

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9005150175      DOC. DATE: 90/05/10      NOTARIZED: NO      DOCKET #  
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylv      05000387  
 AUTH. NAME      AUTHOR AFFILIATION  
 RYDER, T.S.      Pennsylvania Power & Light Co.  
 STANLEY, H.G.      Pennsylvania Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 90-010-00: on 891104, A H202 analyzer inoperable for period greater than allowed by Tech Spec.

W/9      ltr.

DISTRIBUTION CODE: IE22T      COPIES RECEIVED: LTR 1 ENCL 1      SIZE: 5  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: LPDR 1 cy Transcripts.

05000387

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	AEOD/ROAB/DSP	2 2	DEDRO	1 1
	NRR/DET/ECMB 9H	1 1	NRR/DET/EMEB9H3	1 1
	NRR/DLPQ/LHFB11	1 1	NRR/DLPQ/LPEB10	1 1
	NRR/DOEA/OEAB11	1 1	NRR/DREP/PRPB11	2 2
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	NRR/DST/SPLB8D1	1 1	NRR/DST/SRXB 8E	1 1
	<u>REG FILE</u> 02	1 1	RES/DSIR/EIB	1 1
	RGNI FILE 01	1 1		
EXTERNAL:	EG&G STUART, V.A	4 4	L ST LOBBY WARD	1 1
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May 10, 1990


U.S. Nuclear Regulatory Commission  
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SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 90-010-00  
FILE R41-2  
PIAS - 424

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Docket No. 50-387  
License No. NPF-14

Attached is Licensee Event Report 90-010-00. This report is being made pursuant to 10CFR50.73(a)(2)(i)(B), in that Susquehanna Unit 1 was operated in a condition prohibited by the Technical Specifications due to equipment being inoperable for a period of time greater than allowed by Technical Specifications.

  
H.G. Stanley  
Superintendent of Plant - Susquehanna

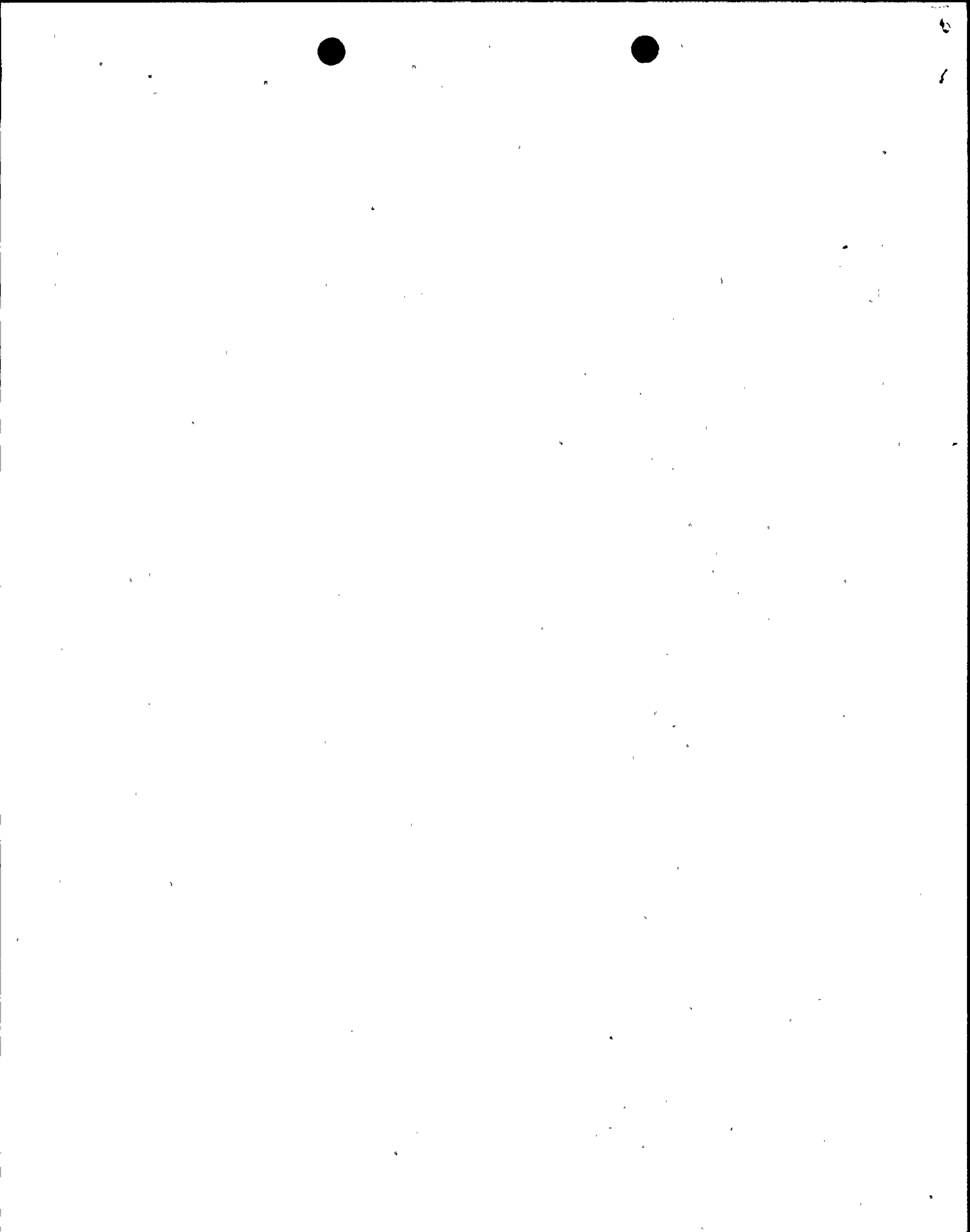
TSR/mjm

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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 (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.

FACILITY NAME (1) Susquehanna Steam Electric Station - Unit 1 DOCKET NUMBER (2) 0 5 0 0 0 3 8 7 1 PAGE (3) 1 OF 4

TITLE (4) 'A' H2O2 Analyzer Inoperable For Period Greater Than Allowed By Technical Specifications

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	1	0	4	8	9	9	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

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) <u>1, 0, 0</u>	20.402(b)	20.406(c)	50.73(a)(2)(iv)	73.71(b)
	20.406(a)(1)(i)	50.38(c)(1)	50.73(a)(2)(v)	73.71(c)
	20.406(a)(1)(ii)	50.38(c)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 368A)
	20.406(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(vii)(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)(ix)	

LICENSEE CONTACT FOR THIS LER (12) NAME T.S. Ryder - Power Production Engineer TELEPHONE NUMBER 7 1 7 5 4 2 1 - 3 2 3 5

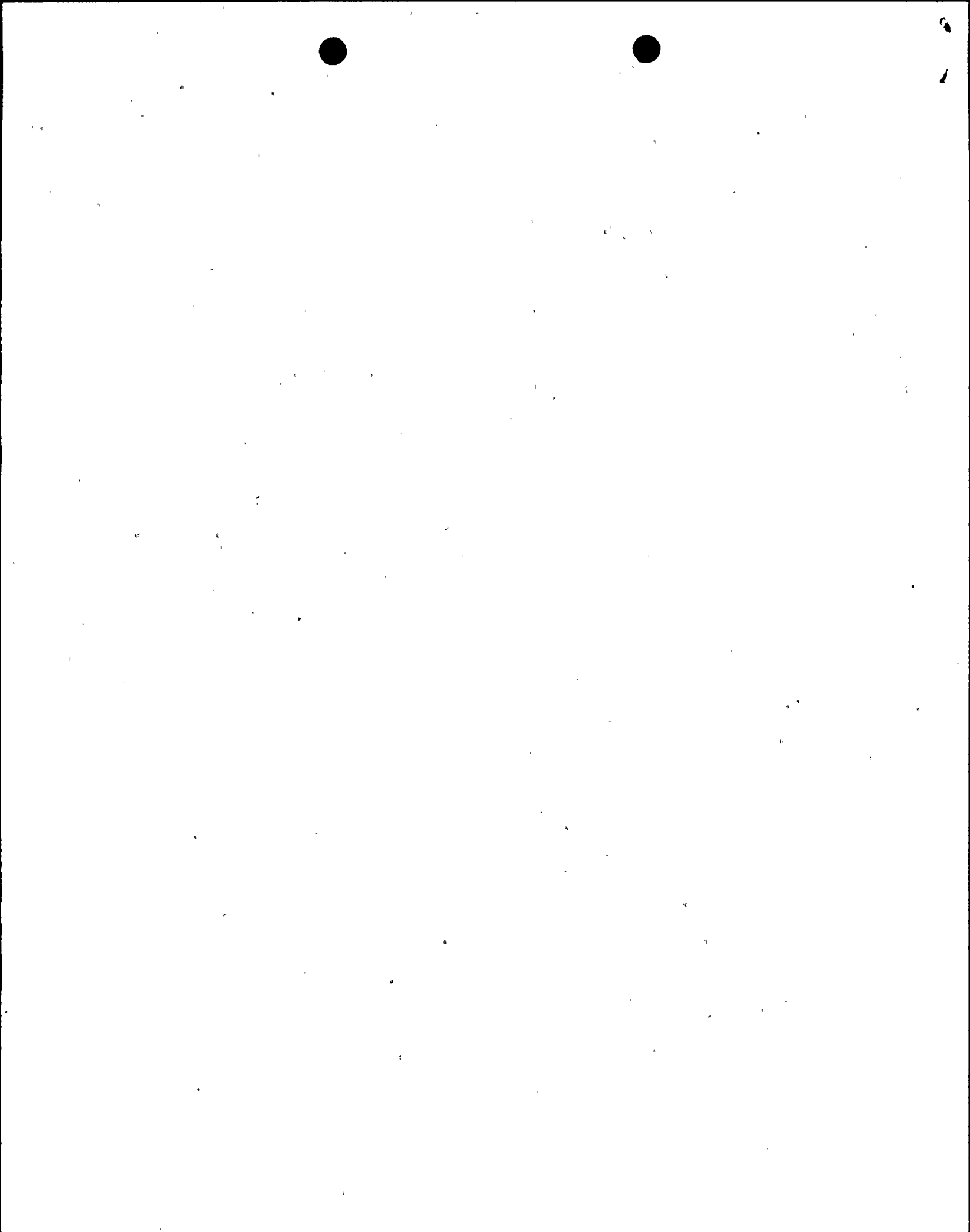
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

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

SUPPLEMENTAL REPORT EXPECTED (14) 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 02/02/90, an obsolete calibration gas bottle of the wrong oxygen concentration was found connected to the Unit 1 "A" H2O2 Analyzer. The bottle is believed to have been installed between 09/29/89 - 10/29/89. Adjustments were made to the analyzer on 10/28/89 which made the "A" H2O2 Analyzer oxygen channel INOPERABLE. The seven day LCO for having one less than the required number of oxygen channels was exceeded on 11/04/89. Root cause for this event is attributed to inadequate change management in that all the obsolete calibration gas bottles were not removed from the plant after implementing a revised oxygen calibration methodology in 1986. The event has been determined to be reportable per 10CFR50.73(a)(2)(i)(B) in that the inoperability of the "A" H2O2 oxygen channel for the period 11/04/89 - 02/02/90 resulted in a condition prohibited by Technical Specifications. Based on an evaluation of data recorded during the above time frame, it was confirmed that the 4% allowable oxygen concentration given in Technical Specifications was not exceeded. On 02/02/90, the correct concentration calibration gas bottle was installed and the "A" H2O2 Analyzer was calibrated. The areas where the H2O2 Analyzer calibration gas bottles are stored on both units have been walked down and it has been verified that there are no other obsolete calibration gas oxygen bottles on the site. Shop training was held to review the event and stress to personnel the need for better attention to detail.



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.

FACILITY NAME (1)  Unit 1 Susquehanna Steam Electric Station	DOCKET NUMBER (2)  0   5   0   0   0   3   8   7	LER NUMBER (8)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		9   0	-   0   1   0	-   0   0	0   2	OF 0   4

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

DESCRIPTION OF EVENT

In June of 1986 the method for calibrating the oxygen channels for the Hydrogen Oxygen (H2O2) Analyzers (EIIIS Code: BB) was revised to allow for more accurate calibration of the 0-10% oxygen range. Previously, calibration gas of nominal concentration of 20-25% oxygen was utilized to calibrate the oxygen readings on the 0-25% indication range. Because containment atmosphere oxygen concentration is required to be less than 4% oxygen by volume per Technical Specification 3.6.6.3, it is preferable to calibrate the oxygen channel over the 0-10% indication range instead of 0-25%. On this basis, the necessary procedural changes were made and calibration gas bottles of nominal concentrations of 9-10% oxygen in nitrogen were installed to facilitate the new calibration methodology. One bottle of the higher concentration (24.7%) calibration gas, however, was never removed from the storage racks in the vicinity of the Unit 1 Reactor Building H2O2 Analyzer during the time period when the revised calibration methodology was instituted.

Routinely, two calibration adjustments are performed on the H2O2 Analyzers. The first normally takes place on a monthly basis when Operations personnel swap the standby analyzer with the operating analyzer. As part of the procedure for placing an H2O2 Analyzer in service, gas of known concentration is introduced to the oxygen analyzer from the calibration gas bottle. Potentiometer adjustments are then made to equate the analyzer indication with the oxygen concentration of the calibration gas. The procedure is written for use with oxygen calibration gas of 9 - 10%. The second routine calibration is accomplished during a quarterly surveillance procedure when Instrumentation and Controls (I&C) personnel perform an oxygen cell standardization similar to the procedure described above.

It is estimated that between 09/29/89 and 10/29/89, the 24.7% concentration calibration gas bottle was inadvertently installed for the Unit 1 "A" H2O2 Analyzer to replace a depleted bottle. A review of the operator logs indicates that on 10/28/89, the "A" H2O2 Analyzer was placed in service. Potentiometer adjustments were made on the "A" oxygen channel based on a calibration gas bottle concentration value assumed to be 9.64%. Calibration with the 24.7% calibration gas resulted in the analyzer being INOPERABLE because it would erroneously indicate a lower than actual oxygen concentration (e.g. 9.7% instead of 24.7% actual). The seven day LCO (Technical Specification 3.3.7.5) for having one less than the required number of oxygen channels was exceeded on 11/04/89.

Between 01/26/90 and 02/02/90 I&C personnel investigated reported inconsistencies between the oxygen concentration readings on the "A" and "B" analyzers. On 02/02/90 they discovered that the wrong concentration calibration gas bottle had been installed. A 9-10% calibration gas bottle was immediately installed in place of the 24.7% calibration gas bottle and the "A" H2O2 Analyzer was then recalibrated. Based on further review, it was concluded

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 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.

FACILITY NAME (1)  Unit 1 Susquehanna Steam Electric Station	DOCKET NUMBER (2)  0   5   0   0   0   3   8   7   9   0   -   0   1   0   -   0   0   0   3   OF 0   4	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		

TEXT (If more space is required, use additional NRC Form 366A's) (117)

that the "A" H2O2 Analyzer oxygen channel would not have performed its specified function during the time period it had been calibrated with the 24.7% calibration gas.

CAUSE OF EVENT

The root cause of the event is attributed to inadequate change management in that all the obsolete calibration gas bottles were not removed from the plant after implementing the revised oxygen calibration methodology in 1986. An additional causal factor is personnel error in that the 24.7% calibration gas bottle was installed as a replacement for a depleted bottle without regard to the oxygen concentration of the replacement bottle.

REPORTABILITY/ANALYSIS

The event has been determined to be reportable per 10CFR50.73(a)(2)(i)(B) in that the inoperability of the "A" H2O2 oxygen channel for the period 11/04/89 - 02/02/90 resulted in a condition prohibited by Technical Specification 3.3.7.5. The H2O2 Analyzers are included in the accident monitoring instrumentation and ensure the capability of monitoring the hydrogen and oxygen content of the containment following an accident. Based on an evaluation of data recorded during the above time frame, it was confirmed that the 4% allowable oxygen concentration given in Technical Specification 3.6.6.3 was not exceeded. On 04/11/90, this event was determined to be reportable. Therefore, in accordance with the guidance provided in NUREG 1022 Supplement 1 Item 14, the required submission date for this report was determined to be 05/11/90.

There was minimal safety significance due to the fact that the H2O2 analyzers have no automatic actions and are provided to allow Operations to monitor containment atmosphere during plant operation and post-accident. In accordance with emergency operating procedures for post-accident conditions, operations personnel are required to start the Hydrogen Recombiners (EIIS Code: BB) when containment hydrogen concentration reaches 3%. Since hydrogen indication was reliable during the time period the oxygen channel of the 'A' H2O2 Analyzer was INOPERABLE, this operator action could have been accomplished in a post-accident situation.

CORRECTIVE ACTIONS

On 02/02/90, the correct concentration calibration gas bottle was installed and the "A" H2O2 Analyzer was recalibrated. The areas where the H2O2 Analyzer calibration gas bottles are stored on both units have been walked down and it has been verified that there are no other 24.7% oxygen calibration gas bottles on the site. Shop training was held to review the event and caution I&C personnel as to better attention to detail in documenting concentrations of replacement calibration gas bottles.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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		9   0	-   0   1   0	-   0   0	0   4	OF	0   4

TEXT (If more space is required, use additional NRC Form 368A's) (17)

ADDITIONAL INFORMATION

Failed Component Identification: Not applicable

Previous Similar Events:

A previous similar occurrence was documented in LER 84-049-00 in which the Unit 1 "A" H2O2 Analyzer had been standardized using the wrong indication range.



