

CATEGORY 1

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FACIL:50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400
AUTH.NAME AUTHOR AFFILIATION
VERRILLI,M. Carolina Power & Light Co.
DONAHUE,J.W. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 96-023-00:on 961114,design deficiency was noted in EDG protection circuitry.Caused by overloading of diesel generator in conjunction w/reduction of voltage.Applicable EDG test procedures will be revised.W/961216 ltr.

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TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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Harris Nuclear Plant
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Serial: HNP-96-211
10CFR50.73

SHEARON HARRIS NUCLEAR POWER PLANT UNIT 1
DOCKET NO. 50-400
LICENSE NO. NPF-63
LICENSEE EVENT REPORT 96-023-00

Sir or Madam:

In accordance with Title 10 to the Code of Federal Regulations, the enclosed Licensee Event Report is submitted. This report describes a design deficiency identified in the Emergency Diesel Generator protection circuitry.

Sincerely,

J. W. Donahue
Director of Site Operations
Harris Plant

MV

Enclosure

c: Mr. J. B. Brady (HNP Senior NRC Resident)
Mr. S. D. Ebnetter (NRC Regional Administrator, Region II)
Mr. N. B. Le (NRC - NRR Project Manager)

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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: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Harris Nuclear Plant Unit-1		DOCKET NUMBER (2) 50-400	PAGE (3) 1 OF 1
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TITLE (4)
Design deficiency in Emergency Diesel Generator protection circuitry.

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 NAME	DOCKET NUMBER
11	14	96	96	023	0	12	16	96		05000
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
		20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)		
POWER LEVEL (10)	100%	20.2203(a)(1)		20.2203(a)(3)(i)	X	50.73(a)(2)(ii)		50.73(a)(2)(x)		
		20.2203(a)(2)(i)		20.2203(a)(3)(iii)		50.73(a)(2)(iii)		73.71		
		20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER		
		20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A		
		20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)				

LICENSEE CONTACT FOR THIS LER (12)

NAME Michael Verrilli Sr. Analyst - Licensing	TELEPHONE NUMBER (Include Area Code) (919) 362-2303
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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

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X	YES (If yes, complete EXPECTED SUBMISSION DATE).	NO			1	30	97

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On November 14, 1996, with the plant operating in Mode-1 at 100% power, a design deficiency was identified in the protection circuitry for the safety-related Emergency Diesel Generators (EDG). Section 8.3.1.1.2.14.g of the Harris Plant Final Safety Analysis Report (FSAR) states that "Protection is provided for the diesel generator and the safety related electrical system during periodic testing of the diesel generator coincident with a loss of off-site power by the voltage restrained over-current relay (51V) at the diesel generator feeder. This relay senses over-current due to overloading of the diesel generator in conjunction with reduction of voltage. The relay is arranged to trip the feeder breaker to the diesel generator."

During an engineering review resulting from NRC Generic Letter 96-01, the ability of the 51V relay to provide the described protection during a loss of off-site power event was questioned. Subsequent investigation concluded on December 4, 1996, that the relay would not provide this protection. The 51V relay is set up to provide backup EDG protection for overload conditions associated with distribution system faults and degraded voltage conditions while the EDG is in test, not overload protection during a loss of off-site power.

As a result of this condition, a scenario exists while the EDG is synchronized to the off-site electrical grid during periodic testing, that could result in a possible EDG overspeed or a potential for the emergency sequencer to not recognize a loss of off-site power condition and not initiate load sequencing on to the safety bus.

Immediate corrective actions included revising the applicable EDG test procedures to verify that stable grid voltage exists prior to paralleling and declaring the EDG inoperable during this testing. This condition was reported to the NRC on December 4, 1996 per 10CFR50.72 via the emergency notification system as operation outside the design basis of the plant. Additional information related to this condition will be provided in a revision to this LER.