provisions of the baseload review order (i.e., a general rate case would not be necessary to commence the recovery of the investment in the abandoned plant).

(h) Federal Commission's approval of PPA between Newco and Duke Energy Carolinas

- ***FERC***: Duke Energy Carolinas and Newco must make a filing with FERC pursuant to Federal Power Act ("FPA") § 205 to obtain approval of the rates, terms and conditions for the wholesale sales of energy from Newco to Duke Energy Carolinas under the PPA. The filing will request approval of a rate that recovers the costs of the investment in the facility, including 100% recovery of CWIP and approval of recovery of prudently-incurred abandonment/cancellation costs. The filing also will request permission to establish a regulatory asset that will include expenses not included in CWIP that are incurred in connection with the project.

The following information contained within this box section contains proprietary information that Duke Energy Carolinas, LLC, requests not be released to persons outside the Government, except for purposes of review and evaluation.

Summary of Potential Legislative Needs

A transfer of the proposed Lee Nuclear Station into a special purpose vehicle (Newco), with PPAs between Newco and Duke Energy Carolinas, would create uncertainty regarding the interpretation and/or applicability of certain statutory provisions summarized above. Therefore, as early as 2009, Duke Energy Carolinas intends to seek legislation in both North Carolina and South Carolina to ensure that the regulatory framework outlined above can be fully adapted to the project financing structure reflected in Duke Energy Carolinas' loan guarantee application. Additionally, Duke Energy Carolinas intends to pursue legislation in North Carolina that would enable the utility (as part of the implementation of the loan guarantee) to recover financing costs incurred during construction without filing a general rate case to initiate or update (on an annual basis) such a recovery mechanism (i.e., current North Carolina law, as explained above, requires a general rate case to initiate or update the recovery of financing costs).

As a result of the information provided in items 1 through 3 above in response to WLS/II/D/2 Duke Energy Carolinas believes that there is a reasonable prospect that Duke Energy Carolinas will be able to repay the Guaranteed Portion of the DOE-Guaranteed Obligation (including interest).

WLS/II/D/3 Project Sponsors' Capabilities

D.II.3 Project Sponsors' Capabilities: Describe each Project Sponsor's capabilities, financial strength and investment both in the project to date and as anticipated during the operational phase of the project (e.g., continuing financial support). Detail the project's strategic significance to each Project Sponsor.

Response:

This response has been updated from the WLS/I/B/6/Project Sponsors' Capabilities response to reflect the Company's position as of September 30, 2008.

Duke Energy Carolinas' experience in constructing and operating nuclear plants places the Company in a unique position to provide the necessary owner oversight so critical to project success (e.g. ref INPO -08-005 August 2008, Historical Construction Experience to Apply to New Plant Deployment). Insights from that experience are being woven into the EPC contract, with tangible incentives for quality performance and schedule adherence, critical to successfully completing projects on budget and on schedule.

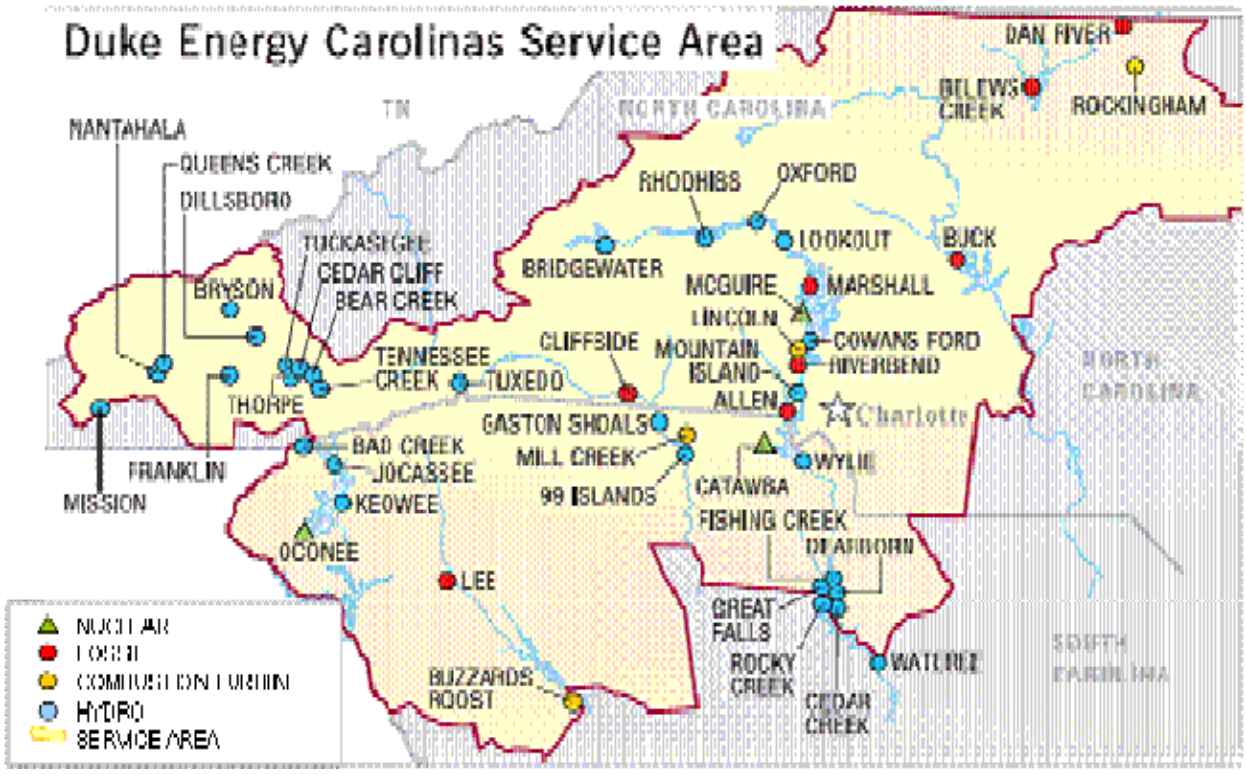
Headquartered in Charlotte, N.C., Duke Energy Corporation ("Duke Energy") is one of the largest electric power holding companies in the United States. A Fortune 500 company, Duke Energy is listed on the New York Stock Exchange under the symbol DUK.

2007 Operating Revenues: $12.7 billion (as of Dec. 31, 2007)
Total Assets: $52.8 billion (as of September 30, 2008)
Employees: 17,800 (as of Dec. 31, 2007)

At September 30, 2008, Duke Energy had cash, cash equivalents and short-term investments of approximately $2,056 million, partially offset by approximately $901 million of short-term notes payable and commercial paper. Duke Energy relies primarily upon cash flows from operations, borrowings, and its existing cash, cash equivalents and short-term investments to fund its liquidity and capital requirements.

Duke Energy has access to unsecured revolving credit facilities, which are not restricted upon general market conditions, with aggregate bank commitments of approximately $3.2 billion at September 30, 2008. As a result of recent financial market developments, Duke Energy has taken action to preserve liquidity and bridge access to uncertain capital markets. In September 2008, Duke Energy and its wholly owned subsidiaries, Duke Energy Carolinas, Duke Energy Ohio, Duke Energy Indiana and Duke Energy Kentucky, borrowed a total of approximately $1 billion under Duke Energy's master credit facility, which is discussed further below. At September 30, 2008, Duke Energy had available liquidity under the master credit agreement of approximately $0.6 billion.

Duke Energy Carolinas is the largest portion of Duke Energy Corporation's Franchised Electric & Gas business segment. Duke Energy Carolinas is the largest electric utility in North and South Carolina with over 2.3 million customers.



Duke Energy Corporation currently has the following credit ratings:

	Standard & Poor's	Moody's Investor Services
Duke Energy Corporation	A-	Baa2
Duke Energy Carolinas, LLC	A-	A3

Duke Energy continues to focus on reducing risk and positioning its business for future success and will invest principally in its strongest business sectors with an overall focus on positive net cash generation. Duke Energy anticipates its debt to total capitalization ratio to be approximately 40% by the end of 2008, as compared to approximately 35% at the end of 2007. This increase is primarily due to expected debt issuances in 2008, primarily to fund capital expenditures.

The Lee Nuclear Station Project is of primary strategic significance to Duke Energy Carolinas. Duke Energy Carolinas utilizes an integrated resource planning approach to ensure that it can reliably and economically meet the electric energy needs of its customers well into the future. The planning process takes into consideration the most economic and reliable alternatives to meet the projected energy needs of customers while incorporating environmental compliance planning. Duke Energy Carolinas considers a diverse range of resources including renewable, nuclear, coal, gas, energy efficiency, and demand-side management resources.

As discussed more fully in responses WLS/II/D/1 and WLS/II/D/2 and the Duke Energy Carolinas Annual Plan, Duke Energy Carolinas' selection process has identified a need for the Lee Nuclear Station project. The selection of the Lee Nuclear Station project by the Company, through the rigorous selection process utilized in the integrated resource plan, demonstrates the strategic significance of the project and its continued financial support of the project.

WLS/II/D/4 Contractual Agreements

D.II.4 Contractual Arrangements: Provide a copy of all material agreements (whether entered into or proposed) for the design, construction, start-up and operation of the project (e.g., engineering, raw material supply, commissioning and maintenance).

Response:
Duke Energy Carolinas is providing certain preliminary drafts of documents (principally in "term sheet" format) that would serve as the starting point for drafting the definitive project related agreements pertaining to the ownership, construction, financing and operation of the Lee Nuclear Station. As discussed in Response WLS/II/D/2 (item 2), the Lee Nuclear Station is intended to be owned by a special purpose entity ("Newco") which will be wholly-owned, directly or indirectly, by Duke Energy Carolinas.

The attached term sheets do not contain definitive terms and conditions and are a "work in progress" as we further refine the structure of the Lee Nuclear Station ownership and operation and project financing in order to satisfy the commercial and legal needs of the various parties as well as the requirements of DOE, the Federal Financing Bank (“FFB”) and other relevant constituents, such as the NRC, the rating agencies and state and federal regulatory authorities.

Generally, from a legal structure standpoint, it presently is contemplated that, as of the closing date of the FFB loan (or the initial drawings thereunder), Newco would own legal title to the Lee Nuclear Station and would be the holder of the COL. The attached documents we have forwarded assume that Newco would be 100% owned, directly or indirectly, by Duke Energy Carolinas, although it is possible that Duke Energy Carolinas may bring in other equity owners into Newco, some of whom may be other load serving entities or others which may be non-load serving entities; in any case, however, it is anticipated that Duke Energy Carolinas would own more than 50% of the equity interests in Newco. Newco would enter into the PPAs (the draft term sheet for which is provided in response WLS/II/D/2 **Appendix 17 [File name: 28 Appendix 17 WLS/II/D/2 PPA Term Sheet.doc])** with Duke Energy Carolinas pursuant to which Duke Energy Carolinas would be obligated to purchase 100% of the capacity, energy and other products from Newco, essentially pursuant to cost based rates tied to Newco's all in costs of developing and constructing the Lee Nuclear Station or, if other load serving entities were to become equity owners in Newco it likely would be the case that those other load serving entities would have "mirror" PPAs with Newco in proportion to their equity interests in Newco. However, at this time, Duke Energy Carolinas is operating under the assumption that it will be the 100% off-taker. Pursuant to a Nuclear Development and Operations and Maintenance Agreement, Duke Energy Carolinas would serve as the operator of the Lee Nuclear Station on behalf of Newco.

The precise timing of when certain contracts will be executed is not known at this time. It may be the case, for example, that certain contracts are executed in the first instance by Duke Energy Carolinas and subsequently assigned to Newco as part of or in connection with the construction and/or financing of the Lee Nuclear Station. This may occur, for example, with respect to the EPC Agreement and related agreements, as described generally below.

Set forth below is a brief description of the attached documents:

1. Summary of EPC Agreement between Duke Energy Carolinas and Westinghouse and Shaw for the Construction of Two AP 1000 Units. This summary describes in general terms the general constructs of the proposed EPC Agreement for the Lee Nuclear Station as they exist at such time, subject to the caveats described therein to reflect that this agreement is still an evolving document and many issues remain to be resolved. **Appendix 18 [File name: 29 Appendix 18 WLS/II/D/4 EPC.doc]**

2. Summary of Alliance Agreement between Duke Energy Carolinas and Westinghouse for the Provision of Parts and Services. This summary describes in general terms the general constructs of a proposed agreement whereby Westinghouse would supply parts and services for a designated period on certain covered components of the Lee Nuclear Station, subject to the caveats described therein to reflect that this agreement is still an evolving document and many issues remain to be resolved. **Appendix 19 [File name: 30 Appendix 19 WLS/II/D/4 Alliance.doc]**

3. Summary of Fuel Fabrication, Technology and Related Services Agreement between Duke Energy Carolinas and Vendor. This summary describes in general terms the general constructs of the proposed Fuel Agreement for the Lee Nuclear Station as they exist at such time, subject to the caveats described therein to reflect that this agreement is still an evolving document and many issues remain to be resolved. **Appendix 20 [File name: 31 Appendix 20 WLS/II/D/4 Fuel.doc]**

4. Summary of Spent Nuclear Fuel Disposal Contract for Lee Nuclear Station Units 1 and 2 with the Department of Energy **Appendix 21 [File name: 32 Appendix 21 WLS/II/D/4 Spent Fuel.doc]**

5. Term Sheet for Power Purchase & Sale Agreement between Newco and Duke Energy Carolinas. This agreement would provide for the long-term sale by Newco and purchase by Duke Energy Carolinas of all of the capacity, energy, ancillary services and other energy products produced by Unit 1 of the Lee Nuclear Station, with such pricing generally tied to the capital and operating costs incurred by Newco for the Lee Nuclear Station. A second PPA containing virtually identical terms and conditions would be entered into for all of the output of Lee Nuclear Station's Unit 2. **Appendix 17 [File name: 28 Appendix 17 WLS/II/D/2 PPA Term Sheet.doc]**

6. Term Sheet for Nuclear Development & Operations and Maintenance Agreement for facility between Newco and Duke Energy Carolinas. This agreement would provide for Duke Energy Carolinas to undertake the O&M services for the Lee Nuclear Station, including administering the Alliance Agreement (described above). **Appendix 22 [File name: 33 Appendix 22 WLS/II/D/4 O&M.doc]**

7. Term Sheet for the Project Debt for the Lee Nuclear Station. This credit agreement would govern the disbursement, repayment and security, among other things, pertaining

to the construction and permanent debt financing for the Lee Nuclear Station. **Appendix 23 [File name: 34 Appendix 23 WLS/II/D/4 Loan Agree Term Sheet.doc]**

8. Term Sheet for Receivable Servicing Agreement. This agreement would provide for the payment by Duke Energy Carolinas (from funds collected from its customers prior to the commercial operation date of the Lee Nuclear Station), for disbursement to the trustee on a current basis to cover the Lee Nuclear Station's debt financing amounts necessary for Newco to pay the interest and fees on its debt financing and a return on its equity capital during the period prior to the Lee Nuclear Station achieving commercial operation. **Appendix 24 [File name: 35 Appendix 24 WLS/II/D/4 Receivable Servicing Agreement.doc]**

9. Large Generator Interconnection Agreement ("LGIA"). The attached agreement is the standard LGIA utilized by Duke Energy Carolinas pursuant to its OATT **Appendix 25 [File name: 36 Appendix 25 WLS/II/D/4 Draft LGIA.doc]**

WLS/II/D/5 Management Plan

D.II.5 Management Plan: Provide an organizational chart showing the staff and positions expected to operate the project, their qualifications and track record. Describe the plan for operating the project.

Response:

Management Plan:

ORGANIZATIONAL STRUCTURE OF THE APPLICANT

This section of the application describes the organization that will be responsible for the operation of the Lee Nuclear Station. The description provided is similar to the description provided in Chapter 13 of the Final Safety Analysis Report (FSAR) submitted to the NRC as part of the Combined Operating License Application (COLA) for Lee Nuclear Station. Generic titles have been used in this description and the FSAR description so that industry comparisons are easier. Specific individuals have not been selected for the positions discussed in the response as it is far premature for actually staffing the positions.

Duke Energy has over 40 years of experience in the design, construction, and operation of nuclear generating stations. This organization is in place at the other three Duke Energy nuclear stations, Oconee Units 1, 2, and 3 McGuire Units 1 and 2 and Catawba Units 1 and 2. Therefore, this is a mature organization structure proven to provide strong oversight supporting safe and efficient operations.

Attached as Appendix 22 is a preliminary draft Term Sheet for a Project Development and Operation and Maintenance Agreement between Duke Energy Carolinas and its proposed wholly-owned special purpose subsidiary, Nuclear Newco, LLC ("Newco"), which is ultimately expected to own the Lee Nuclear Station (the "Development and O&M Agreement"). (For a full discussion of the proposed arrangements between Duke Energy Carolinas and Newco, please see the responses contained in Sections D and E of this Part II Application.) Pursuant to the Development and O&M Agreement, Duke Energy Carolinas would operate and maintain the Lee Nuclear Station, for which both Newco and Duke Energy Carolinas would be licensees.

1.0 MANAGEMENT AND TECHNICAL SUPPORT ORGANIZATIONS

This section describes organizational positions that will be used at Lee Nuclear Station in addition to corporate positions and associated functions and responsibilities. The position titles used in the text are specific to Duke Energy so other nuclear stations may use similar titles or generic titles. The responsibilities of the positions are provided. Figure 13.1-201, Operating Organization Structure, provides a cross-reference to identify position relationships. **In Appendix 26 [File Name: 37 Appendix 26 WLS_II_D_5 FIG 13_1_201.pdf]**

1.1 Design, Construction, and Operating Responsibilities

The President and Chief Executive Officer has overall responsibility for functions involving design, construction and operation. Line responsibilities for those functions are assigned to the Chief Nuclear Officer. The Chief Nuclear Officer maintains control of nuclear plant activities through the executives in charge of nuclear support and nuclear operations. 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.

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.

Key executive and corporate management positions, functions, and responsibilities are shown in Figures 13.1-203, **Appendix 27 [File name: 38 Appendix 27 WLS_II_D_5 FIG 13_1_203.pdf**], and 13AA-201, **Appendix 28 [File name: 39 Appendix 28 WLS_II_D_5 FIG 13AA_201.pdf]**. The management and technical support organization for design, construction, and preoperational activities is addressed in Appendix 13AA of the FSAR.

1.2 Provisions for Technical Support Functions

Before beginning preoperational testing, the site executive in charge of plant management establishes 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:

- Nuclear, mechanical, structural, electrical, thermal-hydraulic, metallurgical and material, and instrumentation and controls engineering
- Safety review
- Quality assurance, audit and surveillance
- Plant chemistry
- Radiation protection and environmental support
- Fueling and refueling operations support
- Training
- Maintenance support
- Operations support
- Fire protection
- Emergency planning organization
- Outside contractual assistance

In the event that station personnel are not qualified to deal with a specific problem, the services of qualified individuals from other functions within the company or an outside consultant are engaged. For example, major contractors, such as the reactor technology vendor or turbine generator manufacturer, provide technical support when equipment modifications or special

maintenance problems are considered. Special studies, such as environmental monitoring, may be contracted to qualified consultants.

Figure 13.1-201, **Appendix 26 [File Name: 31 Appendix 26 WLS_II_D_5 FIG 13_1_201.pdf],** illustrates the management and technical support organizations supporting operation of the plant. See Section 1.2 for a description of responsibilities and authorities of management positions for organizations providing technical support.

Response WLS/II/C/2, Operating and Maintenance Plans, describes the estimated number of positions required for each function of the operating organization.

1.2.1 Engineering

The onsite engineering department consists of system engineering, design engineering, and engineering programs. These groups are responsible for performing the classical design activities as well as providing engineering expertise in other areas. 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 in-service inspection/in-service testing (ISI/IST), fire protection, snubbers, and valves.

The onsite engineering groups (systems, design, and programs) have functional managers who report to the manager in charge of engineering. Nuclear fuels engineering and safety and engineering analysis are located offsite and report to the executive in charge of nuclear engineering.

The onsite engineering department is responsible for:

- Support of plant operations in the engineering areas of mechanical, structural, electrical, thermal-hydraulic, 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.
- Engineering programs.
- Support of procurement, chemical and environmental analysis and maintenance activities in the plant as requested by the plant manager.
- Performance of design engineering of plant modifications.
- Maintaining the design basis by updating the record copy of design documents as necessary to reflect the actual as-built configuration of the plant.
- Accident and transient analyses.
- Human Factors Engineering design process

Reactor engineering, part of system engineering, provides technical assistance in the areas of core design, core operations, core thermal limits, and core thermal hydraulics.

Engineering work may be contracted to and performed by outside companies in accordance with the quality assurance (QA) program.

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.

1.2.2 Nuclear Safety Assurance

Plant licensing, regulatory compliance, corrective actions and performance improvement, security, Environment Safety and Health (ES&H), and emergency preparedness each have a functional manager who reports to and receives direction from the manager in charge of nuclear safety assurance.

The nuclear safety assurance (NSA) organization, through the licensing department, is the normal contact point for the station with the NRC in matters concerning licensing and is responsible for addressing NRC bulletins and orders. Typical duties include;

- Developing licensee event reports (LERs) and responding to notices of violations.
- Writing/submitting operating license and technical specification amendments and updating the FSAR.
- Tracking commitments and answering generic letters.
- Analyzing operating experience data and monitoring industry issues.
- Preparing station for special NRC inspections, interfacing with NRC inspectors, and interpreting NRC regulations.
- Maintaining the licensing basis.

The department also administers the corrective action program, the security program, the station's emergency preparedness program, and programs to protect the environment, public health and employee health (ES&H).

Personnel resources of the NSA organization are shared between units. A single management organization oversees the NSA organization for the station units.

Oversight of safety review of station programs, procedures, and activities is performed by a plant safety review committee, a corporate safety review committee, and the NSA organization.

1.2.3 Quality Assurance

Safety related activities associated with the operation of the plant are governed by QA direction established in Chapter 17 of the FSAR and the Quality Assurance Program Description (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:

- General quality assurance indoctrination and training for the nuclear station personnel.
- Maintenance of the QAPD.
- Coordinating the development of audit schedules.
- Audit, surveillance, and evaluation of nuclear division suppliers.
- Quality control (QC) inspection/testing activities.

QA/QC management is independent of the station management line organization. Onsite personnel resources of the QA/QC organization are shared between units.

1.2.4 Chemistry

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.

The functional manager in charge of chemistry is responsible to the plant manager for maintaining chemistry programs and for monitoring and maintaining the water chemistry of plant systems. The chemistry organization is also responsible for operating radwaste process equipment. The staff of the chemistry department consists of laboratory technicians, support personnel, and supervisors who report to the functional manager in charge of chemistry.

Personnel resources of the chemistry organization are shared between units. A single management organization oversees the chemistry group for the station units.

1.2.5 Radiation Protection

A radiation protection (RP) department is established to protect the health and safety of the surrounding public and personnel working at the plant. The RP program is described in Chapter 12 of the FSAR. The program includes:

- Respiratory Protection
- Personnel Dosimetry
- Bioassay
- Survey Instrument Calibration and Maintenance
- Radioactive Source Control
- Effluents and Environmental Monitoring and Assessment
- Radioactive Waste Shipping
- Radiation Work Permits
- Job Coverage
- Radiation Monitoring and Surveys

The RP 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 manager in charge of radiation protection reports directly to the plant manager.

Personnel resources of the RP organization are shared between units. A single management organization oversees the RP group for both units.

1.2.6 Fueling and Refueling Support

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 manager in charge of work control is responsible for planning and scheduling outages and for refueling support and reports to the plant manager.
Personnel resources of the work control organization are shared between units.

A single management organization oversees the work control associated with both units.

1.2.7 Training and Development

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, re-qualification training, and plant staff training as well as the plant access training (general employee training) and radworker training. The functional manager of training and development is independent of the operating line organization to provide for independence from operating pressures.

Personnel resources of the training department are shared between units. A single management organization provides oversight of station training activities.

1.2.8 Maintenance Support

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 manager in charge of work control who reports to the plant manager.

Personnel of the maintenance support organization are shared between units. A single management organization oversees the function of maintenance support for the station units.

1.2.9 Operations Support

The operations support function is provided under the direction of the manager in charge of operations. Operations support includes the following programs:

- Operations procedures
- Operations surveillances
- Equipment tagging

1.2.10 Fire Protection

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.

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 is the responsibility of the functional manager in charge of emergency preparedness. 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. The site executive of the operating unit(s) has the lead responsibility for the overall site fire protection during construction of new units.

Personnel resources that implement the fire protection program are shared between units. A single management organization oversees the fire protection program for the station units.

1.2.11 Emergency Organization

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 manager in charge of emergency preparedness reports to the manager in charge of nuclear safety assurance.

The site emergency plan organization is described in the Emergency Plan.

Resources of the emergency planning group are shared between units. A single management organization oversees the emergency planning group for the station units.

1.2.12 Outside Contractual Assistance

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 materials, purchasing, and contracts reports to the executive in charge of plant support.

Resources of the materials, purchasing, and contracts organization are shared between units. A single management organization oversees the materials, purchasing, and contracts group for the station units.

1.3 Organizational Arrangement

1.3.1 Executive Management Organization

1.3.1.1 Chief Executive Officer
Executive management is ultimately responsible for execution of activities and functions for the nuclear generating plants owned by the utility. Executive management establishes expectations such that a high level of quality, safety, and efficiency is achieved in aspects of plant operations and support activities through an effective management control system and an organization selected and trained to meet the above objectives.

A high-level chart of the utility nuclear executive organization is illustrated in Figure 13.1-203, **Appendix 27 [File name: 38 Appendix 27 WLS_II_D_5 FIG 13_1_203.pdf**]. Executives and managers with direct line of authority for activities associated with operation of the plant are shown in Figure 13.1-201, **Appendix 26 [File Name: 37 Appendix 26 WLS_II_D_5 FIG 13_1_201.pdf]**. Responsibilities of those executives and managers are specified below.

The chief executive officer (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 chief nuclear officer, and other executive staff in the nuclear division of the corporation.

1.3.1.2 Chief Nuclear Officer

The senior executive in charge of nuclear generation is the chief nuclear officer (CNO) and reports to the chief executive officer. The CNS 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 CNS delegates authority and responsibility for the operation and support of the site through the executive in charge of nuclear operations to the site executive in charge of plant management, executive in charge of nuclear support, and executive in charge of nuclear plant development. It is the responsibility of the chief nuclear officer to provide guidance and direction such that safety-related activities, including engineering, construction, operations, maintenance, and planning are performed following the guidelines of the quality assurance program. The CNO has no ancillary responsibilities that might detract attention from nuclear safety matters.

1.3.1.3 Senior Executive In Charge of Nuclear Operations

The senior executive in charge of nuclear operations is responsible for oversight of operations at each of the operating nuclear units in the system. The site executives in charge of management at each of the operating plants report to the senior executive in charge of nuclear operations.

1.3.1.4 Senior Executive In Charge of Nuclear Support

The senior executive in charge of nuclear support has the responsibility for support functions including licensing, quality assurance and oversight, technical services, nuclear engineering, major projects, and materials, purchasing, and contracts. The senior executive in charge of nuclear support delegates authority and responsibility through executives and managers in charge of each of the above functions.

1.3.1.5 Site Executive In Charge of Plant Management

The site executive in charge of plant management reports to the senior executive in charge of nuclear operations. The site executive in charge of plant management is directly responsible for management and direction of activities associated with the efficient, safe, and reliable operation of the nuclear station, except for those functions delegated to the executive in charge of nuclear support. 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 nuclear safety assurance, engineering, training, site services, and site business. 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.

1.3.1.6 Executive In Charge of Plant Support

The executive in charge of plant support is responsible for providing guidance to the support organizations that provide support to the site such as materials, purchasing, and contracts, QA and oversight, licensing, and technical services. The executive in charge of plant support reports to the senior executive in charge of nuclear support.

1.3.1.7 Executive In Charge of Nuclear Engineering

The executive in charge of nuclear engineering reports to the senior executive in charge of

nuclear support and is responsible for directing activities associated with fuel management, core design, and FSAR Chapter 15 safety analysis. Activities include the scheduling and procurement of uranium concentrates, conversion, enrichment, and fabrication services. The organization is also responsible for the preparation of fuel cycle economic studies, fuel cost and amortization analysis, fuel performance support, fuel inventory accountability and management and market analysis and strategic development. The department provides expertise and support for high-level waste disposal management.

1.3.1.8 Functional Manager in Charge of Nuclear Fuels

The functional manager in charge of nuclear fuels is responsible for providing nuclear fuel and related business and technical support consistent with the operational needs of the plant. Activities include the scheduling and procurement of uranium concentrates, conversion, enrichment, and fabrication services. The department provides expertise and support for high-level waste disposal management. The functional manager in charge of nuclear fuels is assisted by an engineering staff and reports directly to the executive in charge of nuclear engineering.

1.3.1.9 Functional Manager in Charge of Safety and Engineering Analysis

The functional manager in charge of safety and engineering analysis is responsible for development and maintenance of accident analysis activities and programs. The manager is also responsible for probabilistic risk assessment (PRA) studies, risk programs and evaluations for maintenance activities when needed, and outage planning risk programs and evaluations when needed. The manager in charge of safety and engineering analysis is assisted by an engineering staff and reports directly to the executive in charge of nuclear engineering.

1.3.1.10 Functional Manager In Charge of Technical Services

The functional manger in charge of technical services is responsible for the assistance and guidance to support organizations such as chemistry and radwaste, radiation protection, fleet outage support, and technical services for materials engineering and equipment performance. The functional manager in charge of technical services reports to the executive in charge of plant support.

1.3.1.11 Functional Manager in Charge of Licensing

The functional manager in charge of licensing is responsible for the direction and guidance of the functions associated with maintaining the operating license and Final Safety Analysis Report. The functional manager, in charge of licensing, reports to the executive in charge of plant support.

1.3.1.12 Functional Manager In Charge of Nuclear QA and Oversight

The functional manager in charge of nuclear QA and oversight is responsible for the direction and guidance of the QA programs, corporate safety review committee support, audits and performance assessment activities, quality control inspections, vendor audits, and operating

experience assessment. The manager in charge of nuclear QA and oversight reports to the executive in charge of plant support.

1.3.1.13 Functional Manager In Charge of Materials, Purchasing, and Contracts

The functional manager in charge of materials, purchasing, and contracts is responsible for providing direction and guidance to site-located personnel, for providing sufficient and proper materials to support the material needs of the plant, and performing related activities including materials storage, supply system database maintenance, and meeting quality assurance and internal audit requirements. The functional manager, in charge of materials, purchasing, and contracts, reports to the executive in charge of plant support.

1.3.1.14 Executive in Charge of Major Projects

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. The executive in charge of major projects reports to the executive in charge of nuclear support.

1.3.1.15 Executive in Charge of Nuclear Plant Development

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, 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 chief nuclear officer.

1.3.2 Site Support Organization

1.3.2.1 Manager In Charge of Engineering

The manager, in charge of engineering, reports to the site executive in charge of plant management. The 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 1.2.1. The manager in charge of engineering directs functional managers responsible for system engineering, design engineering, and engineering programs.

1.3.2.2 Functional Manager In Charge of System Engineering

The functional manager in charge of system engineering reports to the 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 1.2.1.

The functional manager in charge of system engineering is responsible for providing direction and guidance to system engineers as follows:

- Monitoring the efficiency and proper operation of balance of plant and reactor systems.
- Planning programs for improving equipment performance, reliability, or work practices.
- Conducting operational tests and analyzing the results.
- Identification of plant spare parts for cognizant systems.

1.3.2.3 Functional Manager In Charge of Design Engineering

The functional manager in charge of design engineering reports to the manager in charge of engineering and is responsible for:

- Resolution of design issues.
- Onsite development of design related change packages and plant modifications.
- Implementation of effective project management methods and procedures, including cost controls, for implementation of modifications and construction activities.
- Management of contractors who may perform modification or construction activities.
- Maintaining the configuration control program.

1.3.2.4 Functional Manager In Charge of Engineering Programs

The functional manager in charge of engineering programs reports to the manager in charge of engineering and is responsible for programs such as:

- Valve engineering
- Maintenance rule tracking and trending
- Piping erosion/corrosion
- In-service testing
- Equipment reliability engineering.

1.3.2.5 Manager In Charge of Nuclear Safety Assurance

The manager in charge of nuclear safety assurance is responsible for those functions described in Subsection 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 managers in charge of plant licensing and regulatory compliance, corrective actions and performance improvement, security, emergency preparedness, and environmental safety and health.

1.3.2.6 Functional Manager In Charge of Plant Licensing and Regulatory Compliance

The responsibility of the functional manager 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 1.2.2. The functional manager in charge of plant licensing and regulatory compliance reports directly to the manager in charge of nuclear safety assurance.

1.3.2.7 Functional Manager In Charge of Corrective Actions and Performance Improvement

The responsibilities of the functional manager 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 manager, in charge of corrective actions and performance improvement, reports directly to the manager in charge of nuclear safety assurance.

1.3.2.8 Functional Manager In Charge of Emergency Preparedness

The functional manager in charge of emergency preparedness is responsible for:

- Coordinating and implementing the plant emergency response plan with state and local emergency plans.
- Developing, planning, and executing emergency drills and exercises including fire brigade training exercises.
- Emergency action level development.
- NRC reporting associated with 10CFR50.54(q).

The functional manager in charge of emergency preparedness reports directly to the manager in charge of nuclear safety assurance.

1.3.2.9 Functional Manager In Charge of Security

The functional manager in charge of security is responsible for:

- Implementation and enforcement of security directives, procedures and instructions received from appropriate authorities.
- Day-to-day supervision of the security guard force.
- Administration of the security program.

The functional manager in charge of security reports directly to the manager in charge of nuclear safety assurance.

1.3.2.10 Manager In Charge of Site Business

The manager in charge of site business 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 site business reports to the site executive in charge of plant management.

1.3.2.11 Functional Manager in Charge of Environment, Safety, and Health
The functional manager in charge of environment, safety, and health is responsible for site safety programs and reports to the manager in charge of nuclear safety assurance.

1.3.2.12 Manager In Charge of Training and Development

The 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:

- Operations training programs
- Plant staff training programs
- Plant access training
- Emergency plan training
- Radiation worker training

The 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.

1.3.2.13 Manager in Charge of Site Services

The manager in charge of site services reports to the executive in charge of plant management. The Manager in charge of site services responsibilities include managing warehouses and tools, site facilities, and equipment distribution.

1.3.2.14 Qualifications of Technical Support Personnel

The qualifications of managers and supervisors of the technical support organization meet the qualification requirements in education and experience for those described in ANSI/ANS-3.1-1993 as endorsed and amended by Regulatory Guide 1.8. The qualification and experience requirements of headquarters staff is established in corporate policy and procedure manuals.

1.3.3 OPERATING ORGANIZATION

1.3.3.1 Plant Organization

The plant management, technical support, and plant operating organizations are shown in Figure 13.1-201, **Appendix 26 [File Name: 37 Appendix 26 WLS_II_D_5 FIG 13_1_201.pdf]**. The

on-shift operating organization is presented in Figure 13.1-202, **Appendix 29 [File Name: 40 Appendix 29 WLS_II_D_5 FIG 13_1_202.pdf]**. Additional personnel are required to augment normal staff during outages. Nuclear plant employees are responsible for reporting problems with plant equipment and facilities. They are required to identify and document equipment problems in accordance with the QA program.

QA program requirements, as they apply to the operating organization, are described in FSAR Chapter 17. The guidelines of Regulatory Guide 1.33 , for the operating organization, onsite review, and rules of practice are implemented at the site via administrative procedure or standing order and include:

- Establishment of a quality assurance program for the operational phase.
- Preparation of procedures necessary to carry out an effective quality assurance program.
- A program for review and audit of activities affecting plant safety.
- Programs and procedures for rules of practice as described in Section 5.2 of ANSI/ANS-3.2-1988.

Managers and supervisors within the plant operating organization are responsible for establishing goals and expectations for their organization and to reinforce behaviors that promote radiation protection. Specifically, managers and supervisors are responsible for the following, as applicable to their position within the plant organization:

- Interface directly with radiation protection staff to integrate radiation protection measures into plant procedures and design documents and into the planning, scheduling, conduct, and assessment of operations and work.
- Notify radiation protection personnel promptly when radiation protection problems occur or are identified, take corrective actions, and resolve deficiencies associated with operations, procedures, systems, equipment, and work practices.
- Train site personnel on radiation protection, and provide periodic retraining, in accordance with 10 CFR Part 19 so that they are properly instructed and briefed for entry into restricted areas.
- Periodically observe and correct, as necessary, radiation worker practices.
- Support radiation protection management in implementing the radiation protection program.
- Maintain exposures to site personnel ALARA.

Plant Manager

The plant manager reports to the site executive in charge of plant management, is responsible for overall safe operation of the plant, and has control over those onsite activities necessary for safe operation and maintenance of the plant including the following:

- Operations
- Maintenance and modification
- Chemistry and radiochemistry
- Outage management
- Scheduling and activity coordination

Additionally, the plant manager has overall responsibility for occupational and public radiation safety. Radiation protection responsibilities of the plant manager are consistent with the guidance in Regulatory Guide 8.8 and Regulatory Guide 8.10 including the following:

- Provide management radiation protection policy throughout the plant organization.
- Provide an overall commitment to radiation protection by the plant organization.
- Interact with and support the manager in charge of radiation protection on implementation of the radiation protection program.
- Support identification and implementation of cost-effective modifications to plant equipment, facilities, procedures and processes to improve radiation protection controls and reduce exposures.
- Establish plant goals and objectives for radiation protection.
- Maintain exposures to site personnel ALARA.
- Support timely identification, analysis and resolution of radiation protection problems (e.g., through the plant corrective action program).
- Provide training to site personnel on radiation protection in accordance with 10 CFR Part 19.
- Establish an ALARA Committee with delegated authority from the plant manager that includes, at a minimum, the managers in charge of operations, maintenance, engineering, and radiation protection to help provide for effective implementation of line organization responsibilities for maintaining worker doses ALARA.

The line of succession of authority and responsibility for overall operations in the event of unexpected events of a temporary nature is:

- Manager in charge of operations
- Manager in charge of plant maintenance
- Assistant manager in charge of operations

The manager in charge on-shift is the plant manager's direct representative for the conduct of operations. The succession of authority includes the authority to issue standing or special orders as required.

1.3.3.3 Manager In Charge of Maintenance

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.

The manager in charge of plant 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 plant maintenance reports to the plant manager and provides direction and guidance to the maintenance discipline functional managers and maintenance support staff.

1.3.3.4 Maintenance Discipline Functional Managers

The functional managers of each maintenance discipline (mechanical, electrical, and instrumentation and control) are responsible for maintenance activities within their discipline including plant modifications. They provide guidance in maintenance planning and craft supervision. They establish the necessary manpower levels and equipment requirements to perform both routine and emergency type maintenance activities, seeking the services of others in performing work beyond the capabilities of the plant maintenance group. Each discipline functional manager is responsible for liaison with other plant staff organizations to facilitate safe operation of the station. These functional managers report to the manager in charge of plant maintenance.

1.3.3.5 Maintenance Discipline Supervisors

The maintenance discipline supervisors (mechanical, electrical, and instrumentation and control) supervise maintenance activities, assist in the planning of future maintenance efforts, and guide the efforts of the craft within their discipline. The maintenance discipline supervisors report to the appropriate maintenance discipline functional managers.

1.3.3.6 Manager in Charge of Work Control

The 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.

The Manager in Charge of Work Control reports to the plant manager.

1.3.3.7 Functional Manager In Charge of Radiation Protection

The functional manager in charge of radiation protection has the responsibility for providing adequate protection of the health and safety of personnel working at the plant and members of the public during activities covered within the scope and extent of the license. Radiation protection responsibilities of the functional manager in charge of radiation protection are consistent with the guidance in Regulatory Guide 8.8 and Regulatory Guide 8.10. They include:

- Manage the radiation protection organization.
- Establish, implement, and enforce the radiation protection program.
- Provide radiation protection input to facility design and work planning.
- Track and analyze trends in radiation work performance and take necessary actions to correct adverse trends.
- Support the plant emergency preparedness program and assign emergency duties and responsibilities within the radiation protection organization.

- Delegate authority to appropriate radiation protection staff to 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.

The functional manager in charge of radiation protection reports to the plant manager and is assisted by the supervisors in charge of radiation protection.

The functional manager in charge of radiation protection reports indirectly to and receives support from the corporate functional manager in charge of technical services.

1.3.3.8 Supervisor In Charge of Radiation Protection

The 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 1.2.5.

Supervisors in charge of radiation protection report to the functional manager in charge of radiation protection.

1.3.3.9 Radiation Protection Technicians

Radiation protection technicians (RPTs) directly carry out responsibilities defined in the radiation protection program and procedures. In accordance with technical specifications an RPT is on site whenever there is fuel in the vessel. The following are some of the duties and responsibilities of the RPTs:

- As delegated authority by the 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.
- Provide coverage and monitor radiation conditions for jobs potentially involving significant radiation exposure.
- Conduct surveys, assess radiation conditions and establish radiation protection requirements for access to and work within restricted, radiation, high radiation, very high radiation, airborne radioactivity areas, and areas containing radioactive materials.
- Provide control over the receipt, storage, movement, use, and shipment of licensed radioactive materials.
- Review work packages, proposed design modifications, and operations and maintenance procedures to facilitate integration of adequate radiation protection controls and dose-reduction measures.
- Review and oversee implementation of plans for the use of process or other engineering controls to limit the concentrations of radioactive materials in the air.
- Provide personnel monitoring and bioassay services.

- Maintain, prescribe and oversee the use of respiratory protection equipment.
- Perform assigned emergency response duties.

1.3.3.10 Functional Manager In Charge of Chemistry

The functional manager in charge of chemistry is responsible for development, implementation, and direction and coordination of the chemistry, radiochemistry and non-radiological environmental monitoring programs. The chemistry department is also responsible for operation of the radwaste systems and 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 functional manager in charge of technical services.

1.3.3.11 Supervisor of Radwaste Operations

The supervisor of radwaste operations is responsible for development, implementation, direction, and coordination of the radwaste program. The supervisor of radwaste operations reports to the functional manager in charge of chemistry. The supervisor of radwaste operations supervises radwaste operators.

1.3.3.12 Operations Department

All operations activities are conducted with safety of personnel, the public, and equipment as the overriding priority. The operations department is responsible for:

- Operation of station equipment.
- Monitoring and surveillance of safety and non-safety related equipment.
- Fuel handling.
- Providing the nucleus of emergency and fire-fighting teams.

The operations department maintains sufficient licensed and senior licensed operators to staff the control room continuously using a crew rotation system. The operations department is under the direction of the manager in charge of operations, who through the assistant manager in charge of operations directs the day-to-day operation of the plant.

Specific duties, functions, and responsibilities of key shift members are discussed in Subsections 1.2.4 through 1.2.8 and in plant administrative procedures and the technical specifications.

Some resources of the operations organization are shared between units. Administrative and support personnel perform their duties on either unit. Additional operations staff is required to fill the on-shift staffing requirements of the additional units. To operate, or supervise the operation of more than one unit, a senior reactor operator (SRO) or reactor operator (RO) must hold an appropriate, current license for each unit.

A single management organization oversees the operations group for the station units.

1.3.3.13 Manager In Charge of Operations

The manager in charge of operations has overall responsibility for the day-to-day operation of the plant. The manager in charge of operations reports to the plant manager and is assisted by the assistant manager in charge of operations and assistant manager in charge of operations support. The manager in charge of operations receives support from the engineer in charge of fire protection for coordination of operations related fire protection activities. The manager in charge of operations or the assistant manager of operations is SRO licensed.

1.3.3.14 Assistant Manager In Charge of Operations

The assistant manager in charge of operations, under the direction of the manager in charge of operations, is responsible for:

- Shift plant operations in accordance with the operating license, technical specifications, and written procedures.
- Providing supervision of operating shift personnel for operational shift activities including those of emergency and firefighting teams.
- Coordinating with the assistant manager in charge of operations support and other plant staff sections.
- Verifying that nuclear plant operating records and logs are properly prepared, reviewed, evaluated and turned over to the assistant manager in charge of operations support.

The assistant 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 manager in charge of operations reports to the manager in charge of operations and in the absence of the manager in charge of operations or assistant manager in charge of operations, the assistant manager in charge of operations support may assume the duties and responsibilities of either of these positions.

1.3.3.15 Manager In Charge of Operations Support

The operations support section is staffed with sufficient personnel to provide support activities for the operating shifts and overall operations department.

The assistant manager in charge of operations support, under the direction of the manager in charge of operations, is responsible for:

- Directing and guiding plant operations support activities in accordance with the operating license, technical specifications, and written procedures.
- Providing supervision of operating support personnel, for operations support activities, and coordination of support activities.
- Providing for nuclear plant operating records and logs to be turned over to the nuclear records group for maintenance as quality assurance records.

WLS/II/D/6 Operational Risks and Mitigation Strategies

D.II.6 Operational Risks and Mitigation Strategies: Based on the business plan information above, prepare an analysis showing the Strengths, Weaknesses, Opportunities and Threats for successful operation of the project (e.g., price declines, scarcity of raw materials, dependence on a particular technology supplier) and mitigation strategies.

Response:

As reported in WLS/I/D/2/d Summary Business Plan – Operational Risks and Mitigation Strategies:

As discussed in other sections of this application, risks associated with unfavorable state or federal regulatory rulings will be mitigated prior to the commercial operation date of the proposed Lee Nuclear Station. In fact, all necessary NRC and state regulatory approvals will be obtained before construction commences. Furthermore, during the construction of Lee Nuclear Station, Duke Energy Carolinas will submit cost and schedule information to the North Carolina and South Carolina utilities commissions; by doing so, Duke Energy Carolinas will rely on regulatory proceedings allowed by state law to obtain ongoing assurance during construction of the ultimate recovery of costs incurred to build Lee Nuclear Station.

Technology risk of the asset associated with the AP1000 is considered to be very low. As discussed in response WLS/I/B/2, the AP1000 is built using proven technologies coupled with the laws and forces of nature to simplify the design as compared to currently operating reactors. Canned Motor Reactor Coolant Pumps are being introduced into commercial reactors for the first time with the AP1000. However, pumps of similar design have been used extensively in the Nuclear Navy. Full flow testing of AP1000 RCPs is planned for 2009, well ahead of commercial operations. Additionally AP1000 reactors will be in service in China before Duke Energy Carolinas deploys to the Lee Nuclear Station site for construction.

Transmission adequacy is not believed to be a significant operational risk given the rigorous process followed in siting and designing transmission ties and system upgrades. Transmission corridors for the Lee Nuclear Station have been selected through a process that included numerous opportunities for public input and involvement. Transmission ROW acquisition is planned for completion by the end of 2011, before deploying to the site for construction in 2012. Transmission ties and system upgrades are engineered and completed before tying the asset to the grid. Engineering evaluations follow well established algorithms.

As discussed in response WLS/I/C/1/c, Duke Energy Carolinas is confident of an ongoing fuel supply for the proposed Lee Nuclear Station and considers the operational risk associated with a fuel shortage to be extremely low. Additionally, Duke Energy Carolinas plans to enter into a fuel agreement simultaneous with the EPC agreement, thus providing pricing certainty for the initial period of commercial operations.

Operation and Maintenance costs for Lee Nuclear Station are expected to be in line with cost for the other nuclear stations in the Duke Energy Carolinas fleet. The simpler design of the AP1000,

coupled with increased standardization and structures for leveraging the standardization (e.g. APOG discussed in WLS/I/C/1/d) provide additional confidence that ongoing O&M costs for Lee Nuclear Station are reasonably approximated by O&M costs for Duke Energy Carolinas' existing units. Additionally, Duke Energy Carolinas plans to enter into a maintenance services agreement simultaneous with the EPC agreement, thus providing certainty of services and greater assurance of warranty coverage for the initial period of commercial operations.

The operating organization for the Lee Nuclear Site is planned to mimic the organization used in Duke Energy Carolinas' existing fleet; analogous to plugging the asset into a proven operational platform. In Duke Energy Carolinas' 30-year history of operating nuclear plants, there has never been a regulatory shutdown of a unit apart from shutdowns required by Technical Specifications; nor has there been an extended outage associated with a regulatory issue. Duke Energy Carolinas has mature processes for Operational Decision Making; and for mitigating risk associated with on-line maintenance and refueling activities. Lee Nuclear Station will benefit greatly from the operational philosophy, values, programs, culture and processes in place within the existing Duke Energy Carolinas nuclear fleet.

WLS/II/D/7 Progress Reports

D.II.7 Progress Reports: The applicant shall provide project progress reports to DOE or its Agent(s) during the construction and start-up phases on a monthly basis (the first such report to be submitted within 30 calendar days of notification of CRB approval of the issuance of the Term Sheet), comparing actual timing, cost and financing against the original budget and previous month. Each report shall explain the reason(s) for any significant variance(s) during the quarter and likely impact on the project going forward. During the operational phase of the project, the applicant shall provide financial statements, prepared in accordance with U.S. GAAP, to DOE on a quarterly basis (consisting of an income statement, balance sheet and cash flow statement), with certification by the applicant that the statements are true and correct. At all times, from receipt by DOE of an application, until the guaranteed portion of the Guaranteed Obligation is fully re-paid, the applicant will be obligated to inform DOE expeditiously (but in no event later than three (3) business days business days after discovery) of any condition having, or potentially having, a material adverse effect on either the project or the ability of the parties to carry out their obligations. DOE reserves the right to require submission of additional information as it deems necessary.

Response:

Duke Energy Carolinas agrees to provide progress reports to the DOE or its Agent(s), on a monthly basis, during the construction and start-up phases, beginning within 30 calendar days of notification of CRB approval of the issuance of the Term Sheet, containing the information requested above. The Company will also provide financial statements, prepared in accordance with U.S. GAAP, to DOE on a quarterly basis (consisting of an income statement, balance sheet and cash flow statement), with certification as required by the DOE. Finally, the Company will inform DOE expeditiously (but in no event later than three (3) business days after discovery) of any condition having, or potentially having, a material adverse effect on either the project or the ability of the parties to carry out their obligations.