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April 10, 1990

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U. S. Nuclear Regulatory Commission
Document Control Desk
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Washington, DC 20555

Subject: Arkansas Nuclear One - Units 1 & 2
Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6
Technical Specification Change Request - Biocide

Gentlemen:

AP&L plans to implement use of biocides other than gaseous Chlorine for biological fouling control at ANO-1 and 2. There are other biocides that are as effective, if not more so, than Chlorine for this use. These biocides generally do not have the operational problems or personnel hazards associated with Chlorine gas. Use of equally effective biocides was recognized by the NRC in the recommended program to resolve the issue of fouling of open-cycle service water systems, as transmitted by NRC Generic Letter (GL) 89-13. Our response to GL 89-13, dated January 26, 1990 (ØCANØ19Ø12), mentioned that studies were underway regarding use of equally effective alternate biocides. AP&L therefore requests that the specific references to chlorination requirements be modified to allow flexibility in the use of equally effective biocides.

Technical Specification (TS) Amendment 62 for ANO-1, dated February 2, 1982, and Amendment 16 for ANO-2, dated September 19, 1980, added periodic Service Water (SW) chlorination requirements as part of AP&L's response to the discovery of inadequate flow to certain plant equipment due to an intrusion of Asian Clams (*Corbicula* sp.). Specifically, Surveillance Requirements (SR) 4.5.2.1.2 and 4.6.2.3, for ANO-1 and 2 respectively, require chlorination of the SW during the associated containment cooling flow verification surveillance whenever SW temperature is between 60°F and 80°F. The chlorination is performed to prevent buildup of Asian Clams in the containment cooler cooling coils when SW is pumped through them during the surveillance. The temperature range represents the range in which the Asian Clams can spawn and produce larvae which could pass through the SW System intake flow strainers.

In accordance with 10CFR50.91(a)(1), and using the criteria in 10CFR50.92(c), AP&L has determined that the proposed change involves no significant hazards consideration. Our basis for this determination is also attached for your review. The circumstances of this amendment request are neither exigent nor emergency; however, AP&L requests prompt NRC processing.

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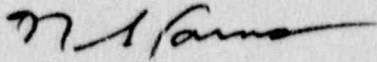
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AP&L also requests that this change become effective immediately upon NRC issuance of the amendment.

Very truly yours,



N. S. Carns

NSC/rbt

cc: Mr. Robert Martin
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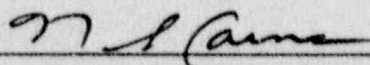
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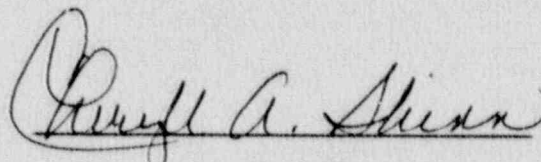
STATE OF ARKANSAS)
)
COUNTY OF POPE) SS

I, N. S. Carns, being duly sworn, subscribe to and say that I am Vice President, Nuclear for Arkansas Power & Light Company; that I have full authority to execute this oath; that I have read the document numbered ØCANØ49ØØ2 and know the contents thereof; and that to the best of my knowledge, information and belief, the statements in it are true.



N. S. Carns

SUBSCRIBED AND SWORN TO before me, a Notary Public in and for the County and State above named, this 10 day of April, 1990, 1990.



Notary Public

My Commission Expires:

6-30-91

ATTACHMENT
PROPOSED TECHNICAL SPECIFICATION CHANGES
LICENSE AMENDMENT REQUEST
IN THE MATTER OF AMENDING
LICENSES NO. DPR-51 AND NPF-6
ARKANSAS POWER & LIGHT COMPANY
ARKANSAS NUCLEAR ONE, UNITS 1 AND 2
DOCKETS NO. 50-313 AND 50-368

DESCRIPTION OF PROPOSED CHANGE

AP&L proposes to modify Surveillance Requirements (SR) 4.5.2.1.2 and 4.6.2.3 and the related Bases for ANO-1 and 2, respectively, to revise the specific reference to chlorination of service water during performance of the required flow verification associated with these SRs. This proposed change will allow flexibility in use of biocides other than Chlorine to prevent biological fouling of the service water system.

BACKGROUND

Technical Specification (TS) Amendment 62 for ANO-1, dated February 2, 1982, and Amendment 16 for ANO-2, dated September 19, 1980, added periodic Service Water (SW) chlorination requirements as part of AP&L's response to the discovery of inadequate flow to certain plant equipment due to an intrusion of Asian Clams (*Corbicula* sp.). Specifically, Surveillance Requirements (SR) 4.5.2.1.2 and 4.6.2.3, for ANO-1 and 2 respectively, require chlorination of the SW during the associated containment cooling flow verification surveillance whenever SW temperature is between 60°F and 80°F. The chlorination is performed to prevent buildup of Asian Clams in the containment cooler cooling coils when SW is pumped through them during the surveillance. The temperature range represents the range in which the Asian Clams can spawn and produce larvae which could pass through the SW System intake flow strainers.

DISCUSSION

The SRs associated with the verification of required service water flow through the containment air coolers for ANO-1 and 2 also require chlorination of the service water during periods of time when water temperature is conducive to Asian Clam infestation. AP&L plans to implement use of biocides other than gaseous Chlorine for biological fouling control at ANO-1 and 2. There are other biocides that are as effective, if not more so, than Chlorine for this use. These biocides generally do not have the operational problems or personnel hazards associated with Chlorine gas. AP&L has evaluated the proposed use of other biocides and determined that they are at least equally effective in preventing Asian Clam infestation, and are no more destructive to the SW system piping and equipment than Chlorine, and in some cases offer reduced corrosion concerns.

AP&L therefore requests that the specific references to chlorination requirements be modified to allow flexibility in the use of the equally effective biocides.

DESCRIPTION OF PROPOSED NO SIGNIFICANT HAZARDS DETERMINATION

In accordance with 10CFR50.92, AP&L has evaluated whether the proposed change involves a significant safety hazards consideration. AP&L has concluded that the proposed changes to SR 4.5.2.1.2 for ANO-1 and to SR 4.6.2.3 for ANO-2 do not involve a significant hazards consideration because the operation of Arkansas Nuclear One, Units 1 and 2 in accordance with this change would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

The containment cooler service water flow monitoring requirements are unchanged by the proposed amendment and will continue to demonstrate operability of the plant system addressed by this technical specification. The proposed change maintains the requirement for treatment of the service water system with a biocide to prevent Asian Clam infestation. The accident mitigation features of the plant are not affected by the proposed change. Verification of the performance of the containment cooling system components as addressed by the SR remains assured under the proposed change. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

- (2) Create the possibility of a new or different kind of accident from any previously evaluated.

No new possibility for an accident is introduced by the allowed flexibility in selection and use of alternate, but at least equally effective, biocides. The overall inspection and monitoring function of this SR remains the same, and allowing the use of a different biocide does not create the possibility of a new or different kind of accident. The change will not allow the service water portion of the containment cooling system to be operated in any new or different way from what is presently allowed.

- (3) Involve a significant reduction in the margin of safety.

The proposed change will maintain the assurance of the availability of the containment cooling system. The proposed change will allow use of a different but equally effective biocide, which will maintain the safety function of assuring adequate cooling flow by preventing Asian Clam infestation. Therefore, this change does not involve a significant reduction in the margin of safety.

The NRC has provided guidance concerning the application of these standards by providing examples of changes involving no significant hazards considerations. The proposed amendment most closely matches example (iv): A relief granted upon demonstration of acceptable operation from an operating restriction that was imposed because acceptable operation was not yet demonstrated. This assumes that the operating restriction and the criteria to be applied to a request for relief have been established in a prior review and that it is justified in a satisfactory way that the criteria have been met. Studies exist which have evaluated and demonstrated the effectiveness of use of different biocides (other than Chlorine) in controlling biological fouling.

Therefore, based on the evaluation discussed above, AP&L has concluded that the proposed change does not involve a significant hazards consideration.

ANO-1 TECHNICAL SPECIFICATION

PROPOSED CHANGE PAGES

4.5.2 Reactor Building Cooling Systems

Applicability

Applies to testing of the reactor building cooling systems.

Objective

To verify that the reactor building cooling systems are operable.

Specification

4.5.2.1 System Tests

4.5.2.1.1 Reactor Building Spray System

- (a) Once every 18 months, a system test shall be conducted to demonstrate proper operation of the system. A test signal will be applied to demonstrate actuation of the reactor building spray system (except for reactor building inlet valves to prevent water entering nozzles).
- (b) Station compressed air or smoke shall be introduced into the spray headers to verify the availability of the headers and spray nozzles at least every five years.
- (c) The test will be considered satisfactory if visual observation and control board indication verifies that all components have responded to the actuation signal properly.

4.5.2.1.2 Reactor Building Cooling System

- (a) At least once per 14 days, each reactor building cooling group shall be tested to demonstrate proper operation of the system. The test shall be performed in accordance with the procedure summarized below:
 - (1) Verifying a service water flow rate of ≥ 1200 gpm to each group of cooling units.
 - (2) Addition of a biocide to the service water during the surveillance in 4.5.2.1.2.a.1 above, whenever service water temperature is between 60F and 80F.
- (b) At least once per 31 days, each reactor building cooling group shall be tested to demonstrate proper operation of the system. The test shall be performed in accordance with the procedure summarized below:
 - (1) Starting (unless already operating) each operational cooling unit from the control room.

Addition of a biocide to service water is performed during reactor building cooler surveillance to prevent buildup of Asian clams in the coolers when service water is pumped through the cooling coils. This is performed when service water temperature is between 60F and 80F since in this water temperature range Asian clams can spawn and produce larva which could pass through service water system strainers.

The delivery capability of one reactor building spray pump at a time can be tested by opening the valve in the line from the borated water storage tank, opening the corresponding valve in the test line, and starting the corresponding pump. Pump discharge pressure and flow indication demonstrate performance.

With the pumps shut down and the borated water storage tank outlet closed, the reactor building spray injection valves can each be opened and closed by operator action. With the reactor building spray inlet valves closed, low pressure air or smoke can be blown through the test connections of the reactor building spray nozzles to demonstrate that the flow paths are open.

The equipment, piping, valves, and instrumentation of the reactor building cooling system are arranged so that they can be visually inspected. The cooling units and associated piping are located outside the secondary concrete shield. Personnel can enter the reactor building during power operations to inspect and maintain this equipment. The service water piping and valves outside the reactor building are inspectable at all times. Operational tests and inspections will be performed prior to initial startup.

Two service water pumps are normally operating. At least once per month operation of one pump is shifted to the third pump, so testing will be unnecessary.

The reactor building fans are normally operating, so testing is unnecessary.

Reference

FSAR, Section 6

ANO-2 TECHNICAL SPECIFICATION

PROPOSED CHANGE PAGES