

Duke Power Company
McGuire Nuclear Generation Department
12700 Hagers Ferry Road (MGO1A)
Huntersville, NC 28078-8585

T. C. McMEEKIN
Vice President
(704)875-4800
(704)875-4809 Fax



DUKE POWER

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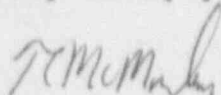
U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Subject: McGuire Nuclear Station, Unit 1 and 2
Inplant Review Number 92-09

Gentlemen:

Attached is Inplant Review Report 92-09 concerning the Groundwater Monitoring System. This 30 day report is submitted as a special report pursuant to Selected Licensee Commitment, Section 16.9-8, Remedial Action Paragraph a.2. 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

xc: Mr. S.D. Ebnetter
Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta St., NW, Suite 2900
Atlanta, GA 30323

INPO Records Center
Suite 1500
1100 Circle 75 Parkway
Atlanta, GA 30339

Mr. Tim Reed
U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Mr. P.K. Van Doorn
NRC Resident Inspector
McGuire Nuclear Station

9207130121 920703
PDR ADOCK C5000369
S PDR

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MCGUIRE SAFETY REVIEW GROUP

INPLANT REVIEW REPORT

1. REPORT NUMBER: 92-09
2. DATE OF REVIEW: June 1992
3. SUBJECT DESCRIPTION: The groundwater level monitors have setpoints which exceed Selected Licensee Commitment (SLC) values due to a Management Deficiency. This 30 day report is submitted as a special report pursuant to SLC Section 16.9-8, Remedial Action a.2.
4. EVALUATION AND COMMENT:

Abstract

During a Design Basis Documentation (DBD) review of the Groundwater Level Control (WZ) system, it was determined that 4 of 6 total Selected Licensee Commitment (SLC) related groundwater level monitors have setpoints which exceed the SLC, Section 16.9-8 value. It was also determined that 1 of 5 total Technical Specification (TS) related groundwater level monitors has an alert setpoint which exceeds TS Table 3.7-7 value. Units 1 and 2 were in Mode 5 (Cold Shutdown) at the time of discovery. An investigation was initiated to determine corrective actions to be taken. The cause of this event is Management Deficiency because there have been discrepancies associated with the groundwater level monitoring portion of the WZ system which have existed since March 1989, when TS 3/4.7.13 was changed.

Background

Since the lower elevations of some nuclear safety related systems, components, and structures are below the naturally occurring water table, a nuclear safety related WZ system was installed to lower the water table (reference McGuire Final Safety Analysis Report (FSAR) Figure 2B-3). The WZ system collects groundwater in wall drains, base mat flow channels and sumps, then pumps the collected water from the sumps to the surface water drainage system, thereby

creating a depression in the water table. Presently, during normal operation of the WZ system, groundwater level is maintained at or below elevation 712 feet mean sea level (MSL) in the Auxiliary building areas and elevation 717 feet MSL in the Reactor building areas.

Groundwater level is monitored at 11 well locations that provide annunciator alarms in the Control Room. Operations staff use McGuire procedures, OP/1 and 2 /A/6100/010I, Annunciator Response for Panel AD-8, to respond to groundwater monitor alarms. The procedure provides instructions for Alert, High, and High-high alarm levels. The Alert and High level alarm results in the dispatch of an operator to check the groundwater monitor panel and the actual monitor that is in alarm. For the High-high level groundwater alarm, the procedure refers to the TS and requires that the Operations Shift Supervisor be informed. If the High-high alarm occurs without previous alarms at the Alert and High levels simultaneously, Instrument and Electrical (IAE) personnel are also to be contacted. At the High-high level alarm, the TS requires the unit to be in at least Hot Standby within 6 hours and in Cold Shutdown within the next 30 hours.

Selected Licensee Commitment (SLC) 16.9-8, Groundwater Level Monitoring System, requires that if one or more of the required monitors are inoperable for more than 7 days, submit a special report to the NRC within 30 days documenting the results of the investigation of the inoperable monitor(s).

Description Of Event

On October 31, 1984, Duke submitted a proposed revision of TS 3/4.7.13, Groundwater Level, to the NRC. The proposed change was submitted to eliminate inconsistencies between the TS and the actual capabilities of the WZ system groundwater level monitoring equipment. At the time, the TS did not differentiate between setpoints of the interior groundwater monitors, which detected groundwater level at 2 feet 8 inches above the top of the floor slabs and the exterior monitors, which detected groundwater level at the top of the floor slabs. The NRC subsequently requested supplemental information regarding the TS proposed change. An analysis/investigation of a portion of the WZ system was initiated by Engineering and Station personnel.

From February 1985, through March 1991, there was considerable

discussion which took place between Duke and NRC personnel concerning WZ system requirements which were to be documented in TS and the SLC. During this period Duke personnel performed many inspections, implemented numerous modifications, and performed engineering reviews of the WZ system. This effort has been documented, in part, to the NRC in correspondence which was generated throughout this time period.

On May 12, 1992, while Design Engineering personnel were performing a review and documentation development (Design Basis Documentation development) of the WZ system, it was determined that 1 groundwater level monitor may have an alert setpoint which exceeds the TS Table 3.7-7 value. During subsequent review and investigation, it was also determined that 4 groundwater level monitors may have setpoints which exceed the SLC, Section 16.9-8 value.

On June 5, 1992, a meeting was held with Design Engineering and station Regulatory Compliance personnel in attendance to determine if a problem existed with the WZ system. At this time, it was determined 4 groundwater level monitors have setpoints which exceed the SLC, Section 16.9-8 value and 1 groundwater level monitor has an alert setpoint which exceeds the TS Table 3.7-7 value. Subsequently, PIR 0-M92-0097 was initiated.

On June 8, 1992, during a Safety Review Group (SRG) review and investigation of PIR 0-M92-0097, it was determined that the 4 groundwater monitors and 1 TS related monitor were technically inoperable and that a reportable event per SLC, Section 16.9-8 a.2, had occurred. Subsequently, TS monitor 2WZLS5070 was declared inoperable and logged in the Unit 2 Technical Specification Action Item (TSAIL) Logbook.

On June 9, 1992, a Component Engineer wrote work request 602139 to gather additional field information and confirm existing data on the groundwater level sampling wells and detectors.

On June 17, 1992, Design Engineering, System Engineering, Component Engineering, Regulatory Compliance, and SRG personnel met to discuss resolution of and formulate an action plan for resolution of the Groundwater Monitoring System problems.

On June 19, 1992, IAE personnel were assisted by personnel with surveying expertise who obtained additional data on the well for detector 2WZLS 070 as directed by work request 602139. The following field data was obtained:

| | |
|----------------------------|---------------------|
| Depth of well: | 41 feet+10.5 inches |
| Water found at a depth of: | 41 feet+7.25 inches |

Elevation of top flange of
Well from top of floor slab: 3 feet+0 inches
Length of detector probe: 32 feet+5.75 inches
Top of floor slab: 760+5.9375 MSL

On June 24, 1992, after discussion by General Office (GO) Engineering, Regulatory Compliance, SRG, and Operations personnel, SLC monitors 1WZLT5080, 1WZLT5090, 2WZLT5080, and 2WZLT5090 were declared inoperable and logged in the Units 1 and 2 TSAILs, respectively. Also, required actions and actions to implement regarding the inoperability of these detectors were clarified with station personnel.

Conclusion

The cause of this event is Management Deficiency because of discrepancies associated with the groundwater level monitoring portion of the WZ system which have existed since March 1989, when TS 3/4.7.13 was changed.

The TS revision approved by the NRC on March 2, 1989 listed the setpoint for all TS related groundwater monitors at a level of 731 feet MSL. This is the correct value for 4 of the 5 TS related detectors. However, the value agreed upon by McGuire Nuclear Station (MNS) and GO personnel for detector 2WZLS5070 was 731 feet +6 inches MSL. The 731 feet +6 inches MSL value was reflected and approved in the TS draft documentation. During the event investigation it could not be determined whether the 731 feet MSL value was submitted in error to the NRC or if an error occurred during printing and distribution of the NRC approved documentation, in which the "+6" notation was dropped. This error was undetected at the time because of less than adequate review of packages to or from the NRC. At the time, the GO Licensing group was experiencing a reorganization and personnel turnover and this could have been a factor. In late 1991, Duke Power Company was reorganized and responsibility for TS and related changes were shifted from the GO to the individual nuclear stations. The McGuire Nuclear Station (MNS) Regulatory Compliance group currently processes TS and SLC changes at MNS and controls/reviews within this organization will eliminate less than adequate reviews of future TS revisions since the Regulatory Compliance group is developing a procedure to provide guidance for development and processing of TS revisions.

Also, there have been additional typographical omissions and errors in TS revisions and FSAR updates related to the WZ system and

associated equipment. These errors have been propagated in the past, in part, because there was no single station group following plant system related performance, problems, and enhancements. This contributed to the continued lack of resolution, and identification of WZ system deficiencies. MNS management has recognized that a dedicated system engineering organization is beneficial in tracking and solving wide ranging system related deficiencies and developing potential improvements. Subsequently, an engineering organization was established, in part, to monitor plant systems and provide dedicated engineering support. This organization includes an engineer assigned to the WZ system.

A working group consisting of MNS System Engineering, Component Engineering, Regulatory Compliance, and GO Engineering personnel was established to resolve the Groundwater Monitoring System problems. The WZ system current unresolved problems are:

1. TS related detector 2WZLS5070 actual setpoint is higher than the setpoint allowed by TS Table 3.7-7 value.
2. SLC related detectors 1WZLT5080, 1WZLT5090, 2WZLT5080, and 2WZLT5090, actual setpoints are 8 inches higher than the setpoint allowed by SLC, Section 16.9-8

Current WZ system problems which have solutions in progress are:

1. All remaining TS and SLC detectors will be added to the TS Reference Manual, Section III, TS Required Mechanical Equipment.
2. An FSAR revision will be submitted to the WZ system and related equipment discussions which are in agreement with the system as actually installed.

During the event investigation, a concern was raised by SRG personnel of potential undetected violations of current TS requirements. Therefore, a data search of the Control Room TS logbook and WZ system equipment history files from March 1, 1989 to June 5, 1992 was conducted. Detector 2WZLS5070 was considered to be inoperable during this time period. The review found no more than 2 TS related WZ detectors inoperable during the same time period of the review. Therefore, there is no evidence that TS Limiting Condition For Operation (LCO) 3/4.7.13, Groundwater Level, which requires action to be taken if any 3 of the 5 monitors is inoperable was challenged during the time period from March 1989 to June 5, 1992. The Diesel Generator (DG) room groundwater monitors are currently calibrated per the FSAR.

There were no personnel injuries, radiation overexposures, or

uncontrolled releases of radioactive material as a result of this event.

Corrective Actions

Immediate none

- Subsequent
1. PIR 0-M92-0097 was generated to investigate setpoint problems with TS and SLC related groundwater monitors.
 2. Engineering, Design, and IAE personnel inspected WZ wells and detectors to gather data about groundwater monitoring equipment.
 3. TS monitor 2WZLS5070 was declared inoperable and logged in the Unit 2 TSAIL Logbook.
 4. SLC monitors 1WZLT5080, 1WZLT5090, 2WZLT5080, and 2WZLT5090 were declared inoperable and logged in the Units 1 and 2 TSAILS, respectively.
 5. A working group consisting of MNS System Engineering, Component Engineering, Regulatory Compliance, and GO Engineering personnel was established to resolve the Groundwater Monitoring System problems. System Engineering personnel agreed to accept lead responsibility for coordinating the activities associated with investigation and correction of the WZ system deficiencies.

- Planned
1. An evaluation will be performed to determine the desired setpoint(s) for detector 2WZLS5070. The High-high level setpoint will be 731 feet +0 inches MSL. The evaluation will include a determination of the feasibility of adding a float assembly to provide an alarm below the High-high level.

2. The following TS and SLC detectors will be added to the TS Reference Manual, Section III, TS Required Mechanical Equipment:

| <u>Detector</u> | <u>Requirement</u> |
|-----------------|--------------------|
| 1WZLS5060 | SLC |
| 1WZLT5090 | SLC |
| 2WZLS5060 | SLC |
| 1WZLS5070 | TS |
| 1WZLT5100 | TS |
| 0WZLT5110 | TS |
| 2WZLS5070 | TS |

3. An FSAR revision will be submitted to the WZ system and related equipment discussions which is in agreement with the system as actually installed.
4. An Evaluation will be performed to change the SLC to reflect the actual calibration setpoint of the Diesel Generator room WZ monitors, which are currently calibrated per the FSAR.
5. A procedure to provide guidance for development and processing of TS revisions will be developed.

ATTACHMENT 1

TS And SLC Groundwater Level Monitor Instrumentation

| <u>Designation</u> | <u>Location</u> | <u>Applicable Reference</u> |
|--------------------|---|---------------------------------|
| 1WZLS5060 | Unit 1 Reactor building, Exterior | SLC |
| 1WZLT5080 | DG 1B room, Interior | SLC |
| 1WZLT5090 | DG 1A room, Interior | SLC |
| 2WZLS5060 | Unit 2 Reactor building, Exterior | SLC |
| 2WZLT5080 | DG 2B room, Interior | SLC |
| 2WZLT5090 | DG 2A room, Interior | SLC |
| 1WZLS5070 | Auxiliary building West wall, Exterior | TS |
| 1WZLT5100 | Auxiliary building, PP51, Interior | TS |
| 0WZLT5110 | Auxiliary building, QQ56, Interior | TS |
| 2WZLS5070 | Auxiliary building East wall, Exterior | TS |
| 2WZLT5100 | Auxiliary building, PP61, Interior | TS |