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DUKE POWER

May 15, 1992

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

Subject: McGuire Nuclear Station, Unit 1
Docket No. 50-369
Inplant Review Number 92-05

Gentlemen:

Attached is Inplant Review Number 92-05 which is in compliance with FSAR Selected Licensee Commitment 16.9-7, Standby Shutdown System. This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

T.C. McMeekin

TLP/bcb

Attachment

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McGUIRE SAFETY REVIEW GROUP

INPLANT REVIEW REPORT

1. REPORT NUMBER: 92-05
2. DATE OF REVIEW: April 30, 1992 through May 12, 1992
3. SUBJECT DESCRIPTION: This Inplant Review is being submitted to the NRC pursuant to FSAR Selected Licensee Commitment 16.9-7, Standby Shutdown System.
4. EVALUATION AND COMMENT: With the Control Room and the Auxiliary Shutdown Panel unavailable, following a fire or security event, the Standby Shutdown System (SSS) provides an alternate and independent means to achieve and maintain a Hot Standby condition for one or both units for a conservative period of three and one half days. SSS instrumentation and controls are located in the Standby Shutdown Facility (SSF).

As part of the SSF emergency mode of control operation, power is supplied to valves 1CA-161, and 1CA-162 (Auxiliary Feedwater [CA] Pump Suction Header Nuclear Service Water [RN] Supply Isolations). These valves supply one of three assured sources of RN flow to the CA Turbine Driven (TD) and Motor Driven Pumps, and will automatically open if pump suction pressure decreases to 2 psig for 3 seconds.

The SSS is required to be operable in Modes 1 (Power Operation), 2 (Startup), and 3 (Hot Shutdown), per Selected Licensee Commitment 16.9-7.

On April 9, 1992, at 1225, the SSS was logged inoperable in the Unit 1 Technical Specification Action Item Logbook (TSAIL), item 22245, as a result of the power supply being removed from valve 1CA-161. Removing power from this valve prohibits the valve from automatically or manually supplying the RN assured source of water to the CA system in the event of a fire or security event, when use of the SSS would be required. The power supply was removed because of a problem of air entrainment in the RN assured makeup water piping to the CA system as documented in Problem Investigation Report (PIR) O-M92-0074. The air was first discovered by System Engineering personnel during implementation of procedure TT/1/A/9100/399, Inspections Of Assured Makeup Piping To Auxiliary Feedwater From Nuclear Service Water For GL (Generic Letter) 89-13. GL 89-13 requires, in part, that inspection be performed, on a regular

regular basis, of important portions of piping of the service water system for corrosion, erosion, and biofouling.

It was initially thought the air had been introduced during maintenance activities; however, this theory has been disproved due to the continuous amounts of air being vented on a daily basis from vents on the RN system, one of which (1RN-1060, RN Assured Makeup To CA High Point Vent)) was installed on April 14, 1992, under Variation Notice (VN) 3188, to aid in the removal of air found in the piping associated with valves 1CA-161 and 1CA-162.

Design Engineering, Operations, and System Engineering personnel determined that declaring the SSS inoperable to be judicious since it was thought that this would eliminate current and future operability concerns with the Unit 1 CA system, (See Licensee Event Report 369/92-06).

CONCLUSION:

At this time, plans to restore the SSS to an operable condition are dependent on CA system operability. Three options have been presented by personnel involved in this event and are listed below:

- 1) Installation of continuous vents on valves 1RN-1060 , 1RN-835 (Essential Header 1A Return High Point Vent), 2RN-815 (RN Channel 2A Discharge High Point Vent), in conjunction with installation of additional vents on high point sections of RN piping which currently do not contain vents.

The continuous vents will be installed as a Temporary Modification and will be evaluated after installation to determine if they are successful in eliminating air entrainment in the RN assured makeup piping. If the venting proves successful, the vents will become permanent. The Temporary Modification is currently being implemented.

- 2) Re-orienting the current RN makeup piping within the current valve boundary. This may be pursued if option 1 is unsuccessful.

The RN assured makeup connection branches off the top of a diagonal section of the 36 inch RN return header and is likely to accumulate air

which is entrained in the RN discharge header flow.

- 3) Installation of a new assured makeup source from the 1A Condenser Circulating Water (RC) system supply header.

The 3 options are currently under implementation and/or evaluation.

5. RECOMMENDATIONS:

The 3 options should continue to be implemented and/or evaluated by System Engineering, DE, and OPS personnel until the SSS can be returned to operable.

6. REFERENCES:

- 1) PIR 1-M92-0074.
- 2) FSAR Selected Licensee Commitments 16.9-7.
- 3) Personnel Interviews.