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April 7, 2020

Attn: Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

10 CFR 50.73

**SUSQUEHANNA STEAM ELECTRIC STATION**  
**LICENSEE EVENT REPORT 50-388/2020-001-00**  
**UNIT 2 LICENSE NO. NPF-22**  
**PLA-7849**

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**Docket No. 50-388**

Attached is Licensee Event Report (LER) 50-388/2020-001-00. The LER reports an event involving a manual scram due to rising main condenser backpressure. The condition is being reported in accordance with 10CFR 50.73(a)(2)(iv)(A) as an event that resulted in a manual actuation of the Reactor Protection System (including a reactor scram).

There were no actual consequences to the health and safety of the public as a result of this event.

This letter contains no new or revised regulatory commitments.

A handwritten signature in black ink, appearing to be "K. Cimorelli".

K. Cimorelli

Attachment: LER 50-388/2020-001-00

Copy: NRC Region I  
Ms. L. H. Micewski, NRC Sr. Resident Inspector  
Ms. S. Goetz, NRC Project Manager  
Mr. M. Shields, PA DEP/BRP



**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-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to [Infocollects.Resource@nrc.gov](mailto:Infocollects.Resource@nrc.gov), and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503; email: [oir\\_submission@omb.eop.gov](mailto:oir_submission@omb.eop.gov). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

<b>1. Facility Name</b> Susquehanna Steam Electric Station Unit 2	<b>2. Docket Number</b> 05000388	<b>3. Page</b> 1 OF 3
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**4. Title**  
Manual Reactor Scram Due to Rising Main Condenser Backpressure

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
02	14	2020	2020	001	00	04	07	2020		05000
									Facility Name	Docket Number
										05000

<b>9. Operating Mode</b>  1	<b>11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)</b>											
	<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)		
<b>10. Power Level</b>  098	<input type="checkbox"/> 20.2203(a)(2)(i)			<input type="checkbox"/> 50.36(c)(1)(i)(A)			<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)			<input type="checkbox"/> 50.73(a)(2)(x)		
	<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 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**

<b>Licensee Contact</b> C. E. Manges, Jr, Senior Engineer – Nuclear Regulatory Affairs	<b>Telephone Number</b> (Include Area Code) (570) 542-3089
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**13. Complete One Line for each Component Failure Described in this Report**

Cause	System	Component	Manufacturer	Reportable To ICES	Cause	System	Component	Manufacturer	Reportable To ICES

<b>14. Supplemental Report Expected</b>  <input checked="" type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date) <input type="checkbox"/> No	<b>15. Expected Submission Date</b>	Month	Day	Year
		06	26	2020

**Abstract** (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

On February 14, 2020 at 00:25, Susquehanna Steam Electric Station (SSES) Unit 2 reactor was manually scrambled due to rising Main Condenser backpressure caused by a loss of the Unit 2 Offgas Recombiner. This event was reported by Notification EN 54525 in accordance with 10CFR 50.72(b)(2)(iv)(B) and (b)(3)(iv)(A). This event is also reportable in accordance with 10CFR 50.73(a)(2)(iv)(A) as an event that resulted in a manual actuation of the Reactor Protection System (RPS) (including reactor scram), as well as associated isolation and actuation of other systems listed in 10CFR 50.73(a)(2)(iv)(B), including the Reactor Core Isolation Cooling (RCIC) system.

A cause evaluation is in progress. A supplement will be issued to provide information regarding the cause of the condition and corrective actions.

There were no actual safety consequences associated with the condition.



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

(See NUREG-1022, R.3 for instruction and guidance for completing this form  
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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-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to [Infocollects.Resource@nrc.gov](mailto:Infocollects.Resource@nrc.gov), and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503; email: [oir\\_submission@omb.eop.gov](mailto:oir_submission@omb.eop.gov). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Susquehanna Steam Electric Station Unit 2	05000-388	2020	001	00

**NARRATIVE**

**CONDITIONS PRIOR TO EVENT**

Unit 1 – Mode 1, approximately 86 percent Rated Thermal Power

Unit 2 – Mode 1, approximately 98 percent Rated Thermal Power

Loss of the Unit 2 Offgas Recombiner caused a loss of Main Condenser backpressure, which resulted in the need for a manual scram.

**EVENT DESCRIPTION**

On February 14, 2020 at 00:25, Susquehanna Steam Electric Station Unit 2 reactor was manually scrammed due to rising Main Condenser [EISS System Code/Component Code: SG/COND] backpressure caused by a loss of the Unit 2 Offgas Recombiner [EISS System/Component Code: WF/RCB]. Following is a timeline of the events associated with the scram:

February 14, 2020 at approximately 00:12 - Unit 2 Offgas Recombiner 0C145 Panel Trouble and 2C198 Hydrogen Water Chemistry Panel Trouble alarms were received along with indication of rising Main Condenser backpressure. Initial Main Condenser backpressure was 2.6 inches HgA (Mercury Absolute) and was rising at approximately 0.3 inches HgA/minute.

February 14, 2020 at approximately 00:15 - A Recirculation Limiter 2 runback was inserted to lower reactor power. Main Condenser backpressure continued to rise following the reduction in reactor power.

February 14, 2020 at approximately 00:25 - A manual scram was inserted by placing the Reactor Mode Switch to Shutdown when Main Condenser backpressure rose to 6 inches HgA. All control rods inserted. Reactor water level lowered to -30 inches causing a Level 3 (+13 inches) isolation and a partial (Division 2) Level 2 (-38 inches) isolation. The Reactor Core Isolation Cooling (RCIC) system [EISS System Code: BN] actuated as expected for given plant conditions. Operators subsequently maintained reactor water level at the normal operating band using the Reactor Feed Water system [EISS System Code: SJ]. No steam relief valves [EISS System/Component Code: SB/RV] opened. The Reactor Recirculation Pumps [EISS System Code/Component Code: AD/P] remained in service.

This event was reported by Notification EN 54525 in accordance with 10CFR 50.72(b)(2)(iv)(B) and (b)(3)(iv)(A). This event is also reportable in accordance with 10CFR 50.73(a)(2)(iv)(A) as an event that resulted in a manual actuation of the Reactor Protection System (RPS) (including reactor scram), as well as associated isolation and actuation of other systems listed in 10CFR 50.73(a)(2)(iv)(B), including RCIC.

**CAUSE OF EVENT**

A cause evaluation is in progress. A supplement will be issued to provide information regarding the cause of the condition.



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

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Susquehanna Steam Electric Station Unit 2	05000-388	YEAR	SEQUENTIAL NUMBER	REV NO.
		2020	001	00

**ANALYSIS/SAFETY SIGNIFICANCE**

Safety significance information will be provided in the supplement to this LER.

**CORRECTIVE ACTIONS**

Corrective actions will be provided in the supplement to this LER.

**COMPONENT FAILURE INFORMATION**

Component failure information, as applicable, will be provided in the supplement to this LER.

**PREVIOUS OCCURRENCES**

Previous occurrences, as applicable, will be provided in the supplement to this LER.