UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

April 8, 2020

Mrs. Maria L. Lacal
Executive Vice President/
Chief Nuclear Officer
Arizona Public Service Company
P.O. Box 52034, MS 7602
Phoenix, AZ 85072-2034

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 - NOTIFICATION OF NRC TRIENNIAL HEAT SINK PERFORMANCE INSPECTION (05000528/2020002, 05000529/2020002, AND 05000530/2020002) AND REQUEST FOR INFORMATION

Dear Mrs. Lacal:

On June 15, 2020, the Nuclear Regulatory Commission (NRC) will begin the onsite portion of the Triennial Heat Sink Performance Inspection at your Palo Verde Nuclear Generating Station Units 1, 2, and 3. This inspection will be performed in accordance with NRC baseline inspection procedure (IP) 71111.07 by two inspectors from the NRC's Region IV office for one week.

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 4, 2020. By May 7, 2020, the inspector will communicate the initial selected set of approximately two to three risk-significant heat exchangers.

- The second group of documents requested includes 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 no later May 26, 2020. 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 inspectors 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 inspectors on June 15, 2020. 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.

It is important that these documents be 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 last Triennial Heat Sink Performance Inspection. If nothing addressing a request was done in that time period, then the request applies to the last applicable document in the previous time period.

We have discussed the schedule for this inspection activity with your staff and understand that our regulatory contact for this inspection will be Mr. D. Mohamed of your licensing organization. If there are any questions about this inspection or the material requested, please contact the lead inspector, Wayne Sifre, by telephone at 817-200-1193 or by e-mail at Wayne.Sifre@nrc.gov.

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Sincerely,

Vincent G. Gaddy /RA/

Vincent Gaddy, Chief
Engineering Branch 1
Division of Reactor Safety

Docket Nos. 50-528, 50-529, and 50-530
License Nos. NPF-41, NPF-51, and NPF-74

Enclosure:
Triennial Heat Sink Performance Inspection
Request for Information

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PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 - NOTIFICATION OF NRC TRIENNIAL HEAT SINK PERFORMANCE INSPECTION (05000528/2020002, 05000529/2020002, AND 05000530/2020002) AND REQUEST FOR INFORMATION – April 8, 2020

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Request for Information
Triennial Heat Sink Performance Inspection
Palo Verde Nuclear Generating Station Units 1, 2, and 3

Inspection Report:	05000528/2020002, 05000529/2020002, and 05000530/2020002
Inspection Dates:	June 15–20, 2020
Inspection Procedure:	IP 71111.07, Triennial "Heat Sink Performance"
Inspectors:	Wayne C. Sifre, Senior Reactor Inspector Fabian D. Thomas, Reactor Inspector

I. Information Requested by May 4, 2020:

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 two years or since the last heat sink performance inspection.

4. Copy of any self-assessment done on any of GL 89-13 heat exchangers done since last heat sink performance inspection.

5. System health report(s) and maintenance rule system notebooks for all the GL 89-13 heat exchangers.

6. Copy of your responses for GL 89-13.

II. Information Requested by May 26, 2020:

1. For the specific heat exchangers selected:

   a. Copies of the two most recent completed tests confirming thermal performance for those heat exchangers which are performance tested;

   b. Copy of system description and design basis document for the heat exchangers (as applicable);

   c. 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;

   d. Copy of the Updated Final Safety Analysis Report (UFSAR) sections applicable for each heat exchanger; and

e. Provide a list of calculations with a description which currently apply to each heat exchanger.

2. A schedule of all inspections, cleanings, maintenance, or testing of any plant heat exchanger to be done during the onsite portion of the inspection.

3. Copies of procedures developed to implement the recommendations of GL 89-13, (e.g., the GL 89-13 Heat Exchanger Program description).

4. Pages from the UFSAR for the GL 89-13 Heat Exchanger Program.

5. Maximum GL 89-13 heat exchanger inlet temperatures that still allow full licensed power operation of the nuclear reactor. Please provide the documents that state these limits (e.g., UFSAR or Technical Requirements Manual (TRM)) and the operating procedures that ensure these limits are not exceeded.

III. Information Requested by June 15, 2020

1. For the specific heat exchangers selected:

   a. Provide the Design Basis Documents and Updated Final Safety Analysis Report pages for the selected heat exchangers;

   b. Copy of the design specification and heat exchanger data sheets for each heat exchanger;

   c. Copy of the vendor manuals including component drawings for each heat exchanger;

   d. 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;

   e. Copy of the calculation which correlates surveillance testing results from these heat exchangers with design basis heat removal capability (e.g., basis for surveillance test acceptance criteria);

   f. Copy of the calculations or documents which evaluate the potential for water hammer or excessive tube vibration in the heat exchanger or associated piping;

   g. List of engineering-related Operator Workarounds/Temporary Modifications for these heat exchangers since the last Heat Sink Performance Inspection;

   h. Copy of the evaluations of data for the two most recent completed tests confirming the thermal performance of each heat exchanger;

   i. 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;

j. Copies of those documents that describe the methods taken to control water chemistry in the heat exchangers;

k. 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;

l. The cleaning and inspection maintenance schedule for each heat exchanger for the next 5 years;

m. Copy of the document describing the inspection results for the last two cleaning and inspection activities completed on each heat exchanger;

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; and

p. Information regarding any alarms which monitor on-line performance.

2. For the ultimate heat sink (UHS):

   a. Maintenance or inspection of inaccessible below-water portions of the UHS system including results of underwater diving inspections and assessments of sediment intrusion and/or removal of sediment; and

   b. Documentation of inspections to verify no structural damage to intake structures that would indicate loss of structural integrity and/or capacity.

3. For the safety-related Residual Heat Removal service water and Diesel Generator Cooling Water systems:

   a. Copies of the pipe testing and/or inspection program procedures and the latest completed surveillances and tests verifying structural integrity of the piping;

   b. History during the last three years of any through wall pipe leak on the system and the disposition documentation; and

   c. Copies of the procedures to monitor, assess, and disposition active through wall pipe leaks, including structural evaluations and/or planned corrective actions.

If the information requested above will not be available, please contact Wayne Sifre as soon as possible.

Inspector Contact Information:

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