

CONTROL BLOCK: (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

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7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

CONT

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## EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 On 6/17/83, while in Mode 1 (Unit 1) and Mode 3 (Unit 2), after identifying a  
03 burned-out preheater element (which had been discovered on 4/3/83) in outside air  
04 pressure filter (OAPFT) Train B as being necessary for system operability, Con-  
05 trol Area Ventilation System (VC) Train B was declared inoperable per T.S.3.7.6  
06 which is reportable per T.S.6.9.1.11(b). The 2-stage preheater is oversized and  
07 the loss of one preheater element did not disable the train's ability to control  
08 humidity. No incidents requiring operation of either OAPFT have occurred, and  
09 health and safety of the public were unaffected.

09 S G 11 X 12 Z 13 H E A T E R 14 Z 15 Z 16  
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## CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 This incident is attributed to Component Failure due to the heater element fail-  
11 ure, and Personnel Error due to the failure to initially identify the failed  
12 heater as a technical specification requirement. An installation deficiency  
13 (overload relay heaters swapped between filter package fans and preheaters) also  
14 contributed to the event. The overload heaters were switched to the proper relay,  
15 the heater element replaced, procedures revised, and the train declared operable.

15 X 28 0 9 0 29 Mode 1(U1) & 3(U2) C 31 Review of modification documentation  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

16 Z 33 Z 34 N/A 35 N/A 36  
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19 Z 42 N/A 43  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

20 N 44 N/A 45  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

NAME OF PREPARER Phillip B. Nardoci

PHONE (704) 373-7432

DUKE POWER COMPANY  
MCGUIRE NUCLEAR STATION  
REPORTABLE OCCURRENCE REPORT NO. 369/83-46

REPORT DATE: July 29, 1983

FACILITY: McGuire Units 1 and 2, Cornelius, NC

IDENTIFICATION: Control Area Ventilation System Train B Declared Inoperable

DESCRIPTION: On 6/17/83, Control Area Ventilation (VC) System Train B was declared inoperable pursuant to Technical Specification 3.7.6. This action was taken after a burned-out preheater element in Outside Air Pressure Filter Train B was identified as being necessary for system operability. The preheater element had first been determined to be a failed component on 4/3/83, but was not identified at that time as being necessary to satisfy surveillance requirement 4.7.6.e.4.

Unit 1 was in Mode 1 at 90% power and Unit 2 was in Mode 3 at the time of the inoperable declaration of VC Train B.

This incident is attributed to Component Failure, due to the heater element failure, and Personnel Error, due to the failure to identify the failed heater as a Technical Specification requirement. Installation Deficiency was also a contributing factor as explained in the report.

EVALUATION: The filter packages are humidity controlled through the operation of three heaters, two air preheaters of 5 KW apiece and one carbon bed heater of 1 KW. Review of the newly issued Units 1 and 2 Technical Specifications identified a change in the surveillance requirement 4.7.6b. The statement, "initiating ... flow ... for at least 10 hours with the heaters in automatic and the humidity controller set at less than or equal to 70% relative humidity", was changed to read "initiating ... flow ... for at least 10 hours with the heaters operating." Operations periodic tests, "Control Room Area Outside Air Pressure Train A and B Tests", are the monthly surveillance procedures that address this requirement. The basis for this change to Technical Specifications was to ensure that moisture in the filter carbon bed is driven off once a month, thereby preserving carbon efficiency and life. Modifications to both Outside Air Pressure Filter Trains (OAPFTs) to energize the filter package preheaters simultaneous with fan operation (bypassing humidistats which energize the heaters at setpoints of 70% R.H.) were performed from 3/4 to 3/7/83.

The OAPFT preheaters are addressed separately in another surveillance specification, 4.7.6.e.4, which requires that the heat dissipated from the filter package heaters be verified every 18 months to equal  $10 \pm 1$  KW. This requirement is addressed by Performance test "Control Area Ventilation System Performance Test".

During the performance of the modifications, both OAPFTs were tested on 3/4/83 and 3/5/83 with the filter preheaters verified as operating. During subsequent OAPFT testing problems with the preheaters tripping from service were identified, and on 4/3/83 investigation of preheater operation found the first stage preheater for OAPFT-B to have infinite resistance in all three phases (burned-out). The second stage heater measured 70 ohms for each phase.

Following consultation between appropriate station personnel a decision was made that the surveillance procedure could satisfy the "heaters operating" requirement with either the preheaters or the carbon bed heater operating. The carbon bed heater control was thus jumpered to operate the heater during the 10 hour test of Train B on 4/4/83.

On 6/17/83, during a review of modification documentation, the burned-out preheater element of Train B was identified as a Technical Specification concern, rendering Train B inoperable.

CORRECTIVE ACTION: Upon identifying the burned out heater element (Industrial Engineering & Equipment Co., part #57632) as a Technical Specification concern, the OAPFT-B was declared inoperable. The preheater element of OAPFT-B was replaced on 6/22/83, and preheater operation tested and VC Train B declared operable on 6/23/83. A procedure change was implemented requiring that the preheaters be verified as operating during the 10 hour test.

On 7/1/83, the improper substitution of fan and preheater overload relay heaters was identified. The overload heaters were switched to the proper relay, correcting the installation deficiency.

The adequacy of installation deficiency corrections (swapping overload relay heaters to their proper position) will be demonstrated by the absence of heater element trips in the future, as verified during the surveillance tests.

SAFETY ANALYSIS: The OAPFTs were originally designed and sized to deliver 100% filtered outside air to the Control Room in the case of an accident. The system was later redesigned to align 50% outside and 50% recirculated Control Room air to the filter package suction. With this dilution of pretreated air, the two-stage preheater of the OAPFTs is essentially 100% oversized. The loss of one preheater element in OAPFT-B did not disable that train's ability to control humidity. The remaining 5 KW preheater was sufficient to maintain less than 70% R.H. in the filter package.

No incidents requiring the operation of either OAPFT have occurred at McGuire and the health and safety of the public were not affected by this incident.

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HAL B. TUCKER  
VICE PRESIDENT  
NUCLEAR PRODUCTION

July 29, 1983

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03 AUG 8 49:16

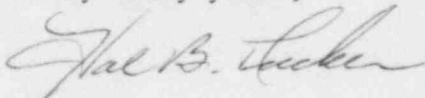
Mr. James P. O'Reilly, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street NW, Suite 2900  
Atlanta, Georgia 30303

Subject: McGuire Nuclear Station Units 1 and 2  
Docket Nos. 50-369 and 50-370  
LER/RO-369/83-46

Dear Mr. O'Reilly:

Please find attached Reportable Occurrence Report RO-369/83-46. This report concerns T.S. 3.7.6, "Two independent control area ventilation systems shall be operable". This incident was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,



Hal B. Tucker

PBN:jfw  
Attachment

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

Mr. W. T. Orders  
NRC Resident Inspector  
McGuire Nuclear Station

Records Center  
Institute of Nuclear Power Operations  
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