



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

May 5, 2011

Mr. T. Preston Gillespie, Jr.  
Site Vice President  
Duke Energy Carolinas, LLC  
Oconee Nuclear Station  
7800 Rochester Highway  
Seneca, SC 29672

SUBJECT: OCONEE NUCLEAR STATION UNIT 1 – NRC POST-APPROVAL SITE  
INSPECTION FOR LICENSE RENEWAL, INSPECTION REPORT  
05000269/2011013

Dear Mr. Gillespie:

On April 14, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed a Post-Approval Site Inspection for License Renewal at your Oconee Nuclear Station, Unit 1. The enclosed report documents the inspection results, which were discussed on April 14, 2011, with members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, no findings were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Timothy L. Hoeg, Acting Chief  
Engineering Branch 3  
Division of Reactor Safety

Docket Nos. 50-269  
License Nos. DPR-38

Enclosure:  
NRC Inspection Report 05000269/2011013  
w/Attachment: Supplemental Information

cc w/encl: See page 2

cc w/encl:  
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Timothy L. Hoeg, Acting Chief  
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ADAMS: X Yes    ACCESSION NUMBER: \_ML111250604 \_\_\_\_\_    X SUNSI REVIEW COMPLETE

OFFICE	RII:DRS	RII:DRS	RII:DRP					
SIGNATURE	RA	RA						
NAME	JRivera-Ortiz	THoeg	JBARTLEY					
DATE	05/ 5 /2011	05/ 5 /2011	5/5/2011					
E-MAIL COPY?	YES NO	YES NO						

Letter to Preston Gillespie from Timothy L. Hoeg dated May 5, 2011

SUBJECT: OCONEE NUCLEAR STATION Unit 1 – NRC POST-APPROVAL SITE  
INSPECTION FOR LICENSE RENEWAL, INSPECTION REPORT  
05000269/2011013

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-269

License Nos: DPR-38

Report No: 05000269/2011013

Licensee: Duke Energy Carolinas, LLC

Facility: Oconee Nuclear Station, Unit 1

Location: Seneca, SC 29672

Dates: April 11 – 14, 2011

Inspectors: Joel Rivera-Ortiz, Senior Reactor Inspector

Approved by: Tim Hoeg, Chief  
Engineering Branch 3  
Division of Reactor Safety

Enclosure

## **SUMMARY OF FINDINGS**

IR 05000269/2011013; April 11 – 14, 2011; Oconee Nuclear Station Unit 1; Post Approval Site Inspection for License Renewal

The report covers an inspection conducted by regional inspectors in accordance with NRC Manual Chapter 2516 and NRC Inspection Procedure 71003.

Based on the sample selected for review, the inspectors determined that commitments, license conditions, and regulatory requirements associated with the renewed facility operating license were either being met or, where commitment actions had not been completed, that the licensee had administrative controls in place to ensure completion before the period of extended operation.

The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

## REPORT DETAILS

### 4. OTHER ACTIVITIES

#### 4OA5 Other Activities

##### .1 Post-Approval Site Inspection for License Renewal – IP 71003 (Phase 1)

##### a. Inspection Scope

##### (1) Implementation of License Conditions and Commitments, including Aging Management Programs

The inspectors reviewed a sample of license renewal activities scheduled for the spring 2011 refueling outage, which was the second to last outage prior to the period of extended operation (PEO). The inspectors conducted this inspection in order to maximize observations of the actual implementation of license conditions, commitments, and Aging Management Programs (AMPs) before the PEO (February 6, 2013). The inspection's objective was to verify that the licensee completed the necessary actions to: (a) comply with the conditions stipulated in the renewed facility operating license; (b) meet the license renewal commitments described in NUREG-1723, "Safety Evaluation Report (SER) Related to the License Renewal of Oconee Nuclear Station; and (c) meet the future activities, including AMPs, described in the Updated Final Safety Analysis Report (UFSAR) supplement submitted pursuant to 10 CFR 54.21(d). A summary of the license renewal commitments for Oconee Nuclear Station is also available in an NRC Memorandum dated March 6, 2007 (ML070640041).

Specifically, the inspectors verified that the licensee met the commitments associated with the one-time Pressurizer examinations described in NUREG-1723 and the UFSAR supplement. For those Pressurizer examination items that were not completed at the time of this inspection, the inspectors verified that there was reasonable assurance that such examination items would be completed prior to the PEO.

The inspection sample for the selected commitment item is described below. Specific documents reviewed are listed in the report attachment.

#### Commitment Item 5 – Pressurizer Examinations

Commitment Item 5 in the NRC Memorandum dated March 6, 2007, specified that Pressurizer examinations would be performed prior to the end of the initial operating license term. NUREG-1723 and the UFSAR supplement for license renewal described the planned visual examinations of the internal cladding, spray line, spray head, and heater bundle penetration welds.

The examination of the Pressurizer internal cladding, spray line, and spray head would consist of a one-time visual examination (VT-3) in accordance with Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. The examination would cover the internal spray line, the spray head, and the fasteners that are used to attach the spray line to the internal surface of the Pressurizer. The clad examination would cover 100 percent of the Pressurizer internal surfaces with emphasis on the cladding adjacent to the heater bundles based on existing operating experience.

The examination of the Pressurizer heater bundle penetration welds would consist of: (a) a surface exam of 16 peripheral welds on the first removed heater bundle; (b) a VT-3 examination (or equivalent) of the remaining welds of the heater bundle; (c) an inspection of the heater bundle welds to ASME examination category B-E welds during the fifth in-service inspection interval; and (d) an inspection of both the heater-sheath-to-sleeve plate structural weld and the heater-sleeve-to-bundle diaphragm plane structural weld in Unit 1 only. These examination activities were not scheduled for the spring 2011 refueling outage. However, the licensee scheduled these activities for the outage where the heater bundles are scheduled for removal as stated in NUREG-1723.

The inspectors reviewed the licensing basis, implementing procedures, engineering evaluations, personnel qualifications, and non-destructive examination plans to verify that the Pressurizer examinations performed during the spring 2011 outage were implemented as stated in the commitment. Additionally, the inspectors observed (either by direct observation or video review) the sample listed below for portions of the visual examinations to verify that essential attributes such as calibration, equipment configuration, and disposition of indications were performed in accordance with the license renewal commitment.

- VT-3 examination on zone 4, Pressurizer upper dome cladding (Direct observation)
- VT-3 examination of the Pressurizer spray line welds and supports (Direct observation)
- VT-3 examination of Pressurizer upper head features, nozzle 1-RC-67 (Video)
- VT-3 examination of Pressurizer upper head features from penetration 1-RC-67, zone 3 (Video)
- VT-3 examination of Pressurizer vessel barrel, elevation 0 inches, zone 1 (Video)
- VT-3 examination of Pressurizer vessel barrel, elevation -6 inches, zone 1 (Video)
- VT-3 examination of Pressurizer vessel barrel, elevation -12 inches, zone 1 (Video)
- VT-3 examination of Pressurizer vessel barrel, elevation -15 inches, zone 1 (Video)
- VT-3 examination of Pressurizer vessel barrel, elevation -18 inches, zone 1 (Video)
- VT-3 examination of Pressurizer vessel barrel, elevation -30 inches, zone 1 (Video)
- VT-3 examination of Pressurizer vessel barrel, elevation -36 inches, zone 1 (Video)
- Calibration for VT-3 examination of Pressurizer vessel barrel zone 1, elevations 0 to -36 inches (Video)
- Calibration for VT-3 examination of Pressurizer upper head features, nozzle 1-RC-67 (Video)

(2) Review of License Renewal Commitment Changes

The inspectors reviewed license renewal commitment change documents to verify the licensee followed the guidance in Nuclear Energy Institute (NEI) 99-04, "Guidelines for Managing NRC Commitment Changes," for any change to Commitment Item 5. The inspectors verified that the licensee properly evaluated, reported, and approved where necessary, changes to license renewal commitments listed in the UFSAR in accordance with 10 CFR 50.59. Specifically, the inspectors reviewed the change to the implementation schedule for the VT-3 examination of the Pressurizer internal clad surfaces in the area adjacent to the heater bundles.

The inspectors did not identify any examples where commitment changes were not consistent with the guidance in NEI 99-04. The review of remaining license renewal



commitment changes is scheduled to be completed during the Phase 2 implementation of inspection procedure 71003.

(3) Review of Newly Identified SSCs

This inspection requirement is scheduled to be completed during the Phase 2 implementation of inspection procedure 71003.

(4) Review of the Description of AMPs and Time-Limited Aging Analyses (TLAAs) in the UFSAR Supplement

The review of the description of AMPs and TLAAs in the UFSAR supplement submitted pursuant 10 CFR 54.21(d) is scheduled to be completed during the Phase 2 implementation of inspection procedure 71003.

b. Findings and Observations

No findings or observations were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On April 14, 2011, the inspectors presented the inspection results to members of the licensee management staff. The licensee acknowledged the inspection results. The inspectors confirmed that all proprietary information reviewed during the inspection was returned to the licensee and that none of the potential report input discussed was considered proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

C. Cruz, Engineering  
D. Peltola, Principal Engineer  
E. Swanson, Engineering  
J. Smith, Licensing  
L. Hekking, License Renewal Fleet Program Owner

### **LIST OF REPORT ITEMS**

None

### **LIST OF DOCUMENTS REVIEWED**

03-9155982, Oconee PZR Internals Inspection Operating Instruction, Revision 1  
03-9157102, Oconee PZR Internals Inspection Plan, Revision 1  
54-ISI-365-02, Visual Inspection of Pressure Vessel Internals, Attachments and Internal Surfaces, Revision 2  
AR 00308431, Determine if a License Amendment Request is Required to Change Section 18.2.5.1 of the UFSAR to Allow an Extension of the Completion Date for a Portion of the Pressurizer VT-3 Examinations of the Internal Clad Surfaces.  
DWG 129252E, Unit 1 Pressurizer Vessel Sub-Assembly, Revision D12  
DWG 129254E, Pressurizer Upper Head Assembly and Details, Revision D9  
DWG 129266, Pressurizer Vessel Supports and Miscellaneous Details, Revision E6  
DWG 24893F, Unit 1 Pressurizer General Arrangement, Revision D16  
Nuclear System Directive 214, Regulatory Commitment Management Program, Revision 8  
NUREG-1723, "Safety Evaluation Report (SER) Related to the License Renewal of Oconee Nuclear Station  
Oconee Nuclear Station Updated Final Safety Analysis Report, Chapter 18, Revision 18  
Personnel Qualification Records for VT-3 examiners  
SAA Short Form 268, PRA Analysis of ONS Pressurizer Wall Thickness in Corroded Condition (40 vs. 41.72 years) in Support of a 50.59 Evaluation, 07/22/2010  
Safety Document Change Notice 30-9158876-000, Visual Inspection of Pressure Vessel Internals, Attachments and Internal Surfaces (54-ISI-365-02)  
TM/1/A/1165/005, Controlling Procedure for Inspection of Unit 1 Pressurizer Internals by Vendor, Revision 0