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Docket No.: 50-424

NL-06-2712

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Vogtle Electric Generating Plant
Results of Reactor Pressure Vessel Head Inspections
Required by First Revised Order EA-03-009

Ladies and Gentlemen:

On February 20, 2004, the NRC issued the First Revised NRC Order EA-03-009 (Order) to establish interim inspection requirements for reactor pressure vessel (RPV) heads at pressurized water reactors. On March 8, 2004, Southern Nuclear Operating Company (SNC) submitted an answer to the Order which included a request for relaxation of the Order pursuant to the provisions of paragraph IV.F. The relaxation request was in regard to inspections performed under paragraph IV.C.(5)(a) of the Order. The relaxation request was supplemented by a SNC letter dated July 1, 2004. In addition, by SNC letter dated May 18, 2006, and supplemented by SNC letter dated June 2, 2006, SNC requested a relaxation of the Order pursuant to the provisions of paragraph IV.F in regard to inspections performed under paragraph IV.C.(5)(b) of the Order.

As reported by SNC's December 19, 2003 letter, SNC completed a bare metal visual (BMV) examination of >99% of the RPV top head surface including 360° around each RPV head penetration nozzle during the fall 2003 refueling outage (1R11) at Vogtle Electric Generating Plant Unit 1 (VEGP-1). This examination satisfied the portion of paragraph IV.C.(3) of the Order which specified an inspection meeting the requirements of paragraph IV.C.(5)(a), consistent with SNC's March 8, 2004 request for relaxation as supplemented by SNC letter dated July 1, 2004. The relaxation request proposed to achieve substantial compliance with the 100% BMV examination requirement of paragraph IV.C.(5)(a) by conducting a BMV examination of the RPV to the extent accessible.

During the recent fall refueling outage at VEGP-1, SNC completed inspections as required to be performed under paragraph IV.C.(5)(b) of the Order, consistent with SNC's May 18, 2006 request for relaxation as supplemented by SNC letter dated June 2, 2006. SNC hereby reports the results of those inspections as required by paragraph IV.E of the Order. In addition, this letter reports the results of a visual inspection performed under paragraph IV.D of the Order.

Examinations Required by the First Revised NRC Order EA-03-009, Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors:

As required by paragraph IV.A of the Order, SNC calculated the Effective Degradation Year (EDY) value at the start of 1R13 for VEGP-1. The current EDY value is 3.30 years which places VEGP-1 into the Low (EDY <8) category for susceptibility to primary water stress corrosion cracking (PWSCC) established by Paragraph IV.B. The susceptibility category determines the required examinations and timing of those examinations. An examination was completed during 1R13 satisfying the portion of paragraph IV.C.(3) of the Order which specified an inspection meeting the requirements of paragraph IV.C.(5)(b) consistent with SNC's May 18, 2006 request for relaxation as supplemented by SNC letter dated June 2, 2006. Full inspection coverage is not achievable at VEGP for all RPV head nozzles, because of nozzle end geometry. Specifically, the bottom end of these nozzles are externally threaded, or internally tapered, or both. The relaxation request proposed to volumetrically examine each nozzle from 2 inches above the J-groove weld down to the maximum extent possible, with a minimum required inspection distance below the J-groove weld to exceed the 6 effective full power years (EFPY) crack growth evaluation limit.

The inspection requirement of paragraph IV.D was also performed on the RPV top head during 1R13.

Paragraph IV.C.(5)(b) Inspection Results:

The examination scope satisfying the portion of paragraph IV.C.(3) of the Order, which specified an inspection meeting the requirements of paragraph IV.C.(5)(b)(i) for VEGP-1, included ultrasonic and supplementary eddy current examinations and leakage assessment of the 78 CRDM penetration nozzles. The scope also included a manual eddy current examination of the one RPV head vent line penetration.

Of the 78 CRDM penetration nozzles inspected, none showed detectable degradation. There were no indications of leak paths identified in the shrink fit areas. All penetrations were inspected from 2 inches above the highest point of the root of the J-groove weld (on a horizontal plane perpendicular to the nozzle axis) and 72 penetrations were inspected 1 inch or greater below the toe of the J-groove weld. Penetrations numbers 63, 65, 66, 67, 68, and 78 had data collected from less than 1 inch below the lowest point at the toe of the J-groove weld, but in all cases coverage was achieved in accordance with the relaxed scope requirement. There were no indications identified in the reactor vessel head vent line penetration.

Paragraph IV.D Inspection Results:

Visual inspections were performed to identify potential boric acid leaks from pressure-retaining components above the RPV head as required by paragraph IV.D of the Order. Boric acid residue was observed on one of the four conoseal assemblies, penetration 76. The conoseals are mechanical joints on the four RPVH penetration extensions that form the pressure boundary for the incore thermocouples. The above mentioned residue was the result of a conoseal leak discovered April 21, 2006 as documented in SNC letter NL-06-1315. The base of the penetration mentioned was not deconned in April due to access limitations. However, it was determined that the effects of leaving the remaining boron residue on the RPVH was negligible as documented in corrosion assessment number 1201-2006-001. Testing was performed as documented in Revision 1 of the EPRI Boric Acid Corrosion Guidebook on dry boric acid and the corrosion rates were very low. A commitment by SNC was made in letter NL-06-1315 to remove corrosion products during the 1R13 outage. The RPV head was deconned during the 1R13 outage and allowed to dry overnight. A remote re-inspection of the affected area around penetration 76 was then performed. The affected area was found to be acceptable. There were no indications of active leakage.

The examinations performed were documented by a written report.

Mr. D. E. Grissette states he is a Vice President of Southern Nuclear Operating Company, 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.

This letter contains no NRC commitments. If you have any questions, please advise.

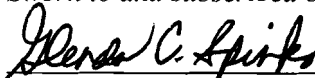
Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



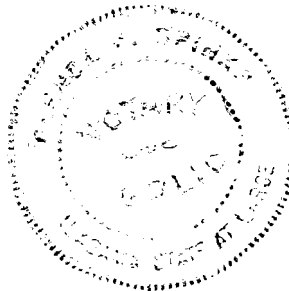
Don E. Grissette

Sworn to and subscribed before me this 22nd day of December, 2006.



Notary Public

My commission expires: 11/10/2010



DEG/DRG/daj

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Mr. T. E. Tynan, General Manager – Plant Vogtle
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Mr. L. C. Barrett, Commissioner – Department of Natural Resources