



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

October 16, 2017

Mr. Thomas D. Ray  
Site Vice President  
Oconee Nuclear Station  
Duke Energy Carolinas, LLC  
7800 Rochester Highway  
Seneca, SC 29672-0752

SUBJECT: OCONEE NUCLEAR STATION, UNIT 1 – REVIEW OF STEAM GENERATOR  
INSERVICE INSPECTION REPORT FOR UNIT 1 END OF CYCLE 29  
REFUELING OUTAGE (CAC NO. MF9375; EPID L-2017-LRO-0006)

Dear Mr. Ray:

By letter ONS-2017-015 dated February 24, 2017, Duke Energy Carolinas, LLC (the licensee) submitted its steam generator tube inspection report for Oconee Nuclear Station, Unit 1 in accordance with Oconee Technical Specification 5.6.8. The report summarizes the steam generator tube inspections that the licensee performed during the Oconee 1 Cycle 29 Refueling Outage in fall 2016. The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the submittal and concluded that the licensee provided the information required by the Technical Specifications. This completes the NRC staff efforts for Cost Activity Code No. MF9375 (EPID L-2017-LRO-0006). The enclosure documents the NRC staff's review of the submittal. Any inquiries can be directed to me at 301-415-0489 or via e-mail at [Audrey.Klett@nrc.gov](mailto:Audrey.Klett@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to be "A. Klett", written in a cursive style.

Audrey L. Klett, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-269

Enclosure: As stated

cc w/encl: Distribution via Listserv

REVIEW BY THE OFFICE OF NUCLEAR REACTOR REGULATION

FALL 2016 STEAM GENERATOR TUBE INSPECTION REPORT

DUKE ENERGY CAROLINAS, LLC

OCONEE NUCLEAR STATION, UNIT 1

DOCKET NO. 50-269

By letter ONS-2017-015 dated February 24, 2017,<sup>1</sup> Duke Energy Carolinas, LLC (the licensee) submitted its steam generator (SG) tube inspection report for Oconee Nuclear Station, Unit 1 (Oconee 1) in accordance with Oconee Technical Specification 5.6.8. The report summarizes the SG tube inspections that the licensee performed during the Oconee 1 Cycle 29 Refueling Outage (RFO) in fall 2016.

Oconee 1 has two replacement once-through SGs (OTSGs) designed and fabricated by Babcock & Wilcox International. These OTSGs were put into service in 2004. Each OTSG has 15,631 thermally treated Alloy 690 tubes that have a nominal outside diameter of 0.625 inches and a nominal wall thickness of 0.038 inches. The tubes were hydraulically expanded for 13 inches from the tube end into the 22-inch thick tubesheet.

The licensee provided the scope, extent, methods, and results of the OTSG tube inspections in letter ONS-2017-015. In addition, the licensee described corrective actions (i.e., tube plugging) taken in response to the inspection findings.

Based on its review of the information provided by the licensee, the U.S. Nuclear Regulatory Commission staff has the following comments and observations:

- The number of indications in SG 1A remained about the same, while the number of indications in SG 1B increased from the previous inspection.
- The average and 95/50 growth rates increased in SG 1A and decreased in SG 1B.
- This information is summarized as follows.

SG	RFO	Indications	Tubes	Average Growth Rate (%TW/EFPY)*	95/50 Growth Rate (%TW/EFPY)*
1A	28	21,289	9,412	0.6	2.7
	29	21,349	9,451	-0.1	1.6
1B	28	17,612	9,194	0.1	1.6
	29	21,214	9,979	0.6	2.7

\* Percent through-wall per effective full-power years

<sup>1</sup> Agencywide Documents Access and Management System Accession No. ML17062A355.

Based on a review of the information provided, the staff concludes that the licensee provided the information required by its Technical Specifications. In addition, the staff concludes that there are no technical issues that warrant followup action at this time because the inspections appear to be consistent with the objective of detecting potential tube degradation. The staff further concludes that the inspection results appear to be consistent with industry operating experience at similarly designed and operated units.

Principal Contributor: Alan T. Huynh

Date: October 16, 2017

SUBJECT: OCONEE NUCLEAR STATION, UNIT 1 – REVIEW OF STEAM GENERATOR  
 INSERVICE INSPECTION REPORT FOR UNIT 1 END OF CYCLE 29  
 REFUELING OUTAGE (CAC NO. MF9375; EPID L-2017-LRO-0006) DATED  
 OCTOBER 16, 2017

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**\*by memorandum**

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