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TALEN ENERGY

December 9, 2021

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

10 CFR 50.73

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 50-388/2021-003-00
UNIT 2 LICENSE NO. NPF-22
PLA-7976

Docket No. 50-388

Attached is Licensee Event Report (LER) 50-388/2021-003-00. The LER reports an event involving an automatic scram due to a main turbine trip. The condition is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in an automatic 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.

Derek Jones Acting Site VP for K. Cimorelli

K. Cimorelli

Attachment: LER 50-388/2021-003-00

Copy: NRC Region I
Ms. A. Klett, NRC Project Manager
Mr. C. Highley, NRC Senior Resident Inspector
Mr. M. Shields, PA DEP/BRP

NRC FORM 366 (08-2020) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2023

LICENSEE EVENT REPORT (LER)

(See Page 3 for required number of digits/characters for each block)

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

1. Facility Name	2. Docket Number	3. Page
Susquehanna Steam Electric Station Unit 2	05000388	1 of 3

4. Title

Automatic Reactor Scram Due to Main Turbine Trip

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
										05000
10	11	2021	2021	- 003 -	00	12	09	2021	Facility Name	Docket Number
										05000

9. Operating Mode	10. Power Level
1	095

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*

10 CFR Part 20	☐ 20.2203(a)(2)(vi)	☐ 50.36(c)(2)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(A)	**10 CFR Part 73**
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.69(g)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(4)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(i)	**10 CFR Part 21**	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(1)(i)
☐ 20.2203(a)(2)(ii)	☐ 21.2(c)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(i)
☐ 20.2203(a)(2)(iii)	**10 CFR Part 50**	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)	☐ 73.77(a)(2)(ii)
☐ 20.2203(a)(2)(iv)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)	
☐ 20.2203(a)(2)(v)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)	

☐ **Other** (Specify here, in Abstract, or in NRC 366A).

12. Licensee Contact for this LER

Licensee Contact	Phone Number (Include Area Code)
D. R. Smith, Senior Engineer – Nuclear Regulatory Affairs	570-542-1377

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to IRIS	Cause	System	Component	Manufacturer	Reportable to IRIS

14. Supplemental Report Expected		15. Expected Submission Date	Month	Day	Year
☐ No	☒ Yes (If yes, complete 15. Expected Submission Date)		02	28	2022

16. Abstract (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)

On October 11, 2021, at approximately 13:21, Susquehanna Steam Electric Station Unit 2 reactor automatically scrammed due to a main turbine trip. Both divisions of the Reactor Protection System (RPS) actuated and all control rods inserted. This event was reported by Event Notification 55514 in accordance with 10 CFR 50.72(b)(2)(iv)(A), (b)(2)(iv)(B) and (b)(3)(iv)(A). This event is also reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in automatic actuation of a system listed in 10 CFR 50.73(a)(2)(iv)(B).

The cause of the event is under investigation and will be provided in a supplement to this LER along with associated corrective actions.

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

CONDITIONS PRIOR TO EVENT

Unit 1 – Mode 1, approximately 100 percent Rated Thermal Power

Unit 2 – Mode 1, approximately 95 percent Rated Thermal Power

There were no structures, systems, or components that were inoperable at the start of the event that contributed to the event.

EVENT DESCRIPTION

On October 11, 2021, at approximately 13:21, Susquehanna Steam Electric Station Unit 2 reactor automatically scrammed due to a main turbine [EIIS System/Component Code: TA/TRB] trip. The Unit 2 Control Room received indication of a main turbine trip with both divisions of the Reactor Protection System (RPS) [EIIS System Code: JC] actuated and all control rods inserted. The turbine bypass valves [EIIS System/Component Code: JI/PCV] opened automatically to control reactor pressure and subsequently remained open causing the reactor to depressurize. Operations manually closed the Main Steam Isolation Valves (MSIVs) [EIIS System/Component: SB/ISV] to stop reactor depressurization. The High Pressure Coolant Injection (HPCI) [EIIS System Code: BJ] and Reactor Core Isolation Cooling (RCIC) [EIIS System Code: BN] systems were manually initiated to control reactor water level. Operations subsequently maintained reactor water at the normal operating band using RCIC and reactor pressure was controlled with HPCI in pressure control mode and the main steam line drains. The Reactor Recirculation Pumps [EIIS System/Component Code: AD/P] tripped on End of Cycle Recirculation Pump Trip.

This event was reported by Event Notification 55514 in accordance with 10 CFR 50.72(b)(2)(iv)(A), (b)(2)(iv)(B) and (b)(3)(iv)(A). This event is also reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in automatic actuation of a system listed in 10 CFR 50.73(a)(2)(iv)(B).

CAUSE OF EVENT

The cause of the event is under investigation and will be provided in a supplement to this LER.

ANALYSIS/SAFETY SIGNIFICANCE

During the reactor scram off-site power remained available to power all safety related shutdown equipment. All control rods inserted as designed and all safety related equipment operated as designed. There was no loss of function that prevented the safe shutdown of the reactor and to maintain it in a safe shutdown condition. All safety systems were available to mitigate the consequences of an accident.

Any additional insights on safety significance identified during the cause evaluation will be provided in a supplement to this LER. There were no actual consequences to the health and safety of the public as a result of this event.

CORRECTIVE ACTIONS

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

COMPONENT FAILURE INFORMATION

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

PREVIOUS OCCURRENCES

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