



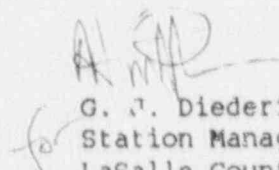
**Commonwealth Edison**  
LaSalle County Nuclear Station  
Rural Route #1, Box 220  
Marseilles, Illinois 61341  
Telephone 815/357-6761

December 18, 1990

Director of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Mail Station P1-137  
Washington, D.C. 20555

Dear Sir:

Licensee Event Report #90-007-01, Docket #050-373 is being submitted to your office in accordance with 10CFR50.73(a)(2)(iv) and supersedes previous submitted report #90-007-00 dated July 18, 1990.

  
for G. J. Diederich  
Station Manager  
LaSalle County Station

GJD/MMT/mkl

Enclosure

xc: Nuclear Licensing Administrator  
NRC Resident Inspector  
NRC Region III Administrator  
INPO - Records Center

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) LaSalle County Station Unit 1	Docket Number (2) 0   5   0   0   0   3   7   3	Page (3) 1   of   0   4
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Title (4)  
Reactor Core Isolation Cooling Trip on Mechanical Overspeed Due To Contaminated Oil

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   6	1   8	9   0	9   0	0   0   7	0   1	1   2	1   8	9   0		0   5   0   0   0

OPERATING MODE (9)  1

POWER LEVEL (10) 1 | 0 | 0

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

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> Other (Specify
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	in Abstract
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	below and in
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	Text)

LICENSEE CONTACT FOR THIS LER (12)

Name Michael Tennyson, Technical Staff Engineer, Ext. 2704	TELEPHONE NUMBER AREA CODE 8   1   5   3   5   7   -   6   7   6   1
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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
X	B	N		Y					

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> Yes (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	Expected Submission Date (15)	Mont.	Day	Year
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On June 18, 1990, at 0838 hours, with Unit 1 in Operational Condition 1 (Run) at 100% power, during the performance of LaSalle Operating Surveillance, LOS-RI-Q4, "Reactor Core Isolation Cooling System Cold Quick Start" the Reactor Core Isolation Cooling (RCIC) Turbine tripped on mechanical overspeed.

The RCIC turbine trip is set to actuate at 5625 +/- 50 rpm. The turbine tripped at 5650 rpm, which is within the design limits. The cause of the turbine overspeed was determined to be from contaminated oil in the lube oil system.

The RCIC system was declared inoperable, and work request L00513 was initiated to investigate and repair the problem. The High Pressure Core Spray System was fully operable throughout the event.

Initial corrective actions included the disassembly and cleaning of the Electronic Governor actuator, flushing of the oil system, changing the oil, and re-adjustment of the limit switch for the RCIC Steam Supply Stop Valve 1E51-F045. These measures brought the initial speed spike down to 4750 rpm, and the RCIC system was declared operable on June 20, 1990 at 2025 hours. Additional corrective action will include a procedure revision to filter the oil before it goes into the turbine and observation of the governor response during the cold quick start surveillance.

This event is reported to the Nuclear Regulatory Commission as a Licensee Event Report in accordance with 10CFR50.73(a)(2)(v) due to the RCIC System being declared inoperable (loss of a safety system function).

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

A. CONDITION PRIOR TO EVENT

Unit(s): 1 Event Date: 6/18/90 Event Time: 08.8 Hours

Reactor Mode(s): 1 Mode(s) Name: Run Power Level(s): 100%

B. DESCRIPTION OF EVENT

On June 18, 1990, at 0838 hours, while Unit 1 was in Operational Condition 1 (Run), at 100% power, the Reactor Core Isolation Cooling (RCIC) [BN] Turbine tripped on mechanical overspeed during the performance of LaSalle Operating Surveillance, LOS-RI-Q4, "Reactor Core Isolation Cooling System Cold Quick Start." This surveillance is performed every quarter to demonstrate the quick start capability of the RCIC system.

A Startrec recorder (high speed data acquisition system) monitors the RCIC pump discharge pressure, pump suction pressure, pump flow rate, turbine speed, ramp generator signal converter, steam demand signal, and the opening of the steam supply stop valve 1E51-F045. The startrec recorder was initiated upon opening of the RCIC Steam Supply Stop Valve 1E51-F045 and the Full Flow Test Return Stop valve 1E51-F059. The RCIC turbine went from zero rpm to 5650 rpm, which resulted in the mechanical overspeed trip system actuation and a RCIC turbine trip as designed. The mechanical overspeed trip assembly is set to actuate at 125% of rated speed (5625 +/- 50 rpm).

During power operation, the RCIC system is normally lined up in standby condition with the RCIC turbine governor valve 1E51-F360 fully open. The surveillance requires that the RCIC turbine steam supply stop valve 1E51-F045, and the RCIC full flow test return to the Condensate Storage Tank (CST) stop valve 1E51-F059 to be opened simultaneously. Steam at rated pressure and temperature enters the turbine, and during the first 2 seconds, a speed spike normally ranging from 4000 to 4500 revolutions per minute (rpm) occurs before the RCIC control system takes control to place the system in a steady state.

After the overspeed trip, the RCIC system was immediately declared inoperable. An entry was made in the Degraded Equipment Log, (DEL 327-89-1-134) and work request L00513 was initiated to investigate and repair the problem.

No other inoperable equipment/systems contributed to this event. No automatic or manual safety system actuations occurred and none were required.

This event is reported to the Nuclear Regulatory Commission as a Licensee Event Report in accordance with 10CFR50.73(a)(2)(v) due to the RCIC System being declared inoperable (loss of a safety system function).

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT Energy Industry Identification System (EIS) codes are identified in the text as [XX]

C. APPARENT CAUSE OF EVENT

The cause of the RCIC turbine overspeed trip during the performance of the surveillance was determined to be from contaminated oil in the turbine lube oil system.

D. SAFETY ANALYSIS OF EVENT

The mechanical overspeed assembly trips the RCIC Turbine at 125 percent of the rated speed, 5625 +/- 50 rpm. Actuation of the trip assembly requires a reset of the RCIC Turbine locally at the turbine. During the performance of the surveillance the RCIC system overspeed trip occurred at 5650 rpm. The mechanical overspeed assembly actuated as designed.

At the time of this incident the High Pressure Core Spray (HPCS) System and the other emergency core cooling systems were fully operable. The HPCS System was operable for the entire time period from the last successful performance of LOS-RI-Q4 on April 12, 1990 until the RCIC System was declared operable again. Therefore, the consequences of this event were minimal.

E. CORRECTIVE ACTIONS

The RCIC System was declared inoperable and Work Request #L00513 was written to investigate and repair the problem.

The Electronic Governor - Type R (EG-R) actuator was removed and during the inspection rust was found in the housing on the top of the governor. The rust discovered in the oil at the EG-R actuator may have been the result of rusting at the governor valve stem.

The EG-R was disassembled and cleaned. The oil to the RCIC system was removed and the oil system was flushed with clean oil. The turbine sump was filled with fresh oil, and a slow start was performed.

To help prevent future occurrences of this problem, the RCIC oil system will be flushed during each outage, and the EG-R actuator will be disassembled, inspected and cleaned. The LaSalle general surveillance program will be updated to include these corrective actions and will be tracked by Action Item Record (AIR) 373-200-90-04601.

The operating department performed LaSalle Operating Surveillance LOS-RI-Q3, "Reactor Core Isolation Cooling Pump Operability Test," satisfactorily. LOS-RI-Q4 was also performed later that day, and the first speed spike for the RCIC turbine was 4950 rpm. The speed spike was at the acceptance limit of <= 4950 rpm, however it was decided to continue to troubleshoot and another work request was written to inspect the limit switch that interlocked the RCIC steam supply stop valve 1E51-F045 and the ramp generator signal converter.

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TEXT Energy Industry Identification System (EIS) codes are identified in the text as [XX]									

E. CORRECTIVE ACTIONS (Continued)

The inspection of valve IES1-F045 found the limit switch set in accordance with the previous revision of the valve maintenance procedure LEP-QM-102, "Limitorque Valve Actuator Electrical Maintenance." The maintenance on this valve was last performed on July 28, 1987 per the maintenance schedule. The setting for closure of the limit switch was readjusted by the current procedure revision, and the limit switches for the ramp generator signal converter and the steam supply stop valve were re-aligned. Opening of the steam supply valve and actuation of the ramp generator signal converter would occur between zero and two percent.

After 24 hours, another cold quick start was performed, the first speed spike was reduced to 4750 rpm. Following this surveillance, the RCIC system was declared operable on June 20, 1990 at 2025 hours.

On August 28, 1990, during another cold quick start the initial speed peak was recorded at 5300 rpm. The governor response was monitored and compared with previous governor movements from Unit 2 and earlier startup tests. The comparison of the governor response with acceptable initial speed peaks showed a slow response. Work Request L02910 was written, and a freedom of movement inspection on the governor valve linkages was performed. The valve linkages were cleaned and lubricated.

Another cold quick start recorded 5400 rpm during the initial speed peak. The actuator was removed and inspected. Sediment was found inside the actuator during the inspection. After cleaning the actuator, another quick start was performed. The initial speed peak was reduced to 4950 rpm.

Surveillance LOS-RI-QA, will be revised and the governor response will be added for future observations of governor response during the surveillance. Action Item Record (AIR) 373-455-89-336R1 will track completion of the revision.

A particle test ranging between 5 and 250 microns was performed. The results of all ranges tested were significantly exceeded. LaSalle Operating Procedure, LOP-RI-07, "Replacing Oil in The Reactor Core Isolation Cooling Turbine," will be revised to require the oil to be filtered before it goes into the turbine. Action Item Record (AIR) 373-402-90-00701 will track the completion of this revision.

F. PREVIOUS EVENTS

LER Number	Title
373/84-054-02	RCIC Inoperable and Steam Line Isolation

G. COMPONENT FAILURE DATA

None.