

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Catawba Nuclear Station, Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 4 1 1 4	PAGE (3) 1 OF 0 5
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TITLE (4) Both Trains Of The Auxiliary Building Ventilation System Inoperable Due To A 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)
0 4	0 7	8 8	8 8	0 1 6	0 0 0	0 5	0 6	8 8	N/A		0 5 0 0 0
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)											

OPERATING MODE (9) 1	POWER LEVEL (10) 1 0 0	20.402(b)	20.406(a)	50.73(a)(2)(ix)	73.71(b)
		20.406(a)(1)(i)	50.38(a)(1)	50.73(a)(2)(v)	73.71(c)
		20.406(a)(1)(ii)	50.38(a)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 306A)
		20.406(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Julio G. Torre, Associate Engineer - Licensing	TELEPHONE NUMBER 710 14 317 13 1-18 10 1 9
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRCDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRCDS

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH DAY YEAR
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ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single-space typewritten lines) (16)

On April 7, 1988, at approximately 1149 hours, a Performance Specialist inadvertently placed the Solid State Protection System (SSPS) Train A in TEST while the Auxiliary Building Ventilation (VA) Filtered Exhaust System Train B was inoperable for preventive maintenance. This rendered both trains of VA Filtered Exhaust inoperable, placing the Unit in Technical Specification 3.0.3. The SSPS was returned to normal by Instrumentation and Electrical (IAE) Technicians before any action was required to shutdown the Unit. The Unit was in Mode 1, Power Operation, at 100% power during this incident. This incident has been attributed to a personnel error. The Specialist had asked a Performance Staff Engineer in charge of the periodic test how the valves being tested were to be stroke timed. The Engineer answered that a switch in the cabinet would be placed in TEST, initiating the Response Time Testing program. The Specialist assumed this was an authorization to proceed with the test (which was on hold at the time). The test procedure correctly identified the switch in the Auxiliary Safeguards Test Cabinet to be placed in the TEST position. However, the Specialist placed the Output Relay Test Switch in the SSPS Train A Cabinet in TEST by mistake. This incident has been reviewed with the Performance Specialist with emphasis on proper use of procedures. Also, a discussion was held with all Performance Technicians reiterating the proper use of procedures while providing assistance during periodic testing. Performance will periodically conduct followup discussions with the Technicians to reemphasize this requirement. The health and safety of the public were unaffected by this event.

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

BACKGROUND:

The Solid State Protection System (EIIS:JC) (SSPS) provides logic to ensure that critical safety parameters are monitored and that protective functions will automatically be actuated in the event certain limits are exceeded. There are two trains of SSPS per Unit. Instrumentation and Electrical (IAE) procedures provide specific and detailed instructions on taking the SSPS in and out of testing modes in order to ensure that Engineered Safety Features (EIIS:JE) (ESFs) are not inadvertently actuated, and Technical Specifications are not violated. Placing an SSPS train in test disables the automatic protective functions for that train. This results in several systems on the same train being rendered inoperable for Technical Specification considerations.

The Auxiliary Building Ventilation (VA) System is designed to maintain a suitable environment in the Auxiliary Building for the operation, maintenance, and testing of equipment as well as for personnel access. Under normal operating conditions, the supply and exhaust systems are balanced such that exhaust air flow exceeds supply air flow to minimize outleakage from unmonitored locations. The VA Filtered Exhaust subsystem consists of two filter (EIIS:FLT) trains with fans (EIIS:FAN) and associated ductwork. During normal plant operation, the two filter trains operate as two 50 percent capacity components of the exhaust system. Each filter train is equipped with a bypass section with the normal mode of operation being in the bypass position. Upon receipt of a loss of coolant accident (LOCA) signal from the SSPS (via the Diesel Generator (EIIS:DG) Load Sequencer), the filter trains will automatically align to direct air flow through the filter units. This will also occur if a high radioactivity level is detected by EMP41. However, additional automatic functions will occur upon receipt of a LOCA signal. The VA Filtered Exhaust Subsystem will automatically isolate exhaust flow from all rooms which do not contain Emergency Core Cooling System (ECCS) pumps (EIIS:P), and will reduce exhaust flow rates by placing the Filtered Exhaust Fan inlet dampers in the minimum open position. The intent of this alignment is to further minimize the possibility of radioisotope release by maintaining the ECCS pump rooms at a negative pressure relative to surrounding areas. A flow rate of 6260 standard cubic feet per minute (scfm) is maintained out of the ECCS pump rooms from each train in either the normal or LOCA alignment. This flow rate is sufficient to provide 100% of the ventilation requirements of these rooms from either train.

Technical Specification 3.7.7 requires that two independent trains of VA Filtered Exhaust be operable, including the capability of maintaining ECCS pump rooms at a negative pressure relative to adjacent areas. There is no action statement provided for having both trains inoperable.

Technical Specification 3.0.3 states that when a Limiting Condition for Operation (LCO) is not met, except as provided in the associated action requirements, within one hour, action shall be initiated to place the Unit in a Mode in which the LCO does not apply by placing it, as applicable in:

- a) At least Mode 3, Hot Standby, within the next 6 hours,

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

- b) At least Mode 4, Hot Shutdown, within the following 6 hours, and
- c) At least Mode 5, Cold Shutdown, within the subsequent 24 hours.

DESCRIPTION OF INCIDENT:

On April 7, 1988, at 0400 hours, Unit 2 VA Filtered Exhaust System Train B was declared inoperable in preparation for preventive maintenance activities on the filter unit and exhaust fan. Filtered Exhaust Fan 2B was secured at 0512 hours. At the same time, the Unit 2 VA Supply Air Handling Units and Unfiltered Exhaust Fans tripped automatically to prevent pressurizing the Auxiliary Building. The breaker for Filtered Exhaust Fan 2B was tagged in the open position to prevent inadvertently operating the fan.

At 1130 hours, Process Radiation Monitor EMP41 (which measures Auxiliary Building airborne gaseous radioactivity) was declared inoperable in preparation for an analog channel operational test. VA Filtered Exhaust System Train A was aligned to the filter mode at 1142 hours to preclude declaring it inoperable.

A Performance Staff Engineer and Performance Specialist began setting up to perform PT/2/A/4200/09A, Auxiliary Safeguards Test Cabinet Periodic Test, Section 12.27. This section of the test verifies correct operation of a Phase A Containment Isolation relay and requires installation of test leads in the SSPS Train A cabinet. During this time, the Engineer addressed the Specialist's questions concerning how the valves, which were to be actuated, would be stroke timed. Typically, when these valves are stroked, a test switch box is installed on the test patch panel just outside the Control Room to initiate the Response Time Testing (RTT) program. However, in this section of PT/2/A/4200/09A, no test switch box was required. The Engineer explained that a test switch in the cabinet would be placed in its TEST position and the associated slave relay would close initiating the RTT program via test leads attached to the relay. The test was temporarily placed on hold while the Engineer addressed another issue. The Specialist continued completing prerequisite steps while the Engineer was busy. After completing the installation of the RTT test leads in the SSPS Train A Output cabinet, the Specialist asked the Engineer a question concerning the test initiation. The Engineer perceived this to be a continuation of their previous valve stroke timing discussion and thought he was confirming what the Specialist thought about how the test worked in general. The Specialist perceived this conversation to be an authorization to proceed with the test, and placed the SSPS Train A Output Relay Test Switch in the TEST position at 1148:45 hours. PT/2/A/4200/09A specified the correct switch in the Auxiliary Safeguards Test Cabinet. However, the Specialist had just installed the RTT leads in the SSPS Train A Output Bay and assumed that the switch the Engineer referred to was in this cabinet. He did not check the procedure before performing the step. The Engineer proceeded to the Auxiliary Safeguards Test Cabinet to initiate the test signal. When the expected system response was not obtained, he looked at the SSPS cabinet and noticed the switch position at approximately 1150 hours. He immediately notified the Control Room Operators that SSPS Train A had been placed in TEST. An Operator checked the status of Train B equipment, then entered

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TEXT (if more space is required, use additional NRC Form 368A 3/ (17))

Technical Specification 3.0.3 due to both trains of VA Filtered Exhaust being inoperable. Performance personnel issued Priority 1 Work Request 6381 PRF to have IAE restore SSPS Train A to normal. IAE completed restoration activities by 1247 hours, which included placing SSPS Train A completely in TEST then returning it to normal per their procedure. The Technical Specification violation ended at this time prior to any required actions to shutdown Unit 2.

CONCLUSION:

This incident has been attributed to a personnel error. The Specialist was under the impression that he was to complete the test procedure based on his conversation with the Engineer. However, the Engineer had only explained how the test would be conducted. He did not authorize the Specialist to complete the test and did not expect him to take any action since his role was to assist with the setup and perform independent verification. The test procedure clearly identified the test switch as being located in the Auxiliary Safeguards Test Cabinet (not in the SSPS Cabinet). If the Specialist had used the procedure, the violation would not have occurred. The actions of the Performance personnel, after discovering the error, were proper and well considered. If the Output Relay Test Switch had been simply returned to the OPERATE position when discovered, a Reactor Trip would have occurred due to the removal of SSPS blocking functions.

There have been three previous occurrences of Technical Specification violations due to misunderstood verbal instructions and improperly following a correct procedure (see LER 413/85-16, LER 413/86-38 and LER 414/85-52). However, none of these incidents involved placing the SSPS in TEST. The corrective actions from these incidents could not have prevented this incident.

CORRECTIVE ACTIONS:

IMMEDIATE

Performance Staff Engineer notified appropriate Control Room personnel.

SUBSEQUENT

- (1) Performance personnel originated a Priority 1 work request to have IAE return the SSPS to normal.
- (2) IAE placed the SSPS fully in TEST, then returned it to normal per procedure.
- (3) This incident has been reviewed with the Performance Specialist with emphasis on proper use of procedures.
- (4) A group discussion was conducted with the Performance Technicians to review this incident in order to prevent occurrences of this type in the future. It was discussed that the Technicians should either have a copy of the procedure in hand when performing the test or consult the control

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TEXT (if more space is required, use additional NRC Form 306A's) (17):

copy, and fully understand each step before it is performed. Follow-up meetings will periodically be conducted to reemphasize this requirement.

SAFETY ANALYSIS:

During this incident, all of the Train A Engineered Safeguards Features which could automatically be actuated by the SSPS under certain conditions were inoperable for approximately one hour. In all cases except for the VA System, a redundant train of equipment was available and would have been actuated by SSPS Train B had it been necessary.

While both trains of the VA Filtered Exhaust System were technically inoperable, Train A was actually operated the entire time in the filter mode due to EMP41 being inoperable. Therefore, in the unlikely event a LOCA had occurred, the SSPS would not have been required to align Train A to the filter unit. However, the automatic isolation of the ECCS pump rooms and subsequent reduction in VA flow rate would not have occurred as designed. While the ECCS pump rooms would not have been maintained at a negative pressure relative to surrounding areas, the overall pressure in the Auxiliary Building was less than the environment due to the supply units being shutdown at the time. Therefore, the possibility of an uncontrolled release of radioactivity from the Auxiliary Building was very improbable.

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

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

DUKE POWER COMPANY
P.O. BOX 33189
CHARLOTTE, N.C. 28242

HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
(704) 373-4531

May 6, 1988

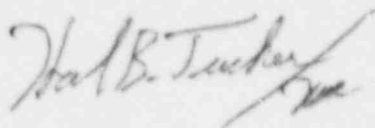
Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Catawba Nuclear Station, Unit 2
Docket No. 50-414
LER 414/88-16

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Licensee Event Report 414/88-16 concerning both trains of the Auxiliary Building Ventilation System being rendered inoperable due to a personnel error. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,



Hal B. Tucker

JGT/15/sbn

Attachment

xc: Dr. J. Nelson Grace
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

M&M Nuclear Consultants
1221 Avenue of the Americas
New York, New York 10020

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

American Nuclear Insurers
c/o Dottie Sherman, ANI Library
The Exchange, Suite 245
270 Farmington Avenue
Farmington, CT 06032

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

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