

Mailing Address

Alabama Power Company
600 North 18th Street
Post Office Box 2641
Birmingham, Alabama 35291
Telephone 205 783-6081

F. L. Clayton, Jr.
Senior Vice President
Flintridge Building



Alabama Power

the southern electric system

March 22, 1983

Docket Nos. 50-348
50-364

Mr. E. L. Jordan, Director
Division of Engineering and Quality Assurance
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Joseph M. Farley Nuclear Plant - Units 1 and 2
I. E. Bulletin 81-03

Dear Mr. Jordan:

In response to your January 21, 1983 letter requesting additional information related to I. E. Bulletin 81-03, "Flow Blockage of Cooling Water to Safety Components by Corbicula Sp. (Asiatic Clam) and Mytilus Sp. (Mussel)," Alabama Power provides the following:

NRC Request: The inspections and flow tests performed in response to the bulletin were minimal (three heat exchangers inspected on Unit 1 and a flow test performed on a single heat exchanger in Unit 2). Your response states "we are planning to inspect all remaining Unit 1 safety-related heat exchangers . . ." Please provide the results of these inspections and justify their applicability to Unit 2.

APCo Response: Alabama Power Company's letter of October 29, 1982 (Attachment 1), provided the results of followup inspections at Unit 1 and Unit 2. A total of 22 heat exchangers were inspected (19 in Unit 1 and 3 in Unit 2) and revealed no evidence of Corbicula or Corbicula shells. Complete details of the inspections are contained in the attached October 29, 1982 letter.

The service water systems for Units 1 and 2 have a common source of water such that the Unit 1 inspections are representative of the conditions at Unit 2. Additionally, as documented in the October 29, 1982 letter, Unit 2 safety-related heat exchangers have been inspected verifying the fact that no Corbicula problems are evident at either Unit 1 or Unit 2.

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NRC Request: Discovery of some shells in several heat exchangers prior to issuance of Bulletin 81-03 is evidence of fouling although flow restriction did not occur. Please provide descriptions of the extent of fouling and how and when it was discovered.

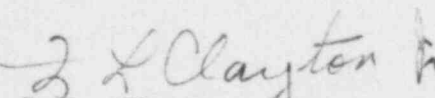
APCo Response: No significant fouling or flow blockage of heat exchangers due to Corbicula shells has been found at the Farley Nuclear Plant. A few isolated individual shells were found during component inspections at the first refueling outage for Unit 1 (this outage began in March 1979 and lasted until November 1979). Some additional indication of shells in the 1C CCW heat exchanger was found during the current Unit 1 refueling outage which began in January 1983. Again, no significant fouling or flow blockage of heat exchangers due to Corbicula shells has been found at the Farley Nuclear Plant.

NRC Request: Provide more complete description of chlorination program, including dose concentrations, and residual concentrations. Insufficient information was provided to assess effectiveness of program.

APCo Response: The chlorination program for the service water system is described in section 9.2.1.6 of the FSAR. The dose concentration for the chlorinator is set at 0.5 ppm free chlorine. Samples at the service water pump discharge have indicated residual values of 0.4 to 0.6 ppm. Presently this system is shutdown for maintenance which is scheduled to be completed in April 1983.

If you have any additional questions, please advise.

Yours very truly,


F. L. Clayton, Jr.

FLCJr/GGY:1sh-D16

Attachments

cc: Mr. R. A. Thomas
Mr. G. F. Trowbridge
Mr. S. A. Varga
Mr. J. P. O'Reilly
Mr. E. A. Reeves
Mr. W. H. Bradford

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ATTACHMENT 1



Alabama Power
the southern electric system

October 29, 1982

Docket No. 50-348

Mr. J. P. O'Reilly
U.S. Nuclear Regulatory Commission
Region II, Suite 3100
101 Marietta Street N.W.
Atlanta, Georgia 30303

Joseph M. Farley Nuclear Plant - Unit 1
I.E. Bulletin 81-03 Item 4.B

Dear Mr. O'Reilly:

In letter dated May 26, 1981, Alabama Power Company committed to provide additional information regarding I.E. Bulletin 81-03 Item 4.b. The following updated information is provided in regard to this subject.

On August 14, 1979, photographs of the 1A component cooling water (CCW) heat exchanger indicated no tube blockage by Corbicula (clams). Information regarding this safety related heat exchanger is given in the attachment.

Subsequent to the May 26, 1981 response, all the charging pump room, bearing oil, and gear oil coolers on both units have been inspected. These inspections revealed no blockage problems due to Corbicula or Corbicula shells (see attachment).

An extensive program of inspecting and cleaning various non-safety related heat exchangers was conducted on Unit 1 from September 1981 to March 1982. No evidence of Corbicula or Corbicula shells was found during these inspections. A summary of these non-safety related heat exchangers is given in the attachment.

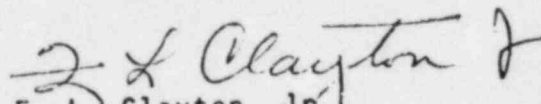
By the above information and the letter of May 26, 1981, it is the judgement of Alabama Power Company that the provisions of I.E. Bulletin 81-03 item 4.b have been met. No future inspections of Unit 1 safety related heat exchangers, except during routine maintenance operations, are therefore planned.

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Mr. J. P. O'Reilly
U.S. Nuclear Regulatory Commission
October 29, 1982
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If you have any questions, please advise.

Yours very truly,


F. L. Clayton, Jr.

FLCJr/RGW:jc-D29

Attachment

cc: Mr. R. A. Thomas
Mr. G. F. Trowbridge
Mr. S. A. Varga
Mr. E. A. Reeves
Mr. W. H. Bradford

ATTACHMENT

Safety-Related Heat Exchangers Inspected

1. Component Cooling Water Heat Exchanger, Unit 1
Location: Aux. Building EL100
Pipe Inlet I.D.: 20 inches
Clams or clam shells found: None
Number of blocked tubes observed: None
2. Charging Pump Room, Bearing Oil, and Gear Oil Coolers-Units 1&2
Location: Aux. Building EL 116 (6 coolers)
Pipe Inlet I.D.: 2½ inches
Clams or clam shells found: None
Number of blocked tubes observed: None

Non-Safety Related Heat Exchangers Inspected

1. Main Turbine Generator Hydrogen Heat Exchanger-Unit 1
Location: Turbine Building EL 200
Pipe Inlet I.D.: 8 inches
Clam or clam shells found: None
Number of blocked tubes observed: None
2. Main Condenser-Unit 1
Location: Turbine Building EL 145 (4 sections)
Pipe Inlet I.D.: 96 inches
Clams or clam shells found: None
Number of blocked tubes observed: None
4. Hydrogen Seal Oil Coolers-Unit 1
Location: Turbine Building EL 137 (2 coolers)
Pipe Inlet I.D.: 4 inches
Clam or clam shells found: None
Number of blocked tubes observed: None
5. Turbine Lube Oil Coolers-Unit 1
Location: Turbine Building EL 155 (2 coolers)
Pipe Inlet I.D.: 10 inches
Clams or clam shells found: None
Number of blocked tubes observed: None
6. Turbine Building HVAC Chillers-Unit 1
Location: Turbine Building EL 275 (2 chillers)
Pipe Inlet I.D.: 6 inches
Clams or clam shells found: None
Number of blocked tubes observed: None
7. Main Turbine Generator Exciter Coolers-Unit 1
Location: Turbine Building EL 195 (2 coolers)
Pipe Inlet I.D.: 2½ inches
Clams or clam shells found: None
Number of blocked tubes observed: None

8. Steam Generator Feed Pump Oil Coolers
Location: Turbine Building EL 157 (2 coolers)
Pipe Inlet I.D.: 3 inches
Clams or clam shells found: None
Number of blocked tubes observed: None