



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

April 27, 2016

Mr. Kelvin Henderson  
Site Vice President  
Duke Energy Carolinas, LLC  
Catawba Nuclear Station  
4800 Concord Road  
York, SC 29745

**SUBJECT: CATAWBA NUCLEAR STATION - NOTIFICATION OF INSPECTION AND  
REQUEST FOR INFORMATION**

Dear Mr. Henderson:

The NRC will perform the baseline heat sink (HS) inspection at the Catawba Nuclear Station from August 8 – 12, 2016. Experience has shown that this inspection is resource intensive both for the NRC inspectors and your staff. In order to minimize the impact to your onsite resources and to ensure a productive inspection, we have enclosed a request for documents needed for this inspection. These documents have been divided into two groups. Section A of the enclosure identifies information to be provided prior to the inspection to ensure that the inspectors are adequately prepared. Section B of the enclosure identifies the information the inspectors will need upon arrival at the site. It is important that all of these documents are up-to-date and complete in order to minimize the number of additional documents requested during the preparation and/or the onsite portions of the inspection.

We have discussed the schedule for these inspection activities with your staff and understand that our regulatory contact for this inspection will be Sherry Andrews of your organization. Our inspection dates are subject to change based on your updated schedule of activities. If there are any questions about this inspection or the material requested, please contact the lead inspector, Robert Williams, at (404) 997-4664 ([Robert.Williams@nrc.gov](mailto:Robert.Williams@nrc.gov)).

In accordance with Title 10 of the Code of Federal Regulations 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS)

component of the NRC's Agencywide Document Access and Management 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/**

Shakur A. Walker, Chief  
Engineering Branch 3  
Division of Reactor Safety

Docket Nos. 50-413, 50-414  
License Nos.: NPF-35, NPF-52

Enclosure:  
Heat Sink Performance Document Request

cc: Distribution via Listserv

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☒ PUBLICLY AVAILABLE      ☐ NON-PUBLICLY AVAILABLE      ☐ SENSITIVE      ☒ NON-SENSITIVE  
ADAMS: ☒ Yes      ACCESSION NUMBER: \_\_\_\_\_      ☒ SUNSI REVIEW COMPLETE      ☐ FORM 665 ATTACHED

OFFICE	RII:DRS	RII:DRS					
SIGNATURE	<b>REW1</b>	<b>SAW4</b>					
NAME	RWILLIAMS	SWALKER					
DATE	4/27/2016	4/27/2016	4/ /2016	4/ /2016	4/ /2016	4/ /2016	4/ /2016
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: S:\DRS\ENG BRANCH 3\INSPECTIONS\WORKING DOCUMENTS\RFIS\HEAT SINK REQUEST FOR INFORMATION LETTERS\2016\CATAWBA HEAT SINK RFI 2016003 - REW.DOCX

## HEAT SINK PERFORMANCE DOCUMENT REQUEST

Site: Catawba Nuclear Station

Docket Nos.: 50-413, 50-414

Inspection Dates: August 8 – August 12, 2016

Entrance Meeting: August 8, 2016

Inspection Procedures: IP 71111.07, "Heat Sink Performance," dated 07/06/2010

Inspectors: Robert Williams, Sr. Reactor Inspector (Lead Inspector)

### **A. Information Requested for the In-Office Preparation Week**

Please provide the information requested in this section to the NRC Region II Office in care of the lead inspector by July 8, 2016, in order to facilitate the selection of specific items that will be reviewed during the onsite inspection week. The information can be provided in hard copy or electronic format; however, electronic format is preferred, either by digital data storage device (e.g. compact disk), or web-based document management system. If you have any questions regarding this information request, please call the lead inspector as soon as possible.

#### **A.1 Heat Exchangers and Service Water Equipment**

- a) List of heat exchangers (HXs) or equipment cooled by service water (SW) directly or indirectly
  - Include the risk ranking from the site specific risk assessment for each listed HX
  - Detail whether any cleaning or inspection activities are planned during the proposed onsite inspection period for any of the listed HXs
  - For HXs directly cooled by SW, provide the testing, inspection, maintenance, and monitoring of biotic fouling and macrofouling program documents
- b) Detail the HX performance inspection methods for HXs that are inspected/cleaned
- c) Response to Generic Letter 89-13 including any regulatory commitments made
- d) Design Basis documents associated with the SW system
- e) Design Basis documents associated with the Ultimate Heat Sink (UHS)
- f) SW system flow diagrams
- g) Recent Health Reports associated with the SW System and systems that are cooled by SW

Enclosure

- h) List of SW system related corrective action documents (with a brief description) which have received a Root Cause Analysis or an elevated severity level in the last three years
- i) Recent Operating Experience Events (2013-2016)
- j) List of applicable Codes and Industry Guidelines
- k) List of findings in the heat sink/heat exchanger performance area for the last 3 years
- l) List of redundant or infrequently used HXs
- m) Chemistry Program for safety-related HXs.
- n) Detail whether the UHS is above ground encapsulated by embankments, weirs or excavated side slopes; underwater weir or excavation; or forced draft cooling tower or spray pond
- o) Provide a list of buried or inaccessible piping and the piping test program, inspection or monitoring program
- p) List of safety-related and non-safety related valve interfaces

**B. Information to be provided on-site to the inspector at the entrance meeting (August 08, 2016):**

**B.1 Heat Exchangers and Service Water Equipment**

The inspector will select two to four heat exchangers and/or heat sink samples as required by the inspection procedure during the in-office preparation. The following items will be requested when the selections are made:

- a) Updated list of System Engineers
- b) List of any thru-wall leaks including completed or planned corrective actions and structural evaluations
- c) Provide a copy of the corrective actions and supporting documentation
- d) For the HXs that have Visual and/or Eddy Current Testing performed, provide a copy of the examination records, examiner qualification records, and associated corrective action documents
- e) Heat transfer calculations
- f) Evaluations for the potential of water hammer
- g) Documentation for controls and operational limits for excessive flow induced vibrations
- h) Periodic flow test results at/or near maximum design flow

- i) For an UHS that is encapsulated by embankments, weirs of excavated side slopes provide: (1) third party dam inspection results, and (2) documentation showing that there is sufficient reservoir capacity
- j) For an UHS that is an underwater weir or excavation provide documentation showing:
  - Periodic monitoring and trending of sediment build-up
  - Sufficient reservoir capacity
  - Considerations for adjacent non-seismic and/or non-safety related structures of possible degradation or blocking of safety-related flow paths due to severe weather or seismic events
  - Performance monitoring of heat transfer capabilities
  - Performance monitoring of UHS structural integrity
  - SW flow balance test results

Inspector Contact Information:

Robert Williams  
Sr. Reactor Inspector  
404-997-4664  
[Robert.Williams@nrc.gov](mailto:Robert.Williams@nrc.gov)

Mailing Address:

US NRC Region 2  
Attn: Robert Williams  
Marquis One Tower  
245 Peachtree Center Avenue, NE  
Suite 1200  
Atlanta, GA 30303