NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Nine Mile Point Unit I	0 5 0 0 0 2 2 0	1 OF 0 4

TITLE (4)
Discovery of Cable Separation Discrepancies

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 5 0 0 0
0 9	1 1	8 5	8 5	0 1 5	0 0	1 0	1 1	8 5		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
N		20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
0 9 0		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	X 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)	Voluntary
		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
Robert Randall, Supervisor Technical Support	3 1 5 3 4 9 - 2 4 4 5

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	
B	F A	C B L	X 9 9 9	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)

ABSTRACT

On September 11, 1985 Niagara Mohawk Engineering, Licensing, and Site personnel were informed of three instances of cable routing discrepancies. The discrepancies were reviewed in detail, including a 10CFR21 analysis, with a conclusion that no significant safety hazards were involved. The situation was determined to be not reportable, but because the reportability question was not clean cut, a decision was made to submit a voluntary LER, and readily inform the Resident Inspector and the Project Manager. The systems involved were not declared inoperable, but a standing order was issued, and engineering work was initiated to rectify the three instances in an expeditious manner through modifications.

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U.S.GPO:1984-0-454-481/18759

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Nine Mile Point Unit I	0 5 0 0 0 2 2 0	8 5	— 0 1 5	— 0 0	0 2 OF 0 4

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

TEXT

During normal operation on September 11, 1985, NMPC Engineering, Licensing and Site personnel were informed by an engineering contractor of three incidences of cable routing discrepancies. These discrepancies were discovered as a result of a review of original plant design cable routing criteria. 10CFR21 and 10CFR50.59 analyses concluded that a significant safety hazard did not exist. Comparison of the situation to 10CFR50.72 and 50.73 and application of "engineering judgement" resulted in a determination that the situation was not reportable, but the decision was made to verbally inform the Resident Inspector and the NRC Project Manager, as well as submit a voluntary LER.

The three situations are as follows:

Case 1) Control cables for Containment Spray Raw Water pumps 111 and 112 are routed for a short distance in the turbine building through the same tray as the control cables for the heat exchanger discharge valves for Containment Spray Raw Water pumps 121 and 122. (MOV 93-26 and 93-27)

Case 2) Control cables for manually starting all four core spray pumps are in the same cable tray in the Auxiliary Control Room.

Case 3) The cable feeding bus 103 from offsite power is routed for about 40 feet on elevation 250 in the turbine building, in the same tray as the cable feeding bus 16B from bus 102.

Case 1 and Case 2 are original plant design. Case 3 is the result of a modification done in response to Branch Technical Position 9.5-1 in 1980.

Assessment of Potential Safety Consequences.

Case 1) Should the tray containing control cables to containment spray raw water pumps 111 and 112 and control cables for normally open valves 93-26 and 93-27 be destroyed, redundant containment spray raw water pumps 121 and 122 would be available to remove heat from the torus following a LOCA. Should heat exchanger 121 or 122 develop tube leaks during Containment Spray and Containment Spray Raw Water operation following a LOCA, the capability to isolate the leak remotely would be lost. However, upon receipt of the high radiation alarm, the operator could secure the affected containment spray pump, thus terminating any release. Since three simultaneous events must occur (LOCA, destruction of the specific cable tray, and a heat exchanger tube leak) and mitigating capabilities still exist (securing the Containment Spray Pumps) this is judged not to be a significant safety hazard.

TEXT (cont.)

Case 2) Should the cable tray containing the manual starting cables for all four core spray pumps be destroyed (creating open circuits), automatic actuation of the core spray system would still occur upon a LOCA. However, if all four cables shorted to ground, the control power fuse would blow, leaving the entire core spray system inoperable. This highly unlikely situation would be mitigated by the use of the containment spray raw water system intertie to core spray.

Case 3) Should the cable tray containing the offsite feed to power board 103 and the feed from power board 102 to power board 16B fail in such a manner that the feed to 103 shorts to ground and the feed to 16B either shorts or opens, all four Core Spray Injection valves (40-01, 40-09, 40-10, 40-11) would be failed in the closed position. This would render the entire Core Spray System inoperable and, therefore, incapable of mitigating a LOCA.

A hazard analysis was performed to assess the potential for a single failure of this cable tray. The results are as follows:

Hazard #1; Fire. The appendix R program showed that the core spray system is not required for the turbine building fire. Further, neither Appendix R nor IEEE cable separation criteria require the assumption of a LOCA at the same time as a fire. Further yet, there is no combustable material with the exception of the cables themselves on el. 250. Therefore, fire is not a hazard that can take out the core spray system at a time that it is needed.

Hazard #2; Missiles. There are no missile hazards on el. 250.

Hazard #3; Heavy loads. The cables are located in the topmost cable tray, located near the ceiling, so no heavy loads could fall on the cable tray.

Hazard #4; Earthquakes. The cable tray is designed the same as any other cable tray carrying safety related cables in the plant. If its failure must be assumed, the failure of all trays in the plant must be assumed, so that separation would achieve nothing. Further, an anlysis of standard cable tray design has shown the adequacy of our design from a qualitative standpoint. (refer to "Seismic Investigations of Electrical Raceways at the SEP plants" by the SEP owners Group and URS/John A. Blume & Associates; also "Solution to USI A-46", Seismic Equipment Qualification Utility Group.)

Hazard #5; Cable failure. By criteria, use of safety related cables allows the assumption that an inherent design, manufacturing or installation flaw does not exist. Further, protection exists that should clear a fault in either cable prior to sufficient damage occurring that would effect the other cable.

TEXT (cont.)

Based on these points, no credible single event or failure could result in the loss of the tray. Therefore, although cable separation criteria was not met, the intent of single failure criteria was met, and no substantial safety hazard exists.

CORRECTIVE ACTION

A standing order has been issued to the Operators informing them of the situations. Modifications are being designed and will be installed in a timely manner.

NMP-14582

NIAGARA MOHAWK POWER CORPORATION

NIAGARA MOHAWK

300 ERIE BOULEVARD WEST
SYRACUSE, N. Y. 13202

October 11, 1985

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

RE: Docket No. 50-220
LER 85-15

Gentlemen:

This report does not constitute an LER per 10 CFR 50.73, but is being submitted due to its significance. Mr. Fred Hebdon of the NRC's office of Analysis and Evaluation of Operational Data has concurred with reporting this situation as a voluntary LER.

This report was completed in the format designated in NUREG-1022 dated September 1983.

Very truly yours,

TE Lempges
Vice President
Nuclear Generation

TEL/tg
cc: Dr. Thomas E. Murley
Regional Administrator

Attachment

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