

UNION ELECTRIC COMPANY  
1901 GRATIOT STREET  
ST. LOUIS, MISSOURI

JOHN K. BRYAN  
VICE PRESIDENT

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July 7, 1981

Mr. James G. Keppler  
Director, Region III  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, IL 60137

Docket Nos. 50-483  
50-486

Dear Mr. Keppler:

ULNRC-461

BLOCKAGE OF COOLING WATER SYSTEMS

Reference: NRC IE Bulletin No. 81-03 dated April 10, 1981

The referenced NRC Bulletin identified instances where nuclear plants have failed to meet technical specification requirements for minimum service water flow due to extensive plugging of heat exchangers by Asiatic clams (*Corbicula* species, a non-native fresh water bivalve mollusk).

The referenced letter detailed action to be taken and responses required from Construction Permit holders. This letter transmits Union Electric Company's responses to information requested.

Very truly yours,

*John K. Bryan*  
John K. Bryan

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Action 1: Determine whether Corbicula sp. or Mytilus sp. is present in the vicinity of the station by completing items 1 and 4 above that apply to operating licenses (OL).

Response: Corbicula species does occur in the Missouri River. Site specific collection data from 1973, 1975, and 1980-81 has shown this organism to be present in the vicinity of the Callaway intake in very low densities. Only one Corbicula species was found to be present from samples taken during the 1980-81 monthly monitoring at four Missouri River sampling locations adjacent to the Callaway intake. A check with Central Electric Coop (Chamois Power Plant) located just upstream from the Callaway intake found that the Chamois Plant has not experienced any problem with Corbicula species in the circulation cooling water system but they have found shells of this organism impinged on their traveling screen.

Action 2: If these organisms are present in the local environment and potentially affected systems have been filled from the station source or receiving water body, determine whether infestation has occurred.

Response: Since those systems susceptible to clam infestation have not yet been filled this question does not apply.

Action 3: Describe the actions taken in items 1 and 2 above for construction permit holders and include the following information:

- a) Applicable portions of the environmental monitoring program including last sample data and results.
- b) Components and systems affected.
- c) Extent of fouling if any existed.
- d) How and when fouling was discovered.
- e) Corrective and preventative actions.

Response:

- a) One Corbicula species was collected during Preoperational Benthos sampling from Missouri River Site A2 during December 1980.
- b) The two systems susceptible to Asiatic clam infestation due to being supplied from Missouri River intake are the Essential Service Water System (ESW) and the Fire Suppression Water System (FWS).

(Neither of these systems has been filled because the intake structure is not yet operable.)

There are areas of low or no flow in both of these systems which provide excellent sites for Asiatic clam growth.

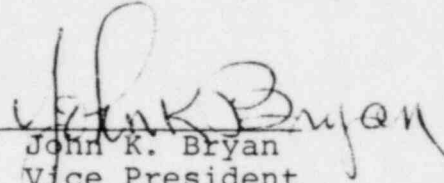
- c) No fouling exists because the systems have not yet been filled.
- d) No fouling has been discovered.
- e) For the FWS, considerable equipment is installed and testing performed to monitor the degradation of the system. Pump degradation is monitored by upstream and downstream pressure indicators and a flowmeter in the pump's recirculation line for use during testing. The pumps will be tested once a month per Technical Specifications and test results monitored for evidence of flow degradation and/or flow below allowable limits. The FWS piping is required by Technical Specifications to be periodically tested and examined with results monitored for evidence of flow degradation. Maintenance will be performed on the FWS when measured parameters fall below the minimum values specified in the Technical Specifications.

In the ESW system component cooling water heat exchangers are monitored for pressure drops. If excessive pressure drop across these heat exchangers indicates flow blockage, the heat exchangers will be inspected. If the heat exchangers are found to be blocked by clams, all other coolers in the system will be sampled to determine the gravity of the problem.

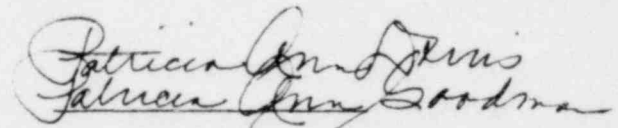
Overhauled equipment in these systems will be inspected for Asiatic clam infestation.

STATE OF MISSOURI )  
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CITY OF ST. LOUIS )

John K. Bryan, of lawful age, being first duly sworn upon oath says that he is Vice President-Nuclear and an officer of Union Electric Company; that he has read the foregoing document and knows the content thereof; that he has executed the same for and on behalf of said company with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By   
John K. Bryan  
Vice President  
Nuclear

SUBSCRIBED and sworn to before me this 7th day of July, 1981

  
Patricia Ann Dennis

PATRICIA ANN DENNIS  
NOTARY PUBLIC, STATE OF MISSOURI  
MY COMMISSION EXPIRES 1/31/82  
ST. LOUIS COUNTY

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