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

Subject: Catawba Nuclear Station
Docket No. 50-414
LER 414/98-001

Gentlemen:

Attached is Licensee Event Report 414/98-001 concerning **Tech Spec 3.0.3 Entry due to an inoperable Annulus Ventilation System.**

This event is considered to be of no significance with respect to the health and safety of the public.

Sincerely,

Mary L. Birch for
Gary R. Peterson

Attachment

cc: Mr. Luis Reyes
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NRC FORM 366 (4-95)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Catawba Nuclear Station, Unit 2	05000414	1 of 7

TITLE (4)
Tech Spec 3.0.3 Entry due to an Inoperable Annulus Ventilation System

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 NAME	DOCKET NUMBER(S)
03	12	98	98	- 001	- 00	04	16	98		

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (Check one or more of the following) (11)							
POWER LEVEL (10)	100%	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)		50.73(a)(2)(i)	X	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
R. L. Bain, Safety Review Manager	(803) 831-3743

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		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)	NO				

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

On March 12, 1998, with both Units in Mode 1, Power Operation at 100% power, both trains of the Unit 2 Annulus Ventilation System became inoperable. The Lower Airlock Enclosure Door was open for five and one half hours during implementation of a Station Modification which involved change out of security related switches on the door. Station documents do not allow this door to be open while the Unit is in Modes 1-4 without compensatory measures in place. Therefore the Annulus Ventilation System could not have performed its intended function and the design basis function of reducing radiation levels in an accident would have been degraded.

The root cause of the event was determined to be an inadequate process for determining what compensatory actions were needed in order to perform work on the door.

Corrective actions included several steps to improve the Compensatory Action Program. Projected improvements to the program are clarification of roles and responsibilities of those involved in the program, and development of a more effective training program.

BACKGROUND

Catawba Nuclear Station is a four loop Westinghouse plant. It has a dual containment with a steel primary containment vessel [EIIS:NH] and a concrete secondary containment with an annulus between the two structures. The secondary containment structure functions to collect and process radioactive material following a design basis accident (DBA).

The Annulus Ventilation [EIIS:VD] System functions in conjunction with the secondary containment to minimize the release of radioactivity (specifically radioiodines) from the primary containment to the environment following a DBA.

The design basis function of the Annulus Ventilation System is to:

Produce and maintain a negative pressure of at least 0.5 inches water gauge in the annulus with respect to adjacent areas;

Reduce the concentration of radioactivity in the air within, and discharged from, the annulus through filtration and recirculation of annulus air; and

Provide long term fission product removal capability within the annulus through holdup (i.e. decay) and filtration.

During normal unit operation, the Annulus Ventilation System is in a standby mode and does not perform any function. Per Technical Specification (T/S) 3.6.1.8, two independent Annulus Ventilation Systems shall be operable in Modes 1 through 4. Technical Specification Surveillance Requirement 4.6.1.8(d)(4) states that at least once per eighteen months testing must be performed verifying that each system produces a negative pressure of greater than or equal to 0.5 inch water gauge in the annulus within one minute after a start signal.

The annulus pressure boundary is an essential feature of the Annulus Ventilation System. Five doors are included as a part of the Annulus Ventilation System pressure boundary. Control Access Door (CAD)[EIIS:DR] AX393D, Unit 2 Lower Airlock Enclosure Door, is one of these doors. If any of these doors are secured open in Modes 1-4, it renders both trains of the Annulus Ventilation System inoperable. This would place the Unit in Technical Specification 3.0.3. Technical Specification 3.0.3 is applicable when a Unit is operated in a condition not covered by the Technical Specifications.

Catawba Nuclear Station has a Compensatory Action Program which provides instructions for temporary control of various doors, hatches, and manhole covers which may need to be manipulated during maintenance or modifications. The compensatory actions are designed to provide measures that compensate for any design function provided by the door, hatch, or manhole cover that would be degraded during performance of maintenance or modification activities. For example, if a lock on a fire door needed to be changed, the compensatory action would direct a fire watch to be posted while the fire door was open.

Normal transit thrcugh a door is allowed without any compensatory action. During a normal transit the door would be open for less than one minute (an alarm would occur after 60 seconds and Security would respond to the door immediately). If a work activity requires a door to be secured in the open position a compensatory actien would be required. A compensatory action would be required for all design functions of the door. Since the most common design functions of doors are to serve as fire protection boundaries, tornado pressure boundaries, and security boundaries, preapproved compensatory actions are available. These are called "generic" compensatory actions. If a door has any other design function, a compensatory action must be developed for that function These compensatory actions are called "specific" compensatory actions.

Door AX393D, Unit 2 Lower Airlock Enclosure Door, serves as a Fire, Security, and Tornado Pressure Boundary for which generic compensatory actions would be available. In addition door AX393D serves as an annulus pressure boundary door. In Modes 1-4, a specific compensatory action would be required for this design function of the door.

EVENT DESCRIPTION

September 1995	A decision was made to change the security access control system to utilize a different type of employee identification. Station modification CN-50463 was developed to implement this change. One of the changes required was to replace an existing switch on Controlled Access Doors from one manufactured by Honeywell to a balanced magnetic switch manufactured by Sentrol.
3-11-98 1435	Door AX393D was isolated (electronic controlled access features disabled) in preparation for performing the modification. A Security Officer was posted at the door. No

work was done on the door on night shift on 3-11-98 or on dayshift on 3-12-98.

3-12-98 1800 — A pre-job briefing was held between the workers, who were to be working on door AX393D during the nightshift of 3-12,13-98, and a representative from Modification Engineering. One of the workers knew that the switch on this door could not be changed out without securing the door in the open position. He did not understand the importance of keeping the door closed. The Modification Engineering Representative understood the importance of keeping the door closed but did not realize that the door would need to be secured open to change out the switch. These facts were not communicated between the two individuals during the pre-job briefing.

3-12-98 — Workers obtained a generic compensatory action form for door AX393D which they thought would allow the door to remain open. The form was issued by the Work Control Center, the Work Order was signed on by the Control Room and a key to the door was issued by the Work Control Center. Per the Generic Compensatory Action Form for Door AX393D opening this door would have required another (specific) compensatory action form which is referenced on the generic compensatory form.

3-12-98 2230 hours — Workers began performing the modification on Door AX393D on Unit 2 per Work Order 97087733-01.

3-13-98 0400 hours — Work was completed and Door AX393D was closed. The door was open for approximately five and one half hours during this work activity. Workers were in the immediate area of the door throughout the entire time period.

3-17-98 — While workers were preparing to perform the same modification on Door AX352D (the corresponding door on Unit 1), it was determined from the Compensatory Action Manual that the door could not be opened when the Unit was in Modes 1-4. At this time, it was determined that the work performed on Door AX393D on 3-12,13-98 had placed Unit 2 in Technical Specification 3.0.3.

CONCLUSION

This event was caused by an inadequate process for determining what compensatory actions were needed for the activity. It has been recognized that there is a need for a formal program to identify those doors, hatches, and certain other structures which have important design functions. The Compensatory Action Process was developed to meet that need. Although the information in the Compensatory Manual is correct, the process for selecting the proper compensatory action is too difficult for those users who do not have an in depth understanding of the program. In this event the current process proved unsuccessful in guiding the craft workers, modification engineer, work control center personnel, and control room personnel to the conclusion that the door could not be secured open while the Unit was in Modes 1-4.

There have been two other reportable events in the past 24 months which involved entries into Technical Specification 3.0.3 caused by written communications. LER 413/96-002 involved omission of relevant information from an Auxiliary Safeguards Test procedure which resulted in an inadequate test of valve control circuits for two valves associated with the Safety Injection System. LER 413/98-001 involved omission of relevant information from a procedure which resulted in removal of a ductwork cover associated with the Control Room Ventilation System. Those two events differ from the event described in this LER in that they affected different systems and the errors involved incorrect procedures. In this event the information provided in the Compensatory Action Manual was correct. This event is judged to be not recurring.

There were no EPIX reportable equipment failures associated with this event.

CORRECTIVE ACTIONS

Immediate

1. A Work Control Center Senior Reactor Operator (SRO) denied permission to work on Door AX352D.

Subsequent

1. Operations determined that a more detailed pre-job briefing would be performed every time a compensatory action is to be implemented. This will be done until process improvements are made to ensure the proper compensatory measures would be used when required.

2. An assessment of the Compensatory Action Program was performed by the Catawba Independent Nuclear Oversight Team to determine what improvements will be needed in the Compensatory Action Program.

Planned

1. Site Directive 3.1.18 which describes the Compensatory Action Program will be revised to include roles and responsibilities of all key individuals involved with the Program. Information on how to implement a compensatory action will be included. Also a clear owner of the program will be identified, and periodic review and update requirements will be defined.

2. A complete review of the Compensatory Action Manual will be performed to ensure that it is up to date, consistent in format, and easy to understand. Consideration will be given to deleting "specific" compensatory actions and placing those controls in procedures.

3. A Training Program will be developed to train targeted individuals involved with the Compensatory Action Program after the program improvements are completed.

SAFETY ANALYSIS

Although performance of the Annulus Ventilation System would have been degraded with Door AX393D open, the system would still have developed some negative pressure. Airflow would have been into the annulus rather than out of the annulus. In addition, the workers were in the immediate area of the door throughout the time when the door was open. The workers did have the compensatory actions for Fire, Tornado, and Security Doors with them. All of these compensatory actions give directions to close the door immediately upon hearing a page announcement for safety injection/reactor trip for either unit, or upon hearing the site assembly alarm. Therefore the workers would have closed the door immediately and restored the system to full

operability. Until the door was closed; the system, although degraded, would have produced enough vacuum with respect to adjacent areas that airflow would have been into the annulus.

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