



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

May 9, 2011

Mr. Barry Allen
Site Vice President
FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station
5501 North State Route 2, Mail Stop A-DB-3080
Oak Harbor, OH 43449-9760

**SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION – NOTIFICATION OF AN NRC
TRIENNIAL HEAT SINK PERFORMANCE INSPECTION AND REQUEST FOR
INFORMATION INSPECTION REPORT 05000 346/2011003(DRS)**

Dear Mr. Allen:

On June 27, 2011, the NRC will begin the onsite portion of the Triennial Heat Sink Performance Inspection at your Davis-Besse Nuclear Power Plant. This inspection will be performed in accordance with NRC baseline inspection procedure (IP) 71111.07.

In order to minimize the impact that the inspection has on the site and to ensure a productive inspection, we have enclosed a request for documents needed for the inspection. The documents have been divided into three groups.

- The first group lists information necessary for our initial inspection scoping activities. This information should be available to the lead inspector no later than May 18, 2011. By May 25, 2011, the inspector will communicate the initial selected set of approximately 2-3 risk significant heat exchangers.
- The second group of documents requested is those items needed to support our in-office preparation activities. This set of documents, including the calculations associated with the selected heat exchangers, should be available at the Regional Office no later than June 15, 2011. This information should be separated for each selected component, especially if provided electronically (e.g., folder with component name that includes calculations, condition reports, maintenance history, etc.). During the in-office preparation activities, the inspector may identify additional information needed to support the inspection.
- The last group includes the additional information above, as well as plant specific reference material. This information should be available onsite to the inspector on June 27, 2011. It is also requested that corrective action documents and/or questions developed during the inspection be provided to the inspector as the documents are generated.

B. Allen

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The lead inspector for this inspection is Gerard O'Dwyer. If there are questions about the material requested, or the inspection, please call Gerard O'Dwyer at (630) 829-9624. Please send the information to the following e-mail address Gerard.ODwyer@nrc.gov. A hard-copy with the required information is also an acceptable option.

It is important that these documents are as complete as possible, in order to minimize the number of documents requested during the preparation week or during the onsite inspection.

All requested documents are to be for the time period from the onsite inspection period back to the documents that were provided in response to the previous heat sink performance inspection. If no activities were accomplished in that time period, then the request applies to the last applicable document in the previous time period.

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011. The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," 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 NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Ann Marie Stone, Chief
Engineering Branch 2
Division of Reactor Safety

Docket No. 50-346
License No. NPF-3

Enclosure: TRIENNIAL HEAT SINK PERFORMANCE INSPECTION DOCUMENT
REQUEST

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TRIENNIAL HEAT SINK PERFORMANCE INSPECTION
DOCUMENT REQUEST

Inspection Report: **05000346/2011003**

Inspection Dates: **June 27, 2011 – July 1, 2011**

Inspection Procedure: **IP 71111.07T “Heat Sink Performance”**

Lead Inspector: **Gerard F. O’Dwyer**
 (630) 829-9624
 Gerard.ODwyer@nrc.gov

Team Member: **Larry J. Jones Jr.**
 (630) 829-9864
 Larry.Jones@nrc.gov

I. Information Requested By May 18, 2011

1. List of the Generic Letter (GL) 89-13, “Service Water System Problems Affecting Safety-Related Equipment,” heat exchangers in order of risk significance.
2. Copy of heat exchanger performance trending data tracked for each GL 89-13 heat exchanger.
3. List of corrective action program documents (with a short description) associated with GL 89-13 heat exchangers, heat sinks, silting, corrosion, fouling, or heat exchanger testing, for the previous three years or since the last corrective action program document list was sent to the NRC for the previous heat sink performance inspection. The list should include all corrective action program documents not on the last corrective action program document list.
4. Copy of any self-assessment done on any of GL 89-13 heat exchangers.
5. Last two system health report(s) and maintenance rule system notebooks for all the GL 89-13 heat exchangers.
6. List of engineering-related operator workarounds (with a short description) associated with GL 89-13 heat exchangers. The requested documents are to be for the time period from the onsite inspection period back to the documents that were provided in response to the previous heat sink performance inspection.
7. List of permanent and temporary modifications (with a short description) associated with GL 89-13 heat exchangers. The requested documents are to be for the time period from the onsite inspection period back to the documents that were provided in response to the previous heat sink performance inspection.

TRIENNIAL HEAT SINK PERFORMANCE INSPECTION
DOCUMENT REQUEST

II. Information Requested By June 15, 2011

1. Copy of the UFSAR section applicable to the GL 89-13 Heat Exchanger Program.
2. Copies of procedures developed to implement the recommendations of GL 89-13 (e.g., the GL 89-13 Heat Exchanger Program description).
3. For the specific heat exchangers selected:
 - a. Copies of the Updated Final Safety Analysis Report (UFSAR) sections applicable for each heat exchanger;
 - b. Copy of system description and design basis document for the heat exchangers (as applicable);
 - c. Provide a list of calculations (with a short description), which currently apply to each heat exchanger; and
 - d. Copy of any operability determinations or other documentation of degradation associated with the heat exchangers or the systems that support the operation for the selected heat exchangers.
4. For the ultimate heat sink (UHS) and the safety-related service water system (or equivalent):
 - a. Copies of the applicable Updated Final Safety Analysis Report (UFSAR) sections;
 - b. Copy of system description and design basis document (as applicable);
 - c. Copy of any operability determinations or other documentation of degradation associated with the UHS and the safety-related service water system; and
 - d. Copy of the document (e.g., UFSAR or Technical Requirements Manual) that states the maximum cooling water system inlet temperature limit that still allows full licensed power operation of the nuclear reactor.
5. A schedule of all inspections, cleanings, maintenance, or testing of any safety-related plant heat exchanger to be performed during the onsite portion of the inspection.

III. Information Requested to be Available on First Day of Inspection, June 27, 2011

1. For the specific heat exchangers selected.
 - a. Copy of the calculation that correlates surveillance testing results from these heat exchangers with design basis heat removal capability (e.g., basis for surveillance test acceptance criteria);

TRIENNIAL HEAT SINK PERFORMANCE INSPECTION
DOCUMENT REQUEST

- b. Copies of the two most recent completed tests and evaluation data confirming thermal performance for those heat exchangers, which are performance tested;
- c. Documentation and procedures that identify the types, accuracy, and location of any special instrumentation used for the two most recently completed thermal performance tests for the heat exchangers (e.g., high accuracy ultrasonic flow instruments or temperature instruments). Include calibration records for the instruments used during these tests;
- d. Information regarding any alarms which monitor on-line performance;
- e. Copy of the document describing the inspection results of each heat exchanger. The requested documents are to be for the time period from the onsite inspection period back to the documents that were provided in response to the previous heat sink performance inspection;
- f. The cleaning and inspection maintenance schedule for each heat exchanger for the next 5 years;
- g. Copy of the design specification and heat exchanger data sheets for each heat exchanger;
- h. Copy of the vendor manuals including component drawings for each heat exchanger;
- i. Copy of the calculation which establishes the limiting (maximum) design basis heat load which is required to be removed by each of these heat exchangers;
- j. Copy of the operating procedure that ensures that the maximum cooling water system inlet temperature limit is not exceeded;
- k. Copy of the calculations or documents which evaluate the potential for water hammer in each heat exchanger or associated piping;
- l. Copy of the calculations that evaluate excessive tube vibration in each heat exchanger and the documents that describe the controls that prevent heat exchanger degradation due to excessive flow induced vibration during operation;
- m. Copy of the periodic flow testing at or near maximum design flow. The requested documents are to be for the time period from the onsite inspection period back to the documents that were provided in response to the previous heat sink performance inspection;
- n. Copy of the document which identifies the current number of tubes in service for each heat exchanger and the supporting calculation which establishes the maximum number of tubes, which can be plugged in each heat exchanger;
- o. Copy of the document establishing the repair criteria (plugging limit) for degraded tubes, which are identified in each heat exchanger;

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- p. Copies of the documents that verify the structural integrity of the heat exchanger (e.g., eddy current summary sheets, ultrasonic testing results, and visual inspection results); and
 - q. Copies of those documents that describe the methods taken to control water chemistry in the heat exchangers.
2. For the UHS:
- a. Copies of the inspection procedures for the verification of the structural integrity of underwater UHS and the associated results. The requested documents are to be for the time period from the onsite inspection period back to the documents that were provided in response to the previous heat sink performance inspection;
 - b. Copies of the maintenance and/or inspection procedures for underwater UHS sediment intrusion and the associated results including underwater diving inspections and/or sediment removal activities. The requested documents are to be for the time period from the onsite inspection period back to the documents that were provided in response to the previous heat sink performance inspection;
 - c. Copies of calculations and surveillances that determine the UHS reservoir capacity and heat transfer capability; and
 - d. Copies of surveillance procedures and testing results performed on the instrumentation relied upon to determine UHS reservoir capability. The requested documents are to be for the time period from the onsite inspection period back to the documents that were provided in response to the previous heat sink performance inspection.
3. For the review of the operation of the safety-related service water system (or equivalent) and the UHS:
- a. Copies of any design change performed on the UHS. The requested documents are to be for the time period from the onsite inspection period back to the documents that were provided in response to the previous heat sink performance inspection;
 - b. Copies of any design change performed on the safety-related service water system. The requested documents are to be for the time period from the onsite inspection period back to the documents that were provided in response to the previous heat sink performance inspection;
 - c. Copies of procedures for a loss of UHS;
 - d. Copies of procedures for a loss of service water system;
 - e. Inspections and/or maintenance related to preventing macrofouling (e.g., silt, dead mussel shells, or debris) and biotic fouling (e.g., fish, algae, grass, or kelp). The requested documents that were provided in response to the previous heat sink performance inspection;

TRIENNIAL HEAT SINK PERFORMANCE INSPECTION
DOCUMENT REQUEST

- f. Copies of chemistry procedures that monitor for pH, calcium hardness, etc. Also, provide copies of the associated results. The requested documents are to be for the time period from the onsite inspection period back to the documents that were provided in response to the previous heat sink performance inspection; and
- g. Copies of documents associated with the monitoring of pump performance for potential strong-pump vs. weak-pump interaction.

If the information requested above will not be available, please contact Gerard O'Dwyer as soon as possible at (630) 829-9624 or email Gerard.ODwyer@nrc.gov.

B. Allen

-2-

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Sincerely,
/RA/
Ann Marie Stone, Chief
Engineering Branch 2
Division of Reactor Safety

Docket No. 50-346
License No. NPF-3

Enclosure: TRIENNIAL HEAT SINK PERFORMANCE INSPECTION DOCUMENT REQUEST

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Letter to Mr. Barry Allen from Ms. Ann Marie Stone dated May 9, 2011.

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