

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~



United States Nuclear Regulatory Commission

Protecting People and the Environment

BRIEFING BOOK

FOR

COMMISSIONER GEORGE APOSTOLAKIS

OCONEE NUCLEAR STATION

September 13, 2011

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

CONTENTS

AGENDA	TAB
Executive Summary	1

FACILITY DATA	
Facility Location Map and Directions	2
Facility Data	3
Facility Unique Features	4

FACILITY PERFORMANCE	
Reactor Oversight Process Info	5
Current Issues	6

FACILITY MANAGEMENT DATA	
Facility Organization	7
Biographical Data of Principal Managers	8

NRC OVERSIGHT DATA	
Resumes of Resident Inspectors	9

Agenda for Commissioner Apostolakis's Visit to Oconee Nuclear Station

September 13, 2011

- 7:30 a.m. Leave the hotel for Oconee Nuclear Station. (See map and directions in Tab 2)
- 8:15 a.m. Arrive at the World of Energy visitors center for overview discussion of the Keowee-Toxaway Project
- 8:30 a.m. Depart the World of Energy for the Jocassee Hydro-Electric Facility
- 9:15 a.m. Arrive at the Jocassee Hydro-Electric Facility for tour of powerhouse and dam structure
- 11:00 a.m. Depart the Jocassee Hydro-Electric Facility for the Oconee Nuclear Station
- 11:45 a.m. Arrive at Oconee, process into the Protected Area (Note: The Senior Resident Inspector will be the assigned escort)
- 11:55 a.m. Meet with the Oconee Resident Office staff
- 12:15 p.m. Working lunch with the station staff
- 1:15 p.m. Tour of the Protected Area
- 3:00 p.m. Tour the Keowee Hydro Facility and the current / planned external flood protection modifications
- 4:00 p.m. Meeting with Duke management & supervisors on industry and regulatory issues
- 5:00 p.m. Depart for Greenville-Spartanburg airport

Executive Summary

Purpose of the visit/meeting

- Meet the Oconee Resident office staff.
- Meet the Oconee senior management team
- Tour the Jocassee Hydro Facility
- Tour the Keowee Hydro Facility
- Tour portions of the plant including ongoing tornado and HELB modifications.
- Tour the Unit 1 / Unit 2 Main Control Room including the new digital RPS/ES equipment installed during the Spring 2011 refueling outage

Issues to be addressed (See TAB 6)

- External flooding
- NFPA 805 transition
- Tornado and HELB mitigation
- Digital Reactor Protective System / Engineered Safeguards Protective system project

Persons to meet

Oconee Personnel (See TAB 8)

- Bill Pitesa, Senior Vice President
- Richard Freudemberger, Manager, Regulatory Interface (ONS)
- Preston Gillespie, Site Vice President
- Scott Batson, Station Manager
- Bob Guy, Organizational Effectiveness Manager
- Tom Ray, Engineering Manager
- Terry Patterson, Safety Assurance Manager

Region II Personnel (See TAB 9)

- Jonathan Bartley, Chief, Reactor Projects Branch 1
- Andy Sabisch, Senior Resident Inspector
- Kevin Ellis, Resident Inspector
- Geoffrey Ottenberg, Resident Inspector

Activities on site

- Meet with Resident office staff
- Working lunch with Oconee staff including a question-&-answer session
- Meeting with the Duke management team to discuss plant, corporate and industry issues
- Plant tour with the resident inspectors, licensee, and
- Tour the Jocassee and Keowee hydro facilities

Messages to be communicated (Reference TAB 6)

- Continue to focus on safe plant operation
- Important to keep Tornado/HELB modifications on track

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

- Recognize the challenge of managing multiple major projects
- Seek opportunities to modify schedule based on risk reduction

Licensee's briefing topics

- The Duke Fleet is implementing actions to improve corporate governance and oversight
- Oconee Performance and Direction
- Major investments to enhance safety, improve reliability, resolve licensing basis issues, and reduce overall station risk profile are continuing.

Licensee Ownership Information

Duke Energy Carolinas owns and operates the three-unit Oconee Nuclear Station located near Seneca, SC and the two-unit McGuire Nuclear Station located near Huntersville, NC. In addition, Duke Energy Carolinas operates and has a partial ownership interest in the two-unit Catawba Nuclear Station located in York, SC.

Recent Oconee Management Changes (Reference TAB 7)

The following management changes have been implemented over the past six months:

- Bob Guy was named as Manager, Organizational Effectiveness, Oconee Nuclear Station.
- Rich Freudenberger was reassigned from the Safety Assurance Manager position to Manager, Regulatory Interface. In this role he is responsible for management of site programs and processes related to regulatory compliance.

ROP Assessment - Significant ROP Inspection Findings (Reference TAB 5)

A Special Inspection was initiated when the licensee identified that the breakers for pressurizer heaters powered from the SSF could trip prematurely. As a result of the inspection, three potentially greater than Green findings were identified for failing to maintain design control of SSF components and failing to perform adequate operability evaluations.

Potential Discussion Topics (Reference TAB 6)

External Flood Action Plan

An issue related to the potential impact that external flooding would have on the Oconee Nuclear Station is currently being addressed by both the licensee and NRC. The licensee has developed Interim Compensatory Measures (ICMs) to address the external flooding concerns and is working on permanent actions to ensure the station is not adversely affected by a potential external flooding scenario. A Confirmatory Action Letter (CAL) was issued on June 22, 2010, to confirm that the ICMs would remain in place until final modifications have been completed. The CAL also requested the licensee to provide a list of modifications to enhance the capability of the Oconee Nuclear Station to withstand the postulated failure of the Jocassee Dam. By letter dated April 30, 2011, the licensee responded to that CAL request. The NRC staff has reviewed the licensee's response, and by letter dated August 18, 2011, requested the licensee to provide clarifying information.

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

NFPA 805 Transition

Oconee is one of two pilot plants that are in the process of transitioning to NFPA 805 for fire protection. The NRC staff completed its review of the License Amendment Requests (LAR) and issued the final licensee amendment on December 29, 2010. The licensee is currently performing modifications to be in compliance with NFPA 805.

Tornado & High Energy Line Break (HELB) Mitigation

The licensee is implementing a number of major modifications designed to minimize the risk exposure resulting from events such as tornado and a high-energy line break. The licensee submitted several LARs to update the Updated Final Safety Analysis Report (UFSAR). The staff has issued numerous Requests for Additional Information and the licensee is in the process of responding to the request.

Digital Computer Based Reactor Protective System (RPS)/Engineered Safeguards Protective System (ESPS)

The licensee is currently implementing a major modification to all three units' Reactor Protection System and Engineered Safeguards Features Actuation System (RPS/ESFAS). The licensee has installed the new digital system on Unit 1 (performed during the Spring 2011 refueling outage) and is preparing to install the system on Unit 3 in the Spring 2012 outage followed by Unit 2 in the Spring of 2013.

William States Lee III Nuclear Station Combined Operating License (COL) Application

The licensee submitted a 10 CFR 52 application for a combined operating licensee to the NRC on December 12, 2007, which was docketed on February 25, 2008. This project is on the site of the old Cherokee Nuclear Station project that was cancelled in the 1980's.

Tritium

Elevated levels of tritium have been detected in a single ground water monitoring well within the Owner Controlled Area.

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

Facility Location Map and Directions

Directions to Oconee Nuclear Station from Clemson, SC



1. Head north on College Ave toward Earle St 0.6 mi
 2. Turn left onto S Carolina 28 W/US-123 S/US-76 W/Tiger Blvd
Continue to follow S Carolina 28 W/US-123 S/US-76 W 6.2 mi
 3. Turn right onto S Carolina 130 N/Rochester Hwy 7.8 mi
Destination will be on the right approximately 0.5 miles past the traffic light at
junction SC HWY 183
- The Resident Inspector office number is 864-882-6927.

Facility Data

Utility: Duke Energy Carolinas, LLC
Location: 8 miles northeast of Seneca, SC
County: Oconee County, SC

	<u>UNIT 1</u>	<u>UNIT 2</u>	<u>UNIT 3</u>
Docket Nos.	50-269	50-270	50-287
License Nos.	DPR-38	DPR-47	DPR-55
Full Power License Date	02/06/1973	10/06/1973	07/19/1974
Commercial Operation Date	07/15/1973	09/09/1974	12/16/1974
OL Expiration Date	02/06/2033	10/06/2033	07/19/2034

PLANT CHARACTERISTICS

All Units

Reactor Type	PWR
Containment Type	Dry Ambient
Power Level	2568 MWt (900 MWe)
NSSS Vendor	B & W

Facility Unique Features

Emergency Supply to 4160 Volt-AC Safety-Related Buses

Power to the safety-related buses is provided from the two Keowee Hydro Station generating units. A single Keowee Hydro Unit (KHU) will supply all emergency power. This power is supplied to Oconee by two connections; an overhead transmission line and an underground line. Gas turbines at the Lee Steam Station can also be made available manually via a separate overhead line to provide power if neither KHU is available.

Standby Shutdown Facility (SSF)

The SSF provides an alternate and independent means to achieve and maintain a hot standby condition for all three units following postulated turbine building flood, fire, and sabotage events. It consists mainly of one diesel generator, an auxiliary service water pump, and supporting equipment (in a seismically qualified building) and three standby makeup pumps (one in each unit's reactor building). Powered by the SSF diesel generator, the standby makeup pumps deliver water at approximately 26 gpm from the associated spent fuel pool to the reactor coolant pump seals. In support of primary decay heat removal, the SSF auxiliary service water pump supplies water from the condenser circulating water (CCW) system to the once-through steam generators. The SSF is able to maintain all three units in Mode 3 (525 degrees) for 72 hours. The proposed Tornado/HELB mitigation strategies also take credit for the SSF.

Low Pressure Service Water (LPSW)

As originally designed, long-term decay heat removal has relied on the non-safety, non-seismically qualified CCW piping system and its pumps to provide water to the safety-related LPSW pumps located in the turbine building basement. During loss of offsite power events, the CCW pumps lose power; therefore, decay heat removal and cooling water for safety-related pumps rely on the use of a siphon effect (between the lake and the CCW system) to provide water to the safety-related LPSW system.

Emergency Feedwater (EFW)

The safety-related EFW pumps (two per unit) are located in the turbine building basement. Each unit's EFW system must rely on the limited source of water in its seismically qualified upper surge tank and on the water contained in the condenser hotwell. However, cross-connect valves are provided between all three units' EFW systems. Identified EFW single failure vulnerabilities have been addressed through plant modifications and licensing basis changes/clarifications.

Containment Isolation

Several piping systems penetrating containment were designed without isolation valves (Main Steam), or redundant, reliable (QA-1) isolation devices (Main Feedwater). In 2002, a new automatic feedwater isolation system (AFIS) modification was installed that secures/isolates both main and emergency feedwater to the affected steam generator. Supplemental diesel air compressors are used to compensate for the expected bleed off of valve operating air pressure should a coincident loss of offsite power occur.

Reactor Oversight Process Info

The following URLs are for the Oconee Nuclear Station (Units 1, 2 and 3) ROP Performance Summary web pages.

http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/OCO1/oco1_chart.html

http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/OCO2/oco2_chart.html

http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/OCO3/oco3_chart.html

http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/pi_summary.html

ROP Performance Status (3rd Quarter 2010 – 2nd Quarter 2011)

The licensee was in the Degraded Cornerstone Column of the NRC's Action Matrix due to a Yellow finding and a White finding related to blockage in the Standby Shutdown Facility (SSF) letdown lines for all three units. A 95002 supplemental inspection was performed in December 2010 and both findings were closed. The licensee moved to the Licensee Response Column of the NRC's Action Matrix in January 2011. There were no safety significant findings in the first or second quarter 2011. On July 5, 2011, a Special Inspection was initiated when the licensee identified that the breakers for pressurizer heaters powered from the SSF could trip prematurely. As a result of the inspection, three potentially greater than Green findings were identified for failing to maintain design control of SSF components and failing to perform adequate operability evaluations. These finding are currently being evaluted to determine their safety significance.

Current Issues

A. EXPECTED DISCUSSION TOPICS

External Flood

An issue related to the potential impact that external flooding would have on the Oconee Nuclear Station has been raised and is currently being addressed by both the licensee and NRC. The licensee has developed Interim Compensatory Measures to address the dam concerns and is working on permanent actions to ensure the station is not adversely affected by potential external flooding. Regional inspection of the Interim Compensatory Measures was completed in June 2010. On June 22, 2010, the NRC issued a CAL which documented that the licensee would submit a final inundation study by August 2, 2010 (completed), submit a list of modifications by November 30, 2010 (licensee extended until April 2011), and complete those modifications by November 30, 2011.

Tornado & HELB Mitigation

As a result of a 95002 supplemental inspection of two White Mitigating System tornado-related findings in 2001, it was determined that Oconee has a number of tornado-related vulnerabilities that collectively represented a deficient tornado mitigation strategy. Duke notified the NRC in January 1999 that it was initiating a project to reconstitute the design and licensing basis for HELBs outside the reactor building. The licensee is implementing a number of major modifications designed to minimize the risk exposure resulting from events such as tornado and a high-energy line break, as well as add equipment that had not been part of Oconee's initial design; i.e., main steam isolation valves. The schedule for completion of these activities has been adversely impacted by factors including changes to the design as work is proceeding, quality issues tied to the vendors performing the work, and fabrication issues. The licensee submitted LAR's to update the UFSAR in June 2009.

Digital Computer Based Reactor Protective System (RPS)/Engineered Safeguards Protective System (ESPS)

The licensee is currently implementing a major modification to all three units' Reactor Protection System and Engineered Safeguards Features Actuation System (RPS/ESFAS). The licensee has installed the new digital system on Unit 1 (performed during the Spring 2011 refueling outage) and is preparing to install the system on Unit 3 in the Spring 2012 outage followed by Unit 2 in the Spring of 2013. The Division of Reactor Safety is currently leading the NRC inspection effort supported by the resident inspectors.

William States Lee III Nuclear Station Combined Operating License (COL) Application

By letter dated December 12, 2007, Duke Energy Carolinas, LLC (Duke) tendered a COL application for two Westinghouse AP1000 advanced passive pressurized water reactors

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

designated as Units 1 and 2 of the William States Lee III Nuclear Station. The proposed site is located in the eastern portion of Cherokee County in north central South Carolina, approximately 35 miles southwest of Charlotte, North Carolina, and approximately 7.5 miles southeast of Gaffney, South Carolina.

Tritium

Elevated levels of tritium have been detected in a ground water monitoring well within the Owner Controlled Area. In February 2010, one well exceeded the 20,000 pCi/l threshold which initiated the NEI Groundwater Communication plan. The local media outlets carried the story for several days and additional interest was indicated during the annual public meeting for 2009. The licensee has installed additional monitoring wells and is conducting sampling & analysis to determine if the source is an active leak or a legacy issue. The latest sample values indicate that the tritium levels in the well has decreased below the 20,000 pCi/l threshold.

B. OTHER TOPICS OF INTEREST

Labor/Management Issues

None

License Renewal Activities

The Oconee Site-Specific Independent Spent Fuel Storage Installation (ISFSI) license was renewed on May 29, 2009, for 40 additional years. This included a 20 year renewal plus an exemption which allows for an additional 20 years. The license will now expire on January 31, 2050.

Escalated Enforcement, Non-Green Findings and Non-Green Performance Indicators

- A licensee-identified potentially greater than Green apparent violation of 10 CFR 50 Appendix B, Criterion III, Design Control, was identified when the licensee failed to maintain design control of the Standby Shutdown Facility (SSF). The failure to maintain equipment qualification did not provide reasonable assurance that the SSF auxiliary service water (ASW) subsystem would perform its safety function.
- An NRC-identified potentially greater than Green apparent violation of 10 CFR 50 Appendix B, Criterion V, Instructions, Procedures, and Drawings, was identified when the licensee failed to perform an adequate operability evaluation for the Standby Shutdown Facility (SSF) auxiliary service water subsystem in accordance with NSD 203, Operability/Functionality. The licensee failed to assure the SSF pressurizer heater breakers would function under expected environmental conditions before declaring the SSF operable but degraded/nonconforming.
- An NRC-identified potentially greater than Green apparent violation of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, was identified when the licensee

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

failed to perform a 50.59 evaluation for a compensatory measure for the SSF ASW subsystem in accordance with NSD 203, Operability/Functionality. The revised guidance to use solid-water operation for RCS pressure control could not be used as a compensatory measure without prior NRC review and approval.

Open Investigations

There are two open OI investigations.

Open Allegations

There are three open allegations related to cyber security and access control

Congressional Interest

None

Harassment and Intimidation Issues

None

2.206 Petitions

None

Recent News Articles

(b)(4)

(b)(4)

(b)(4)

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

(b)(4)

(b)(4)

(b)(4)

~~OFFICIAL USE ONLY - SENSITIVE INTERNAL INFORMATION~~

Facility Organization

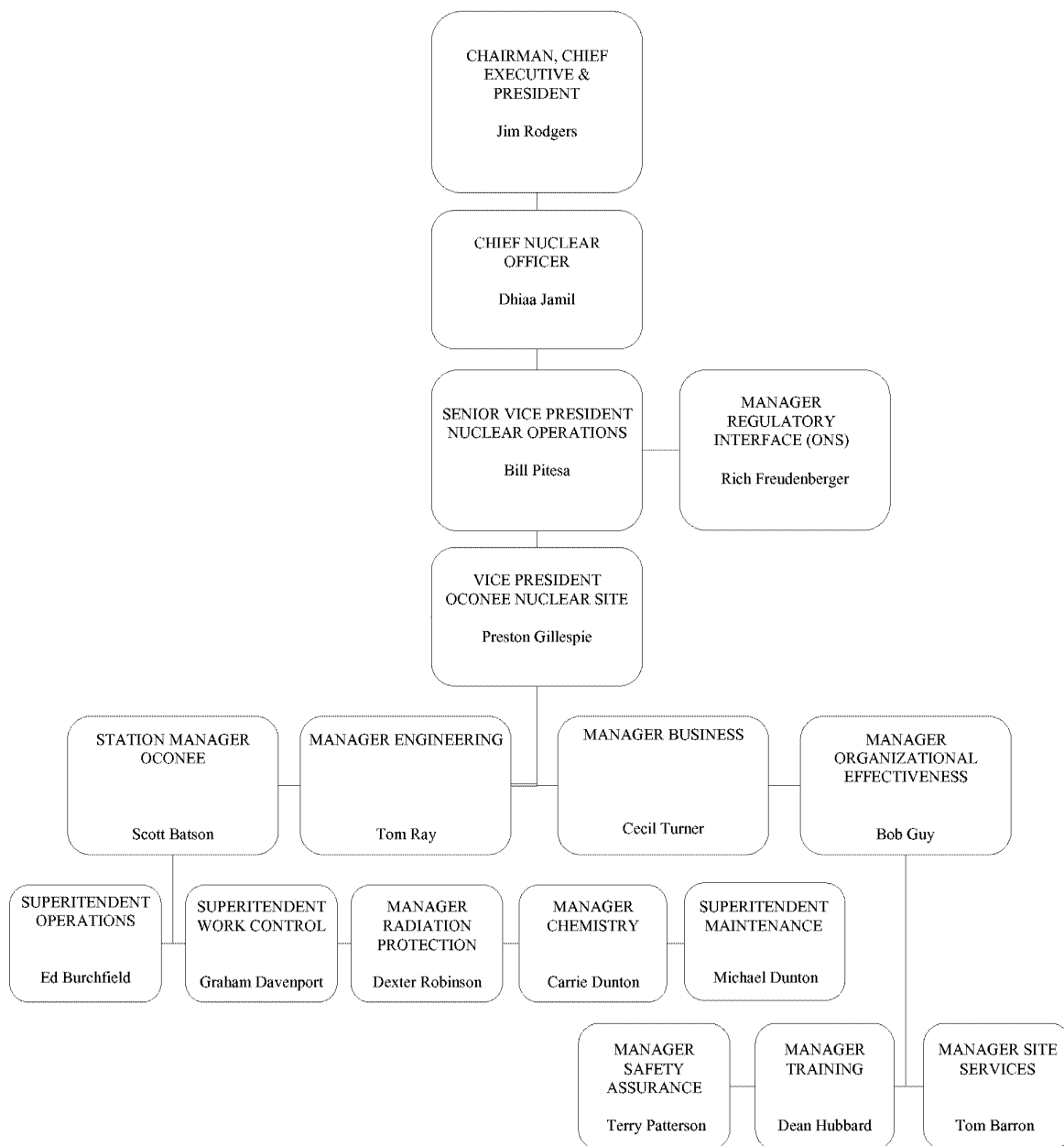
OVERVIEW OF DUKE ENERGY

Duke Energy Carolinas

Duke Energy Carolinas operations include nuclear, coal-fired, natural gas, and hydroelectric generation. This diverse fuel mix provides nearly 21,000 megawatts (MW) of electricity to more than 2.3 million electric customers in a 24,000 square-mile service area of North Carolina and South Carolina. Duke Energy Carolinas generates energy primarily from three nuclear generating stations with a combined net capacity of 6,996 MW, eight coal-fired stations with a combined capacity of 7,699 MW, 31 hydroelectric stations with a combined capacity of 2,693 MW, and six combustion turbine stations with a combined capacity of 2,861 MW. Duke Energy Carolinas owns and operates the two-unit McGuire and the three-unit Oconee nuclear stations. In addition, Duke Energy Carolinas operates and has a partial ownership interest in the two-unit Catawba Nuclear Station.

Duke Energy submitted a 10 CFR 52 application for a combined operating licensee to the NRC on December 13, 2007, which was docketed on February 25, 2008. A public scoping meeting was also held on May 1, 2008, near the proposed site location. The license application references the Westinghouse AP1000 as the reactor type and two reactors are planned for the site. The location is just south of the North Carolina/South Carolina border near Gaffney, S.C.

**DUKE ENERGY
OCONEE NUCLEAR STATION
ORGANIZATIONAL CHART**



Biographical Data of Principal Managers

John W. (Bill) Pitesa
Senior Vice President – Nuclear Operations



Bill provides oversight for the safe and reliable operation of all three Duke operating nuclear stations. He is also responsible for the major projects groups and the fleet centers of excellence group. Bill was named to his current position in December 2010. Bill has over 29 years of experience in the nuclear field.

Bill joined the company in 1980 as an engineer at McGuire Nuclear Station. He was named senior reactor operator in 1986 and later served as a nuclear fuel handling supervisor and operations staff lead. In 1992, he served two years as a loaned employee for the Institute of Nuclear Power Operations.

Bill returned to McGuire Nuclear Station in 1995 as an independent oversight manager. In 2000, he moved to Catawba Nuclear Station as an engineering supervisor. After a series of promotions, including operations training manager, Bill was named as the station's operations manager in 2004 and station manager in 2005. In 2009, Bill was named vice president of nuclear support for Duke Energy. He was responsible for corporate nuclear engineering, major projects, licensing and regulatory support, fleet outage management and other plant support functions.

Bill earned a Bachelor of Science degree in electrical engineering from Auburn University. He is a registered professional engineer in North Carolina. In support of the International Atomic Energy Agency (IAEA) and the World Association of Nuclear Operators (WANO), Bill has served on nuclear plant review teams in the United States, Korea, France, South Africa, and Ukraine.

T. Preston Gillespie Jr.

Site Vice President - Oconee Nuclear Station



Preston is responsible for the safe and reliable operation of Oconee Nuclear Station, a three-unit, pressurized water-reactor nuclear generating facility. He directs station and facilities management, operations, maintenance, chemistry and radiation protection, engineering, nuclear and industrial safety, and business operations. He joined Duke Power in 1986 as an assistant engineer at Oconee Nuclear Station. He served in a variety of positions while at the station, including nuclear operations shift manager, shift operations manager, and nuclear engineering manager. He moved to Catawba Nuclear Station in 2007 to serve as the station's operations superintendent. He was named Oconee Station Manager in October

2008 and moved to his current position in December 2010.

Preston graduated from Clemson University with a Bachelor of Science degree in mechanical engineering. He is a registered professional engineer in South Carolina. He held a senior reactor operator license at Oconee Nuclear Station. He is also a past recipient of the company's Robinson Award, which recognized employees for their outstanding contributions to the company's operations.

Robert (Bob) H. Guy

Organizational Effectiveness Manager



Bob is responsible for managing station support functions including training, site services, security, emergency preparedness, performance improvement, environmental and safety, and regulatory compliance. Bob joined Duke Energy in May 2011.

Prior to joining Duke Energy, Bob had over thirty years of experience in military, government and commercial nuclear fields. Guy trained in nuclear power after graduating from the Naval Academy. He served in a variety of positions on several submarines including supervision of the nuclear propulsion department. Other assignments included operations training instructor and training manager at the Nuclear Power Training Unit Idaho Falls, on the staff

of the Director of Naval Reactors and overseas duty in Australia and Japan. He commanded the nuclear submarine USS Greeneville (SSN 772) from 1996 to 1999, commanded Naval Nuclear Power Training Unit Charleston from 2002 to 2006 and Naval Nuclear Power Training Command from 2006 to 2007. After retiring from the Navy, he served as a Nuclear Safety Specialist in the Office of Independent Oversight, U.S. Department of Energy and was later employed as Manager of Nuclear Oversight, Salem Nuclear Generating Station with PSEG Nuclear.

Bob earned a Bachelor of Science degree in Marine Engineering from the United States Naval Academy.

Scott L. Batson
Station Manager



Scott is responsible for all aspects of operation, maintenance, work control, radiation protection, and chemistry activities at the station to provide safe, reliable, and efficient electrical service. He has over 22 years of experience in plant operation and engineering. He joined the company in January 1985 as a junior engineer at Oconee Nuclear Station in and has held various positions including most recently as Operations Superintendent responsible for managing all aspects of operations activities at Oconee and at Keowee Hydro Station. He was named Engineering Manager in January 2008 and moved to his current position in December 2010.

Scott earned a Bachelor of Science degree in Mechanical Engineering from Clemson University and is a registered professional engineer in South Carolina. He received a senior reactor operator license from the U.S. Nuclear Regulatory Commission and a senior nuclear plant management certification from the Institute of Nuclear Power Operations. He has also completed the Duke Energy Advanced Leadership Program.

Thomas (Tom) D. Ray
Engineering Manager



Tom is responsible for managing and directing activities at the station related to system, component, and design engineering. He joined the company in 1989 as an associate engineer in the nuclear generation department in Charlotte. He was named senior engineer of reactor engineering at McGuire Nuclear Station in 1994; engineering supervisor in 1999; maintenance manager in 2002; and outage manager in 2003. He was named safety assurance manager at Catawba Nuclear Station in 2004, maintenance superintendent in 2005, and most recently engineering manager. Ray was named engineering manager of Oconee Nuclear Station in September 2010. Before joining the company, Ray was an engineer for Bechtel Power Corporation, from 1987 to 1989.

Ray earned a Bachelor of Science degree in nuclear engineering from North Carolina State University. He is a registered professional engineer in North Carolina and has a technical nuclear certification. He also serves as a Duke Energy management committee representative for the Pressurized Water Reactor Owners Group.

Terry L. Patterson

Safety Assurance Manager – Oconee Nuclear Station



Terry is responsible for the management of site programs and processes related to environmental health and safety, regulatory compliance, performance improvement, emergency planning and security. He filled this position in October 2010 coming from Constellation Energy Nuclear Group (CENG). Terry has over 30 years of commercial nuclear power experience. Prior to joining Duke Power, Terry spent five years in the nuclear submarine service where he served as the Main Propulsion Assistant on a nuclear ballistic missile submarine. He also spent three years with Combustion Engineering, Inc., fifteen years at Omaha Public Power District's (OPPD) Fort Calhoun Station and thirteen years at Florida Power and Light's (FPL) St. Lucie Nuclear Station.

Terry earned a Bachelor of Science degree in Physics from the U. S. Naval Academy, Annapolis, Maryland and a Masters in Business Administration from the University of Nebraska.

Richard (Rich) J. Freudenberger

Nuclear Regulatory Support Manager – Oconee Nuclear Station



Rich is responsible for the management of site programs and processes related to regulatory compliance and licensing. He was named to his current position in February 2010. Previously, Rich served as safety assurance manager of Oconee Nuclear Station since 2008. He was responsible for the management of site programs and processes related to environmental health and safety, regulatory compliance, performance improvement, emergency planning and security. Prior to joining Duke Power in 1997, Rich had 12 years of commercial nuclear power experience as a resident and senior resident inspector for the Nuclear Regulatory Commission at the Maine Yankee, Crystal River, and Catawba nuclear stations. His

first position with Duke Power was as the regulatory audit supervisor. He was responsible for implementation of performance-based audits required by the Duke Energy Nuclear Quality Assurance program. In February 2000, Rich was assigned to the Oconee Nuclear Station as the secondary systems engineering supervisor and was responsible for the power conversion and standby shutdown systems mechanical design and licensing basis, testing support and equipment reliability. Between 2001 and 2007, he held several other supervisory positions within engineering. He successfully completed the operator training program and was licensed as a senior reactor operator in July 2004.

Rich earned a bachelor of science degree in marine engineering from the Maine Maritime Academy in Castine, Maine.

Resumes of Oconee Resident Inspectors

Andrew *(Andy) T. Sabisch Senior Resident Inspector



Andy joined the NRC in 2003. He is a (b)(6) (b)(6) Mr. Sabisch attended SUNY Maritime College and received his Bachelor degree in Nuclear Science with a minor in Computer Science.

Andy joined MetEd at the Three Mile Island Generating Station in Middletown, PA and worked in both the Operations department and the Unit 1 Recovery Group. He served as Shift Test Director in 1982 during hot functional testing conducted to support the restart of Unit 1 following the 1979 Unit 2 accident. Andy worked for Louisiana Power & Light from 1982 to 1984 as a Plant

Engineering section manager supporting the construction and turnover of plant systems during startup of the Waterford 3 Steam Electric Station. In this role, he also was responsible for the development of the plant technical specifications and worked with the NSSS vendor, architect engineering firm and the NRC to obtain final approval to support license issuance. Andy worked for Public Service Electric & Gas at the Salem and Hope Creek Generating stations from 1984 to 1988 in the Operations, Start-up & Test and Licensing departments supporting restart of Salem following the ATWS event and initial startup of the Hope Creek 1 reactor. Andy worked for the Institute of Nuclear Power Operations (INPO) from 1988 to 2000 conducting plant inspections, technical assistance visits and event follow-up reviews at 42 U.S. reactor sites and 12 international sites. During this period, Andy served as the Refueling Coordinator at the Peach Bottom Atomic Power Station and team leader for the international Nuclear Plant Reliability Data System (NPRDS) project with WANO as a loaned employee while at INPO. Andy worked for Pennsylvania Power & Light Corporation at the Susquehanna Steam Electric Station from 2000 to 2002 as a Unit Supervisor in the Operations Department.

Andy's career with the NRC began in 2003 with his assignment to the Catawba Nuclear Station as the Resident Inspector following a five-month period in Region II as a Project Engineer for Branch I. He was promoted to the Catawba Senior Resident Inspector in 2006 and was transferred to the Oconee Nuclear Station as Senior Resident Inspector in September 2009. In addition to baseline inspection program activities associated with Catawba, Andy has participated in or led PI&R inspections, 95-001 and 95-003 inspections, Augmented and Special Inspections, a Component Design Basis Inspection and a B.5.b inspection. Andy has received ten awards in his 6 years with the NRC including a Regional Administrator's Employee Excellence Award.

Mr. Sabisch received honorable discharges from the U.S. Navy and the Pennsylvania Army National Guard.

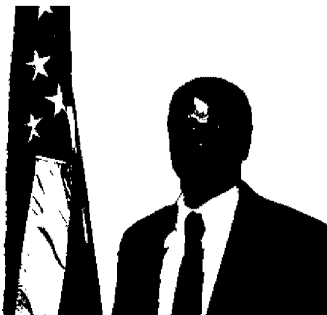
Kevin M. Ellis
Resident Inspector



Kevin joined the NRC in 2007. He is a (b)(6) York. He has been a resident inspector at the Oconee Nuclear Station since July 2009. Kevin began his career in 2002 as a nuclear engineer for Norfolk Naval Shipyard where he qualified as a shift refueling engineer. Kevin was initially hired as a project engineer in Region II, Division of Reactor Projects. He acted as the resident inspector at the V. C. Summer Nuclear Plant and then worked as the project engineer for Branch 4, Division of Reactor Projects.

He graduated Cum Laude from Florida Institute of Technology with a Bachelor of Science degree in Mechanical Engineering in (b)(6)

Geoffrey K. Ottenberg
Resident Inspector



Geoff joined the NRC in 2004. He is a native of Homestead, Florida. He has been a resident inspector at the Oconee Nuclear Station since September 2008. Previously, he worked as a researcher at Argonne National Laboratory on a fellowship assignment. In the NRC, Geoff was initially hired as a reactor engineer in Region I, Division of Reactor Projects. After qualifying as an inspector, Geoff worked in Region I, Division of Reactor Safety, as a reactor inspector doing primarily Component Design Basis Inspections, and also completed a 6-month rotation as resident inspector at the Susquehanna Steam

Electric Station.

Geoff received his bachelor's degree in Mechanical Engineering from the Florida State University in (b)(6) and is a registered engineer intern in the State of Florida.