



Exelon Generation®

10 CFR 50.73

NMP1L3305
August 2, 2019

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

Nine Mile Point Nuclear Station, Unit 1
Renewed Facility Operating License No. DPR-63
Docket No. 50-220

Subject: NMP1 Licensee Event Report 2019-003, Revision 1, Manual Reactor Scram Due to Pressure and Power Oscillations

The original NMP1 LER 2019-003 was submitted June 28, 2019. Enclosed is NMP1 Licensee Event Report (LER) 2019-003, Revision 1, Manual Reactor Scram Due to Pressure and Power Oscillations. This revision is to provide additional details on the cause of the event and the corrective actions following completion of the root cause analysis.

There are no regulatory commitments contained in this letter.

Should you have any questions regarding the information in this submittal, please contact Brandon Shultz, Site Regulatory Assurance Manager, at (315) 349-7012.

Respectfully,

Todd A. Tierney
Plant Manager, Nine Mile Point Nuclear Station
Exelon Generation Company, LLC

TAT/DJW

Enclosure: NMP1 Licensee Event Report 2019-003 Revision 1, Manual Reactor Scram Due to Pressure and Power Oscillations.

cc: NRC Regional Administrator, Region I
NRC Resident Inspector
NRC Project Manager

IEZZ
NRR

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D. P. Ferraro
H. Apa

| COMMITMENTS IDENTIFIED IN THIS CORRESPONDENCE |
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- | |
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| <ul style="list-style-type: none">• None |
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Enclosure

NMP1 Licensee Event 2019-003, Revision 1
Manual Reactor Scram Due to Pressure and Power Oscillations

Nine Mile Point Nuclear Station, Unit 1

Renewed Facility Operating License No. DPR-63



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, NEOF-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 Nine Mile Point Unit 1 | 2. DOCKET NUMBER 05000220 | 3. PAGE 1 OF 4 |
|---|-------------------------------------|--------------------------|

4. TITLE
Manual Reactor Scram due to Pressure and Power Oscillations

| 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 |
| 04 | 29 | 2019 | 2019 | 003 | 01 | 06 | 28 | 2019 | N/A | 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"/> 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 checked="" type="checkbox"/> 50.73(a)(2)(iv)(A) | <input type="checkbox"/> 50.73(a)(2)(x) |
| 10. POWER LEVEL 084 | <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

| | |
|---|--|
| LICENSEE CONTACT Brandon Shultz, Site Regulatory Assurance Manager | TELEPHONE NUMBER (Include Area Code) (315) 349-7012 |
|---|--|

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 | JJ | RG | GE | Y | N/A | N/A | N/A | N/A | N/A |

| | | | | |
|--|-------------------------------------|-------|-----|------|
| 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 |
| | | N/A | N/A | N/A |

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

On April 29, 2019 at 16:33, Nine Mile Point Unit 1 inserted a manual reactor scram due to pressure and power oscillations. The High Pressure Coolant Injection (HPCI) System automatically initiated, on low reactor vessel water level, as designed. This event is reportable under 10 CFR 50.73(a)(2)(iv)(A) as any event or condition that resulted in a manual or automatic actuation of any of the systems listed in 10 CFR 50.73(a)(2)(iv)(B).

The cause of the event is the organization did not effectively incorporate appropriate learnings from previous NMP events and operating history that would have provided adequate flexibility in the operating strategy to mitigate the risks of increased oscillations. The scope of the corrective actions is to incorporate operational history and events into Special Operating Procedures (SOPs)

The event described in this LER is documented in the plant's corrective action program.



**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 | | |
|------------------------|------------------|---------------|-------------------|---------|
| | | YEAR | SEQUENTIAL NUMBER | REV NO. |
| Nine Mile Point Unit 1 | 05000220 | 2019 | - 003 | - 01 |

NARRATIVE

I. DESCRIPTION OF EVENT

A. PRE-EVENT PLANT CONDITIONS:

Prior to the event, Nine Mile Point Unit 1 (NMP1) was in the Power Operating Condition at 84.6% reactor power. Power ascension was in progress.

B. EVENT:

On April 29, 2019, at approximately 16:30, NMP1 experienced oscillations in reactor pressure, level and power during power ascension. A manual reactor scram was inserted when the procedural limits were reached.

The scram resulted in shrink of the water level in the reactor vessel and the low level set point was reached. This resulted in a HPCI initiation as designed.

Nine Mile Point Unit 2 (NMP2) was unaffected by the scram at NMP1.

Operations performed the ENS notification (#54035) required by 10 CFR 50.72(b)(2)(iv)(B) and 10 CFR 50.72(b)(3)(iv)(A) for the reactor scram and specified system activations.

This event has been entered into the plant's corrective action program as IR 4244521.

C. INOPERABLE STRUCTURES, COMPONENTS, OR SYSTEMS THAT CONTRIBUTED TO THE EVENT:

No other systems, structures, or components contributed to this event.

D. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES AND OPERATOR ACTIONS:

The dates, times, and major occurrences and operator actions for this event are:

April 29, 2019
 16:29—Control Rod 14-39 withdrawn to position 30 from position 08
 16:29—Operators observe reactor power, pressure and level oscillations
 16:30—Operator places the feedwater flow control valve in manual to check for controller malfunction
 16:30—Operators enter SOP for pressure regulator malfunctions
 16:33—Mode switch placed in shutdown
 16:33—HPCI initiation due to low reactor vessel water level
 16:34—HPCI reset



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NARRATIVE

E. METHOD OF DISCOVERY:

This event was discovered by Reactor Operators when the reactor pressure, level and power oscillations were observed in the control room.

F. SAFETY SYSTEM RESPONSES:

All safety systems responded per design.

II. CAUSE OF EVENT:

The organization did not effectively incorporate appropriate learnings from previous NMP events and operating history that would have provided adequate flexibility in the operating strategy to mitigate the risks of increased oscillations. The Nine Mile Point U1 operational strategy did not provide flexibility or incorporate an exit strategy from the oscillation region.

III. ANALYSIS OF THE EVENT:

The reactor scram and specified system activation is reportable under 10 CFR 50.73(a)(2)(iv)(A), as any event or condition that resulted in manual or automatic action of any of the specified systems listed in 10 CFR 50.73(a)(2)(iv)(B).

The non-optimal tuning resulted in EPR pressure control issues in the 80-90% power region during reactor startup that produced reactor pressure, level and power oscillations greater than those allowed without a backup pressure regulator available. A manual reactor scram was inserted per procedure.

All other plant systems performed per design. Plant parameters, other than the pressure, level and power oscillations, remained within normal values throughout the event. There was no loss of offsite power to the onsite emergency buses, the HPCI mode of feed and condensate system initiated as designed on the low reactor water level signal.

Based on the above discussion, it is concluded that the safety significance of this event is low and the event did not pose a threat to the health and safety of the public or plant personnel.

This event does affect the NRC Regulatory Oversight Process Indicator for unplanned scrams per 7000 hours of critical operation.

IV. CORRECTIVE ACTIONS:

A. ACTION TAKEN TO RETURN AFFECTED SYSTEMS TO PRE-EVENT NORMAL STATUS:



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CONTINUATION SHEET**

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NARRATIVE

Replaced bean valve and flushed/cleaned MPR sensing line. Tuning of the Turbine Control systems was completed prior to return to service.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

N1-SOP-31.2, "Pressure Regulator Malfunctions" has been revised to allow margin for expected oscillations. SOPs that direct a unit to shutdown or derate will be reviewed and revised as needed to incorporate the lessons learned pertaining to providing appropriate operational flexibility.

V. ADDITIONAL INFORMATION:

A. FAILED COMPONENTS:

Tuning of the EPR was not optimal. There were no individual component failures.

B. PREVIOUS LERs ON SIMILAR EVENTS:

NMP1 LER 2017-002, submitted May 18, 2017, was due to pressure oscillations at 4% power. The cause of that event was a partial blockage within the MPR sensing line coupled with hysteresis found within the cylinder stroke of the Mechanical Hydraulic Control (MHC) Bypass Relay. The actions to prevent recurrence in 2017 included:

1. Implementation of a two-year preventive maintenance activity for routine flushing and filling of the pressure sensing bellows line and associated piping with contingencies to replace when required.
2. Revision of associated procedures to include steps to flush and backfill sensing lines.
3. Revised the Turbine Trip Test procedure.

These actions do not ensure the EPR is optimally tuned and would not have prevented this event.

C. THE ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIS) COMPONENT FUNCTION IDENTIFIER AND SYSTEM NAME OF EACH COMPONENT OR SYSTEM REFERRED TO IN THIS LER:

| <u>COMPONENT</u> | <u>IEEE 803 FUNCTION IDENTIFIER</u> | <u>IEEE 805 SYSTEM IDENTIFICATION</u> |
|--|---|---|
| Reactor Pressure Vessel | RPV | AD |
| Feedwater Level Control System | N/A | JB |
| High Pressure Coolant Injection System | N/A | BJ |
| Reactor Protection System | N/A | JC |
| Turbine Control System | N/A | JJ |
| Electronic Pressure Regulator | RG | JJ |