



Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360

May 14, 2018

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

SUBJECT: Licensee Event Report 2018-004-00, Automatic Emergency Diesel Generator
System Actuation Caused By Loss of Offsite Power

Pilgrim Nuclear Power Station
Docket No. 50-293
Renewed License No. DPR-35

LETTER NUMBER: 2.18.031

Dear Sir or Madam:

The enclosed Licensee Event Report 2018-004-00, Automatic Emergency Diesel Generator
System Actuation Caused By Loss of Offsite Power, is submitted in accordance with Title 10
Code of Federal Regulations 50.73.

If you have any questions or require additional information, please contact me at (508) 830-7127.

There are no regulatory commitments contained in this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter J. Miner".

Peter J. Miner
Manager, Regulatory Assurance

PJM/sc

Attachment: Licensee Event Report 2018-004-00, Automatic Emergency Diesel Generator
System Actuation Caused By Loss of Offsite Power

IEZZ
NRR

cc: Mr. David C. Lew
Acting Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
2100 Renaissance Blvd., Suite 100
King of Prussia, PA 19406-2713

Mr. John Lamb, Senior Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Stop O-8C2A
Washington, DC 20555-0001

USNRC Senior Resident Inspector
Pilgrim Nuclear Power Station


Attachment

Letter Number 2.18.031

Licensee Event Report 2018-004-00, Automatic Emergency Diesel

Generator System Actuation Caused By Loss of Offsite Power

(3 Pages)

NRC FORM 366 (04-2017)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB: NO. 3150-0104		EXPIRES: 03/31/2020		
 LICENSEE EVENT REPORT (LER) (See Page 2 for required number of digits/characters for each block)		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 Pilgrim Nuclear Power Station				2. DOCKET NUMBER 05000-293		3. PAGE 1 OF 3		
4. TITLE 2018-004-00, Automatic Emergency Diesel Generator System Actuation Caused By Loss of Offsite Power								
5. EVENT DATE			6. LER NUMBER		7. REPORT DATE		8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR
03	13	2018	2018	- 004	00	05	14	2018
							FACILITY NAME N/A	
							DOCKET NUMBER N/A	
							FACILITY NAME N/A	
							DOCKET NUMBER N/A	
9. OPERATING MODE N			11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)					
			<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"/> 20.2201(d)		<input type="checkbox"/> 20.2203(a)(3)(ii)		<input type="checkbox"/> 50.73(a)(2)(ii)(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"/> 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"/> 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"/> 20.2203(a)(2)(iii)		<input type="checkbox"/> 50.36(c)(2)		<input type="checkbox"/> 50.73(a)(2)(v)(B)	
			<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"/> 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"/> 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"/> 50.73(a)(2)(i)(C)		<input type="checkbox"/> OTHER Specify in Abstract below or in NRC Form 366A	
10. POWER LEVEL 000								
12. LICENSEE CONTACT FOR THIS LER								
LICENSEE CONTACT Mr. Peter J. Miner--Regulatory Assurance Manager							TELEPHONE NUMBER (Include Area Code) 508-830-7127	
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
C	FK			Y				
14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO					15. EXPECTED SUBMISSION DATE			
					MONTH	DAY	YEAR	
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)								
<p>On March 13, 2018 at approximately 10:02 am [EDT], with the reactor in Cold Shutdown, Pilgrim Nuclear Power Station experienced a loss of offsite power. The loss of both incoming 345KV lines to the Startup Transformer and the loss of the 23KV line to the Shutdown Transformer were due to weather related conditions associated with Winter Storm Skylar. The loss of offsite power lasted long enough for the associated Startup Transformer relay to transmit a valid auto start signal to both Emergency Diesel Generators and trip the non-safety related buses A1 through A4. There was minimal impact from this occurrence as the Emergency Diesel Generators had been started manually several hours prior to the auto start signal being received. The Emergency Diesel Generators were already providing power to the A5 and A6 Emergency Buses.</p> <p>This event is reportable per the requirements of Title 10 Code of Federal Regulations 50.73(a)(2)(iv)(A) due to the receipt of a valid automatic start signal by the Emergency Diesel Generators.</p> <p>There was no impact to public health and safety.</p>								

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

(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	2. DOCKET NUMBER	3. LER NUMBER		
Pilgrim Nuclear Power Station	05000-293	YEAR	SEQUENTIAL NUMBER	REV NO.
		2018	- 004	- 00

BACKGROUND:

The station preferred Alternating Current (AC) power source (Startup Transformer) provides AC power to all station auxiliaries required for startup and shutdown and is normally in use when the unit AC power source is unavailable. The preferred AC power source is that power supply which furnishes electric energy under accident or post-accident conditions. At Pilgrim Nuclear Power Station (PNPS), this is an offsite power source (either of two 345KV lines) which supply power to the Startup Transformer.

The station's auxiliary power system distributes AC power necessary for startup, operation, or shutdown of station loads. All portions of this system receive AC power from the unit AC power source or the preferred AC power source. The emergency service portions of this distribution system can also receive AC power from the secondary AC power source, the standby AC power source, or the station blackout AC power source.

The standby AC power source provides two independent diesel generators as the onsite source of AC power to the emergency service portions of the station Auxiliary Power Distribution System. Each onsite source provides AC power to safely shut down the reactor, maintain safe shutdown conditions, and operate all auxiliaries necessary for station safety.

EVENT DESCRIPTION:

On March 13, 2018 at approximately 10:02 am [EDT], with the reactor in Cold Shutdown, Pilgrim Nuclear Power Station experienced a loss of offsite power. The loss of both incoming 345KV lines to the Startup Transformer and the loss of the 23KV line to the Shutdown Transformer were due to weather related conditions associated with Winter Storm Skylar. The loss of offsite power (LOOP) lasted long enough for the associated Startup Transformer (SUT) relay to transmit a valid auto start signal to both Emergency Diesel Generators (EDGs) and trip the non-safety related buses A1 through A4. There was minimal impact from this occurrence as the EDGs had been started manually several hours prior to the auto start signal being received. The EDGs were already providing power to the A5 and A6 Emergency Buses.

CAUSE OF THE EVENT:

The direct cause of the event was a loss of offsite power caused by Winter Storm Skylar.

CORRECTIVE ACTIONS:

The Corrective Actions taken as part of the Root Cause Evaluation for Winter Storm Juno have been evaluated and are acceptable at mitigating risk during severe winter storms. No changes to storm preparation or criteria in the procedure are required at this time. The actions taken prior to Winter Storm Skylar were proactive in ensuring power was available to Emergency Buses A5 and A6.

The Station will continue to interface with the transmission operator to improve reliability of 345 kV lines prior to storms that can cause a LOOP. The intent of this action is to confirm appropriate steps are being taken prior to a storm to limit faults offsite on the 345 kV lines.

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

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<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

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SAFETY CONSEQUENCES:

The actual consequence was reliance on onsite emergency AC power to supply safety buses A5 and A6 and the loss of normal service to buses A1, A2, A3, and A4. There were no other actual consequences.

The risk associated with the actual event was considered low because at the time of occurrence the unit was offline and safety systems were powered from their associated EDG via emergency buses A5 and A6. Since shutdown conditions in the severe weather procedure were met during the storm and a LOOP occurred, the procedural guidance was effective in ensuring power was available to appropriate Station loads.

The risk associated with loss of buses A1 through A4 was low. This is non-safety related equipment, but is needed for normal heat sink availability. The risk associated with reliance on onsite emergency AC power to supply safety buses A5 and A6 was low. This risk was low since the plant was in Cold Shutdown condition with decay heat removal having been previously established using equipment powered from the EDG supplied safety buses. In addition the Station Blackout-Diesel Generator remained available to provide partial power to Emergency Buses A5 or A6 loading if the respective EDG was lost.

Therefore, based on the above information there was no adverse impact on the public health or safety.

REPORTABILITY:

This event is reportable per the requirements of Title 10 Code of Federal Regulations 50.73(a)(2)(iv)(A) due to the receipt of a valid automatic start signal by the EDGs.

PREVIOUS EVENTS:

LER 2015-001-00, Loss of 345KV Power Resulting in Automatic Reactor Scram During Winter Storm Juno

LER 2013-009-00, Loss of Offsite Power and Reactor Scram

LER 2013-003-00, Loss of Offsite Power Events Due to Winter Storm Nemo

REFERENCES:

CR-PNP-2015-00558

CR-PNP-2018-02144