NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Catawba Nuclear Station, Unit 1	0 5 0 0 0 4 1 3	1 OF 0 5

TITLE (4)
Technical Specification Violation Due To Management Deficiency And Personnel Error

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)
1 2	0 1	8 7	8 7	0 4 4	0 1	0 3	1 7	8 8	Catawba, Unit 2	0 5 0 0 0 4 1 4
										0 5 0 0 0

OPERATING MODE (9): 5

POWER LEVEL (10): 0 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)	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)	X 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 (AREA CODE)
Julio G. Torre, Associate Engineer - Licensing	7 0 4 3 7 3 - 8 0 2 9

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)

YES (If yes, complete EXPECTED SUBMISSION DATE) [ ] X NO

EXPECTED SUBMISSION DATE (15): MONTH | DAY | YEAR

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

On December 1, 1987, at 0200 hours, Diesel Generator (D/G) 1B was declared inoperable after it tripped during an Engineered Safety Feature Periodic Test. At the time, D/G 1B was the designated emergency power supply for Control Room Area Ventilation (VC)/Chilled Water (YC) System Train B. At 0400 hours, VC/YC Train A was declared inoperable in order to allow preventive maintenance work to be performed. This situation resulted in both trains of VC/YC being incapable of performing their safety function had a loss of offsite power occurred. Unit 1 was in Mode 5, Cold Shutdown, and Unit 2 was in Mode 1, Power Operation, at 75% power during this incident. This incident has been attributed to a management deficiency because the Shift Supervisor allowed VC/YC Train A to be removed from service while Train B had no emergency power. Additionally, emergency power requirements for VC/YC are not adequately addressed in Technical Specifications when the Unit associated with an inoperable D/G is below Mode 4. A personnel error was also involved because a Nuclear Control Operator initialed a step in the Nuclear Service Water (RN) System procedure certifying that both D/G 1B and 2A had been removed from service per the Diesel Generator Operation procedure. However, the procedure was not completed until three hours later.

Duke Power personnel swapped power supplies for VC/YC Train B to Unit 2 since D/G 2B was operable at the time, and a request to change Technical Specification 3.7.6 to specify emergency power requirements for VC/YC in all operational modes was initiated. This incident was discussed with the appropriate personnel.

The health and safety of the public were unaffected by this event.

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☆U.S.GPO:1984-0-464-481/18759

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

BACKGROUND:

The Control Room Area Ventilation (VC) and Chilled Water (YC) Systems combine to form one system which is designed to maintain a suitable environment in the following plant areas at all times: Control Room, Cable Room, Battery Room, Switchgear Rooms, Motor Control Center (MCC) Rooms, and the Electrical Penetration Rooms at elevation 594+0. The VC/YC System is shared between both Units. There are two 100% redundant trains of VC/YC equipment. Each is capable of being powered by Unit 1 or Unit 2 Essential Auxiliary Power, but under normal conditions both trains are aligned to Unit 1. Two diesel generators (EIIS:DG) (D/Gs) are provided per Unit to energize the Essential Auxiliary Power buses during emergency conditions.

Technical Specification 3.7.6 specifies that two independent trains of VC/YC shall be operable during all operational modes. If one train becomes inoperable while either Unit is in Mode 4, Hot Shutdown, or above, the inoperable train must be restored to operability within seven days, or the operating Units must be shutdown. If both Units are below Mode 4 and one train is inoperable, the train must be restored to operability within seven days or the operable train must be operated in the FILTER mode. If both trains are inoperable, or with the operable train not capable of being powered by an operable emergency power source, all core alterations and positive reactivity changes must be suspended on both Units. The requirement for an operable emergency power source is only specifically stated for Units operating below Mode 4. However, the bases for Technical Specification 3.7.6 states that the operability of VC/YC ensures that ambient air temperature does not exceed allowable limits for equipment and instrumentation, and the Control Room will remain habitable, during and following all credible accident conditions. This implies that an operable emergency power supply should be a prerequisite to VC/YC operability in all modes.

Technical Specification 3.8.1.1 specifies for each individual Unit that two separate and independent D/Gs are required to be operable per Unit, if the Unit is in Mode 4, or above. Below Mode 4, Technical Specification 3.8.1.2 applies and only one D/G is required operable per Unit. Action statement C for Technical Specification 3.8.1.1 specifies that when one D/G becomes inoperable, all required systems (or trains) that depend on the remaining operable D/G as a source of emergency power, must be verified operable within two hours, or the Unit must be shutdown. This is intended to provide assurance that a loss of offsite power event, while one D/G is inoperable, will not result in a complete loss of safety function of critical systems. It is also the reason Technical Specification 3.7.6 does not specifically require that VC/YC have an operable emergency power source in Mode 4, or above. This action statement is deficient with respect to VC/YC because VC/YC is a Unit shared system, and Technical Specification 3.8.1.1 applies only to individual Units. In order for VC/YC operability to be protected by this action statement, the D/G must become inoperable while the Unit is in Mode 4, or above. There is no such action statement in Technical Specification 3.8.1.2 since only one D/G is required operable, and the Unit is already shutdown.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

DESCRIPTION OF INCIDENT:

On December 1, 1987, at 0141:24 hours, D/G 1B tripped during performance of PT/1/A/4200/09, Engineered Safety Features (ESF) Actuation Periodic Test (see Special Report dated December 31, 1987). Work Request 5993 PRF was initiated to investigate and repair the D/G. At 0157:05 hours, Control Room personnel secured VC/YC Train B which had started automatically as part of the ESF test. VC/YC Train A was then started at 0158:46 hours. The Shift Supervisor declared D/G 1B inoperable at 0200 hours and entered it into the Unit 1 Technical Specification Action Items Log (TSAIL) under Technical Specification 3.8.1.2. At 0254 hours, a Nuclear Control Operator (NCO) began OP/0/A/6400/06C, Nuclear Service Water (RN) System, Enclosure 4.13, in order to maintain RN System operability with two D/Gs inoperable (D/G 2A was also inoperable at the time for preventive maintenance (PM) activities). He initialed a step in this enclosure verifying that both D/G 1B and 2A had been removed from service per OP/1 or 2/A/6350/02, Diesel Generator Operation. At the time, this procedure had not yet been worked for D/G 1B.

At 0400 hours, VC/YC Train A was declared inoperable to allow PM activities. At the time, Train A was aligned to Unit 1 essential power, and therefore was not affected by D/G 2A being inoperable. Control Room personnel secured VC/YC Train A at 0418:32 hours, and started Train B at 0418:43 hours. At 0430 hours, the Shift Supervisor made the evaluation that VC/YC Train B was inoperable for Unit 1 only, based on D/G 1B being inoperable (Train B was also aligned to Unit 1 essential power at the time). The Shift Supervisor declared VC/YC Train B inoperable for Unit 1 only because he interpreted Technical Specification 3.7.6 to require an operable emergency power supply only for Units that are below Mode 4. However, identical entries were made in both the Unit 1 and Unit 2 TSAILs, indicating that he was aware that VC/YC is a shared system and inoperability affects both Units. At 0611 hours, Operations personnel swapped 600 Volt power supplies for Train B VC loads from Unit 1 to Unit 2 (per OP/1/A/6350/02, Enclosure 4.13). The 600 Volt power swap effectively restored emergency power to a portion of VC/YC Train B. However, the motor for Chiller Compressor B (2CRA-C-1) was still aligned to Unit 1 essential power. A subsequent step in this procedure to align 2CRA-C-1 to Unit 2 allowed the alternative of declaring VC/YC Train B inoperable for both units. Therefore, the power was not swapped at this time. The enclosure was completed at approximately 0622 hours, removing D/G 1B from service.

At 0842:54 hours, Control Room personnel secured VC/YC Train B, and began swapping power supplies for 2CRA-C-1 to Unit 2. At 0907:51 hours, VC/YC Train B was restarted. At 0945 hours, VC/YC Train B was declared operable.

CONCLUSION:

This incident has been attributed to a management deficiency. The Shift Supervisor allowed VC/YC Train A to be removed from service while Train B had no emergency power. This decision was based upon his interpretation of Technical Specification 3.7.6, which was inconsistent with existing procedures and policies governing VC/YC operability. The D/G Operation procedure, Enclosure 4.13, specifies that a VC/YC train should be declared inoperable for both Units within

two hours of its emergency power supply becoming inoperable, unless power is transferred to the other Unit. This procedural requirement is independent of the current operational mode of either Unit. In addition, Operations Management Procedure (OMP) 2-29, Technical Specifications Logbook, states that all equipment made inoperable by the inoperability of other equipment should be logged in the TSAIL. Examples are given of an inoperable D/G causing VC/YC to be declared inoperable due to no emergency power in all modes.

This incident has also been attributed to a personnel error. An NCO initialed a step in OP/0/A/6400/06C, Nuclear Service Water System, Enclosure 4.13, certifying that both D/G 1B and 2A had been removed from service per OP/1 or 2/A/6350/02, Diesel Generator Operation. However, he did this three hours before enclosure 4.13 of OP/1/A/6350/02 was actually completed for D/G 1B. If he had ensured that the enclosure was complete before signing the step, VC/YC Train B power supplies would have been swapped to Unit 2, or the train would have been declared inoperable for both Units per procedure. If Train B had been declared inoperable at 0254 hours, the PM activities for Train A would have been postponed. The NCO assumed that the enclosure had been completed when he signed this step.

Additionally, a second management deficiency also contributed to this event. Technical Specification 3.7.6 does not specifically state that emergency power is required for VC/YC if a Unit is in Mode 4 or above. Technical Specification 3.8.1.1, action C, is intended to account for this by requiring that when a D/G becomes inoperable, the required systems dependent on the remaining operable D/G for emergency power must also be verified operable. However, Technical Specification 3.8.1.1 is Unit specific and did not apply in this case since Unit 1 was in Mode 5. Therefore, emergency power requirements for VC/YC are not adequately addressed in Technical Specifications if a D/G becomes inoperable while its respective Unit is below Mode 4.

There have been six incidents at Catawba Nuclear Station involving Technical Specification violations due to causes similar to this incident (failure to properly interpret Technical Specification and apply existing procedures, failure to follow a correct procedure, and lack of adequate policy/directive). None of the corrective actions in these incidents could have prevented this event. This incident is considered to be a recurring event.

CORRECTIVE ACTION:

SUBSEQUENT

(1) Operations personnel swapped 600V and 4160V essential power supplies for VC/YC Train B to Unit 2 (D/G 2B was operable at the time).

(2) Compliance initiated processing of a request to change Technical Specification 3.7.6. The new Technical Specification is to specify emergency power requirements for VC/YC in all operational modes.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

(3) This incident was reviewed with the involved Shift Supervisor and Nuclear Control Operator.

(4) This incident was discussed with all Shift Supervisors at an upcoming Shift Supervisors meeting.

SAFETY ANALYSIS:

During this incident, for a period of approximately 5 hours and 45 minutes, neither train of VC/YC would have been available to perform its safety function had a loss of normal AC power occurred on Unit 1. Train B was operating during most of this period without an operable emergency power supply. Offsite power was available to both Units at all times during this incident. Therefore, a VC/YC train was available during this incident except for the short periods of time while power was being swapped to Unit 2. In the unlikely event a Station Blackout had occurred during this incident, VC/YC Train B could easily have been restored to service by swapping power to Unit 2, since D/G 2B was operable at the time.

This incident is reportable pursuant to 10 CFR 50.73, Section (a)(2)(vii)(D).

The health and safety of the public were not affected by this incident.

DUKE POWER COMPANY
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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

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March 17, 1988

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

Subject: Catawba Nuclear Station, Unit 1
Docket No. 50-413
LER 413/87-44, Revision 1

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Revision 1 to Licensee Event Report 413/87-44 concerning a Technical Specification violation due to management deficiencies and a personnel error. This event was considered to be of no significance with respect to the health and safety of the public. Changes to the original report which was submitted to the NRC per my December 17, 1987 letter are identified by sidebars.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

JGT/10007/sbn

Attachment

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