ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8809080204 DOC.DATE: 88/09/02 NOTARIZED: NO DOCKET #
FACIL:50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
AUTH.NAME AUTHOR AFFILIATION
MAZZAFERRO,P. Niagara Mohawk Power Corp.
PERKINS,T.J. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-039-01:on 880806,reactor scram due to loss of electrohydraulic control sys pressure.

W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD1-1 LA	1	1	PD1-1 PD	1	1
	HAUGHEY,M	1	1	BENEDICT,R	1	1
INTERNAL:	ACRS MICHELSON	1	1	ACRS MOELLER	2	2
	ACRS WYLIE	1	1	AEOD/DOA	1	1
	AEOD/DSP/NAS	1	1	AEOD/DSP/ROAB	2	2
	AEOD/DSP/TPAB	1	1	ARM/DCTS/DAB	1	1
	DEDRO	1	1	NRR/DEST/ADS 7E	1	0
	NRR/DEST/CEB 8H	1	1	NRR/DEST/ESB 8D	1	1
	NRR/DEST/ICSB 7	1	1	NRR/DEST/MEB 9H	1	1
	NRR/DEST/MTB 9H	1	1	NRR/DEST/PSB 8D	1	1
	NRR/DEST/RSB 8E	1	1	NRR/DEST/SGB 8D	1	1
	NRR/DLPQ/HFB 10	1	1	NRR/DLPQ/QAB 10	1	1
	NRR/DOEA/EAB 11	1	1	NRR/DREP/RAB 10	1	1
	NRR/DREP/RPB 10	2	2	NRR/DRIS/SIB 9A	1	1
	NUDOCS-ABSTRACT	1	1	REG FILE 02	1	1
	RES TELFORD,J	1	1	RES/DSIR DEPY	1	1
	RES/DSIR/EIB	1	1	RGN1 FILE 01	1	1
EXTERNAL:	EG&G WILLIAMS,S	4	4	FORD BLDG HOY,A	1	1
	H ST LOBBY WARD	1	1	LPDR	1	1
	NRC PDR	1	1	NSIC HARRIS,J	1	1
	NSIC MAYS,G	1	1			

TOTAL NUMBER OF COPIES REQUIRED: LTTR 47 ENCL 46

R I D S / A D D S

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 2	0 5 0 0 0 410	1 OF 04

TITLE (4) Reactor Scram due to Loss of Electrohydraulic Control System Pressure Caused by Excessive Vibration

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)
08	06	88	88	—	039	—	01	09	02	88	N/A	0 5 0 0 0
											N/A	0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	053	20.402(b)	20.405(c)	X 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)	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 Mazzaferro, Supervisor Technical Support	315	349-2190

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	
B	TG	PSX	G080	N							

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 fifteen single-space typewritten lines) (16)

On August 6, 1988 at 2101 hours Nine Mile Point Unit 2 (NMP2) experienced an actuation of an engineered safety feature, specifically a reactor scram. At the time of the event the reactor mode switch was in the "RUN" position with the reactor at approximately 53% of rated thermal power.

At approximately 2053 hours Operations personnel observed that turbine Electrohydraulic Control System (EHC) pressure was decreasing rapidly. The EHC pressure decrease was due to an EHC oil leak. The low EHC oil pressure initiated a trip of the turbine resulting in an automatic reactor scram. Reactor pressure control was maintained during the event.

The EHC oil leak was due to the failure of an EHC fluid pipe nipple. The immediate cause of the pipe failure has been attributed to excessive vibration. Vibration caused the clamp used to support the failed pipe to its support frame to fail.

The pipe then vibrated excessively causing bending at the pump discharge piping. This resulted in fatigue stress and eventual failure.

Operator actions were to secure the EHC pumps and issue a work request (WR 136781) to replace the failed pipe and secure the clamp. A work request (WR 135422) was also issued to determine the cause of the vibration.

IE22

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Nine Mile Point Unit 2	0 5 0 0 0 410	88	039	01	02 OF 04

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

I. DESCRIPTION OF EVENT

On August 6, 1988 at 2101 hours Nine Mile Point Unit 2 (NMP2) experienced an actuation of an engineered safety feature, specifically a reactor scram. At the time of the event the reactor mode switch was in the "RUN" position with the reactor at approximately 53% of rated thermal power.

On August 6, 1988 at approximately 2053 hours, while performing surveillance procedure N2-OSP-RPS-W001, "Weekly Turbine Valve Cycling", Operations personnel observed that the turbine Electrohydraulic Control (EHC) system pressure was decreasing rapidly. The standby EHC fluid pump started automatically but could not maintain system pressure. An operator was dispatched to investigate and discovered an EHC oil leak in the vicinity of the EHC skid. The Station Shift Supervisor (SSS) ordered an immediate power reduction.

At 2100 hours low EHC system pressure initiated a master trip of the turbine. This caused a fast closure of the turbine stop and control valves and resulted in an automatic reactor scram at 2101 hours. Reactor pressure control was maintained during the event.

Operations personnel carried out immediate actions for a reactor scram and secured the EHC pumps. A work request (WR 136781) was issued to replace the failed pipe nipple.

There were no other components or systems which were inoperable and/or out of service which contributed to this event. No other plant system or component failures resulted from the event.

II. CAUSE OF EVENT

The reactor scram was the result of a turbine EHC fluid leak due to a pipe nipple failure. The failure occurred on the threaded portion of the 2 inch long 1/4 inch pipe nipple connecting the EHC pump "B" discharge header to the air bleed valve (see Diagram 1).

The immediate cause of the pipe nipple failure has been attributed to excessive vibration. Vibration caused the clamp used to secure the piping downstream of the air bleed valve to the piping support frame to fail. System vibration then caused the unsupported pipe to bend at the air bleed valve pipe/pump discharge piping tee connection causing fatigue stress. The pipe failure occurred at this "bending point". The cause of the excessive vibration is currently under investigation. The clamp on the piping associated with the EHC "A" pump was found intact and secure.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Nine Mile Point Unit 2	0 5 0 0 0 410	88	— 039	— 01	03 OF 04

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

III. ANALYSIS OF EVENT

A reactor scram is a conservative event and poses no adverse safety consequences at any reactor power. This event did not adversely affect any safety system nor the operators' ability to achieve safe shutdown. This transient was less severe than the Final Safety Analysis Report (FSAR), Section 15.2.3 evaluation of the "Turbine Trip" event.

IV. CORRECTIVE ACTIONS

1. Operations personnel carried out immediate actions required following a scram and secured the EHC pumps.

2. Work request (WR 136781) was issued to replace the failed section of piping. The failed nipple ("B" pump) and its "A" pump counterpart (WR 136792) were removed for inspection and new pipe nipples installed. The Niagara Mohawk Quality Control Department is presently performing an analysis on the failed pipe nipple.

3. Work request (WR 135422) has been issued to troubleshoot the excessive vibration on the EHC "B" pump fluid system.

4. A walkdown and analysis of the EHC pump skid and piping system will be performed during the next outage. Further corrective actions will be implemented based on this information.

5. Niagara Mohawk will acquire the services of an independent consulting firm to analyze the EHC system for potential vibration problems. Further corrective actions will be implemented based on this information.

V. ADDITIONAL INFORMATION

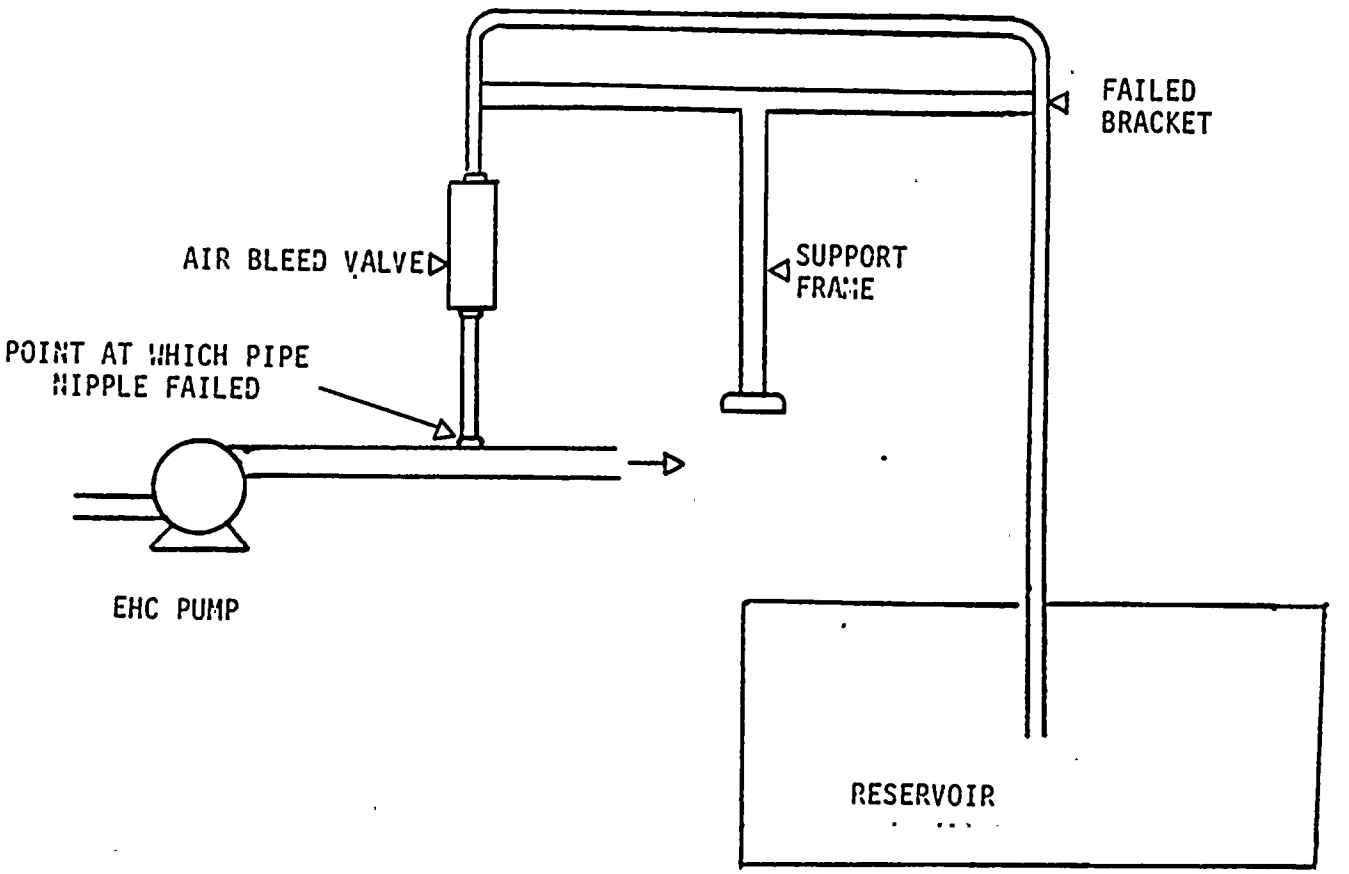
A. Identification of Components Referred to in this LER

Component	IEEE 803 EIIS Funct	IEEE 805 System ID
Turbine	TRB	TA
Turbine Control (EHC)	N/A	TG
Piping	PSX	TG
Hydraulic Fluid	N/A	TG

B. Failed Components - Threaded pipe nipple (non-safety related) connecting the EHC pump discharge header to the air bleed valve.

C. There have been two previous events which involved the loss of EHC fluid. In one event, a tubing failure occurred due to a crack originating on a weld connecting the EHC header to a turbine control valve. The cause of this event was excessive vibration due to speed signal noise (LER 87-43). The second event involved a loose fitting on an EHC pressure sensing line to a turbine control valve. The cause of the event was determined to be an installation deficiency (LER 88-28).

EHC HYDRAULIC POWER UNIT (SIMPLIFIED)



NIAGARA MOHAWK

NMP39086

NINE MILE POINT—UNIT 2/P.O. BOX 63, LYCOMING, NY 13093/TELEPHONE (315) 343-2110

September 2, 1988

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

RE: Docket No. 50-410
LER 88-39 - Revision 1

Gentlemen:

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

LER 88-39 Revision 1 Is being submitted in accordance with 10 CFR 50.73 (a) (2) (iv), "Any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS)."

This revision is being submitted to include information that was inadvertently omitted in the original LER.

A 10CFR50.72 (b)(2)(ii) report was made at approximately 2141 hours on August 6, 1988.

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

Very truly yours,

T. J. Perkins

T. J. Perkins
Vice President
Nuclear

TJP/JMT/mjd

Attachments

cc: Regional Administrator, Region 1
Sr. Resident Inspector, W. A. Cook

IE22
1/1