



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

Peter J. Miner
Manager, Regulatory Assurance

10 CFR 50.73

2.19.006

February 28, 2019

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

SUBJECT: Licensee Event Report 2019-001-00, Reactor Core Isolation Cooling System
Declared Inoperable During Surveillance Testing

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

Dear Sir or Madam:

The enclosed Licensee Event Report 2019-001-00, Reactor Core Isolation Cooling System
Declared Inoperable During Surveillance Testing, is submitted in accordance with Title 10
Code of Federal Regulations 50.73.

There are no regulatory commitments contained in this letter.

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

Sincerely,

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

Peter J. Miner

PJM/rjm

Attachment 1: Licensee Event Report 2019-001-00, Reactor Core Isolation Cooling System
Declared Inoperable During Surveillance Testing

IE22
NRR

cc: NRC Region I Regional Administrator
NRC NRR Project Manager - Pilgrim
NRC Senior Resident Inspector - Pilgrim

Attachment 1

Letter Number 2.19.006

Licensee Event Report 2019-001-00, Reactor Core Isolation Cooling System Declared Inoperable During
Surveillance Testing

(3 Pages)



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 Pilgrim Nuclear Power Station | 2. DOCKET NUMBER 05000-293 | 3. PAGE 1 OF 3 |
|--|--------------------------------------|--------------------------|

4. TITLE Reactor Core Isolation Cooling System Declared Inoperable During Surveillance Testing

| 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 |
| 01 | 08 | 2019 | 2019 | - 001 | - 00 | 02 | 28 | 2019 | N/A | N/A |
| | | | | | | | | | FACILITY NAME | DOCKET NUMBER |
| | | | | | | | | | N/A | N/A |

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|-------------------------------|--|---|---|---|
| 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"/> 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 100 | <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 checked="" 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

| | |
|---|--|
| 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 | REPORTABLE TO EPIX |
|-------|--------|-----------|---------------|--------------------|-------|--------|-----------|---------------|--------------------|
| X | BN | FIC | G080 | Y | | | | | |

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| 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)

On January 8, 2019, the Reactor Core Isolation Cooling (RCIC) system was declared inoperable. This action was taken because the RCIC system turbine-pump did not achieve the acceptance criteria of flow rate, discharge pressure, and speed during the performance of a surveillance test.

Due to the unexpected response a Failure Modes Analysis was initiated to determine the cause. No deficient conditions were identified during troubleshooting. However, based on the investigation, the team determined that the direct cause was output signal loss from the RCIC flow controller. A spare calibrated controller was installed, the system was tested, and successfully returned to service.

The High Pressure Coolant Injection system was operable and capable of providing high pressure core cooling similar to the RCIC system. This event had no impact on the health and/or safety of the public.

This report is submitted in accordance with Title 10 Code of Federal Regulations 50.73(a)(2)(v)(D).



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

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| 1. FACILITY NAME | 2. DOCKET NUMBER | 3. LER NUMBER | | |
|-------------------------------|------------------|---------------|-------------------|---------|
| | | YEAR | SEQUENTIAL NUMBER | REV NO. |
| Pilgrim Nuclear Power Station | 05000- 293 | 2019 | - 001 | - 00 |

NARRATIVE

BACKGROUND

The Pilgrim Station Updated Final Safety Analysis Report (UFSAR) states that the Reactor Core Isolation Cooling (RCIC) system is designed to provide makeup water to the reactor vessel following reactor isolation in order to prevent the release of radioactive materials to the environment as a result of inadequate reactor core cooling. The system consists of a steam driven turbine-pump and associated valves and piping capable of delivering makeup water to the reactor vessel over a range of reactor pressures. The system can be operated automatically or manually, and is one of the systems credited in the UFSAR for a design basis Control Rod Drop Accident (CRDA). The RCIC system is sufficient to maintain reactor vessel water level at an acceptable limit during this event.

EVENT DESCRIPTION

On January 8, 2019, the RCIC turbine was started in automatic from the main control room per a quarterly surveillance. During the test run, the turbine did not reach rated conditions. Operators identified that flow controller, FIC-1340-01, output meter was indicating zero, which was unexpected. Operators attempted to change demand by varying the flow controller setpoint from 375 gallons per minute (gpm) to 425 gpm, but no change in output or flow occurred. Operators then manually stopped the RCIC turbine from the main control room and declared the RCIC system inoperable.

The NRC Operations Center was notified of the event in accordance with Title 10 Code of Federal Regulations (CFR) 50.72 at 1545 hours on January 8, 2019.

The event occurred during power operation while at 100 percent reactor power. The reactor mode selector switch was in the RUN position.

CAUSE OF THE EVENT

Due to the unexpected response a Failure Modes Analysis was initiated to investigate the cause. No deficient conditions were identified during troubleshooting. However, based on the investigation, the team determined that the direct cause was output signal loss from RCIC flow controller FIC-1340-01.

CORRECTIVE ACTIONS

The installed flow controller was removed and replaced with a spare calibrated controller. An operability test run was completed and the system was successfully returned to service.

Any further corrective actions will be documented in the corrective action program.



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

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SAFETY CONSEQUENCES

The RCIC system function is to provide high pressure makeup water to the reactor vessel after isolation of the vessel. The RCIC and High Pressure Coolant Injection (HPCI) systems provide Single-Failure Proof response to high pressure reactor vessel injection following a CRDA. The HPCI system was operable while the RCIC system was inoperable. If the HPCI system were to become inoperable and core cooling was necessary, the automatic depressurization system would depressurize the reactor in order to allow low pressure core cooling by the residual heat removal system (low pressure coolant injection mode), and/or core spray system.

There were no actual consequences to safety of the general public, nuclear safety, industrial safety, or radiological safety for this event based on the availability of appropriate high pressure core cooling.

REPORTABILITY

The condition is reportable under 10 CFR 50.72 and 50.73 based on NUREG-1022 guidance as a condition that could have prevented fulfillment of a safety function because the RCIC system was inoperable as defined in the Technical Specifications. However, the condition is not a safety system functional failure because an engineering evaluation concluded that the safety function would have been fulfilled by HPCI, if high pressure core cooling were needed. HPCI was operable at the time that RCIC failed to meet its surveillance requirements and was declared inoperable.

PREVIOUS EVENTS

LER 2004-004-00, RCIC System Declared Inoperable During Surveillance Testing due to Flow Controller Potentiometer Oxidation

REFERENCES

CR-PNP-2019-00145