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June 20, 2002

Docket No.: 50-348

NEL-02-0135

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Joseph M. Farley Nuclear Plant – Unit 1
Licensee Event Report 2002-001-00
Reactor Trip Due to Inadvertent Electrical Contact During Recorder Maintenance

Ladies and Gentlemen:

Joseph M. Farley Nuclear Plant – Licensee Event Report (LER) No. 2002-001-00 is being submitted in accordance with 10 CFR 50.73(a)(2)(iv)(A).

There are no NRC commitments in this letter. If you have any questions, please advise.

Respectfully submitted,

A handwritten signature in cursive script that reads "Dave Morey".

Dave Morey

EWC/sdl: LER2002-001-00.doc

Attachment

IE22

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U. S. Nuclear Regulatory Commission

cc: Southern Nuclear Operating Company
Mr. D. E. Grissette, General Manager - Farley

U. S. Nuclear Regulatory Commission, Washington, D. C.
Mr. F. Rinaldi, Licensing Project Manager - Farley

U. S. Nuclear Regulatory Commission, Region II
Mr. L. A. Reyes, Regional Administrator
Mr. T. P. Johnson, Senior Resident Inspector - Farley

LICENSEE EVENT REPORT (LER)

(See reverse for required number of
digits/characters for each block)

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to: bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1)

Joseph M. Farley Nuclear Plant - Unit 1

DOCKET NUMBER (2)

05000348

PAGE (3)

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TITLE (4) Reactor Trip Due to Inadvertent Electrical Contact During Recorder Maintenance

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
May	03	2002	2002	- 001 -	00	06	20	2002		05000
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)										
OPERATING MODE (9)		1	20.2201(b)			20.2203(a)(3)(ii)			50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
POWER LEVEL (10)		100	20.2201(d)			20.2203(a)(4)			50.73(a)(2)(iii)	50.73(a)(2)(x)
			20.2203(a)(1)			50.36(c)(1)(i)(A)		X	50.73(a)(2)(iv)(A)	73.71(a)(4)
			20.2203(a)(2)(i)			50.36(c)(1)(ii)(A)			50.73(a)(2)(v)(A)	73.71(a)(5)
			20.2203(a)(2)(ii)			50.36(c)(2)			50.73(a)(2)(v)(B)	OTHER
			20.2203(a)(2)(iii)			50.46(a)(3)(ii)			50.73(a)(2)(v)(C)	Specify in Abstract below or in
			20.2203(a)(2)(iv)			50.73(a)(2)(i)(A)			50.73(a)(2)(v)(D)	NRC Form 366A
			20.2203(a)(2)(v)			50.73(a)(2)(i)(B)			50.73(a)(2)(vii)	
			20.2203(a)(2)(vi)			50.73(a)(2)(i)(C)			50.73(a)(2)(viii)(A)	
			20.2203(a)(3)(i)			50.73(a)(2)(ii)(A)			50.73(a)(2)(viii)(B)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

D. E. Grissette, General Manager Nuclear Plant

TELEPHONE NUMBER (Include Area Code)

334-899-5156

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

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 15 single-spaced typewritten lines) (16)

On May 3, 2002, with the reactor at 100% power, Unit 1 experienced an automatic reactor trip due to an indicated reactor coolant pump bus undervoltage on 2 of 3 busses. Undervoltage relays associated with "A" Reactor Coolant Pump (RCP) bus were in a tripped condition due to surveillance testing in progress. While reconnecting power leads to the neutron flux recorder following recorder repair, the tape on an energized power lead was inadvertently breached and the lead was shorted to ground. The short caused an undervoltage condition on the B vital instrument bus. The B vital instrument bus is the power supply for the recorder as well as the B RCP undervoltage relays. As a result of the "A" RCP bus undervoltage relays tripped for testing and drop out of the "B" RCP bus undervoltage relays due to the shorted power lead, the coincidence necessary to generate a RCP bus undervoltage reactor trip was met. A second trip signal was generated in another 2 milliseconds due to a 1 of 3 RCP breaker position open signal resulting from the "B" vital instrument bus undervoltage condition alone. All safeguards equipment functioned as designed following the trip. All RCPs continued to operate throughout the event.

The event was caused by an inadequate work order planning and scheduling process which did not consider potential consequences of energized work. A second cause was inadequate management expectations with respect to taping of electrical leads.

Procedural guidance has been developed to require work planning to specifically identify work activities associated with energized conductors and the affected power source. Procedural guidance has been developed to evaluate work activities involving energized conductors during work scheduling. Procedural guidance has been developed and personnel working on energized conductors have been trained on enhanced taping/insulating techniques for energized leads.

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NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

Westinghouse -- Pressurized Water Reactor
Energy Industry Identification Codes are identified in the text as [XX]

Description of Event

On May 3, 2002, surveillance testing on the "A" Reactor Coolant Pump (RCP) bus undervoltage relays had placed a relay in the trip condition. Additionally, the main control board neutron flux recorder was being reinstalled following repair. The power supply for both the Reactor Protection System [JC] field input relays for the "B" RCP bus undervoltage signal and the "B" RCP breaker open signal, as well as the main control board neutron flux recorder, is the "B" 120 VAC vital instrument bus [EF]. The "B" vital bus is powered by the "B" inverter.

Following maintenance on the neutron flux recorder, the recorder power leads, energized and taped with a single layer of tape over each lead, were to be reterminated. The power leads (3) were to be routed through a conduit type sleeve to the back of the recorder. While routing the second lead through the conduit, the electrical tape was breached and an arc occurred creating a short to ground on the "B" vital instrument bus. Based on engineering evaluation, the arc resulted in sufficient short term current in excess of the "B" inverter rating to cause the inverter [EF] to shift to the bypass source. In addition, the ground current resulted in a voltage drop on the associated distribution panel to an estimated 30 – 60 volts. This drop in voltage caused solid state protection system input relays, "B" undervoltage and "B" RCP breaker position, to deenergize sending trip signals into the Reactor Protection System "B" channel.

On May 3, 2002 at 1321, with the Unit 1 reactor at 100% power, the dropout of the "B" undervoltage relay made up the 2 out of 3 coincidence requirement for RCP bus undervoltage causing an automatic reactor trip. A second trip signal was generated 2 milliseconds later due to a 1 out of 3 RCP breaker open signal resulting from the "B" vital instrument bus undervoltage condition alone.

The RCP busses and pumps continued to operate normally throughout the event and all safeguards equipment functioned as designed. The bypass source and distribution panel current ratings were not exceeded and these components remained energized. Other equipment supplied by the "B" 120VAC vital bus continued to operate.

Following investigation, the surveillance test procedure was performed satisfactorily on the "B" inverter. The inverter was then returned to its normal alignment on the evening of May 3, 2002. The main control board neutron flux recorder was also returned to service.

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NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

Cause of Event

The cause of the event was that planning and scheduling of work activities, which involve energized conductors, requires unique actions and precautions. However, no procedural guidance prompted additional considerations for this type work function.

A second cause was inadequate management expectations with respect to taping of electrical leads. Electrical and I&C procedures identified the need to tape energized leads with approved electrical tape. The individual involved taped the electrical lead consistent with the management expectations at the time, however, that taping proved to be inadequate.

Safety Assessment

All safety systems functioned as designed following the trip. The "B" inverter shifted to bypass per design and the associated loads remained energized on the alternate source. The other three vital instrument inverters and their loads were unaffected by this event. The actual RCP bus voltage and breaker conditions were unaffected by this event. Therefore, all RCPs continued to function normally and forced reactor coolant flow was maintained. There was no abnormal release of radioactive material during this event; therefore, the health and safety of the public were unaffected by this event.

This event does not represent a Safety System Functional Failure.

Corrective Action

Procedural guidance has been developed to require work planning, specifically, to identify work activities associated with energized conductors and the affected power source.

Procedural guidance has been developed to evaluate work activities involving energized conductors during work scheduling.

Procedural guidance has been developed and personnel working on energized conductors have been trained on enhanced taping/insulating techniques for energized leads.

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NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

Additional Information

The following LERs have been submitted in the past 2 years on reactor trips:

LER 2001-001-00 Reactor Trip Due to Main Generator Neutral Connecting Bolt Failure;

LER 2001-002-00 Reactor Trip Due to Turbine Trip from Turbine Latch Mechanism Problem; and

LER 2000-006-00 Reactor Trip From 4% Power Due to Personnel Error.