



Omaha Public Power District

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December 17, 1982

LIC-82-405

Mr. Robert A. Clark, Chief
U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Licensing
Operating Reactors Branch No. 3
Washington, D.C. 20555

Reference: Docket No. 50-285

Dear Mr. Clark:

NUREG-0737, Item II.K.3.25
Power to Reactor Coolant Pump Seals

The Commission's letter dated October 13, 1982 requested Omaha Public Power District provide additional information regarding the subject TMI Action Plan item. The District's response to this informational request is attached.

Sincerely,

W. C. Jones
Division Manager
Production Operations

WCJ/TLP:jmm

Attachment

cc: LeBoeuf, Lamb, Leiby & MacRae
1333 New Hampshire Avenue, N.W.
Washington, D.C. 20036

OMAHA PUBLIC POWER DISTRICT'S RESPONSE TO THE
COMMISSION'S LETTER DATED OCTOBER 13, 1982

Position #1

The cooling water supply should be adequate to provide seal cooling and prevent seal failure for a period of two hours during a loss of offsite power event.

Response

The Fort Calhoun Station component cooling water (CCW) system is a closed loop system and has been designed with sufficient equipment redundancy such that a supply of CCW is always available to the reactor coolant pump (RCP) seals during normal operation. Additionally, the system has been designed such that during a loss of offsite power event, CCW to the RCP seals is automatically and continuously maintained, except upon concurrent initiation of a containment isolation actuation signal (CIAS). This statement is substantiated in the Fort Calhoun Station Updated Safety Analysis Report (USAR), Section 9.7.6, which states "The emergency diesel-generators ensure power supply if the off-site power supply is interrupted and either generator operates sufficient equipment to provide the design post-DBA cooling." For further specific system design details, please refer to the Fort Calhoun Station USAR, Section 9.7, "Component Cooling Water System". Thus, CCW supply is adequate to provide seal cooling and prevent seal failure for a period of at least two hours during a loss of offsite power event. The concern that CIAS isolates CCW to the RCP seals is addressed in the response to #2 below.

Position #2

RCP seals should be designed such that they are cooled by means of two independent supplies, e.g. seal injection (charging pumps) and thermal barrier heat exchangers (Reactor Building Closed Cooling Water (RBCCW) System). If plant design consists of only one cooling method, provide detailed design information to demonstrate that seal integrity is still maintained in the event of a loss-of-offsite power event.

Response

Fort Calhoun Station utilizes only one system (i.e., CCW) for the cooling of the RCP seals and it is the thermal-barrier-heat-exchanger-type system. Due to certain operating conditions which may exist when a loss of offsite power event occurs, CIAS may be initiated. At present, CIAS will isolate CCW from the RCP seals. However, Omaha Public Power District will modify the applicable CCW isolation valves to permit their isolation only upon initiation of concurrent low CCW supply and CIAS signals. This modification is expected to be completed during the present refueling outage and will ensure that the CCW system is capable of providing cooling to the RCP seals during both normal and accident conditions.

As stated above, the CCW pumps are automatically and sequentially loaded onto the diesel generators and are automatically started. This auxiliary power source, together with the modification that will be completed as detailed above, provides adequate assurance that RCP seal cooling and integrity can be maintained during a loss of offsite power event.

Position #3

It is currently our position that automatic loading of the cooling water pumps onto the emergency buses is desirable and should be incorporated. The cooling water pumps should be automatically (requiring no operator action) and sequentially loaded onto the diesel generators and automatically started.

Response

As stated in USAR Sections 7.3.2 and 9.7.6, the CCW pumps are automatically and sequentially loaded onto the diesel generators and any idle pumps are automatically started.

Additionally, Attachment 3 to the District's letter dated December 31, 1981 referenced the fact that Licensee Event Report 81-003 reported a loss of CCW to the RCP seals for a period of 1 hour and 33 minutes without resultant failure. The District wants to emphasize that this incident resulted from the loss of a 125 volt DC bus, which is obviously a different event than a loss of offsite power (i.e., AC power). However, in order to improve the CCW system reliability so that no single active failure can result in the loss of CCW to the RCP seal coolers, a redundant set of solenoid operated valve controllers to the CCW/raw water interface valves, powered from the opposite DC bus, will be installed. These redundant controllers will preclude the temporary loss of CCW through the raw water interface valves as occurred in the event described in Licensee Event Report 81-003. This modification is also expected to be completed during the present refueling outage.

In summary, the Fort Calhoun Station is in conformance with the Commission's positions regarding the capability to provide cooling to the RCP seals for a period of two hours following a loss of offsite power event and for automatic loading of the CCW pumps. Although RCP seal cooling can only be provided from a single system, the District believes the equipment redundancy and reliability of the CCW system is sufficient to ensure seal cooling is maintained. The modifications detailed above will serve to enhance this cooling capability for potential single active failures.