JAN 29 1980

Meeting Summary

Docket File
NRC PDR
Local PDR
TIC
NRR Reading
LWR #2 File
E. Case
D. F. Ross
D. B. Vassallo
S. A. Varga
D. Skovholt
W. Gammill
J. Stolz
R. Baer
O. Parr
L. Rubenstein
C. Heltemes
W. Haass
R. Houston
L. Crocker
F. J. Williams
R. J. Mattson
R. DeYoung
Project Manager - R. A. Birkel
Attorney, ELD -
J. Lee
IE(3)
ACRS(16)

T. Murphy
J. Knight
S. Hanauer
R. Tedesco
R. Bosnak
S. Pawlicki
F. Schauer
K. Kniel
T. Novak
Z. Rosztoczy
W. Butler
V. Benaroya
R. Satterfield
V. Moore
M. Ernst
F. Rosa
R. P. Denise
EP Branch Chief
G. Chipman
J. Collins
W. Kreger
G. Lear
B. Youngblood
L. Hulman
NRC Participants:
F. Orr
M. E. Zeftawy
J. C. Glynn
P. R. Matthews
V. Leung
L. W. Bell
R. W. Stevens, Jr.
R. A. Birkel

JAN 29 1980

DOCKET NOS. 50-369/370

APPLICANT: DUKE POWER COMPANY

FACILITY: MCGUIRE NUCLEAR STATION, UNITS 1 & 2

SUBJECT: SUMMARY OF MEETING HELD ON JANUARY 9, 1980

A meeting was held with the applicant on January 9, 1980 in Bethesda, Maryland to discuss design changes to the auxiliary feedwater system. A list of attendees is provided in Enclosure No. 1.

Review of the Auxiliary Feedwater System by the applicant resulted in the issuance of Significant Deficiency Report SD 369-370/79-07, September 7, 1979 (See Enclosure No. 2). Subsequently SD 369-370/79-10 was issued on November 8, 1979 (See Enclosure No. 3). The applicant described the results of the AFS review which revealed (1) certain pump suction problems during postulated multiple steam generator depressurization and (2) pump runout problems during a feedline break with a second depressurized steam generator. Enclosure No. 4 describes the previous AFS design, the associated problems and the design changes being implemented to correct the deficiencies. Schematic diagrams of both the previous and present AFS system are also included in the enclosure. The applicant anticipates that all changes will be completed by May 1980. The FSAR will be revised to reflect these changes.

Original signed by:

Ralph A. Birkel
LWR Branch #2
Division of Project Management

Enclosures:
As stated

cc: w/enclosure
see next page

OFFICE ▶	LWR2:DPM	DPM:LWR #2				
SURNAME ▶	RBirkel:lk	RLBaer				
DATE ▶	1/23/80	1/23/80				

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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Ralph A. Birkel

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LWR Branch #2
Division of Project Management

Enclosures:
As stated

cc: w/enclosure
see next page

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Power Systems Division
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Washington, D. C. 20555

Richard P. Wilson, Esq.
Assistant Attorney General
State of South Carolina
2600 Bull Street
Columbia, South Carolina 29201

ENCLOSURE No. 1

Attendance List

Meeting With Duke Power Company

January 9, 1980

Duke Power Company

G. A. Copp
D. L. Canup
S. D. Alexander

Westinghouse Electric Corp.

C. L. Sturla
G. Lang

NRC Staff

R. A. Birkel
R. W. Stevens, Jr.
L. W. Bell
V. Leung
P. R. Matthews
J. C. Glynn
Med El Zeftawy
Frank Orr

ENCLOSURE No. 2

Duke Power Company

McGuire Nuclear Station

Units 1 & 2

Report Number: SD 369-370/79-07

Report Date: September 7, 1979

Facility: McGuire Nuclear Station, Units 1 & 2

Description of Deficiency:

The present Auxiliary Feedwater System (AFS) is a safety related ASME Section III Class 3 system with the exception of the non-safety related condensate quality suction sources which are ANSI B31.1. The AFS pumps are normally aligned to the condensate quality sources with automatic switchover to the safety related Nuclear Service Water (NSW) source.

Recent review of the Auxiliary Feedwater System has identified depressurization cases of multiple steam generators which combined with the most limiting single failure will cause AFS flow increases to the extent that pump runout occurs. The increased flow creates negative suction pressures in the pump suction headers which could lead to air ingestion from the normal non-safety grade source of water.

Analysis of Safety Implications:

Worst case safety consequence is the loss of all AFS Pumps following a multiple steam generator depressurization event combined with the most limiting single failure. This, in combination with loss of normal feedwater, would result in loss of all feedwater.

Corrective Action:

Travel stops will be set on flow control valves to prevent unacceptable pump runout with all steam generators completely depressurized. The turbine driven AFS pump, rated at 200% design, will be throttled to supply 1/3 design flow to each of three intact steam generators at lowest safety valve set pressure plus 3% accumulation with the fourth steam generator completely depressurized. The two motor driven AFS pumps, rated at 100% design each, together will be throttled to supply 3/8 design flow to each of two steam generators and remaining 1/4 design flow to the third steam generator at lowest safety valve set pressure plus 3% accumulation with the fourth steam generator completely depressurized.

To prevent negative suction pressures, the suction piping will be revised to allow each motor driven AFS pump to be supplied from the corresponding train of NSW with the turbine driven AFS pump supplied from either train. Adequate suction pressure will be available under the most limiting cases of multiple steam generator depressurization and single failure.

Potential AFS pump runout problems resulting from multiple steam generator depressurization will be considered in the design of future plants.

ENCLOSURE No. 3

Duke Power Company

McGuire Nuclear Station

Units 1 & 2

Report No: SD 369-370/79-10

Report Date: November 8, 1979

Facility: McGuire Nuclear Station, Units 1 and 2

Description of Deficiency:

Some safety related mechanical and electrical equipment in the doghouse area outside containment is not qualified for the final environment resulting from a feedwater or steamline break. In addition, some safety related equipment is below the flood level caused by a feedwater line break.

The following safety related equipment and corresponding controls are affected by the adverse environment.

1. Main Steam Isolation Valves

2. Main Steam Power Operated Relief Valves

3. Auxiliary Feedwater Pump Turbine Steam Supply Isolation Valves

4. Feedwater Isolation Valves

Analysis of Safety Implications:

Worst case safety consequence following an auxiliary feedwater line break in a doghouse would be reduction of effective auxiliary feedwater flow from the required 450 gpm to 100 gpm. This worst case assumes the failure of both auxiliary feedwater pump turbine steam supply isolation valves to open as a result of the break environment. Additionally, a single failure of one motor driven auxiliary feedwater pump is assumed. The operating motor driven auxiliary feedwater pump would provide 100 gpm flow to only one intact steam generator, with the remainder of its flow spilling from the broken auxiliary feedwater line.

Worst case safety consequence following a steam line break inside a doghouse is reduction of auxiliary feedwater flow from the required 450 gpm to 340 gpm. This worst case assumes the failure of both auxiliary feedwater pump turbine steam supply isolation valves to open as a result of the break environment. Additionally, a single failure of one motor driven auxiliary feedwater pump is assumed. The operating motor driven auxiliary feedwater pump would provide 170 gpm [illegible] have been successfully isol[illegible]

Corrective Actio[illegible]

All safety relate[illegible] above will either be qualifi[illegible] case steam line or feedwater[illegible] table location outside [illegible]