

OPPD

Omaha Public Power District
1623 Harney Omaha, Nebraska 68102-2247
402/536-4000

May 25, 1988
LIC-88-265

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

Reference: Docket No. 50-285

Gentlemen:

SUBJECT: Generic Letter 88-03, Steam Binding of Auxiliary Feedwater Pumps

The Omaha Public Power District (OPPD) received the subject Generic Letter dated February 17, 1988. This letter required specific actions of licensees. The actions required of addressees are detailed in the attachment to this letter. As requested, this response is being submitted under oath or affirmation.

If you have further questions concerning this matter, please contact us.

Sincerely,

for *R. L. Andrews*
R. L. Andrews
Division Manager
Nuclear Production

RLA/me

cc: LeBjeuf, Lamb, Leiby & MacRae
1333 New Hampshire Ave., N.W.
Washington, DC 20036

R. D. Martin, NRC Regional Administrator
A. Bournia, NRC Project Manager
P. H. Harrell, NRC Senior Resident Inspector

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
Omaha Public Power District) Docket No. 50-285
(Fort Calhoun Station)
Unit No. 1))

AFFIDAVIT

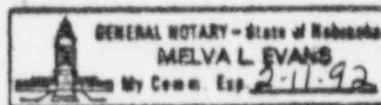
W. G. Gates, being duly sworn, hereby deposes and says that he is authorized to act as an alternate to the Division Manager - Nuclear Production of the Omaha Public Power District; that as such he is duly authorized to sign and file with the Nuclear Regulatory Commission the response to Generic Letter 88-03 dated February 17, 1988; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information, and belief.

W. G. Gates
W. G. Gates - authorized alternate to
Division Manager
Nuclear Production

STATE OF NEBRASKA)
) ss
COUNTY OF DOUGLAS)

Subscribed and sworn to before me, a Notary Public in and for the State of Nebraska on this 25th day of May, 1988.

Melva L. Evans
Notary Public



Attachment

Generic Letter (GL) 88-03 addresses the resolution of Generic Safety Issue 93, "Steam Binding of Auxiliary Feedwater Pumps." This issue concerns the potential disabling of Auxiliary Feedwater (AFW) pumps by steam binding that is caused by the backleakage of main feedwater (MFW) past the isolation check valves between the AFW and MFW systems. Numerous events have been reported through the industry where hot water has leaked into AFW systems and flashed to steam, disabling the AFW pumps. These events have been documented in IE Information Notice (IN) 84-06, Significant Operating Experience Report (SOER) 84-03, and IE Bulletin (IEB) 85-01.

IN 84-06, "Steam Binding of Auxiliary Feedwater Pumps," was issued in January 1984 and discusses leakage into the AFW pumps from the feedwater system at H. B. Robinson, Crystal River 3, and D. C. Cook 2 nuclear plants. These events suggested that a common mode failure potential exists which could lead to a loss of AFW capability. A special interim procedure at H. B. Robinson called for the venting of each AFW pump once each shift, the monitoring of casing temperatures, and the operation of the pumps as required to prevent saturation conditions in the system. D. C. Cook also monitored AFW system temperatures. IN 84-06 concluded that routine monitoring of AFW system temperatures would detect backleakage so that the system could be periodically vented. This venting would prevent steam binding until an appropriate long-term solution was developed. SOER 84-03, "Auxiliary Feedwater Pumps Disabled by Backleakage," issued in April 1984, discusses the H. B. Robinson event and similar occurrences at Farley 1 and Surry 2. These events demonstrated that backleakage could disable redundant AFW pumps through common pump suction and/or discharge piping, resulting in a loss of all auxiliary feedwater. Recommendations contained in the SOER included the monitoring and recording of AFW system piping temperature at least once per shift, and included guidance in operating procedures and training to identify backleakage and subsequently return the AFW system to full operability.

Omaha Public Power District (OPPD) initiated several corrective actions in response to IN 84-06 and SOER 84-03. A modification was initiated to install surface temperature instrumentation on the discharge piping for both AFW pumps at Fort Calhoun Station. An item was added to the Turbine Building Operations Log to have the turbine building operator monitor the temperature of the AFW discharge piping for each pump once every shift. Operator initial and requalification training programs have been revised to include the identification and mitigation of AFW pump steam binding. Procedure OI-FW-4, "Auxiliary Feedwater Pump Operation and Testing," was revised to delay the closing of motor-operated valve HCV-1384 and pump discharge valves FW-171 and FW-172 to ensure the positive seating of check valve FW-1334. Procedures were also revised to address corrective actions which would be taken in response to a high temperature condition in the AFW pump discharge lines.

IEB 85-01, "Steam Binding of Auxiliary Feedwater Pumps," requested certain PWR licensees and all PWR construction permit holders to take further action to prevent the possibility of steam binding of AFW pumps occurring at their facilities. The Fort Calhoun Station was not included as a licensee required to take corrective action. Corrective actions required of other PWR licensees were to develop procedures for monitoring fluid conditions within the AFW

Attachment (continued)

system on a regular basis during times when the system is required to be operable and to develop procedures for recognizing steam binding and for restoring the AFW system to operable status should steam binding occur. These procedural controls were to remain in effect until completion of hardware modifications to substantially reduce the likelihood of steam binding or until superseded by action implemented as a result of the resolution of Generic Safety Issue 93. The resolution of Generic Safety Issue 93, as contained in GL 88-03, is to continue to implement, as a minimum, the monitoring and corrective procedures previously identified for interim resolution of this issue in IEB 85-01. Actions specified for licensees in GL 88-03, and OPPD's response, are as follows:

1. Maintain procedures to monitor fluid conditions within the AFW system each shift during times when the system is required to be operable. This monitoring should ensure that fluid temperature at the AFW pump discharge is maintained at about ambient levels.

OPPD Response

OPPD has installed surface temperature instrumentation on the discharge piping for both AFW pumps at Fort Calhoun. An item was added to the Turbine Building Operations Log to monitor AFW pump discharge piping temperature once each shift. Procedure OI-AFW-2 contains corrective actions necessary to respond to AFW pump discharge piping high temperature conditions. These completed actions will be maintained by OPPD to ensure that AFW pump discharge temperature is maintained at about ambient levels.

2. Maintain procedures for recognizing steam binding and for restoring the AFW system to operable status, should steam binding occur.

OPPD Response

Operator initial and requalification training programs have been revised to include the identification and mitigation of AFW pump steam binding. Procedure OI-AFW-2 contains directions for recognizing the steam binding of AFW pumps and provides corrective actions. These actions will be maintained by OPPD to ensure that operators will recognize and correctly resolve the steam binding of an AFW pump.

OPPD believes that the actions listed above will minimize the possibility of an AFW pump experiencing steam binding at Fort Calhoun Station.