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Docket Nos. 50-424  
50-425

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U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555

Vogtle Electric Generating Plant  
15-Day Response to NRC Bulletin 2002-01  
Reactor Pressure Vessel Head Degradation and  
Reactor Coolant Pressure Boundary Integrity

Ladies and Gentlemen:

Pursuant to the requirements of Nuclear Regulatory Commission (NRC) Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity," dated March 18, Southern Nuclear Operating Company (SNC) hereby submits the enclosed information which serves as the 15-day response for Vogtle Electric Generating Plant - Units 1 and 2, required by Bulletin Item 1. This response addresses wastage concerns associated with the reactor pressure vessel head attributable to leakage of primary coolant. This response is provided in accordance with the provisions of 10 CFR 50.54(f).

Mr. J. B. Beasley, Jr. states he is Vice President of Southern Nuclear Operating Company and is authorized to execute this oath on behalf of Southern Nuclear Operating Company, and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

  
J. B. Beasley, Jr.

Sworn to and subscribed before me this 28th day of March, 2002.

  
Notary Public

My commission expires: **NOTARY PUBLIC STATE OF ALABAMA AT LARGE  
MY COMMISSION EXPIRES: Dec 12, 2005  
BONDED THRU NOTARY PUBLIC UNDERWRITERS**

A095

JBB/BHW/TMM

Enclosure

cc: Southern Nuclear Operating Company

Mr. J. T. Gasser, Nuclear Plant General Manager, Vogtle  
SNC Document Management

U. S. Nuclear Regulatory Commission

Mr. L. A. Reyes, Regional Administrator  
Mr. F. Rinaldi, Licensing Project Manager  
Mr. J. Zeiler, Senior Resident Inspector, Vogtle

## Enclosure

### **Vogtle Electric Generating Plant 15-Day Response to NRC Bulletin 2002-01 Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity**

Provided below is the Vogtle Electric Generating Plant (VEGP) 15-day response to the requested information contained in Nuclear Regulatory Commission (NRC) Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity," dated March 18, 2002, for Bulletin Item 1. The Bulletin's "Required Information" contained in Item 1 is shown in bold.

#### **Bulletin Item 1.A**

**"...provide the following: a summary of the reactor pressure vessel head inspection and maintenance programs that have been implemented at your plant,"**

#### **Response to Bulletin Item 1.A**

A visual inspection of the control rod drive mechanisms (CRDMs), canopy seal weld area, and the area inside the reactor vessel head shroud above the insulation is performed by a qualified person during each refueling outage. The inspector looks for evidence of boric acid leaks or deposits. An inspection report is generated which records any leakage indication, including its suspected source and location. The completed inspection report is provided to the engineering department for evaluation and resolution.

As a result of the problems discovered at Davis-Besse, Southern Nuclear Operating Company (SNC) performed a complete one-hundred percent (100%) bare metal inspection of the Unit 1 reactor vessel head during the tenth refueling outage which is currently in progress. This inspection was conducted using remote camera equipment eliminating the need to remove the vessel head insulation. Only trace amounts of boric acid were found, and no evidence of leakage or external surface corrosion was observed.

#### **Bulletin Item 1.B**

**"...provide the following: an evaluation of the ability of your inspection and maintenance programs to identify degradation of the reactor pressure vessel head including, thinning, pitting, or other forms of degradation such as the degradation of the reactor pressure vessel head observed at Davis-Besse,"**

#### **Response to Bulletin Item 1.B**

VEGP's normal inspection and maintenance programs will identify leakage at mechanical joints or welds that occur above the insulation which could lead to degradation of low alloy material. If significant boric acid residue is discovered, a report is generated which identifies the location, source, and form of the deposits. An evaluation is performed to determine the path taken by the fluid. If necessary, additional insulation is removed so that the affected surfaces can be properly inspected. The boric acid residue is removed, as necessary, and the condition of surface material is assessed. The evaluator then makes a determination if general corrosion or degradation has occurred. Finally, as necessary, repairs are made for cosmetic or precautionary reasons. VEGP will augment their inspection and maintenance program, as necessary, based upon the recommendations of the EPRI Material Reliability Project (MRP).

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### Vogtle Electric Generating Plant 15-Day Response to NRC Bulletin 2002-01 Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity

#### Bulletin Item 1.C

**“...provide the following: a description of any conditions identified (chemical deposits, head degradation) through the inspection and maintenance programs described in 1.A that could have led to degradation and the corrective actions taken to address such conditions,”**

#### Response to Bulletin Item 1.C

During each refueling outage, accessible areas of the reactor vessel head, CRDMs, canopy seal welds, and conoseals are visually inspected for accumulation of boric acid. A historical review of the inspection results indicate that very small deposits of boric acid were discovered below the conoseals at Penetrations 75 and 76 on both Units 1 and 2 during the first several refueling outages. However, no deposits have been found during the subsequent outages. The deposits that appeared to be new and white boric acid accumulations were cleaned and an engineering evaluation performed. In each case, no corrosion of carbon steel surfaces was observed. As described in response to Item 1.A, a complete 100% bare metal inspection of the Unit 1 reactor vessel head was performed during the tenth refueling outage which is currently in progress. Only trace amounts of boric acid were found, and no evidence of leakage or external surface corrosion was observed.

#### Bulletin Item 1.D

**“...provide the following: your schedule, plans, and basis for future inspections of the reactor pressure vessel head and penetration nozzles. This should include the inspection method(s), scope, frequency, qualification requirements, and acceptance criteria, and”**

#### Response to Bulletin Item 1.D

SNC will continue to perform at each refueling outage the normal visual inspection of the reactor vessel head accessible areas as described in response to Item 1.A. This inspection is conducted by personnel that are either certified in mechanical inspection or in ASME visual examination. The acceptance criteria for this inspection is that any leakage is identified and referred to the engineering department for evaluation and corrective action, as needed. VEGP will augment their inspection and maintenance program, as necessary, based upon the recommendations of the EPRI MRP.

A complete 100% bare metal inspection of the Unit 2 reactor vessel head has not yet been performed; however, such an inspection is planned for the ninth refueling outage, which is scheduled to begin in October 2002. Unit 2 has an extremely low susceptibility ranking to penetration leakage due to primary water stress corrosion cracking (PWSCC) as demonstrated by the EPRI MRP. In addition, the technical specification requirement to monitor for RCS operational leakage provides assurance that vessel head penetration leakage would be recognized and quantified.

#### Bulletin Item 1.E

**“...provide the following: your conclusion regarding whether there is reasonable assurance that regulatory requirements are currently being met (see the Applicable Regulatory Requirements,**

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### Vogtle Electric Generating Plant 15-Day Response to NRC Bulletin 2002-01 Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity

above). This discussion should also explain your basis for concluding that the inspections discussed in response to Item 1.D will provide reasonable assurance that these regulatory requirements will continue to be met. Include the following specific information in this discussion:

- (1) If your evaluation does not support the conclusion that there is reasonable assurance that regulatory requirements are being met, discuss your plans for plant shutdown and inspection.
- (2) If your evaluation supports the conclusion that there is reasonable assurance that regulatory requirements are being met, provide your basis for concluding that all regulatory requirements discussed in the Applicable Regulatory Requirements section will continue to be met until the inspections are performed.”

#### Response to Bulletin Item 1.E

The inspection plans described in Item 1.D and the corrective action program provide assurance that the regulatory basis for VEGP will continue to be met. RCS leakage detection systems, which are required by technical specifications, afford the ability to detect low levels of RCS leakage through a variety of independent means. Finally, the FSAR Chapter 15 accident analysis describes the design basis of VEGP to address and mitigate the effects of RCS leakage, including a CRDM housing rupture, control rod ejection, and loss of coolant accident with acceptable regulatory consequences as approved by the NRC. In summary, the combination of inspection plans, technical specification surveillance requirements and leakage detection system requirements, and design basis analysis provide assurance that the regulatory requirements specified in NRC Bulletin 2002-01 will continue to be met.