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Constellation Energy Group

Nine Mile Point
Nuclear Station

October 14, 2003
NMP2L 2103

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Nine Mile Point Unit 2
Docket No. 50-410
Facility Operating License No. NPF-69

Licensee Event Report 03-002, "Reactor Scram Due to Electric Grid Disturbance"

Gentlemen:

In accordance with 10 CFR 50.73(a)(2)(iv)(A), we are submitting Licensee Event Report (LER) 03-002, "Reactor Scram Due to Electric Grid Disturbance."

Very truly yours,

LA Hopkins

Lawrence A. Hopkins
Plant General Manager

LAH/KLE/bjh
Attachment

cc: Mr. H. J. Miller, NRC Regional Administrator, Region I
Mr. G. K. Hunegs, NRC Senior Resident Inspector

IE22

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION
(1-2001)

APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs1@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 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.

LICENSEE EVENT REPORT (LER)

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TITLE (4)

Reactor Scram Due to Electric Grid Disturbance

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
08	14	2003	2003	– 002 –	00	10	14	2003	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)			
1	20.2201(b)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
POWER LEVEL (10)	20.2201(d)	20.2203(a)(4)	50.73(a)(2)(iii)	50.73(a)(2)(x)
100	20.2203(a)(1)	50.36(c)(1)(i)(A)	X 50.73(a)(2)(iv)(A)	73.71(a)(4)
	20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)	50.73(a)(2)(v)(A)	73.71(a)(5)
	20.2203(a)(2)(ii)	50.36(c)(2)	50.73(a)(2)(v)(B)	OTHER
	20.2203(a)(2)(iii)	50.46(a)(3)(ii)	50.73(a)(2)(v)(C)	Specify in Abstract below or in
	20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)	50.73(a)(2)(v)(D)	NRC Form 366A
	20.2203(a)(2)(v)	50.73(a)(2)(i)(B)	50.73(a)(2)(vii)	
	20.2203(a)(2)(vi)	50.73(a)(2)(i)(C)	50.73(a)(2)(viii)(A)	
	20.2203(a)(3)(i)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(B)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Michael T. Navin, Manager Operations	315-349-2421

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On August 14, 2003 at approximately 1611 hours, Nine Mile Point Unit 2 automatically scrammed from 100% rated thermal power. The scram resulted from a turbine control valve fast closure signal that was generated as the electrohydraulic system (EHC) attempted to control turbine speed and reactor pressure in response to a severe disturbance in the electric grid. All three (Divisions 1, 2, and 3) emergency diesel generators (EDG) started as a result of the grid disturbance and each EDG powered its associated emergency bus. At 1700 hours an Unusual Event (UE) was declared because of grid instability. The UE was terminated at 0734 hours on August 15, 2003 after grid stability had been established and off-site power had been restored to all three emergency buses.

After the scram, the turbine tripped as a result of high reactor vessel water level. The high water level occurred because the electrical transient had caused the feedwater flow control valves to lock up at approximately 55% open. Because the feedwater flow control valves had locked up, operators used reactor core isolation cooling (RCIC) to maintain reactor water level. Reactor pressure was initially controlled using the turbine bypass valves.

The cause of the event was the severe disturbance in the electric grid.

This event is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) because of the reactor scram while critical, and because the automatic starting of the EDGs.

LICENSEE EVENT REPORT (LER)

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

I. Description of Event

On August 14, 2003 at approximately 1611 hours, Nine Mile Point Unit 2 (NMP2) automatically scrammed from 100% rated thermal power. The scram resulted from a turbine control valve fast closure trip that was generated as the electrohydraulic system (EHC) attempted to control turbine speed and reactor pressure by re-positioning turbine control and turbine bypass valves in response to a severe disturbance in the electric grid.

As a result of the grid disturbance, undervoltage conditions occurred on each of three emergency buses. Because of the undervoltage conditions, at approximately 1612 hours each of the three divisional (Division 1, 2, and 3) emergency diesel generators (EDG) automatically started and powered its associated emergency bus, as designed. Although there was never an actual loss of 115 KV off-site power (both off-site 115 KV lines remained energized), the fluctuations in voltage were such that the grid was deemed unstable and the Emergency Action Levels for an Unusual Event (UE) were deemed to be met. At 1700 hours a UE was declared because of grid instability. After grid stability had been established, operators began transferring the emergency buses to off-site power and securing the associated EDG. Division 1 and Division 3 emergency buses were aligned to off-site power through their normal transformer. The Division 2 emergency bus was aligned to off-site power through an alternate transformer that required additional load transfers to maintain divisional separation. The Division 1 EDG was secured at 0137 hours on August 15, 2003, the Division 3 EDG was secured at 0401 hours on August 15, 2003 and the Division 2 EDG was secured at 0712 hours on August 15, 2003. The UE was terminated at 0734 hours on August 15, 2003 after off-site power was restored to all three emergency buses.

After the scram, the turbine tripped as a result of high reactor vessel water level. The high water level occurred because the electrical transient had caused the feedwater flow control valves to lock up at approximately 55% open. The high reactor vessel water level also tripped the running feedwater pump, 2FWS-P1C, as designed. Operators had previously tripped feedwater pump 2FWS-P1B due to increasing reactor water vessel level. Feedwater pump FWS-P1C had been left running while preparations were being made to start reactor core isolation cooling (RCIC). Because the feedwater flow control valves had locked up, operators used RCIC to maintain reactor water level. Reactor pressure was controlled using the turbine bypass valves.

NMP2 remained in hot shutdown until the unit was restarted.

II. Cause of Event

A severe disturbance in the electric grid, affecting parts of the northeastern United States and southern Ontario in Canada, caused the cycling of the turbine control valves and turbine bypass valves leading to a reactor scram.

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* (17)

III. Analysis of Event

This event is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) because of the reactor scram while critical and because of the automatic start of the EDGs.

No Emergency Core Cooling Systems actuated or should have actuated.

All rods fully inserted on the scram.

All three EDGs started and ran as designed.

Based on the above, the event did not pose a threat to the health and safety of the public.

IV. Corrective Actions

None.

V. Additional Information

1. Failed Components:
   None

2. Previous similar events:
   None

3. Identification of components referred to in this Licensee Event Report:

Components	IEEE 805 System ID	IEEE 803A Function
Feedwater System	SJ	N/A
Main Steam System	SB	N/A
Main Turbine System	TA	N/A
Turbine Bypass System	JI	N/A
Turbine Control System	TG	N/A
Reactor Core Isolation Cooling	BN	N/A
Emergency Buses	EB	N/A
Non-Emergency Buses	EA	N/A
Recirculation System	AD	N/A
Reactor Core	AC	N/A
Emergency Diesel Generator	EK	N/A
115 KV Off-site Power System	FK	N/A
Control Rod Drive System	AA	N/A
Turbine	TA	TRB
Control rod	AA	ROD
Bus	EA, EB	BU
Pump	AD, AA	P
Valve	SB, SJ, JI	ISV, PCV
Reactor Vessel	AD	RPV