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Regional Administrator Briefing Sheet
Oconee Nuclear Station Visit
Date: February XX, 2008

Current Plant Performance

- Units 1, 2 & 3 are in the Licensee Response Column of the NRC Action Matrix with no "Greater than Green" inspection findings or performance indicators for any unit.
- All Cornerstone objectives have been met.
- Substantive cross-cutting issue(s): None

Key Messages or Themes

- Oconee continues to focus on licensing and design basis issues.

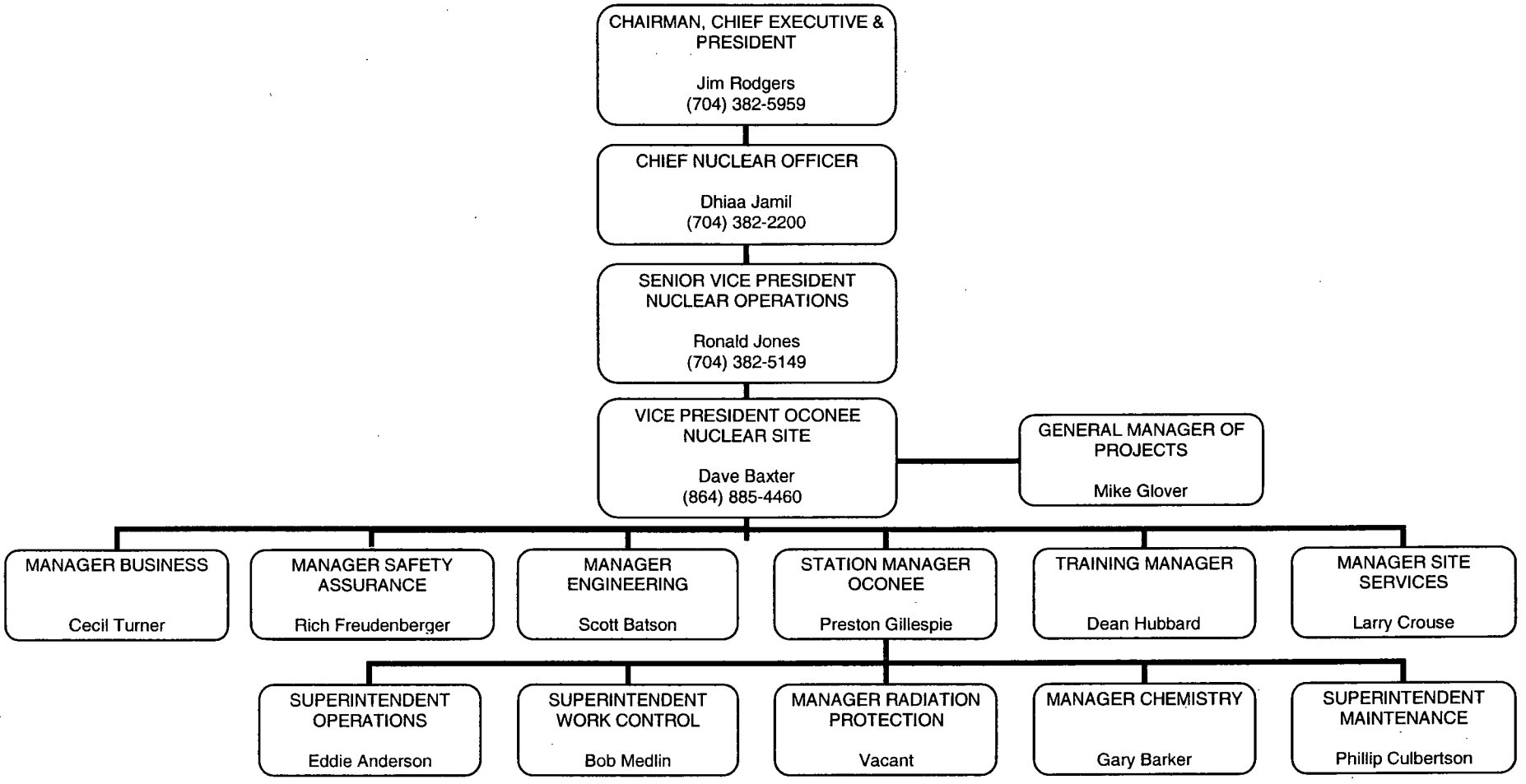
Items of Interest

1. **Organizational issues**
   - New Resident Inspector - Geoffrey Ottenberg reported to Oconee on September 28, 2008.
   - Oconee Organizational Chart - See attached

2. **Plant equipment issues**
   - Flood Action Plan - Using the Significance Determination Process (SDP), the staff initially evaluated a performance deficiency of a breached flood barrier to the Oconee SSF. During a re-evaluation on licensee appeal, it was discovered that the licensee had erroneously used a significantly lower random Jocassee Dam rupture frequency in their site external flooding analysis for the Individual Plant Examination of External Events. An approach using the techniques of NUREG/CR-6823, "Handbook of Parameter Estimation for Probabilistic Risk Assessment", was used to verify this. Upon further review, it was discovered that an earlier alternate approach had underestimated dam rupture frequency published in NSAC-60, "Oconee PRA; a probabilistic risk assessment of Oconee Unit 3", a document which is referenced throughout the industry by other licensees in their flooding analyses. Consequently, an internal NRC backfit assessment/flood action plan was implemented. A 50.54(f) letter was issued on August 15, 2008, concerning this "inadequate protection" issue. On November 5, 2008, NRC and Licensee Management met to discuss: concerns with the SSF licensing basis with respect to flooding, as addressed in the related 50.54(f) letter; short-term interim measures for ONS operation; and a long-term solution to the question of flood protection at the ONS site. Current concerns are that the SSF has protection only up to 5 feet of flood height and that the licensee's response to the 50.54(f) letter was insufficient. NRR met with the Federal Energy Regulatory Commission (FERC) on December 1, 2008, to discuss generic issues related to the Jocassee dam inundation study performed by Oconee. A technical exchange meeting was held December 4, 2008, to work out details on the probabilistic and consequence analyses. NRC Headquarters will be using LIC-504 as guidance to document the decision to allow continued operation for the near future and will develop a response to licensee's 50.54(f) response.
   - Tornado 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 represent a deficient tornado mitigation strategy. Duke has subsequently provided its resolution to this matter by proposing the use of two redundant and largely separate tornado mitigation systems (i.e., the standby shutdown facility (SSF) and a planned protected service water (PSW) system). The licensee has already started civil/site work on the PSW system and the Unit 3 control room wall missile protection modifications are also underway. Duke has also informed the NRC that difficulty in meeting the Standard Review Plan TORMIS risk acceptance criteria (1.0E-6) will result in the need for more missile protection than originally thought. The Tornado Mitigation LAR was submitted June 26, 2008, and has been accepted (Rare Circumstances) by NRR.
   - High Energy Line Break (HELB) Mitigation - Following a 1998 self-assessment of Oconee's licensing basis for HELB events outside containment, 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 NRC staff is concerned that the analyses that were completed by Duke in 1973 for addressing postulated high energy pipe failures in the auxiliary building do not adequately consider and address the potential consequences of postulated HELB events. Oconee's Unit 1 HELB mitigation LAR (which includes the use of existing safety systems, along with the SSF and planned installation of the PSW system and main steam isolation valves) was submitted June 26, 2008, and accepted (Rare Circumstances) by NRR. LARs for Units 2 and 3 will be submitted in December 2008 and June 2009 respectively.

- NFPA 805 Transition - Oconee is one of two pilot plants that are in the process of transitioning to NFPA 805 for fire protection. License Amendment Request (LAR) No. 2008-01, to adopt NFPA 805, was submitted for all three Units on May 30, 2008. On October 31, 2008, the licensee submitted, as a supplement to the LAR, the fire probabilistic risk assessment model, change evaluations, non-power operations, and proposed modifications for variances from the deterministic requirements. NRR is planning an on-site review of the submittal in February 2009.
- Digital Computer Based Reactor Protective System (RPS)/Engineered Safeguards Protective System (ESPS) By letter dated January 31, 2008, Duke submitted an LAR that would allow replacement of the current analog-based RPS/ESPS with a digital computer based RPS/ESPS. By letter dated April 24, 2008, the NRC staff stated that Duke had provided sufficient information to accept the LAR and start a comprehensive review of the LAR. The letter identified six issues (discussed with Duke in a March 18, 2008, public meeting) that presented significant challenges to completing a comprehensive review of the LAR. Four members of NRR/EICB visited Oconee the week of May 19, 2008, and resolved these issues. Implementation will begin in Spring 2011 following development of modification packages.

3. **Recent Plant Events**
   - Unit 1 Loss of Inventory - On April 12, 2008, Oconee Unit 1 shut down for refueling. On April 15, 2008, Unit 1 had restored level, from a midloop operation to install coldleg nozzle dams, to below the reactor vessel flange. The head was detensioned in preparation for removal. As part of main generator voltage regulator modification testing, a main generator lockout signal was generated while the switchyard was back-feeding all Unit 1 electrical loads through the main transformer and the associated auxiliary transformer. This caused a slow transfer from the aux transformer to backup transformer (CT1) from the switchyard. The resulting electrical transient caused a momentary loss of power to the running pumps performing shutdown cooling (SDC) and, due to one complication, a relief valve in the letdown purification system opened and remained open as designed. This transient caused a loss of inventory (LOI) from the reactor coolant system (RCS) to the miscellaneous waste holdup tank (MWHUT). The operators quickly recognized the LOI and entered the appropriate procedures. They had the relief valve isolated and makeup water going into the RCS within 17 minutes. During the RCS level transient, level dropped from 70 inches above hotleg midloop to approximately 55 inches. Approximately 2000 gallons were transferred from the RCS to the MWHUT. The root cause of the generator lockout was determined to be a failure of the procedure preparers and reviewers of IP/0/B/2005/001, "Main Generator Automatic Voltage Regulator (AVR) Maintenance and Channel Transfer," to recognize the system interaction between the AVR trip circuitry and the backcharge power path; therefore, steps to isolate actuation of the K31 relay were not included in the procedure. A Significance and Enforcement Review Panel was conducted on Wednesday, November 12, 2008, and a "Greater than Green" preliminary determination letter was sent to the licensee on November 21, 2008. The licensee has requested a Regulatory Conference in mid-January 2009.
   - Unit 3 Reactor Trip - At 0834 hours on November 7, 2008, a Unit 3 reactor trip occurred. The Events Recorder and Operator Aid Computer (OAC) first-out alarms were "reactor trip confirm" signals out of the Control Rod Drive (CRD) system. The transient response of the unit was normal and operator actions were appropriate with no complications. The licensee's investigation determined that the trip was a result of a simultaneous shut down of the CRD digital primary processors P1 and P2 which caused the system to go to a fail-safe condition as designed which ultimately de-energized all rods. The shut down of the processors was caused by an erroneous time signal from the satellite clock repeater for Unit 3, which is used for a time stamping function in the CRD system. The bad time signal also caused a reset of the Unit 3 control room clock and OAC time stamp. On Sunday, November 9, 2008, the Plant Operations Review Committee convened (Senior Resident attended) and made the decision to restart Unit 3 following the disconnection of the clock input to the CRD system as there are no other external synchronous inputs to the CRD system that could have the same effect. Subsequent to the implementation of the modification, Unit 3 was returned to power operations on November 9, 2008. The same modification was also performed on Unit 1 (Unit 2 is not affected).
4. **Inspection findings** - None currently greater than Green
5. **Allegations** - None noteworthy
6. **Safety Culture/SCWE** - None
7. **Security Issues** - Small quantities of marijuana were discovered inside the Protected Area at Oconee between November 12 and 18, 2008. All instances were traced to a contractor who has had her plant access suspended. The licensee is conducting an investigation to evaluate the extent of condition. Regional inspectors are following the investigation and OI has opened a case with regards to 10 CFR 50.5 for withholding of information.
8. **Significant industry issues** - See attached articles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Duke seeking major changes in regulations

Friday, November 28, 2008
Charlotte Business Journal - by John Downey Senior staff writer

Duke Energy Corp. is taking its effort to remake utility regulation in the Carolinas to the general assemblies of both states this year.

The company plans to push bills on a range of fronts. Most ultimately will affect the way Duke recovers costs for everything from plant development to energy-efficiency programs. The result could cut the time it takes for those costs to hit customers' power bills.

Duke feels the traditional rate-case procedures in the Carolinas create too long a lag between spending and cost recovery. The proceedings that allow utilities to raise rates — for anything other than fuel costs — are lengthy, and utilities frequently seek to avoid them.

That weakens utility balance sheets, says Brett Carter, Duke Energy Carolinas new president. But it also causes "rate shocks" when the companies finally seek increases.

"Legislatively, that's where we are going to focus our efforts," Carter says.

No bills have been filed with either legislature.

N.C. Rep. Pricey Harrison (D-Guilford) and Dukes Scott, head of the Office of Regulatory Staff for the S.C. Public Utilities Commission, have each heard rumblings about new efforts from the utilities, but have seen no details.

Duke Chief Executive Jim Rogers and other top Duke executives say those proposals will be coming. They gave a broad outline in a conference call with analysts last week.

Rogers says a new regulatory framework will be needed to meet the changing demands on power companies. And he recognizes that it will be a difficult sell because prices are going to be hard to control.

"For the last couple of decades, the real price of electricity has been going down," he told the analysts during a conference call last week. "Now they are going to start going up."

The annual conference call includes a discussion of Duke's capital spending, legislative and operating goals for the next five years.

And Rogers laid out the broad outlines of the legislative efforts.

He renewed his company's commitments to major construction plans, including coal plants in North Carolina and Indiana, and the proposed $11 billion Lee Nuclear Station near Gaffney, S.C.

For the Carolinas, the expansion will mean average bills — including fuel costs — are likely to go up about 6.4% a year. That would mean that by 2013, rates could be about 36% higher than they are now.

The company expects to seek rate increases in the Carolinas in 2010, 2011 and 2012.

Rogers told analysts that slowing growth has caused Duke to delay some projects for a year, including two gas plants in North Carolina.

But he says the company must go ahead with new construction and with energy efficiency through its Save-A-Watt program.

He said following through on those initiatives will require new legislation for what Duke considers appropriate regulatory treatment.

Carter, speaking in an interview after the conference, says Duke is looking at a model similar to regulation in the company's Midwest region.

Many rate increases there are handled by riders that require less involved proceedings and allow, he says, for incremental increases year after year instead of large hikes following rate cases.

Such riders are similar to the fuel-cost provisions used in both Carolinas that allow rates to vary according to a utility's annual fuel expenses.

Legislators and regulators in the Carolinas already have anticipated renewed initiatives from the utilities when their general assemblies convene in January.

And Duke has a particular incentive to seek regulatory changes. Approval of its Save-A-Watt program, for instance, appears stalled in both states.

Legislation on such major issues will be a tall order just a year after both states approved significant energy legislation last year.

North Carolina established requirements for renewable-energy production, set up mechanisms for approving nuclear plant planning costs and endorsed cost-recovery models such as the one Duke proposes in Save-A-Watt.

The South Carolina legislature gave utilities the authority to recover the financing costs of major base-load plants as they are built.

Harrison says new legislation on nuclear costs could undo the compromise reached last year in North Carolina.

Lawmakers pushing then for higher renewable-energy goals moderated their position in return for utilities agreeing to take less than they sought on nuclear cost recovery.

Joint plan for power plants

Friday, November 28, 2008
Charlotte Business Journal - by John Downey Senior staff writer

Part of Duke Energy Corp.'s legislative agenda is likely to lay the groundwork for regional planning for big projects such as its proposed $11 billion Lee Nuclear Station near Gaffney, S.C.

That idea is still being worked out - and may be held over to sessions in 2010. But it appears to build on a concept Duke first broached with Carolinas legislators in 2006. It would involve a regional body, owned jointly by utilities, that could build major projects such as nuclear plants.

But since the regional body would own the plants, current law would not allow utilities to include the plants' rate-base charges.

Ellen Ruff, formerly president of Duke Energy Carolinas, is leading the regional project for Duke. In her new role as president of nuclear development, she will report directly to Chief Executive Jim Rogers - an indication of how important Rogers considers the effort.

Community colleges win grants

November 25, 2008
Asheville Citizen-Times.com

Raleigh - McDowell Technical Community College will receive $250,000 from Duke Energy to improve its machining program and recruit more students to the field.

The grant is one of five from the power company announced today, funding more than $1.1 million in community-college manufacturing education.

The Marion school along with Forsyth Technical Community College in Winston-Salem, Mitchell Community College in Statesville, Rowan-Cabarrus Community College in Salisbury and Wilkes Community College in Wilkesboro will receive grants.

Duke Energy has awarded 39 Community and Technical College Grants since 2004.

Duke shuffles management team

Saturday, November 15, 2008
The Business Journal of the Greater Triad Area - by John Downey Senior Staff Writer

Ellen Ruff will step down as Duke Energy Carolinas' president to become president of nuclear development, charged with shepherding the proposed Lee Nuclear Station to completion. She will be replaced by Brett Carter, who currently heads business development and customer service.

Their new jobs are part of a broader restructuring.

"The changes position the company to strengthen its focus on new generation, delivery efficiency and service excellence," says Jim Rogers, chief executive of parent Duke Energy Corp. (NYSE:DUK), in a prepared statement.

Ruff will report directly to Rogers. That represents a promotion, as the job of Duke Carolinas president is lower on the organizational chart.

Carter will report to Keith Trent, the parent company's chief regulatory officer.

The change will take place Dec. 1.

Duke recently delayed applying for permission from South Carolina to build a 2,134-megawatt Lee plant near Gaffney, S.C. The appointment of Ruff is the clearest signal that Duke intends to go ahead with the plant, which it has not formally committed to build.

Ruff herself remains circumspect. She says Duke is absolutely committed to nuclear power, but she says Duke will not say it is finally committed to Lee until it seeks its S.C. permit and signs a contract.

"But you know me," she says. "I would not have taken this position unless I was determined to move forward on this."

The plant is expected to cost about $11 billion in 2008 dollars. That doesn't include financing — which could easily add $3 billion or more — nor cost inflation by the time the plant is completed in 2018.

Carter says he sees one of his principal jobs in the coming year as helping the state governments and regulators in the Carolinas work with Duke and other groups to clarify regulations in important areas that include energy efficiency and renewable energy sources.

Sandra Meyer, who has headed Duke Energy Ohio and Duke Energy Kentucky, will take over as senior vice president of power delivery for the parent company. She will be responsible for the transmission and distribution system for Duke's regulated utilities in five states. She replaces Theopolis Holeman, who is leaving Duke at the end of November.

Julie Hanson, senior vice president of ethics and compliance at the parent company, will replace Meyer at the top of the Ohio and Kentucky utilities.

Ruff joined Duke Power in 1978 as an attorney in the legal department. She served as group vice president of planning and external relations for Duke Power. She was named president of Duke Carolinas in April 2006.