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ACCESSION NBR: 8708050410 DOC. DATE: 87/07/31 NOTARIZED: NO DOCKET #
FACIL: 50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe 05000220

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SUBJECT: LER 87-011-00: on 870703, discovered that daily fuel surveillance procedure not performed since 870702 & exceeded interval specified in Tech Spec. Caused by personnel error. Test performed & personnel counseled. W/870731 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 6
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

# LICENSEE EVENT REPORT (LER)

| FACILITY NAME (1) | DOCKET NUMBER (2) | PAGE (3) |
|---|---|---|
| Nine Mile Point Unit 1 | 0 5 0 0 0 2 2 0 | 1 OF 0 5 |

TITLE (4)
Failure To Perform Surveillance Testing Within Technical Specification Required Interval

| 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) |
| 0 7 | 0 3 | 8 7 | 8 7 | 0 1 1 | 0 0 | 0 7 | 3 1 | 8 7 | | 0 5 0 0 0 |
| | | | | | | | | | | 0 5 0 0 0 |

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

OPERATING MODE (9):
POWER LEVEL (10): 0 9 0

| | | | |
|---|---|---|---|
| [ ] 20.402(b) | [ ] 20.405(c) | [ ] 50.73(a)(2)(iv) | [ ] 73.71(b) |
| [ ] 20.405(a)(1)(i) | [ ] 50.36(c)(1) | [ ] 50.73(a)(2)(v) | [ ] 73.71(c) |
| [ ] 20.405(a)(1)(ii) | [ ] 50.36(c)(2) | [ ] 50.73(a)(2)(vii) | [ ] OTHER *(Specify in Abstract below and in Text, NRC Form 366A)* |
| [ ] 20.405(a)(1)(iii) | [X] 50.73(a)(2)(i) | [ ] 50.73(a)(2)(viii)(A) | |
| [ ] 20.405(a)(1)(iv) | [ ] 50.73(a)(2)(ii) | [ ] 50.73(a)(2)(viii)(B) | |
| [ ] 20.405(a)(1)(v) | [ ] 50.73(a)(2)(iii) | [ ] 50.73(a)(2)(x) | |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER (AREA CODE) | |
|---|---|---|
| Peter A. Mazzaferro, Assistant Supervisor Technical Support | 3 1 5 | 3 4 9 - 2 1 9 0 |

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)

[ ] YES *(If yes, complete EXPECTED SUBMISSION DATE)* [X] NO

EXPECTED SUBMISSION DATE (15): MONTH | DAY | YEAR

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


ABSTRACT

On July 3, 1987, at 2330, with the unit on-line and the reactor operating at 90% power, it was discovered that the daily fuel surveillance procedure N1-RPSP-1 had not been performed since 0630 on July 2 and had exceeded the surveillance interval specified in Nine Mile Point Unit 1 Technical Specification 4.1.7. The surveillance procedure was not performed due to an unintentional oversight on the part of the reponsible technician.

The surveillance procedure was performed at 2330 using the latest fuel thermal parameter output from the plant process computer and verified that all Technical Specification fuel limits were met. Corrective action for this event includes counseling of the technician and rescheduling of personnel to reduce the responsibilities of the on-shift technician.




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| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | PAGE (3) |
|---|---|---|---|---|---|
| Nine Mile Point Unit 1 | 0 5 0 0 0 2 2 0 | 8 7 | — 0 1 1 | — 0 0 | 0 2 OF 0 5 |

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

DESCRIPTION OF EVENT

On July 3, 1987, at 2330, Nine Mile Point Nuclear Station Unit 1 was on-line with the reactor operating at 90% of rated thermal power due to partial recirculation loop operation. Preparations were being made to perform a control rod pattern change on the following shift. At this time, the Unit 1 Reactor Analyst Supervisor, who was on-site to oversee the rod pattern adjustment, was notified by the responsible technician that the daily fuel surveillance procedure N1-RPSP-1, "Reactor Physics Daily Surveillance", had not yet been completed for July 3. Procedure N1-RPSP-1 records and verifies that the fuel rod operating parameters are within the thermal limits specified in Nine Mile Point Unit 1 Technical Specification 4.1.7. The Average Planar Linear Heat Generation Rate (APLHGR) for each fuel type, the Linear Heat Generation Rate (LHGR), and the Minimum Critical Power Ratio (MCPR) must be determined daily whenever the reactor is operating at or in excess of 25% of rated full power. The Power/Flow relationship must also be determined daily during reactor operation. These core thermal values are normally calculated by the plant process computer and recorded on N1-RPSP-1 by a Reactor Physics group technician. The previous set of data available from N1-RPSP-1 was performed on July 2 at 0630. As Technical Specification 1.15 states that a surveillance interval can only be adjusted plus or minus 25%, this required the next set of data to be taken no later than 1230 on July 3, and another 11 hours elapsed until the missed surveillance was discovered.

CAUSE OF EVENT

A root cause evaluation of this event was performed in accordance with procedure S-SUP-1, "Root Cause Evaluation Program". The cause was determined to be personnel error by the Reactor Physics technician who failed to perform the surveillance procedure as scheduled.

The Reactor Analyst Supervisor normally assigns technicians from each day shift to perform the scheduled surveillance testing and to provide coverage during planned power changes. N1-RPSP-1 is performed daily by the scheduled technician, utilizing the 0630 output from the plant process computer program which monitors fuel thermal performance. Increased staffing demands at Unit 2 to support its startup and test program required reassignment of technicians to provide continuous shift coverage (2-12 hour shifts per day). Supporting Unit 2 testing and a temporary shortage of trained technicians necessitated eliminating the technician previously assigned exclusively to Unit 1 on the weekends and holidays, except for planned plant evolutions requiring a technician's presence. The off-going Unit 2 technician had been assigned the duty of performing the Unit 1 daily fuel surveillance report prior to leaving the plant site in the morning. The technician in question was completing 7 consecutive days of 12 hour shifts (1900-0700) on the morning of July 3. Due to an oversight on his part, the daily fuel surveillance was not completed before he left the site.

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

CAUSE OF EVENT (Cont'd)

In response to other instances of missed surveillance testing, a Surveillance Test Scheduling and Progress Tracking program was implemented by procedure N1-PI-2.0. However, this program does not include daily surveillances in its database due to the short time interval and would not have prevented this Technical Specification violation from occurring. There is no evidence of this surveillance ever having been missed in the past and this event can, therefore, be considered an isolated case.

ANALYSIS OF EVENT

There are no potential safety consequences resulting from this event. Core thermal parameters monitored at 0630 on July 2 were well within the specified limits. Reactor power remained steady at 90%. of rated thermal power until the missed surveillance was discovered, with one exception. Power was reduced below 90% at 0035 on July 3 to complete the weekly surveillance test N1-ST-W1, "Control Rod Exercising", and restored to the previous power level by 0400. Although N1-RPSP-1 was not performed within the required time interval, it is possible to confirm that no core thermal limits as stated in Technical Specification 3.1.7 were being exceeded. The Nine Mile Point Unit 1 Daily Operating Report records calculated values for core power distribution that can be utilized to demonstrate that the readings usually recorded in N1-RPSP-1 were within specified limits.

The Daily Operating Report is filled out by the Assistant Station Shift Supervisor (ASSS) at 0600 and records values from the plant process computer program "Periodic Core Evaluation - Thermal Limits" (P-1). N1-RPSP-1 utilizes P-1 and data from option 3 and 4 of program OD-6," Thermal Data in a Specified Fuel Bundle", which calculates and edits specific thermodynamic data and thermal limit data for the fuel. The calculations in OD-6 are based upon results of the previous P-1 calculation and, therefore, represent an extension of that program. The P-1 output is printed automatically by the plant process computer daily at 0300, 0630, 1200, 1500, 2000, and 2400. The OD-6 option 3 and 4 output does not print out automatically and must be requested. The Daily Operating Report records the power/flow ratio and the most limiting values of MFLCPR and MAPRAT in the core. MFLCPR is the ratio of the limit to the critical power ratio for the most limiting fuel. MAPRAT is the ratio of the maximum average planar heat generation rate to the exposure-dependent limit.

ANALYSIS OF THE EVENT (Cont'd)

Technical Specification 4.1.7(a) requires that APLHGR be determined for each fuel type. For APLHGR to be within its specified limit, its associated MAPRAT value must be less than or equal to 1.0. N1-RPSP-1 records the value of MAPRAT for each fuel type in OD-6, option 4. As the Daily Operating Report does not utilize the OD-6 option 4, only the most limiting value of MAPRAT for all fuel bundles (as calculated on P-1) was recorded, rather than the most limiting value for each of the three fuel types. However, it can be inferred that since the highest calculated value of MAPRAT was less than 1.0, then the MAPRAT for all three fuel types must also be less than 1.0. In addition, P-1 calculates and prints the twelve highest fuel bundle MAPRATs in the core and specifies if any has a ratio greater than 1.0. As the maximum value for MAPRAT on the Daily Operating Report for July 3 (using the 0606 P-1 output) was 0.870, the most limiting value of APLHGR for the core was within the Technical Specification limit.

Technical Specification 4.1.7(b) requires that the LHGR as a function of core height be checked daily. N1-RPSP-1 calculates the maximum linear heat generation rate (MLHGR) by taking the maximum fraction of limiting power density (CMFLPD) value for the whole core from P-1 and multiplying that number by 13.4 KW/ft. The process computer calculates the maximum linear heat generation rate in terms of the maximum fuel rod power density (MRPD). The ratio of MRPD to the limiting fuel rod power density (13.4 KW/ft) is defined as the maximum fraction of limiting power density (MFLPD) and must be less than or equal to 1.0 for LHGR to be within the specified limit. P-1 calculates and prints the twelve highest values of MFLPD in the core and specifies if any has a ratio greater than 1.0. Although no value of MFLPD is recorded on the Daily Operating Report, the ASSS did verify that the twelve most limiting fuel bunndles had MFLPD of less than 1.0 on the 0606 P-1 edit (highest ratio was 0.656). Therefore, the maximum LHGR was below the 13.4 KW/ft limit imposed by Technical Specifications.

Technical Specification 4.1.7(c) states that the MCPR be determined daily. N1-RPSP-1 records the value of the minimum critical power ratio (MCPR) and the ratio of the limit to the critical power ratio (MFLCPR) for the twelve most limiting fuel bundles, which are calculated and printed in OD-6 option 3. The Daily Operating Report records the most limiting value of MFLCPR for the entire core (CMFCP) calculated in P-1. Therefore, the most limiting value of MFLCPR as calculated in OD-6, option 3 is identical to CMFCP calculated in P-1. As the recorded value of MFLCPR on the July 3 Daily Operating Report was 0.809, the minimum critical power ratio was within its specified limits.

Technical Specification 4.1.7(d) requires that the power/flow relationship be determined daily. N1-RPSP-1 records the values calculated from the P-1 edit (PFR) and must be $\leq$ 1.00. The Daily Operating Report utilizes the same value from the P-1 edit (0.961 for July 3), confirming that the power/flow ratio was within the Technical Specification limit.

ANALYSIS OF THE EVENT (Cont'd)

The analysis of the core thermal data recorded in the Daily Operating Report for 0600 on July 3 confirms that all the core thermal parameters were within the limits imposed by Technical Specification 4.1.7. No other power change occurred between the time the Daily Operating Report was filled out at 0600 and the discovery of the missed surveillance at 2330 the same day. Review of the preceding P-1 outputs verifies that no core thermal limits were exceeded. Therefore, there are no potential safety consequences resulting from this event.

CORRECTIVE ACTION

Immediate corrective action consisted of the Unit 1 Reactor Analyst Supervisor performing N1-RPSP-1 utilizing the latest (2000) P-1 and OD-6 option 3 and 4 outputs from the plant process computer. All specified fuel thermal parameters were well within the Technical Specification limits. Subsequently, all Reactor Physics group technicians were informed about the event and the importance of completing surveillance procedures within the specified time interval was emphasized. In addition, personnel are being reassigned to provide coverage at Unit 1 on the weekends and holidays without utilizing technicians that had worked on the preceeding night shift.

ADDITIONAL INFORMATION

There is one previous event where a daily surveillance test required by Technical Specifications was not performed within the required time interval. Licensee Event Report (LER) 87-06 was caused by inadvertently changing the frequency of a surveillance test from daily to weekly while still required to be performed daily by Technical Specifications.

Licensee Event Report (LER) 85-25 concerned a plant power reduction due to the inability to monitor the core thermal parameters of Technical Specification 4.1.7 because of the failure of the plant process computer. Failure to perform surveillance testing within the specified time intervals was the subject of LER's 83-19, 86-23, 86-29, and 87-04. All of these Technical Specification violations were for surveillance intervals other than daily.

NIAGARA MOHAWK POWER CORPORATION

NIAGARA MOHAWK

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SYRACUSE, NY 13212

THOMAS E. LEMPGES
VICE PRESIDENT—NUCLEAR GENERATION

NMP26844

July 31, 1987

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

RE: Docket No. 50-220
LER 87-11

Gentlemen:

In accordance with 10 CFR 50.73, we hereby submit the following Licensee Event Report:

LER 87-11 Which is being submitted in accordance with 10 CFR 50.73 (a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications;"

This report was completed in the format designated in NUREG 1022, Supplement 2, dated September, 1985.

Very truly yours,

Thomas E. Lempges

Thomas E. Lempges
Vice President
Nuclear Generation

TEL/meh

Enclosure

cc: William T. Russell

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