

# CATEGORY 1

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9608260151      DOC. DATE: 96/08/16      NOTARIZED: NO      DOCKET #  
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 AUTH: NAME      AUTHOR AFFILIATION  
 BALDUZZI, M.A.      Niagara Mohawk Power Corp.  
 RADEMACHER, N.L.      Niagara Mohawk Power Corp.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 96-006-00: on 960717, TS violation identified re calculation error in surveillance test N1-ST-Q1B. Caused by cognitive personnel error. Procedure N1-ST-Q1B reperformed sucessfully on 960717.W/960816 ltr.

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NIAGARA MOHAWK

GENERATION  
BUSINESS GROUP

NINE MILE POINT NUCLEAR STATION/LAKE ROAD, P.O. BOX 63, LYCOMING, NEW YORK 13093

August 16, 1996  
NMP1L 1114

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

RE: LER 96-06  
Docket No. 50-220

Gentlemen:

In accordance with 10CFR.73(a)(2)(i), we are submitting LER 96-06, "Technical Specification Violation Caused by Cognitive Error in Calculation Verification."

Very truly yours,

Norman L. Rademacher  
Plant Manager - NMP1

NLR/TWR/kap  
Enclosure

xc: Mr. H. J. Miller, Regional Administrator  
Mr. Barry S. Norris, Senior Resident Inspector

9608260151 960816  
PDR ADOCK 05000220  
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IE221,



## LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1) Nine Mile Point Unit 1						DOCKET NUMBER (2) 5000220						PAGE (3) 1 OF 4						
TITLE (4) Technical Specification Violation Caused by Cognitive Error in Calculation Verification																		
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 NAMES						DOCKET NUMBER(S)			
07	17	96	96	06	00	08	16	96	N/A						05000			
									N/A						05000			
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)															
POWER LEVEL (10) 100			<input type="checkbox"/> 20.402(b) <input type="checkbox"/> 20.405(a)(1)(i) <input type="checkbox"/> 20.405(a)(1)(ii) <input type="checkbox"/> 20.405(a)(1)(iii) <input type="checkbox"/> 20.405(a)(1)(iv) <input type="checkbox"/> 20.405(a)(1)(v)			<input type="checkbox"/> 20.405(c) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.36(c)(2) <input checked="" type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(iii)			<input type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> 50.73(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(x)			<input type="checkbox"/> 73.71(b) <input type="checkbox"/> 73.71(c) <input type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
LICENSEE CONTACT FOR THIS LER (12)																		
NAME Michael A. Balduzzi, Manager Operations NMP1										TELEPHONE NUMBER (315) 349-2196								
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																		
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS								
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR				
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> NO								

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

On July 17, 1996, at 0030 hours, with the mode switch in "RUN," and the reactor at approximately 100 percent of rated power, plant management at Nine Mile Point Unit 1 (NMP1) determined that the unit had been operated in a condition prohibited by Technical Specifications (TS) since June 6, 1996. Specifically, a calculation error in performance of surveillance test N1-ST-Q1B, "Core Spray Loop 12 Pumps and Valves Operability," on June 6, 1996 was identified for Core Spray Topping Pump 121 (CSTP-121) differential pressure (dp). During the test the dp was erroneously calculated such that the acceptance criteria was believed to have been satisfied. Subsequent review of the procedure by shift personnel and the Inservice Test (IST) Supervisor discovered an error in the calculation but the individuals involved did not discover a second calculation error which occurred later in the procedure. Subsequent review on July 17, 1996 discovered the second error and personnel determined that the dp was in fact not satisfactory but was in the "Action Required" range and the pump should have been declared inoperable on June 6, 1996, in accordance with TS 3.1.4.b, "Core Spray System."

The cause of this event has been determined to be cognitive personnel error in that self-checking was not performed to ensure the mathematical computation of the pump dp was correct. Immediate corrective action was to declare the pump inoperable per TS. Procedure N1-ST-Q1B was reperformed successfully on July 17, 1996 and CSTP-121 was declared operable. A Deviation Event Report (DER) was generated to evaluate the event.



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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 30.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)				PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Nine Mile Point Unit 1	05000220	96	- 06	- 00		02 OF 04

TEXT (If more space is required, use additional NRC Form 366A's) (17)

## **I. DESCRIPTION OF EVENT**

On July 17, 1996, at 0030 hours, with the mode switch in "RUN" and the reactor at approximately 100 percent of rated power, plant management at Nine Mile Point Unit 1 (NMP1) determined that the unit had been operated in a condition prohibited by Technical Specifications (TS) since June 6, 1996.

Specifically, on June 6, 1996 performance of surveillance test (ST) N1-ST-Q1B, "Core Spray Loop 12 Pumps and Valves Operability," resulted in unacceptable test data for Core Spray Topping Pump 121 (CSTP-121) differential pressure (dp). However, due to a calculational error made by personnel performing the test, the acceptance criteria was believed to have been satisfied. This resulted in a failure to declare the CSTP-121 inoperable.

The performance of surveillance test N1-ST-Q1 involves throttling system flow rate to meet prescribed procedural guidance values and obtaining flow indication data. This data is used by the Control Room operator in performing a series of calculations to determine pump differential pressure.

The Shift Supervisor completing the acceptance criteria for that test section discovered a calculation error in step 8.3.21d of N1-ST-Q1B. The error was corrected and the test was completed. An additional review was completed on the same shift by the Assistant Station Shift Supervisor (ASSS). The next day, the IST Supervisor performed a procedural review which included a check of the calculations. Neither of these reviews detected any errors. Six weeks later during the performance of the final supervisory review, it was discovered that another error existed in step 8.3.21f. The error was a result of the failure to carry through the appropriate value in later calculations in the procedure. When this error was corrected on July 17, 1996, it was determined that the pump dp was slightly higher than the acceptance criteria, and the pump was declared inoperable per Technical Specifications. The failure to meet the Acceptance Criteria was due to pump performance exceeding ASME Code Criteria, thus indicating increased pump performance, and not degradation.

## **II. CAUSE OF EVENT**

A root cause analysis was performed in accordance with NIP-ECA-01, Deviation Event Report. The root cause of the event was determined to be a cognitive personnel error in that self-checking was not applied to ensure the mathematical computation was correct.

The operator who performed the calculation omitted the pressure correction for the elevation of the gauge. During the first level review the Station Shift Supervisor (SSS) discovered the initial error and corrected a portion of the calculation. The SSS, however, failed to correct the latter calculations required in the procedure after having discovered the error. The undetected error resulted in acceptance criteria that fell within the "Normal Range," when in fact it was in the "Action Required" range.





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Nine Mile Point Unit 1	05000220	96	- 06	- 00	03 OF 04

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**III. ANALYSIS OF EVENT**

This event is being reported in accordance with 10CFR50.73 (a)(2)(i)(b), "Any operation or condition prohibited by Technical Specifications." TS section 3.2.6.b.1 states in part "to be considered operable quality groups A, B, and C pumps and valves shall satisfy the requirements contained in Section XI of the ASME Boiler and Pressure Vessel Code." Contrary to this on June 6, 1996, Core Spray Topping Pump 121 (which is a quality group B component) was not considered inoperable per ASME Section XI as required due to a calculational error in the acceptance criteria calculation. Other Technical Specification sections which could apply were evaluated, and no other deficiencies were identified.

The surveillance test is performed by throttling system flow to a prescribed reference value and obtaining flow data. When the test was initially performed on June 6, 1996, and the data plotted on the validated pump discharge pressure vs. flow curve, the results indicated that the pump was performing in excess of the value required for the 10CFR50 Appendix K Analysis. Furthermore, the successful performance of the surveillance test on July 17, 1996 also verified that the pump was operable. Consequently, pump performance was not degraded, and the Core Spray System was fully capable of meeting its design criteria throughout this period. Accordingly, the safety significance of this event is minimal.

**IV. CORRECTIVE ACTIONS**

1. Immediately upon discovery of the calculation error the CSTP-121 was declared inoperable in accordance with TS 3.1.4.b. Surveillance Procedure N1-ST-Q1B was performed for CSTP-121 successfully and the pump was declared operable. This was done on July 17, 1996.
2. The Manager Operations has counseled the individuals involved in this event regarding the importance of attention to detail and self-checking.
3. The Manager Operations will discuss this event with each operating shift, discussing self-checking techniques and the necessity to ensure calculations are performed correctly. Also, the expectations for supervisory review of testing activities will be reaffirmed. This will be completed by December 20, 1996.
4. The Procedure Writer's Guide governing Operations Surveillance Procedures will be revised to enhance the format of independent verification steps for calculations. This will be completed by December 20, 1996.



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LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATIONESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION  
REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE  
RECORDS AND REPORTS MANAGEMENT BRANCH (P-330), U.S. NUCLEAR REGULATORY  
COMMISSION, WASHINGTON, DC 20535, AND TO THE PAPERWORK REDUCTION PROJECT  
0150-0104, OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Nine Mile Point Unit 1	05000220	96	- 06	- 00	04 OF 04

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V. ADDITIONAL INFORMATION

- A. Failed components: None.
- B. Previous similar events: None
- C. Identification of components referred to in this LER:

COMPONENT	IEEE 803 FUNCTION	IEEE 805 SYSTEM ID
Core Spray Topping Pump	P	BM

