

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Nine Mile Point Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 4 1 1 0	PAGE (3) 1 OF 0 5
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TITLE (4)
Standby Gas Treatment System - Flow Switch Design Deficiency

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 7	8 6	8 6	0 1	6	0 7	0 7	8 7	N/A		0 5 0 0 0
									N/A		0 5 0 0 0

OPERATING MODE (9) 4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) 0 1 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(e)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)							
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(vii)(B)							
	<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)							

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME	AREA CODE		
Robert G. Randall, Supervisor Technical Support	3 1 1 5	3 1 4 1 9 1 - 1 2 1 4 1 4 5	

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)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

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

Surveillance procedure N2-OSP-GTS-M001, "Standby Gas Treatment System Functional Test" was performed on 12/07/86 and 12/08/86 with Nine Mile Point Unit 2 at 0% power and the mode switch in shutdown. In performing this procedure it was determined the filter train heaters were intermittently de-energizing on a low flow signal from flow switch 2GTS*FS25A(B). The "appearance" of low flow was attributed to a combination of high static pressure from reactor building ventilation recirculation unit coolers and recirculating flow from the filter.

CORRECTIVE ACTION

The sensing points of 2GTS*FS25 A(B) have been relocated to provide more accurate flow measurement.

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

I. DESCRIPTION OF EVENT

Surveillance procedure N2-OSP-GTS-M001, "Standby Gas Treatment System Functional Test" was performed on 12/07/86 and 12/08/86 with Nine Mile Point Unit 2 at 0% power and the mode switch in shutdown. In performing this procedure it was determined the filter train heaters were intermittently de-energizing on a low flow signal from flow switch 2GTS*FS25A(B). The "appearance" of low flow was attributed to a combination of high static pressure from reactor building ventilation recirculation unit coolers (2HVR*UC413A/B) and recirculating flow from the filter. Note - Five successful surveillance tests were performed prior to this.

While performing N2-OSP-GTS-M001 on 12/7 it was observed by operations personnel on local standby gas control panel that SBGTS train "B" heater was intermittently de-energizing during normal operation. The cause was determined to be a low flow signal from 2GTS*FS25B de-energizing heater 2GTS*CH1B. Preliminary investigation revealed that high static pressure from unit cooler 2HVR*UC413A(B) combined with recirculation flow from the filter gave the appearance of low flow. N2-OSP-GTS-M001 was run again on 12/08/86 on Train "A" verifying that the combination of flow from 2HVR*UC413A(B) and recirculation flow caused the heater to de-energize.

2GTS*FS25A(B) is a Dwyer model 1640 differential pressure switch. Sensing points were located to measure a negative pressure in the assembly housing (ventilation duct to ambient) to infer flow rate through the system. In the recirculation mode a high static pressure condition at the heater would decrease the differential pressure simulating low flow conditions. The filter train heaters would then de-energize as designed.

II. CAUSE OF EVENT

The cause of LER 86-16 has been attributed to a deficiency in the vendor design in the installation of 2GTS*FS25A(B). The effects of varying operational modes were not analyzed when locating the flow switch sensing points

III. ANALYSIS OF EVENT

The standby gas treatment system consists of two identical, parallel 100% capacity air filtration assemblies. The assembly electric heater reduces the relative humidity of the air to less than 70% to increase the performance of the charcoal absorber and HEPA filters. Because the design of both trains was identical, the possibility of de-energizing the heaters in both did exist.

Control Room alarms do exist indicating inoperability of standby gas system heaters. The alarms actuate on a low differential temperature across the heater (with the applicable train running) indicating the heater is not operating. Note - this would include a prolonged de-energization of the heater on a low flow signal. These alarms are labeled "SGTS train A(B) heater differential temperature low", and produce audible alarms that require operator acknowledgment.



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A "SGTS" FLTR Train A(B) Inop" alarm also exists and will actuate on a loss of heater power or loss of heater control power. These will also produce audible alarms and require operator acknowledgment.

In conclusion, the possibility of inoperable heaters in both standby gas system trains has existed since fuel load. Because certain system configurations and ambient conditions are needed to identify the design deficiency, the condition was not identified during preoperational or earlier surveillance tests. In addition, these conditions would need to exist for an extended period to bring in the "Low Differential Temperature" alarm in the control room. Infrequent heater de-energization on a "Low Flow" signal as inferred by 2GTS*FS25A(B) would only be detectable at local control panels.

IV. CORRECTIVE ACTION TAKEN

One sensing line of 2GTS*FS25A(B) has been relocated to obtain a more accurate measurement of filter flow. As previously noted, 2GTS*FS25A(B) used a differential pressure measurement at the heater with respect to ambient for monitoring flow. With the previous design, excessive static pressure at the heater gave the appearance of low flow.

Per Engineering & Design Coordination Report M10062, the sensing points of 2GTS*FS25A(B) have been relocated to measure differential pressure across the heater/demister to monitor flow. This will provide a true flow measurement regardless of the static pressure present in the filter. The modification was proven operable by performing standby gas system functional test N2-OSP-GTS-M001 on trains A and B. Heater operability was verified with recirculation valve 2GTS*PV5A(B) 100% open and 2HVR*UC413B operating in the test condition proving flow switch capability.

V. ADDITIONAL INFORMATION

Identification of Components Referred to in this LER

Component	IEEE 803 EIIS Funct	IEEE 805 System ID
Standby Gas Treatment (GTS)	PDI	BH
Standby Gas Treatment (GTS)	EHTR	BH
Standby Gas Treatment (GTS)	FLT	BH

No events similar to LER 86-16 had previously occurred.



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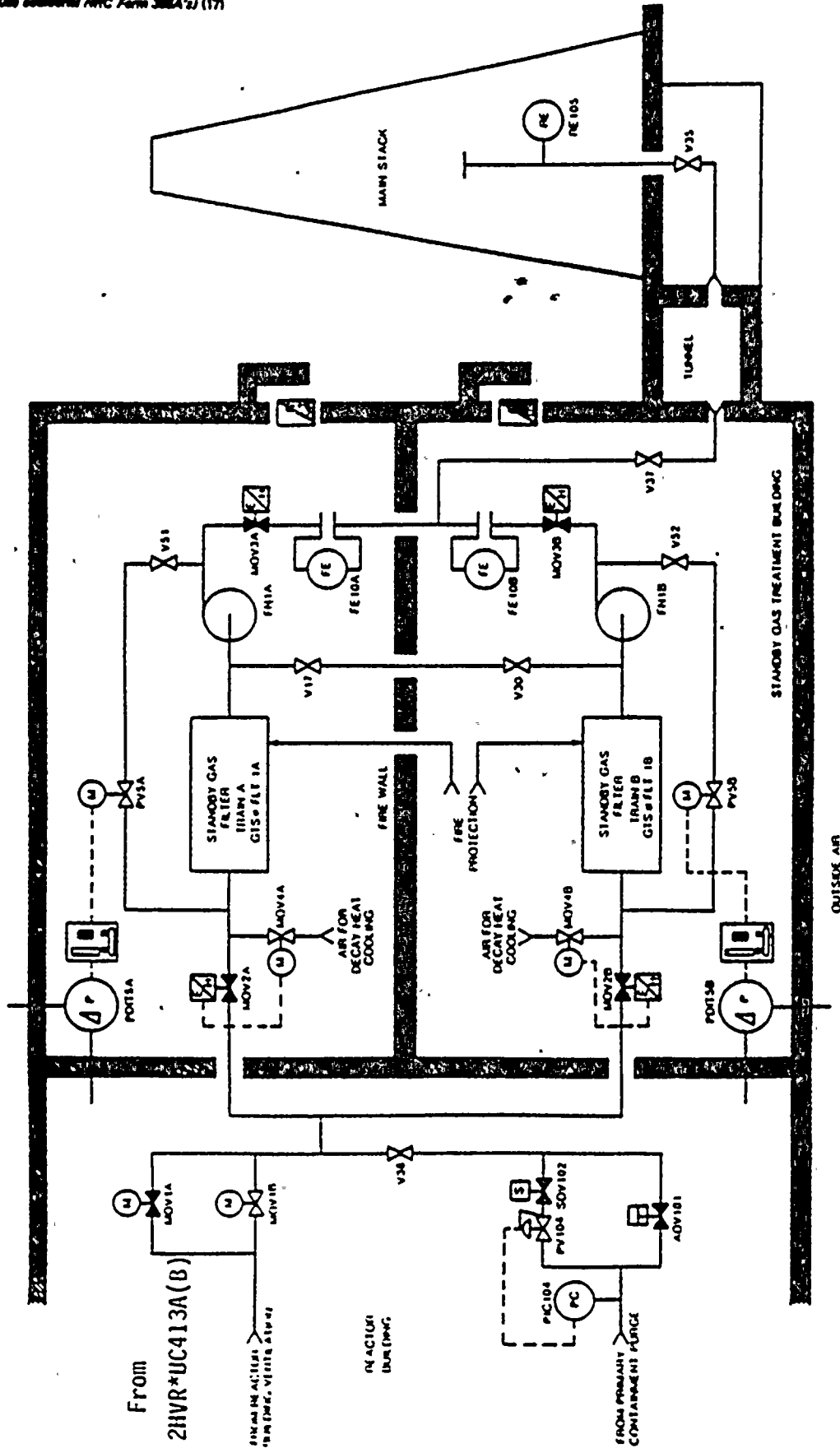
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TEXT (If more space is required, use additional NRC Form 388A's) (17)

STANDBY GAS TREATMENT





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TEXT (if more space is required, use additional NRC Form 388A's) (17)

STANDBY GAS FILTER TRAIN

