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July 24, 2000

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Subject: Licensee Event Report

In accordance with 10 CFR 50.73(a)(2)(i), Commonwealth Edison (ComEd) Company is submitting Licensee Event Report #00-003-00, Docket No. 050-373.

Should you have any questions concerning this letter, please contact Mr. Frank A. Spangenberg, III, Regulatory Assurance Manager, at (815) 357-6761, extension 2383.

Respectfully,

A handwritten signature in black ink, appearing to read "Charles G. Pardee".

Charles G. Pardee
Site Vice President
LaSalle County Station

Attachments: Licensee Event Report

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector - LaSalle County Station

IE22

LICENSEE EVENT REPORT (LER)

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If 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.

FACILITY NAME (1): LaSalle County Station, Unit 1

DOCKET NUMBER (2) 05000373

PAGE (3)
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TITLE (4) P-Bypass Setpoint Set Non-Conservatively Due to Inappropriately Turning Off the Process Computer Feedwater Flow Density Correction Program

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
06	24	00	00	003	00	07	24	00	LaSalle County Station, Unit 2	05000374
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9) 1
POWER LEVEL (10) 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(2)(v)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2003(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(x)
<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 20.2003(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 73.71
<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 20.2003(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> OTHER
<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	Specify n Abstract below or in NRC Form 366A
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME
Edward McVey, Reactor EngineeringTELEPHONE NUMBER (Include Area Code)
(815) 357-6761 Extension 2250

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

☐ YES
(If yes, complete EXPECTED SUBMISSION DATE)☒ NO

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines 16)

On June 24, 2000, during the startup of LaSalle Unit 2 from L2F29, it was determined that P-Bypass was not set conservatively enough to meet Technical Specification (TS) requirements that the reactor scram and End-of-Cycle Recirculation Pump Trip (EOC-RPT) on Turbine Control Valve and Turbine Stop Valve closure would always occur above 25% power. The condition was determined to apply to both Unit 1 and Unit 2.

On Unit 1, the trip bypass logic fuses were removed within one hour as required by TS 3.3.1 action b.1 and TS 3.3.4.2 action e. Since Unit 2 was below 25% power, no immediate actions were required. The setpoints for both Units 1 and 2 were changed to the correct value, and the Unit 1 fuses were reinstalled.

The cause of the condition was that the Process Computer subroutine (P4) that performs a density correction for feedwater flow was inappropriately turned off when the Core Monitoring Software was being upgraded in 1988 (Unit 1) and 1989 (Unit 2). This caused an error in the thermal power calculation used in determining the P-Bypass setpoint. The P4 subroutine has since been restored. The safety significance of the event is minimal, due to the large margin to thermal power limits at low reactor power.

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PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor, 3489 Megawatts Thermal Rated Core Power

A. CONDITION PRIOR TO EVENT

Unit(s): 1/2 Event Date: 06/24/00 Event Time: 1710 Hours
Reactor Mode(s): 1/1 Power Level(s): 100/023
Mode(s) Name: Run/Run

B. DESCRIPTION OF EVENT

On June 24, 2000, during the startup of LaSalle Unit 2 from forced outage L2F29, personnel recognized that plant conditions were not consistent with the Powerplex Heat Balance Program (OD-3), which indicated that power was approximately 23% of rated core thermal power. Specifically, P-Bypass, which typically clears at 23% power, had not yet cleared. The P-Bypass setpoint is required by Technical Specifications 3.3.1 "Reactor Protection System Instrumentation" and 3.3.4.2 "End-of-Cycle Recirculation Pump Trip System Instrumentation" to be less than or equal to 25% power. Below this setpoint, the automatic scram signal and End-Of-Cycle Recirculation Pump Trip (EOC-RPT) signal on Turbine Control Valve (TCV) and Turbine Stop Valve (TSV) closure are bypassed.

This was the first startup where the OD-3 program was using a density-corrected feedwater flow value. At low powers where feedwater temperature is significantly below rated, the density correction can affect calculated thermal power by 3% to 4%. LaSalle had discovered in December 1999 that Units 1 and 2 had potentially exceeded the maximum thermal power limit of License Condition 2.C(1) due to a calculation error, which was the result of inappropriately turning off the Process Computer feedwater flow density correction subroutine (P4) in July 1988 (Unit 1) and February 1989 (Unit 2). P4 was turned back on, and the event was documented in a Special Report dated December 22, 1999.

P-Bypass gets its signal from first stage turbine pressure, and is independent of the OD-3 calculation. However, the P-Bypass setpoint had been established utilizing OD-3 data obtained prior to identification and correction of the feedwater density correction error. This condition also existed on Unit 1, which was operating at 100% power.

Therefore, it could not be confirmed that the P-Bypass interlock would enable the reactor scram and EOC-RPT from TSV and TCV closure at 25% power, as required by Technical Specifications (TS), over the full range of feedwater temperatures. A one hour timeclock was entered on Unit 1 in accordance with TS 3.3.1 action b.1 and TS 3.3.4.2 action e. The fuses for the trip bypass logic were removed to enable the scram and EOC-RPT to function at all power levels (Immediate Action 1) and the one hour timeclock was exited. Since Unit 2 was not above 25% power, no Technical Specification actions were required.

On June 25, 2000, temporary modifications were installed on Units 1 and 2 to lower the P-Bypass setpoints to 100 psig first stage turbine pressure, and the trip bypass logic fuses were reinstalled. Permanent design change packages were

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issued and installed on June 30, 2000, which established the P-Bypass setpoint at 104.1 psig.

The P-Bypass interlock potentially enabled the reactor scram and EOC-RPT from TSV and TCV closure at powers greater than 25% during startups performed on both Units 1 and 2 in 1999. This condition is reportable in accordance with 10 CFR 50(a)(2)(i) as a condition prohibited by the plant's Technical Specifications.

C. CAUSE OF EVENT

The root cause of this event was an inappropriate action that occurred when the Core Monitoring Software was upgraded in July 1988 (Unit 1) and February 1989 (Unit 2). The Process Computer subroutine (P4) that performs the feedwater flow density correction was turned off. The personnel performing the upgrade did not evaluate all Process Computer inputs that used the P4 subroutine. This condition existed until December 1999.

This error was carried over to the Unit 1 and 2 P-Bypass setpoints in 1999, when a Technical Specification change was implemented to lower the setpoints from 30% to 25% power. The core thermal power calculation used to determine first stage turbine pressure corresponding to 25% power used the uncorrected feedwater flowrates. In May 2000, new P-Bypass setpoints for 25% power were implemented as a part of power uprate. These new setpoints were determined by extrapolating the data used to lower the setpoints from 30% to 25%. In both cases, the error biased the P-Bypass setpoints non-conservatively high.

The extent of condition review conducted in December 1999 as part of the root cause analysis failed to identify the impact on the P-Bypass setpoint, which resulted in the condition being undetected until the startup of Unit 2 on June 24, 2000.

Corrective Actions to address software controls were addressed in the Special Report dated December 22, 1999.

D. SAFETY ANALYSIS

The safety significance of this event was minimal. Margins to thermal limits are sufficiently large at power levels less than 30% that, if a postulated event had occurred with P-Bypass not cleared, the Minimum Critical Power Ratio Safety Limit would not have been exceeded. Thermal limit margins for the startup where this issue was identified were greater than 28% at power levels up to 30% reactor power. This margin is typical during startups at power levels less than 30%.

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E. CORRECTIVE ACTIONS

Corrective Actions:

1. The trip bypass logic fuses were removed on Unit 1 within one hour in accordance with TS 3.3.1 action b.1 and TS 3.3.4.2 action e.
2. Design Change Packages were issued and installed on June 30, 2000, which established the P-Bypass setpoint at 104.1 psig (Complete).
3. Other Technical Specification setpoints based on core thermal power were evaluated to determine whether other setpoints are affected by the feedwater density correction issue. No other affected setpoints were identified (Complete).

Corrective Actions to Prevent Recurrence

4. The Process Computer subroutine P4 was turned on in December 1999 to density correct the feedwater flow value utilized in the heat balance calculation (Complete).

F. PREVIOUS OCCURRENCES

LER NUMBER	TITLE
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Special Report	License Condition 2.F(a) and 2.F Report - Exceeding License Condition 2.C.(1), dated December 22, 1999
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Corrective actions and the extent of condition review were focused on operations at or near rated power, when margins to fuel thermal limits were limiting. The effect of the P4 subroutine being turned off on the P-Bypass setpoint was not evaluated.

G. COMPONENT FAILURE DATA

Since no component failure occurred, this section is not applicable.