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**DUKE POWER**

February 6, 1992

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Washington, D. C. 20555

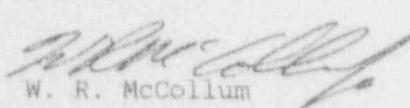
Subject: Catawba Nuclear Station  
Docket No. 50-413  
LER 413/92-001

Gentlemen:

Attached is Licensee Event Report 413/92-001 concerning TECHNICAL SPECIFICATION VIOLATION DUE TO IMPROPERLY PERFORMED UPPER CONTAINMENT TEMPERATURE SURVEILLANCE.

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

Very truly yours,

  
W. R. McCollum  
Station Manager

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Regional Administrator, Region II  
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             Master File               -        CN-815.04 (with Enclosures)

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

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

TITLE (4) Technical Specification Violation Due To Improperly Performed Upper Containment Temperature Surveillance

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						
0	1	0	7	9	2	9	2	0	0	4	1	3	N/A		
									DOCKET NUMBER(S)						
									0 5 0 0 0						
									0 5 0 0 0						

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)

OPERATING MODE (8) <u>1</u>	20.402(b)	20.406(c)	50.73(a)(2)(w)	73.71(b)
POWER LEVEL (10) <u>1 0 0</u>	20.406(a)(1)(i)	50.36(a)(1)	50.73(a)(2)(v)	73.71(c)
	20.406(a)(1)(ii)	50.36(a)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.406(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)	50.73(a)(2)(vii)(A)	
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(vii)(B)	
	20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
<u>R. C. Futrell, Compliance Manager</u>	<u>810 383 11-1 31616 5</u>
AREA CODE	

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)  NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

On January 7, 1992, Unit 1 was in Mode 1, Power Operation. Containment Ventilation (VV) System Upper Containment Unit Fans (UCVU) 1B and 1C were both in service. At 0440 hours, Control Room Operators secured UCVU 1C to allow for one containment air pressure release through the Containment Addition and Release (VQ) System instead of the normal two per shift. Fan 1C was returned to service on January 12, 1992, at 1935 hours. During this time period, Technical Memorandum 11-29 was in effect which stated that the cables for the temperature indications for Fans 1B and 1C could possibly be reversed and both fans must either be on or off for the average temperature data to be valid. This data is used to perform required Daily Surveillance item #12 of procedure PT/1/A/4600/02A to fulfill Technical Specification requirements. All daily surveillances between January 7, 1992 and January 12, 1992, were performed; however, the data used in the calculations was inaccurate. This incident is attributed to Inappropriate Action in that action was not taken to follow information stated in Technical Memorandum 11-29. A contributing cause to the incident was due to an Installation Deficiency in that instruments 1VVRD 5140 and 1VVRD 5150 were installed in the reverse locations. Corrective Actions included a correct realignment of the fans in service, placing tags on the on/off switches in the Control Room and proposed changes to the affected procedures.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

BACKGROUND

The Unit 1 Containment Ventilation [EIIS:VA] (VV) System ventilates and cools the Control Rod Drive Mechanism [EIIS:66], the Incore Instrumentation Room, Lower and Upper Containment [EIIS:PEN] areas of Unit 1. The Upper Containment Ventilation portion of the VV System consists of four, 33-1/3 percent capacity air handling units (1A, 1B, 1C, and 1D) and four Upper Containment Return Air Fans [EIIS:BLO]. A non-safety related leg of the Nuclear Service Water [EIIS:BI] (RN) System supplies water to the cooling coils of the air handling units and is thermostatically controlled to maintain 90 degrees F. The air handling unit and return air fans for each train (1A, 1B, 1C, and 1D) are controlled by selector switches [EIIS:XIS] located in the Control Room (C/R). The switches for the Upper Containment Ventilation (Air Handling) Units (UCVU) also allow the operator to select either normal or maximum cooling. Maximum cooling bypasses the normal thermostat [EIIS:XI] control of temperature. All eight fans start automatically on "blackout" power [EIIS:JX]. The Upper Containment Cooling System performs no function during a LOCA and is not Nuclear Safety Related.

The Containment Air Release and Addition System [EIIS:VA] (VQ) System provides a means of controlling the containment pressure between 0.25 psig and -0.25 psig during normal plant operations including startup and shutdown transients. Technical Specification (T/S) 3.6.1.4 mandates that the primary containment internal pressure shall be maintained between -0.1 and +0.3 psig. The release of air pressure to maintain this limit is normally required one to two times per shift.

Section 9.4.6 of the Final Safety Analysis Report (FSAR) and System Descriptions state that during "normal" plant operation, three of the four 33-1/3 percent capacity fan-coil units with their respective return air fans are required to operate to maintain conditions. The remaining one fan-coil unit and associated return air fan is on standby. The Upper Containment Return Air Fans are normally run in the AUTO position in the C/R. With this arrangement, these fans will automatically start when its respective UCVU is started. A cooling water throttling valve for each fan-coil unit is automatically controlled by return air thermostats set to maintain the upper compartment at 90 degrees F.

Technical Specifications 3.6.1.5, Containment Systems Air Temperature, and 4.6.1.5.1, Surveillance Requirements, specify that the primary containment average air temperature shall be maintained between 75 degrees F and 100 degrees F in the containment upper compartment while in Mode 1 and between 60 degrees F and 100 degrees F while in Modes 2, 3, or 4. The upper compartment average air temperature is obtained by the arithmetical average of the ambient air temperature monitoring stations located at an elevation of approximately 653 feet in the upper containment near the inlet of each operating UCVU. Temperature readings are obtained at least once per 24 hours, on night shift

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

between 2000 and 2300 hours, and are documented on Enclosure 13.1 of procedure PT/1/A/4600/02A, Mode 1 Periodic Surveillance Items. If the containment average air temperature does not conform to the specified limits, the plant must restore the temperature to the specified limits within eight hours or be in at least HOT STANDBY within the next six hours and in COLD SHUTDOWN within the following thirty hours.

The Control Room Operators (CROs) utilize the Operator Aid Computer (OAC) [E11S:IMOD] to perform the necessary calculations as required per surveillance requirements specified in procedure PT/1/A/4600/02A. Computer point P1500 is the average output based on the average of all analog points read for each operating ventilation train. The "A" (Analog) points correspond to the respective "D" (Digital) points which indicate to the OAC which units are running. The points that correspond to the specific UCVU Fan trains are as follows: 1A (D3548, A1178), 1B (D3549, A1226), 1C (D3550, A1455), and 1D (D3430, A1449). The UCVU Fans involved in this incident are 1B and 1C. When the OAC is out of service or otherwise unavailable, procedure PT/1/A/4600/09, Loss of Operator Aid Computer, is used by the CRO to document T/S requirements normally performed by the OAC. The C/R "Balance of Plant Operator" normally is the responsible Operations (OPS) person who must verify the average temperature of point P1500 is within the T/S limitations and signs off item 12 of Enclosure 13.1 of procedure PT/1/A/4600/02A.

The Technical Memorandum (T/M) Program, as specified in Operations Management Procedure (OMP) 2-5, is used by OPS to provide enhancements to an existing procedure or provide temporary instructions in the absence of a procedure; however, they shall not conflict with or be used as a permanent replacement for operating procedures. It must not prevent an existing procedure from being followed, and when being used as a supplement to a procedure, it must not be in the non-conservative direction. T/Ms are to be used only on a temporary short term basis. The OPS Unit Manager is responsible for writing the Work List and normally for issuing T/Ms. He is also responsible for reviewing T/Ms to ensure they are deleted when no longer needed or reissued prior to their expiration date if they are still needed. The CRO must review the T/M logbook prior to each shift change and sign the appropriate turnover sheet, such as the "Balance of Plant Operator Turnover Sheet" from OMP 2-22, Shift Turnover.

T/M 11-29, Revision 0, was issued on December 31, 1991 stating there was a possibility of rolled (reversed) cables on 1B and 1C Upper Containment temperature leads. The T/M suggested that 1VTT5140 may actually be reading the temperature for 1C UCVU, and that 1VTT5150 may be reading the inlet to 1B UCVU, instead of the reverse. The immediate concern was that with this condition, the Daily Surveillance (PT/1/A/4600/02A), which uses computer point P1500 to average the temperatures for the units which are running, could be invalid. For the average to be valid, both 1B and 1C must either be both on or off. The T/M stated, "Please ensure one of these cases is true prior to

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555 AND TO THE PAPERWORK REDUCTION PROJECT (D-500104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 360A's) (17)

doing the Daily Surveillance item #12" and specified a Problem Investigation Process (PIP) was being generated to pursue final confirmation and correction of the item.

The "Upper Containment Ventilation Unit Startup and Normal Operation" are specified on Enclosure 4.1 of procedure OP/1/A/6450/01, Containment Ventilation (VV) System. The calibration of the VV System is performed using procedure IP/1/B/3172/03, Containment Ventilation Systems (VV) Upper Containment Cooling System.

Design drawings CN-1576-2.0 [Flow Diagram of Containment Ventilation System (VV)], CN-1499-01.11-00 (Instrument Locations Reactor Building and Doghouse El. 565'-3" and above), CN-1784-02.05 [Connection Diagram Containment Ventilation System (VV) Miscellaneous Devices], Unit 1 Instrument and Control (I&C) List, etc., all show instruments CN1VVT5140 and CN1VVRD5140 to be associated with Upper Containment B Air Temperature and instruments CN1VVT5150 and CN1VVRD5150 to be associated with Upper Containment C Air Temperature. Each Resistance Temperature Device (RTD) is located over the respective Steam Generator (S/G) [E11S:HX] at El. 652' and located at a 29' radius according to these drawings. The cable to 1VVRD5140 (at 176 degrees) is 1VV676 and the cable to 1VVRD5150 (at 180 degrees) is 1VV20. The power sources for the corresponding switches in the C/R are 1MXP-P04C for VV UCVU 1B and 1MX0-P04C for VV UCVU 1C. All of the Upper Containment Ventilation Unit Fan Switches (1A, 1B, 1C, and 1D) are located on the back panel of Main Control Board 1MC3 in the C/R.

EVENT DESCRIPTION

Prior to September 1, 1991, both Unit 1 and 2 were in Mode 1, at 100% power. There had been problems with both Train 1A and 1B temperature indications on the Upper Containment Ventilation Unit Fans. Work Requests (W/Rs) 55982OPS and 56187OPS were issued to investigate and repair the problems. W/R 55982OPS was written to investigate and repair VV Upper Containment Train B temperature indication since Train B was reading approximately 6 degrees F higher than Train A. On September 1, 1991, Instrument and Electrical (IAE) personnel compared gauge 1VVP5140 to computer point A1226 (the temperature indication analog point for UCVU Fan 1B) and found that both were indicating a temperature of approximately 95 degrees F. Train A indication was approximately 91 degrees F. On September 3, 1991, a string check on 1VVP5140 was performed using Enclosure 11.1.9 of procedure IP/1/B/3172/03. After the string check was performed, Component Engineering Services (CES), IAE and OPS personnel continued to discuss the data. With Unit 2 Refueling Outage approaching, the problem was not given a high priority. Unit 2 Refueling Outage U2EOC4 started on October 17, 1991, and the Unit returned to 100% power

# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO 3150-0104  
EXPIRES 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 500 HRS FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

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

on December 28, 1991. With the Unit 2 outage complete, attention was once again given to the problem concerning the temperature indications for UCVU Train B.

On December 31, 1991, IAE personnel discussed the indication discrepancy with OPS. IAE went into Upper Containment to take an ambient temperature measurement at the RTD to substantiate its indication. Upon approaching the RTD, IAE personnel observed that the instrument was not tagged but by utilizing the cable number (1VV20), it was possible to identify the RTD as 1VVRD5150. 1VVRD5150 should have been located at 652', 180 degrees (above C S/G). The RTD being sought by IAE was 1VVRD5140, which should have been located at 652', 176 degrees (above B S/G), but was found at 180 degrees above C S/G tagged as 1VVRD5140. Not being sure of which RTD was correct, ambient temperatures were taken adjacent to each one, with a reading of 92.2 degrees F at the unmarked probe and 92.6 degrees F at the probe marked 1VVRD5140. The reading at the latter was within 1 degrees F of the indicated temperature on gauge 1VVP5140. IAE discussed the findings with CES engineers, who suggested that the probe tagged 1VVRD5140 should be heated to verify it was indeed wired to 1VVTT5140 and provided indication on 1VVP5140. When IAE heated RTD 1VVRD5140, the indication for 1VVP5140 rose. This confirmed the suspicion that the RTDs (5140 and 5150) had been installed in the wrong locations. IAE discussed the findings with OPS personnel and then wrote PIR 1-C92-0008 to document the incident.

At the same time IAE entered Upper Containment to check out the RTDs, OPS issued T/M 11-29, Rev. 0, which stated that there were "possible rolled cables" on 1B and 1C Upper Containment temperature leads that suggested 1VVTT5140 may actually be reading the temperature for 1C UCVU and that 1VVTT5150 may actually be reading the temperature for 1B UCVU. OPS stated that the immediate concern was that this condition would possibly invalidate data used by computer point P1500, which averages the temperatures for the ventilation units which are in service and is used to document containment temperature on the Daily Surveillance procedure, PT/1/A/4600/02A. OPS stressed the importance of having both 1B and 1C in service or both out of service for the average to be valid.

Between December 31, 1991 and January 7, 1992, CROs continued to have the correct UCVU Fan 1B, 1C alignment (both in service or both out of service). However, on January 7, 1992, at 0440 hours, UCVU Fan 1C was removed from service with UCVU Fan 1B remaining in service. This alignment existed until January 12, 1992, at 1935 hours, when UCVU Fan 1C was returned to service. At this time, the CROs realized the existing condition of UCVU Fans 1B and 1C was no longer conforming to T/M 11-29. PIR 1-C92-0005 was written to document the incident. Subsequent corrective actions included placing the correct alignment of fans in service, placing tags on the on/off switches in the C/R (using Removal and Restoration Tag # 12-17) to ensure the correct fans were running, and proposing a restricted procedure change; for PT/1/A/4600/02A and

EXPIRE: 4/30/92

**LICENSEE EVENT REPORT (LER)  
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TEXT: If more space is required, use additional NRC Form 306A's (17)

OP/1/A/6450/01. During this timeframe (January 7, 1992 to January 12, 1992), Unit 1 Daily Surveillance item #12, Primary Containment Upper Compartment Average Air Temperature on Enclosure 13.1 of procedure PT/1/A/4600/02A, was being performed on each night shift; however, the data used in the OAC calculations was invalid.

On January 13, 1992, CES personnel initiated Station Problem Report (SPR) CNPR-06076 stating that the Upper Containment Temperature RTDs 1VVRD5140 and 1VVRD5150 were found to be installed in the incorrect locations. The SPR is now being evaluated by the Instrument and Electrical Engineering (IEE) Department. The proposed resolution is to revise the I&C List, OAC program and associated description, and other documentation to reflect the "As-Built" configuration in the plant.

On January 15, 1992, OPS personnel issued Revision 1 of T/M 11-29 to confirm the fact that the cables to 1VVT5140 and 1VVT5150 were indeed rolled and consequently led to the temperature indications reading the opposite UCVU Fan.

#### CONCLUSION

This incident has been attributed to a root cause of Inappropriate Action due to improperly following a T/M and a contributing cause of Installation Deficiency in that instruments 1VVRD5140 and 1VVRD5150 were installed in the reverse locations in the Upper Containment. There is an additional situation involving the timeframes concerning this incident. Prior to December 31, 1991, there was an unknown period of time that Unit 1 has been running with the condition. Most personnel interviewed in OPS feel this questionable status condition could have existed beginning from the original installation of these instruments prior to the initial Unit 1 criticality in early 1985.

Normally, the night shift "Balance of the Plant Operator" performs item 12, Primary Containment Upper Compartment Average Air Temperature on Enclosure 13.1 of procedure PT/1/A/4600/02A between 2000 and 2300 hours. Since this step required OAC computer point P1500 to average the air temperature at the inlet of each "operating" upper containment ventilation unit, the T/M 11-29 specification of requiring either both Fans 1B and 1C to be in service or both to be out of service at the same time was critical to the calculation. Between December 31, 1991 and January 7, 1992, the correct UCVU fan alignment existed in accordance with T/M 11-29; therefore, data input for computer point P1500 was valid. The CROs did the required Daily Surveillance between January 7, 1992 and January 12, 1992, per PT/1/A/4600/02A, but the data related to the calculation was inaccurate since 1B was in service and 1C was not in service during this time. Conversations with OPS C/R personnel involved during this time period, revealed that the T/M logbook was reviewed as required at each shift change; however, they said they just failed to follow the specific instructions in T/M 11-29. OPS CRO A said he read the Memorandum but on that particular night he did not think he had a problem with the fans and



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

consequently did not look at the switches. OPS CRO B said he reviewed the Memorandum because he wanted to cut the number of air pressure release times thru VQ System from two to one on his shift, since the pressure was at .2 psig at the time. CRO B stated that the Operator at the Controls (OATC) and Balance of the Plant Operator usually do not have the time to go outside of the C/R "horseshoe". Therefore, since he had not heard of a problem with any of the UCVU fans on his shift, Operator B did not personally go to the back side of panel 1MC3 and look at the fan selector switches to verify the position of the switches for 1B and 1C. OPS CRO C said he could not remember any specific details concerning this incident during the particular shift he was working at the time.

When IAE confirmed that the cables for 1VVRD5140 and 1VVRD5150 were indeed reversed on December 31, 1991, the suspicion that OPS had identified in T/M 11-29, Rev. 0, concerning the "possible rolled cables" was confirmed. T/M 11-29, Rev. 1, was not issued until January 15, 1992. Since T/Ms are reviewed during each shift change by the CROs, it is vital that any revision to a T/M should be distributed in a timely manner. This would be especially critical on T/S items necessary to perform a Daily Surveillance requirement. In this case; however, the "confirmation" of the rolled cables did not change the OPS action requirement specified in both Rev. 0 and Rev. 1 of T/M 11-29.

It has not been determined exactly who actually cut off Fan 1C at 0440 hours, on January 7, 1992. The fan unit may not have been switched off if the danger tags had been placed on the selector switches at the time the rolled cable situation was "confirmed", as documented by PIR 1-C92-0008, instead of relying solely on each CRO to remember the specific instructions within T/M 11-29. The danger tag stickers were placed on the selector switches on January 12, 1992, after PIR 1-C92-0005 was written.

The revision to procedure OP/1/A/6450/01, including the note requiring that both UCVU Fans 1B and 1C be operating simultaneously or both be off, is being prepared at this time. This revision will remain in the procedure until the resolution to SPR #CNPR-06076 has been implemented.

The proposed resolution of SPR #CNPR-06076, due the week of January 27, 1992, is to revise the I&C List, OAC program and associated description and other documentation to reflect the actual "As-Built" conditions. This will alleviate the existing situation with the computer point data that feeds input for point P1500 to obtain the average air temperature in the Primary Containment Upper Compartment. The restricted changed to Daily Surveillance procedure PT/1/A/4600/02A has been determined to be unnecessary at this time per discussion with personnel in the OPS Support Group. This decision is based on the amount of time required in revisions to other related procedures if PT/1/A/4600/02A was revised, and the relative short amount of time that would be required if the OAC computer analog points were reversed.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION IS: 1.5 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-33) U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (if more space is required, use additional NRC Form 365A's) (17)

During the subsequent investigation of this incident, it was discovered that some of the terminology involving the digital points in Section 2.3.8 of the OAC Documentation Manuals and the Electrical System Description for VV System could be misleading. For instance, the analog points for 1B and 1C temperature indications are A1226 and A1455, respectively. These points represent the temperature reading from the RTDs which are located at the inlet to each Upper Containment Ventilation Unit Fan 1B and 1C, respectively. The digital points, which tell when the fan units are in service are for the Upper Containment Return Air Fan (UCRAF), 1B and 1C, respectively. CROS confirm per procedure OP/1/A/6450/01 that the selector switch for these fans are "normally" set in the AUTO position, which means when the UCVU fan is put into service, the respective UCRAF is automatically put into service. However, if the selector switch for the UCRAF was switched to the ON or OFF position, the UCVU could still be independently operated. During this type of alignment, the OAC history for these digital points would be inconclusive and it could not be proven that the analog point was taking temperature readings from an "operating" ventilation unit (required per T/S 4.6.1.5.1). This issue will be evaluated and action taken, if needed, to ensure that valid temperature readings are taken under all conditions.

It was also found that during this investigation that drawing CN-1499-01.11-00, which indicates instrument locations in the Reactor Building, shows the correct location as labels for RTDs 1VVRD5120 (item 2, quadrant 0 degrees - 90 degrees), 1VVRD5130 (item 39, quadrant 270 degrees - 360 degrees) and 1VVRD5140 (item 2, quadrant 90 degrees - 180 degrees), but the description and label for 1VVRD5150 is incorrect (item 51, quadrant 180 degrees - 270 degrees). This item will be corrected as part of the implementation of the resolution of SPR # CNPR-06076.

The Operating Experience Program (OEP) database review of the last 24 months has revealed three Licensee Event Reports (LERs) that have been similar incidents. LER 413/91-014 involves an improperly applied calculation while LERs 413/91-020 and 413/92-002 involves failure to adhere to the requirements of a T/M. This incident is considered to be a recurring event, since the acceptance criteria involved in each incident was invalid. This is the third incident involving failure to adhere to the requirements of a T/M. Operations management will review existing controls for the T/M program and take action to strengthen them. Proposed changes include plans to reduce the overall number of T/Ms, strict requirements for setting expiration dates, and higher levels of management approval for extension of expiration dates.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

APPROVED OMB NO. 1500-0104

EXPIRES 4-30-92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

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TEXT (if more space is required, use additional AF Form 206A's) (17)

CORRECTIVE ACTIONS

SUBSEQUENT

- 1) W/Rs 55982OPS and 56187OPS were written to investigate and repair the temperature indication problems with the VV Upper Containment Train 1B and 1A, respectively.
- 2) IAE personnel compared gauge 1VVP5140 to computer point A1226 to find both indicated a temperature of approximately 95 degrees F, and performed a string check of 1VVLP5140 per procedure 1P/1/B/3172/03 (per W/R 55982OPS) in September, 1991.
- 3) IAE took ambient temperature measurements at RTDs, traced cables, and heated up the probe at 1VVRD5140 to prove it was located at the wrong location (per W/R 55982OPS) on December 31, 1991. PIR 1-C92-0008 was written by IAE personnel to document this problem.
- 4) OPS personnel issued T/M 11-2, Rev. 0, to warn CROs of "possible rolled cables" concerning temperature leads 1VVT5140 and 1VVT5150 on December 31, 1991. OPS issued Rev. 1 of T/M 11-29 on January 15, 1992, after "confirmation" of the rolled cables by IAE's investigation of the problem in the plant.
- 5) PIR 1-C92-0005 was written by OPS on January 12, 1992 to document the time period in the C/R where T/M 11-29 specifications were not followed, from 0440 hours on January 7, 1992 to 1900 hours on January 12, 1992.
- 6) The correct VV UCVU fan alignment was made by CROs and danger tags (stickers) were placed on selector switches for VV UCVU 1B and 1C fans in the C/R on panel 1MC3 on January 12, 1992. OPS also proposed procedure changes as a result of the "confirmation" of the rolled cables.
- 7) SPR #CNPR-06076 was written on January 13, 1992 by CES personnel to document the incident and proposed a resolution to correct the rolled cable situation.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

APPROVED OMB NO. 3160-0184  
EXPIRES 4/30/93

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH, F-530, U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, D.C. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, D.C. 20503.

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TEXT: If more space is required, use additional NRC Form 386A's (17)

PLANNED

- 1) Planned restrictive change to procedure OP/1/A/6450/01 by OPS Support Group personnel to add a note prior to Step 2.2, on Enclosure 4.1 to make sure that both control switches for VV UCVU 1B and VV UCVU 1C must be placed in the same position to ensure surveillance point P1500 is valid. This restrictive change will remain in effect until the resolution of SPR #CNPR-06076 has been implemented.
- 2) SPR #CNPR-06076 is to be resolved by IEE personnel. The proposed resolution is to make design drawings, I&C List, OAC program and associated description match "As-Built" conditions.
- 3) OPS management will review OMP 2-5 and make revisions to strengthen the management controls over the process of using T/Ms.
- 4) The use of Upper Containment Return Air Fan digital points as indication of Upper Containment Ventilation Units operation will be evaluated and action taken, as needed, to ensure that valid temperature readings are taken under all conditions.
- 5) IAE personnel will replace the missing tag on instrument 1VVRD5150.

SAFETY ANALYSIS

The Containment Ventilation System provides adequate capacity to assure that proper temperature levels are maintained in the containment under normal operating conditions. Sufficient redundancy is included to assure proper operation of the system with one active component out of service by the use of four 33-1/3 percent capacity ventilation units. The system is arranged wholly in the upper and lower containment compartments eliminating the need of ductwork penetrating the divider barrier thus enhancing the barrier integrity. The Containment Ventilation System is not considered an engineered safety feature (Safety Related) and no credit is taken for the operation of any VV System subsystem or component in analyzing the consequences of an accident. There are no C/R status lights to indicate the status of the system; however, there are indicating lights near the switches controlling the fans and damper to indicate the fan or damper status in the C/R.

While in Mode 1 status, T/S 3.6.1.5 specifies that the Primary Containment Upper Compartment average air temperature shall be maintained between 75 degrees F and 100 degrees F. During the winter months of the year the temperature stays in the lower portion of this range, and in the summer months

# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-530) U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104) OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1)  Catawba Nuclear Station, Unit 1	DOCKET NUMBER (2)  0   8   0   0   0   4   1   3	LER NUMBER (6)			PAGE (3)		
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TEXT IF MORE SPACE IS REQUIRED, USE ADDITIONAL NRC Form 365A (11/79)

of the year the temperature ... in the upper portion of this range. During this time of the year, the K<sub>2</sub> supply to the Upper Containment is isolated to prevent the temperature from falling below 75 degrees F.

OPS and Systems Engineering personnel have concluded that obtainable past data history shows that all four UCVU fan temperature indications are almost always consistently within just a few degrees of each other during normal operation of the plant whether the UCVU fans have been in service or shutdown. There have been no significant heat loads recorded in the past and none at the present that have shown a tendency to heat up one compartment's area significantly over any other compartment. During the time period involved in this LER (January 7-12, 1992), all four temperature indications for the UCVU fan units were reading approximately the same at 77 degrees F (based on data from the thermocouples near each fan). Whether VV UCVU Fans 1B or 1C were running or not does not apparently affect the temperature indications at the probes for each quadrant. The area temperatures have consistently been within a few degrees of each other, both during this time period and in the unknown length of time period prior to December 31, 1991. The OAC temperature averaging program would be expected to give representative results. For this reason, OPS and System Engineering do not consider this an operability concern and Upper Containment temperatures would have remained within the grounds of the Safety Analysis Report.

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