Duke Power Company
McGuire Nuclear Station
12700 Hagers Ferry Road
Huntersville, NC 28078-8985

(704)875-4000

DUKE POWER

July 8, 1991

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

Subject: McGuire Nuclear Station Unit 2
Docket No. 50-370
Licensee Event Report 370/91-03

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 370/91-03 concerning an inadvertent Unit 2 Train B Engineered Safety Features actuation. This report is being submitted in accordance with 10 CFR 50.73(a)(2)(iv). This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

Tony L McConnell

T. L. McConnell

ADJ/cbl

Attachment

xc: Mr. S. D. Ebneter
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

IE22
1/1

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
McGuire Nuclear Station, Unit 2	0 5 0 0 0 3 7 0	1 OF 6

TITLE (4): An Inadvertent Unit 2 Train B Engineered Safety Features Actuation Occurred Because Of An Inappropriate Action And Management Deficiencies

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
0 6	0 6	9 1	9 1	— 0 0 3	— 0 0	0 7	0 8	9 1	N/A	0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9): 1

POWER LEVEL (10): 1 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Alan Sipe, Chairman, McGuire Safety Review Group	AREA CODE 7 0 4 — 8 7 5 - 4 1 8 3

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)

	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)				
X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On June 6, 1991, at 1515, Performance (PRF) personnel were performing procedure PT/2/A/4200/28B, Train B Slave Relay Test on Unit 2. The PRF person coordinating the procedure mistakenly communicated to Operations (OPS) personnel to rack out the breaker for Motor Driven Auxiliary Feedwater (CA) Pump 2A instead of the breaker for Motor Driven CA Pump 2B as specified by the procedure. Consequently, when Train 2B Slave Relay was actuated in a later procedure step, Motor Driven CA Pump 2B started and pumped water into Steam Generators (SGs) 2C and 2D. The OPS personnel involved did not have specific written directions or a reference copy of the PRF procedure when racking out the breaker. When CA Pump 2B started OPS and PRF personnel recognized that an error had been made. PRF personnel reset the slave relay. OPS personnel then stopped the pump and took appropriate measures to stabilize SG level. Unit 2 was in Mode 1 (Power Operation) at 100 percent power when this event occurred. This event is assigned causes of Inappropriate Action and Management Deficiencies. Appropriate procedure changes will be implemented to ensure that Station personnel performing support activities for procedures will have a reference copy of the procedure or will have the procedure step(s) read to them verbatim prior to performing them.

EVALUATION:

Background

The CA [EIIS:BA] system assures a feedwater supply to the SGs [EIIS:SG] for decay heat removal if the Condensate [EIIS:KA] system and Condensate Feedwater [EIIS:SJ] system are not available through loss of power or other malfunctions. The CA system is provided with two motor [EIIS:MO] driven pumps [EIIS:P], one turbine [EIIS:TRB] driven pump, their associated piping, valves [EIIS:V], and controls. Each motor driven pump supplies feedwater to two SGs. Pump 2A supplies SGs 2A and 2B and Pump 2B supplies SGs 2C and 2D. Power for the motor driven pumps is supplied by 4KV buses 2 Essential Train A [EIIS:EB] and 2 Essential Train B respectively.

An automatic start of the motor driven pumps will be initiated on any of the following conditions:

1) Loss of both Main Feedwater pumps

2) Two out of four (2/4) low-low level alarms [EIIS:LA] in any one SG

3) Initiation of a Safety Injection (SI) [EIIS:BQ] system signal

4) Loss of off-site power (Blackout)

5) Detection of an ATWS (Anticipated Transient Without Scram) Event.

Description of Event

On June 6, 1991, PRF personnel were preparing to perform the Motor Driven CA Pump 2B portion of the Slave Relay Test using Unit 2 procedure PT/2/A/4200/28B, Train B Slave Relay Test. The PRF Technician coordinating the test contacted the OPS Senior Reactor Operator (SRO) on duty at approximately 1230. The SRO requested that he wait until a test currently in progress was completed since the Reactor Operators (ROs) in the Control Room [EIIS:NA] were occupied with it.

At approximately 1445, the PRF Technician contacte he SRO a second time. The PRF Technician and the SRO discussed requirements for performance of the test. The PRF Technician informed the SRO that the test would require the breaker [EIIS:7] for Motor Driven CA Pump 2B be racked out. At that time, the SRO contacted a Nuclear Operations Specialist (NOS) and requested that he and another NOS report to the Control Room. The NOSs arrived in the Control Room and the SRO instructed them to get with the PRF Technician for instructions. The PRF Technician then informed the NOSs that he would be performing the slave relay test and that they were to rack out the breaker for Motor Driven CA Pump 2A. (The SRO was not involved in this discussion.) The NOSs then left the Control Room to perform the task. The PRF Technician did not realize that he had specified the wrong train to the NOSs during their discussion.

The NOSs proceeded to the Unit 2 Essential Train A Switchgear Room [EIIS:SWGR] and contacted RO A in the Control Room stating they were ready to rack out the breaker for Motor Driven CA Pump 2A. The NOSs were using procedure OP/0/A/6350/08, Operation of Station Breakers, to perform this task. They had no specific written instructions or reference copy of the PRF procedure with them.

At approximately the same time, the PRF Technician asked RO B if he wanted to manually start Nuclear Service Water (RN) [EIIS:BI] Pump 2B or allow it to auto start. There was no discussion about why the pump would receive an auto start signal. Subsequently, RO B started RN Pump 2B manually. RN Pump 2A was already running at that time. RO B stated that he did not associate starting RN Pump 2B with the running of the Motor Driven CA Pump 2B test, but with valve stroke tests which were to be performed later on selected RN valves.

The PRF Technician then requested that RO B perform step 12.14.1 of the PRF procedure. This step states to ensure that the "CA AUTO START DEFEAT" is not selected. RO B questioned as to what this meant and the PRF Technician pointed to the "2A CA AUTO START DEFEAT" on the Control Board. RO B signed off that this switch was not selected. The PRF Technician did not recognize his error in pointing to the "2A CA AUTO START DEFEAT" at this time.

The NOSs and RO A had established communication. Using repeat back communication, instructions were given to rack out the breaker for Motor Driven CA Pump 2A. RO A relayed the information that the breaker for Motor Driven CA Pump 2A was racked out to RO B who in turn repeated that the breaker was racked out to the PRF Technician.

The PRF Technician communicated with the SRO that the pump was now inoperable. The SRO logged Motor Driven CA Pump 2B inoperable at 1510. Since the breaker for Motor Driven CA Pump 2A had been mistakenly racked out, Motor Driven CA Pump 2A was actually inoperable instead.

The PRF Technician then proceeded with the performance of the test. He worked with another PRF Technician to start Motor Driven CA Pump 2B as directed by step 12.4.6 of the PRF procedure. When Train 2B Slave Relay was actuated, an SI signal was sent to the controls for Motor Driven CA Pump 2B and it started. At that time the PRF Technician and the ROs noted that CA Pump 2B was running and that water was being pumped into SGs 2C and 2D. The PRF Technician reset the Slave Relay. The ROs then stopped CA Pump 2B and took appropriate action to stabilize SG level.

At 1522, Motor Driven CA Pump 2B was logged as operable and Motor Driven CA Pump 2A as inoperable. Appropriate measures were taken to rack the breaker back in for Motor Driven CA Pump 2A. OPS personnel made the appropriate notification of an Engineered Safety Features (ESF) Actuation [EIIS:JE] to the NRC at 1615.

Conclusion

A cause of Inappropriate Action because of deficient communication is assigned due to the improper train being communicated by the PRF Technician to the NOSs. The OPS personnel involved stated that the PRF Technician coordinating this test was very competent and that they knew he had performed the same test in the past without incident. Since they had a high level of confidence in the PRF Technician, no one questioned his communication or asked for a copy of the PRF procedure. Independent Verification of the step to rack out the breaker was performed via phone.

The PRF Technician communicated the proper train during his initial conversation with the SRO but swapped to the wrong train in his communication with the NOSs and later when he pointed to the wrong train "CA AUTO START DEFEAT" switch for RO B. Also, the procedure step for verification that "CA AUTO START DEFEAT" was not selected was a handwritten change to the procedure and was not train specific. Neither train was selected at that time. No distractions or mitigating circumstances could be found which should have caused the PRF Technician to swap to the wrong train. He was following the correct procedure and was in the correct equipment cabinet but simply communicated the wrong train to the NOSs and ROs.

A cause of Management Deficiency, because of inadequate groups interface, is assigned since the initial "prejob" briefing did not include the ROs or NOSs. When discussing the test initially, only the PRF Technician and SRO were present.

A cause of Management Deficiency is also assigned because of lack of an adequate policy or directive requiring groups performing support activities associated with a procedure to have a reference copy of the procedure with them when performing the support steps or to have the procedure step(s) read to them verbatim. OPS personnel involved in this test did not have specific written directions or a copy of the PRF procedure with them when racking out the breaker. They used an OPS generic procedure pertaining to the operation of Station breakers. There was no direct communication of the PRF procedure step to the NOSs since their communication was with RO A and not the PRF Technician at that time. Also, the ROs did not have a copy of the procedure and depended on verbal communication from the PRF Technician.

Changes will be implemented to appropriate Station procedures requiring all Station personnel performing support activities associated with procedure steps to either have a reference copy of the respective procedure with them or to have the specific step(s) read to them verbatim when performing them. Also, Station Management personnel are currently evaluating the Station policy regarding "prejob" briefings to determine the need for a policy specifying required personnel to be present at such briefings.

*U.S. GPO: 1988-520-589 00010

A review of the Operating Experience Program Data Base for the twenty four months prior to this event revealed one event involving an ESF Actuation with a cause of Inappropriate Action. This was Licensee Event Report (LER) 369/89-23. This LER documented an auto repositioning of one valve, 1CA-86, (RN to CA Isolation Valve) caused by PRF personnel improperly following the correct procedure. The corrective actions for that LER were specific to that event and were not applicable to this event. However, problems with Inappropriate Actions because of failure to follow procedures are considered to be recurring. Therefore, this event is considered to be recurring.

This event is not Nuclear Plant Reliability Data System (NPRDS) reportable.

There were no personnel injuries, radiation overexposures, or uncontrolled releases of radioactive material as a result of this event.

CORRECTIVE ACTIONS:

Immediate:

1) OPS personnel stopped Motor Driven CA Pump 2B.

2) OPS personnel took appropriate measures to stabilize SG 2C and 2D level.

Subsequent:

1) OPS Management personnel met with OPS personnel from each shift to discuss the event and gather possible corrective actions.

2) PRF Management personnel met with PRF personnel involved and discussed the event.

3) PRF personnel evaluated the PRF procedures for performing Slave Relay Testing and made appropriate changes.

Planned:

1) Station management personnel will evaluate and make appropriate changes to Station Directive 4.2, Handling of Station Procedures, to ensure that all Station personnel performing support activities associated with procedures have a reference copy of the respective procedure with them or have the specific procedure step(s) read to them verbatim when performing the activity.

2) Appropriate changes will be made to OPS procedure OMP 1-2, Use Of Procedures, to require OPS personnel performing support activities to either have a reference copy of the respective procedure or be read the appropriate step(s) verbatim when performing the task.

3) Appropriate changes will be made to PRF Section Directive 1.0, governing procedure compliance, to ensure that PRF personnel will provide a reference copy of the respective

procedure to appropriate personnel performing support activities for procedures.

4) Appropriate changes will be made to procedures PT/1 and 2/A/4200/28A and B, Train A and B Slave Relay Tests, to specify the proper train when verifying that the "CA AUTO START DEFEAT" is not selected.

5) Station Management personnel will evaluate requirements to hold "prejob" briefings to include all personnel involved for tests or procedures involving Station Personnel support.

SAFETY ANALYSIS:

Unit 2 was in Mode 1 at 100 percent power with all Train A components in service, except Motor Driven CA Pump 2A, at the time of the ESF actuation. During this event, Motor Driven CA Pump 2B did auto-start, as designed, upon receipt of the start signal and pumped water into SGs 2C and 2D. Immediately upon discovery of the pump start, OPS personnel took appropriate actions to stop the pump and stabilize SG level. The inadvertent actuation of Motor Driven CA Pump 2B did not adversely affect any of the Unit 2 equipment or systems. The event did not cause any power transient or power mismatch. SG water levels did not change during this event.

This event did not affect the health and safety of the public.