



George A. Lippard  
Vice President, Nuclear Operations  
803.345.4810

December 15, 2017

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

Dear Sir / Madam:

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS), UNIT 1  
DOCKET NO. 50-395  
OPERATING LICENSE NO. NPF-12  
LICENSEE EVENT REPORT (LER 2017-006-00)  
TECHNICAL SPECIFICATION ACTION NOT MET FOR INOPERABLE  
OXYGEN MONITOR

Attached is Licensee Event Report (LER) 2017-006-00, for the Virgil C. Summer Nuclear Station. This report provides details concerning a missed action requirement of taking waste gas samples as required by Technical Specification 3.3.3.9 Table 3.3-13 Item 1.a (Action 44). This report is submitted in accordance with 10 CFR 50.73(a)(2)(i)(B).

Should you have any questions, please call Mr. Michael S. Moore at (803) 345-4752.

Very truly yours,

George A. Lippard

JRB/GAL/rp  
Attachment

c: K. B. Marsh  
S. A. Byrne  
J. B. Archie  
N. S. Carns  
J. H. Hamilton  
G. J. Lindamood  
W. M. Cherry  
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NRC Resident Inspector  
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ICES Coordinator  
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INPO Records Center  
Marsh USA, Inc.  
Maintenance Rule Engineer  
NSRC  
RTS (CR-17-05725)  
File (818.07)  
PRSF (RC-17-0170)



## LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form  
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

## 1. FACILITY NAME

VC Summer - Unit 1

## 2. DOCKET NUMBER

05000

395

## 3. PAGE

1 OF 3

## 4. TITLE

TECHNICAL SPECIFICATION ACTION NOT MET FOR INOPERABLE OXYGEN MONITOR

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED			
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER		
10	31	2017	2017	006	00	12	15	2017	FACILITY NAME	DOCKET NUMBER		
										05000		
9. OPERATING MODE			11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)									
1			<input type="checkbox"/> 20.2201(b)			<input type="checkbox"/> 20.2203(a)(3)(i)			<input type="checkbox"/> 50.73(a)(2)(ii)(A)		<input type="checkbox"/> 50.73(a)(2)(viii)(A)	
			<input type="checkbox"/> 20.2201(d)			<input type="checkbox"/> 20.2203(a)(3)(ii)			<input type="checkbox"/> 50.73(a)(2)(ii)(B)		<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
			<input type="checkbox"/> 20.2203(a)(1)			<input type="checkbox"/> 20.2203(a)(4)			<input type="checkbox"/> 50.73(a)(2)(iii)		<input type="checkbox"/> 50.73(a)(2)(ix)(A)	
			<input type="checkbox"/> 20.2203(a)(2)(i)			<input type="checkbox"/> 50.36(c)(1)(i)(A)			<input type="checkbox"/> 50.73(a)(2)(iv)(A)		<input type="checkbox"/> 50.73(a)(2)(x)	
10. POWER LEVEL			<input type="checkbox"/> 20.2203(a)(2)(ii)			<input type="checkbox"/> 50.36(c)(1)(ii)(A)			<input type="checkbox"/> 50.73(a)(2)(v)(A)		<input type="checkbox"/> 73.71(a)(4)	
			<input type="checkbox"/> 20.2203(a)(2)(iii)			<input type="checkbox"/> 50.36(c)(2)			<input type="checkbox"/> 50.73(a)(2)(v)(B)		<input type="checkbox"/> 73.71(a)(5)	
			<input type="checkbox"/> 20.2203(a)(2)(iv)			<input type="checkbox"/> 50.46(a)(3)(ii)			<input type="checkbox"/> 50.73(a)(2)(v)(C)		<input type="checkbox"/> 73.77(a)(1)	
			<input type="checkbox"/> 20.2203(a)(2)(v)			<input type="checkbox"/> 50.73(a)(2)(i)(A)			<input type="checkbox"/> 50.73(a)(2)(v)(D)		<input type="checkbox"/> 73.77(a)(2)(i)	
			<input type="checkbox"/> 20.2203(a)(2)(vi)			<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)			<input type="checkbox"/> 50.73(a)(2)(vii)		<input type="checkbox"/> 73.77(a)(2)(ii)	
			<input type="checkbox"/> 50.73(a)(2)(i)(C)			<input type="checkbox"/> OTHER			Specify in Abstract below or in NRC Form 366A			

## 12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT  
Michael S. MooreTELEPHONE NUMBER (Include Area Code)  
(803) 345-4752

## 13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
B	WE	MON	B202	No					

## 14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE) ☒ NO

## 15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

At 0230 on October 30, 2017, VCSNS Unit 1 entered Technical Specification (TS) 3.3.3.9, Explosive Gas Monitoring Instrumentation, Action b. Entry into the TS action was a result of having one less than the minimum number of operable oxygen monitoring channels on the Waste Gas Holdup System Explosive Gas Monitoring System. TS Table 3.3-13, Line Item 1a requires a minimum of two operable channels for oxygen monitoring. When the number of operable monitoring channels is one less than required, the system can remain in operation, provided that grab samples are taken and analyzed at least once per 24 hours.

Upon entry into the TS action statement, the Control Room initiated station procedure GTP 702, General Test Procedure for Surveillance Activity Tracking and Triggering, and notified Chemistry of the grab sample requirements. The TS requirements were not adequately communicated to the oncoming personnel the following shift. As a result, the grab sample and analysis was not performed until 0405 on October 31, 2017 (after the 0230 requirement). The analysis was found to be satisfactory.

At the time of the event, Virgil C. Summer Nuclear Station (VCSNS) Unit 1 was operating in Mode 1 at 100% rated thermal power.



**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
VC Summer - Unit 1	05000-	2017	006	00

**NARRATIVE****1.0 EVENT DESCRIPTION**

At 0230 on October 30, 2017, VCSNS Unit 1 entered Technical Specification (TS) 3.3.3.9, Explosive Gas Monitoring Instrumentation, Action b. Entry into the TS action was a result of having one less than the minimum number of operable oxygen monitoring channels on the Waste Gas Holdup System Explosive Gas Monitoring System. In order to maintain the system in operation, grab samples were required once per 24 hours.

The Control Room entered station procedure GTP-702, General Test Procedure for Surveillance Activity Tracking and Triggering, and briefed chemistry personnel on taking grab samples. However, inadequate communication during shift turnover allowed the time requirement for the sample, due at 0230 on October 31, 2017, to be exceeded. The deficiency was identified at approximately 0300, and a grab sample was performed at 0405 on October 31, 2017.

The results of the analyzed grab sample were satisfactory. The plant remained in normal operation at 100% power during this event.

**2.0 EVENT ANALYSIS**

A catalytic recombiner disposes of hydrogen brought into the Waste Gas System by adding a controlled amount of oxygen in the recombiner to react with the hydrogen as the gas flows through the catalyst bed. Water vapor formed by the reaction is then condensed and removed from the system. The control system is designed with careful consideration for the potential hazards involved in processing a gas mixture containing hydrogen and oxygen contaminated with radioactive fission gases.

There are two oxygen monitors provided, one each on the inlet and outlet of the recombiner. TS 3.3.3.9 in conjunction with Table 3.3-13, Line Item 1a, requires that at least two channels are operable for oxygen monitoring in the Waste Gas Holdup System Explosive Gas Monitoring System instrumentation. TS 3.3.3.9 Action b specifies that with less than the minimum number of channels available, take the action indicated by Table 3.3-13. Table 3.3-13 Line Item 1a and referenced notation (Action 44) allow the continued operation of the system, provided grab sampling be performed at least once per 24 hours, when the number of operable channels is one less than the required minimum.

On October 30, 2017, the outlet oxygen monitor IAE01119A went out of service. Upon entry into the TS action statement, the Control Room initiated station procedure GTP-702. The Control Room notified chemistry of the grab sample date and time requirements. The sampling time requirements were not adequately communicated to the oncoming night shift Chemistry personnel. As a result, the grab sample and analysis was not performed by 0230 on October 31, 2017.

At approximately 0300 on October 31, 2017 the Control Room contacted Chemistry to inquire about the sample results. It was determined that a sample had not yet been collected. Chemistry collected a sample at 0405 on October 31, 2017 and analysis determined it to be SAT (satisfactory).

As of November 29, 2017, VCSNS Unit 1 restored the affected instrumentation and has exited TS 3.3.3.9 Action b.



## LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

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VC Summer - Unit 1	05000- 395	YEAR 2017	SEQUENTIAL NUMBER 006	REV NO. 00

### NARRATIVE

#### 3.0 SAFETY SIGNIFICANCE

The Waste Gas Holdup System oxygen monitors are not included in the PRA model.

There was no risk impact from this event. A grab sample was taken at 0405. Analysis determined oxygen levels were satisfactory.

#### 4.0 PREVIOUS OCCURRENCE

No previous occurrences identified within the last three years.

#### 5.0 CORRECTIVE ACTIONS

The Station's corrective actions are documented in the CR-17-05725 Quick Cause Evaluation.

The below two actions are being completed to reinforce station expectations of communications during shift turnovers and the time requirements for taking grab samples associated with the Waste Gas System.

1. Operations Management to discuss Missed Grab Sample with operations shifts during training department meetings.
2. Chemistry to discuss missed Grab Sample with shift chemists.