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ACCESSION NBR: 9405030248      DOC. DATE: 94/04/26      NOTARIZED: NO      DOCKET #  
 FACIL: 50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co.      05000335  
 AUTH. NAME      AUTHOR AFFILIATION  
 HURCHALLA, J.A.      Florida Power & Light Co.  
 SAGER, D.A.      Florida Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 94-003-00: on 940328, power for condenser waterbox cleaning activities & unit 2 was shutdown. Cause was due to cognitive personnel error. Corrective action: counseled & disciplined personnel responsible. w/940426 ltr.

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April 26, 1994

L-94-111  
10 CFR 50.73

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D. C. 20555

Re: St. Lucie Unit 1  
Docket No. 50-335  
Reportable Event: 94-003  
Date of Event: March 28, 1994  
Automatic Reactor Trip caused by Manipulation  
of the Main Generator Exciter Field Breaker  
due to Cognitive Personnel Error

The attached Licensee Event Report is being submitted pursuant to the requirements of 10 CFR 50.73 to provide notification of the subject event.

Very truly yours,

D. A. Sager  
Vice President  
St. Lucie Plant

DAS/JWH/kw

Attachment

cc: Stewart D. Ebnetter, Regional Administrator, USNRC Region II  
Senior Resident Inspector, USNRC, St. Lucie Plant.

DAS/PSL #1107

030007

9405030248 940426  
PDR ADDCK 05000335  
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**LICENSEE EVENT REPORT (LER)**

ESTIMATE BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.8 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-430), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) <b>St. Lucie Unit 1</b>	DOCKET NUMBER (2) <b>0510101335</b>	PAGE (3) <b>1 OF 04</b>
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TITLE (4) **Automatic Reactor Trip caused by Manipulation of the Main Generator Exciter Field Breaker due to Cognitive Personnel Error**

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)
03	28	94	94	003	00	04	26	94	St Lucie 2		051010131819
									N/A		05101010111

OPERATING MODE (9) <b>1</b>	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR : (Check one or more of the following) (11)					
POWER LEVEL (10) <b>068</b>	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 <b>James A. Hurchalla, Shift Technical Advisor</b>	TELEPHONE NUMBER
	AREA CODE <b>407</b>   <b>465</b> - <b>3550</b>

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)	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO				

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

On March 28, 1994, St. Lucie Unit 1 was at 68% power for Condenser waterbox cleaning activities and Unit 2 was shutdown for a scheduled refueling outage. Utility Electrical Maintenance personnel requested a clearance for the Unit 2 main generator exciter switchgear breaker for preventive maintenance. The chief electrician requesting the clearance went to the work control center and signed on to the clearance which specified that the Unit 2 exciter breaker was in the open position. He then went to the Unit 1 exciter switchgear room and found the breaker closed. Unaware that he was on the wrong unit, the chief electrician tried to verify what he thought was the appropriate position by attempting to open the breaker. The breaker opened and Unit 1 immediately experienced a reactor trip by turbine trip. An uncomplicated automatic reactor trip was verified and Unit 1 was subsequently stabilized in mode 3.

The root cause of the event was due to cognitive personnel error by a member of the utility Electrical Maintenance department in failure to adhere to the clearance procedure. The procedure governing clearance orders provides direction to verify deenergization of the system prior to work proceeding. Station practices restrict personnel other than Operations from manipulating in-service equipment without a valid clearance boundary. A contributing factor was the lack of an identifier on the exciter switchgear housing or the exciter field breaker.

Corrective actions included: 1) Operations stabilized the unit in mode 3. 2) The individual responsible was counseled and disciplined. 3) Reviews will be held with plant maintenance personnel to re-emphasize the foreman's responsibilities in the clearance procedure. 4) Unit 1 and Unit 2 main generator exciter switchgear housings and breakers have been labeled. 5) Additional postings to ensure unit awareness will be installed.



**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION  
REQUEST: 30 2 1985. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS  
AND REPORTS MANAGEMENT BRANCH (P-330), U.S. NUCLEAR REGULATORY COMMISSION,  
WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE  
OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  St. Lucie Unit 1	DOCKET NUMBER (2)  0   5   0   0   0   3   3   5	LER NUMBER (6)			PAGE (3)	
		YEAR 9   4   --	SEQUENTIAL NUMBER 0   0   3	REVISION NUMBER 0   0	0   2	OF 0   4

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

**DESCRIPTION OF THE EVENT**

On March 28, 1994 St. Lucie Unit 1 was at 68% power for Condenser waterbox cleaning activities and Unit 2 was shutdown for refueling. Utility Electrical Maintenance personnel requested a clearance on the Unit 2 Main Generator exciter switchgear breaker (EIS: EL) for preventive maintenance. At approximately 1600 the chief electrician requesting the clearance mistakenly went to the Unit 1 exciter breaker to check that the clearance had been completed. After contacting the centralized work control center he was informed that the clearance would be completed at approximately 1800. At approximately 1810 the chief electrician signed on to the completed clearance on the Unit 2 exciter breaker and walked from the work control center to the Unit 1 exciter switchgear, both of which are located on the mid-level of the Unit 1 turbine building. Unaware that he was on the wrong unit, the chief electrician tried to verify what he thought was the proper breaker position by attempting to open the breaker. At 1813 he manually tripped open the breaker which resulted in an immediate loss of main generator excitation (EIS: EL). Unit 1 experienced a main generator lockout resulting in an automatic reactor trip from loss of turbine generator load. After performing standard post-trip actions, the reactor trip was verified to be uncomplicated and the utility licensed operator control room crew stabilized the unit in mode 3.

**CAUSE OF THE EVENT**

The root cause of this event was due to cognitive personnel error by a member of the utility Electrical Maintenance department in not adhering to the proper sequence of actions as delineated in OP 0010122 "In-Plant Equipment Clearance Orders". Specifically, the individual did not verify that the clearance was adequate prior to signing for acceptance of the clearance and starting work. Station practices restrict personnel other than Operations from manipulating in-service equipment without a valid clearance boundary. There was no clearance tag hanging on the Unit 1 breaker cubicle, as would be expected for a valid clearance order. The Unit 1 exciter breaker was in the closed instead of open position which should have caused the chief electrician to stop and review the clearance with the Operations department.

Interviews indicate that the individual did not feel rushed to accomplish this job nor did he become disoriented due to the common unit work control clearance center. The common work control clearance center is located in the Unit 1 turbine building. The work control center utilizes different colored paper when printing clearance orders to distinguish between the two units.

A deficiency identified in this event was the the lack of an identifying label on both the Unit 1 and Unit 2 exciter switchgear housings and the associated breaker cubicles. There were no other characteristics of the work place which contributed to this event.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION  
PROJECT: 30.2 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS  
AND REPORTS MANAGEMENT BRANCH (7-332), U.S. NUCLEAR REGULATORY COMMISSION,  
WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE  
OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  St. Lucie Unit 1	DOCKET NUMBER (2)  0   5   0   0   0   3   3   5	LER NUMBER (6)			PAGE (3)	
		YEAR 9   4   --	SEQUENTIAL NUMBER 0   0   3	REVISION NUMBER --   0   0	0   3	OF 0   4

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

**ANALYSIS OF THE EVENT**

This event is reportable under the requirements of 10CFR50.73.a.2.iv as "any event that resulted in a manual or automatic action of any Engineered Safety Feature."

The inadvertent breaker manipulation resulted in an uncomplicated automatic reactor trip on main turbine generator loss of load as designed. The function of this trip in the St. Lucie design basis is considered to be equipment protective and is not required for reactor safety. This event is bounded by section 15.2.7 of the St. Lucie Unit 1 Final Updated Safety Analysis Report (FUSAR) "Loss of External Electrical Load and/or Turbine Stop Valve Closure". The actual plant response was more conservative than that described in the FUSAR for several reasons:

- 1) The actual power level was 68% versus the FUSAR analysis assumption of 100% power.
- 2) The Reactor Protection System actuated on "Loss of Load" versus "High Pressurizer Pressure" thereby minimizing the Reactor Coolant System temperature and pressure transient.
- 3) The primary system Code Safety Valves were not challenged due to the minimal Reactor Coolant System transient. In addition, the Pressurizer Power Operated Relief Valves were available which is not credited in the FUSAR.
- 4) The secondary system Main Steam Safety Valves were not challenged as the Steam Bypass Control System functioned as designed.

Therefore, the health and safety of the public were not affected by this event.

**CORRECTIVE ACTIONS**

- 1) The Unit 1 Operations control room crew stabilized the unit in mode 3.
- 2) The individual responsible was counseled by maintenance supervision and was disciplined for failure to adequately ensure a satisfactory clearance prior to performing work.
- 3) Reviews will be held with plant maintenance personnel to emphasize the foreman's responsibilities in the clearance procedure OP 0010122.
- 4) Unit 1 and Unit 2 main generator exciter switchgear housings and breakers have been appropriately labeled by Electrical Maintenance.
- 5) A review for the placement of postings to reinforce awareness of work locations has been performed by the Human Performance Enhancement System coordinator and additional signs will be installed.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION  
REQUIREMENT: 30 MINUTES. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS  
AND REPORTS MANAGEMENT BRANCH (P-335), U.S. NUCLEAR REGULATORY COMMISSION,  
WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE  
OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  St. Lucie Unit 1	DOCKET NUMBER (2)  05000335	LER NUMBER (6)		PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		94	003	00	04 OF 04

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

**ADDITIONAL INFORMATION**

**Failed Component Identification**

None

**Previous Similar Events**

There are no previous Licensee Event Reports at St. Lucie plant involving actuation of Engineered Safety Features including the Reactor Protection system due to working on the wrong unit.