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AUTH. NAME AUTHOR AFFILIATION
WOODY, C. O. Florida Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION
TOURIGNY, E. G. PWR Project Directorate 8

SUBJECT: Forwards diesel generator info, per 860729 request & 860812 telcon re review of 860507 application. Emergency diesel generator history, failures, preventative maint & reliability improvement programs discussed. See Reports

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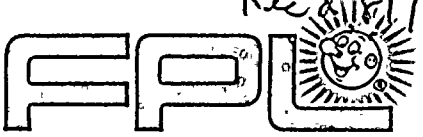


FLORIDA POWER & LIGHT COMPANY

August 15,1986
L-86-342

Office of Nuclear Reactor Regulation
Attention: Mr. E. G. Tourigny, Project Manager
PWR Project Directorate #8
Division of PWR Licensing - B
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Tourigny:

Re: St. Lucie Unit 2
Docket No. 50-389
Diesel Generator Information

Florida Power & Light Company is submitting the attached information in response to your request dated July 29, 1986 (E. G. Tourigny to Mr. C. O. Woody), and clarified during an August 12, 1986 conference call between members of NRC and FPL staffs. As discussed during the August 12 call, more in-depth information can be provided if necessary for you to complete your review of our May 7, 1986 application. However, additional time will be needed to gather the more detailed information.

FPL is available at your convenience to discuss this matter further, if necessary.

Very truly yours,

J. W. McGaughy for

C. O. Woody
Group Vice President
Nuclear Energy

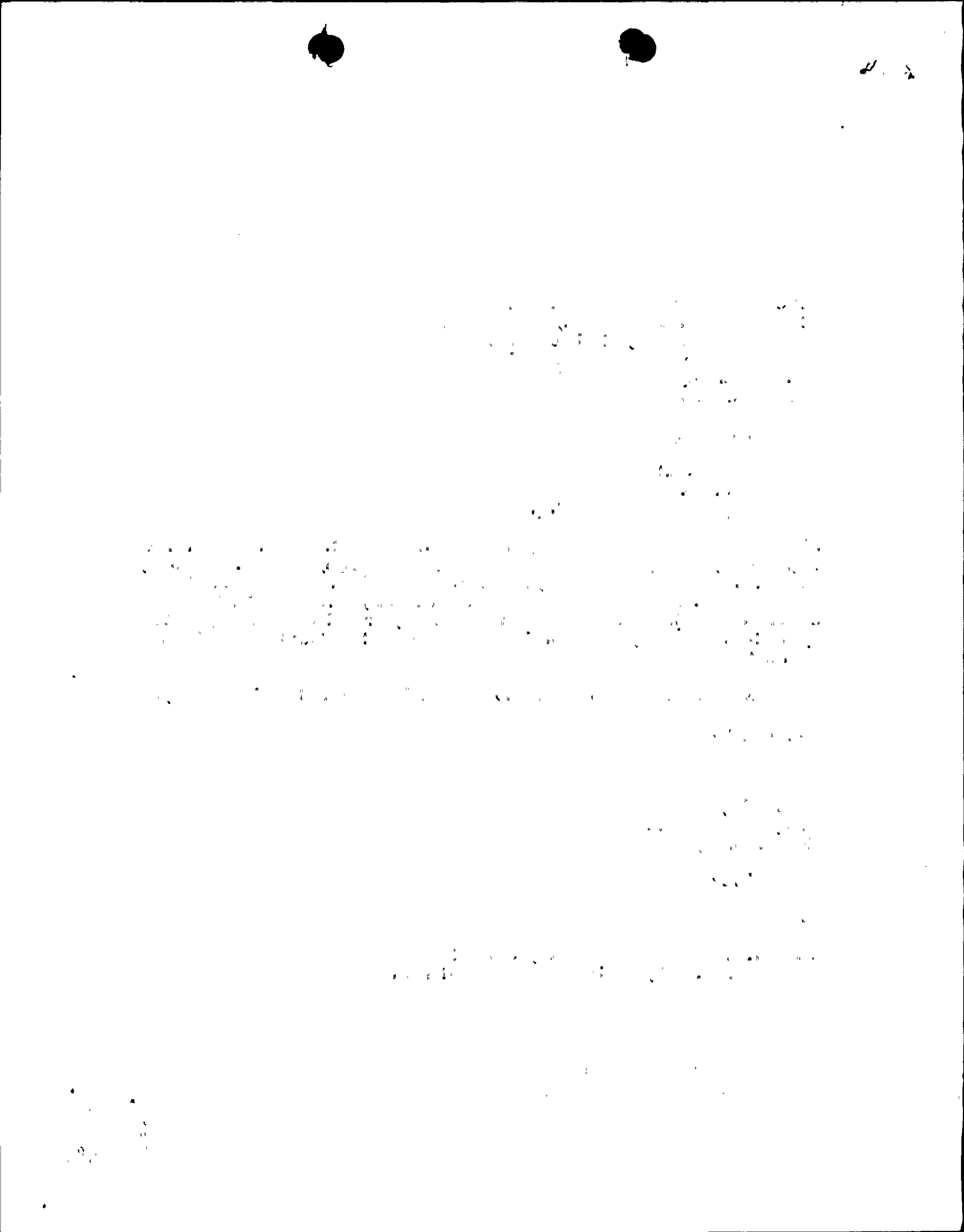
COW/RJS/cvb

Attachment

cc: Dr. J. Nelson Grace, USNRC, Region II
Harold F. Reis, Esquire, Newman & Holtzinger

A001

RJS4/043/1



Question 1

NRC REQUEST:

Please provide a complete operating history of the EDG's to include:

A. Pre-Operational Testing

B. In-Service Surveillance Testing

C. Maintenance and/or Repair History

D. Failure History

E. Analysis of all Failures and Follow-Up Actions

Question 1

FPL Response:

A. Pre-Operational Testing

Pre-Operational Testing was performed in accordance with Reg. Guide 1.68, Appendix A, "Initial Test Program," paragraph g.3, "Electrical Systems," and the St. Lucie Unit II FSAR, sections 14.2.12.1.3.G, "Integrated Test of Engineered Safety Features.," and 14.2.12.1.3.H, "Diesel Generator and Auxiliary System Proportional Test." The acceptance criteria specified by these documents were met and the system declared operable during the pre-operational phase of Unit II pre-license construction testing.

B. In-Service Surveillance Testing

Diesel Generator In-Service Surveillance Testing has been performed in accordance with the requirements of Unit II Technical Specification 4.8.1.1.2.a. The schedule for this testing is determined by Table 4.8-1. Test results are analyzed according to the criteria set down in Reg Guide 1.108, Rev. 1. Any required reporting has been handled as per the specification of T.S. 4.8.1.1.3 and 10 CFR 50.73.

C. Maintenance and/or Repair History

At the St. Lucie Plant, maintenance and repair work on the diesel generators is divided between the three maintenance departments: mechanical, electrical and instrumentation and control.

A task team assigned to improving diesel generator reliability is currently at work analyzing the Plant Work Orders (PWO's) for all diesel generator work. The response to question 5 provides more information on the task team job assignment and research. Repair history summaries are included in the reports referenced in Question 1, Section D.

Question 1

FPL Response (continued):

D. Failure History

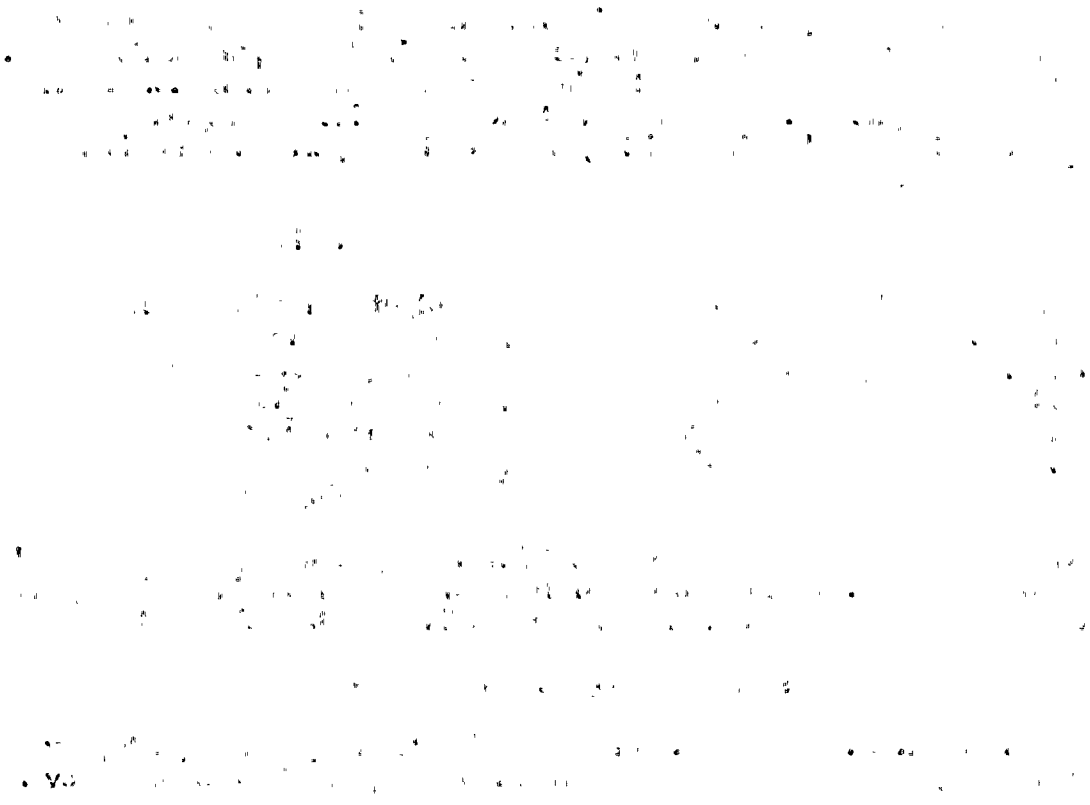
As stated in the response to Question 1, Section B, the determination of valid tests and failures is performed in accordance with the requirements of Reg. Guide 1.108, Rev. 1, and reported in accordance with Unit II T.S. 4.8.1.1.3, whereever applicable. The following table summarizes the reports filed and therefore the Plant's failure history for the stated period for the indicated diesel generators:

Date	DOCUMENT	DOCUMENT TITLE
07/28/83	LER 335-83-37	2B D/G Output Generator Failure
12/20/84	Special Report	2B D/G Fan Hub Failure
12/19/85	Special Report	2B Speed Change Motor Failure
03/12/86	LER 389-86-6	2A D/G Governor Failure
03/26/86	Special Report	2B D/G Governor Failure
07/09/86	LER 389-86-11	2A D/G Governor Failure
		2B D/G Fan Rubbing Shroud

Attachment 1 to this response contains the Special Reports and LER's mentioned above. Further documentation can also be found in FPL's response to Enclosure 2 of Generic Letter 84-15 regarding the St. Lucie Plant.

E. Analysis of all failures and follow-up actions:

As per T.S. 4.8.1.1.3 and Reg. Guide 1.108, LER's and Special Reports provide event analysis and Plant follow-up actions. See response to Section D above.



QUESTION 2

NRC REQUEST:

Please provide specific information on the most recent failures which have resulted in EDG surveillance testing at the maximum frequency (3 days).

FPL Response:

As indicated in the response to Question 1, Section D, failures are reported in accordance with T.S. 4.8.1.1.3 and Reg. Guide 1.108. Only the most recent failure has resulted in testing at the maximum frequency. Please see LER 389-86-11 for the information requested.

QUESTION 3

NRC REQUEST:

Please provide dates and identifying numbers of LER's covering the above failures.

FPL Response:

Please see the response to Question 1, Section D for the required information.

QUESTION 4

NRC REQUEST:

Please provide details of licensee's preventive maintenance program.

FPL Response:

All three maintenance departments have a Preventive Maintenance Program. The PM programs have been developed through FPL diesel operating experience and vendor recommendations. The Mechanical Maintenance Department has the most extensive program as shown in the attachments. The Electrical Maintenance and Instrument and Control Departments' PM's are outlined below. The procedures are provided in Attachment #2.

Electrical Preventive Maintenance Procedures	Performance Interval
Emergency Diesel Inspection Proc #2-2200062, 2-2200063	18 Months
Load Sequence Relay Test Proc #2-0910053	12 Months

I&C Preventive Maintenance Procedures	Performance Interval
Inspect all oil press, water temp, and fuel gauges	18 Months
Fuel oil transfer pump 2A, 2B discharge press, gauges	18 Months
Tank level calibrations	18 Months

QUESTION 5

NRC REQUEST:

Please provide details of licensee's reliability improvement program.

FPL Response:

A Quality Improvement Team (QIP) has been formed at the St. Lucie Plant to investigate methods of improving diesel engine reliablity. This is an integral part of our policy deployment and QI team aspects of FPL's Quality Improvement Program, and, as such, represents an internal commitment under FPL's QIP activities. The team is now gathering and analyzing data from various sources, including the existing in-house files, the NRC, NPRDS Trending Data, INPO, EPRI, vendors and other utilities. Based upon the review of this data according to the established QIP process, a root cause analysis will be performed and a program enacted to solve the problems identified.

QUESTION 6

NRC REQUEST:

Regarding the current three day testing frequency, is the licensee following 4.8.1.1.2.a or just 4.8.1.1.2.a.4?

FPL Response:

All aplicable sections of specification 4.8.1.1.2.a are performed.

ATTACHMENT I

DOCUMENT

LER 335-83-37

Special Report

Special Report

LER 389-86-6

Special Report

LER 389-86-11

RJS4/043/9

FLORIDA POWER & LIGHT COMPANY

INTER-OFFICE CORRESPONDENCE

TECH/PSL
Ltr. Bk. #914

LOCATION St. Lucie Plant
DATE January 9, 1986

TO P. L. Pace

FROM C. A. Pell

COPIES TO D. A. Sager
J. H. Barrow
R. R. Jennings
N. G. Roos
L. W. Pearce

SUBJECT: ST. LUCIE UNIT 2 DIESEL GENERATOR - SPECIAL REPORT

On 19 December 1985, a speed changer motor on the PSL 2B Diesel Generator (D/G) failed. This failure is required to be covered by a "Special Report" within 30 days per Technical Specification 4.8.1.1.3 (Electrical Power Systems - Surveillance Requirements - Reports) and Generic Letter 83-43 (Technical Specification changes due to new LER rule).

You are requested to prepare and submit the report to the appropriate NRC office. A description of the occurrence for use in preparation of the report is as follows:

On 19 December 1985, with Unit 2 in Mode 1 at normal full power, the 2B Diesel Generator (D/G) was placed out of service for periodic maintenance. After the periodic maintenance on the air start system was completed, the 2B D/G was started at 1353 hours for an operable test run. The 2B D/G failed the test when it took 13.6 seconds to reach rated speed and voltage. (Technical Specification 4.8.1.1.2 requires $\leq$ 10 seconds). The 2B D/G was secured and Electrical Maintenance was contacted.

At 1603 hours on 19 December, the 2B D/G was restarted for troubleshooting. (start time: 12.41 seconds). It was discovered that only the 12 cylinder engine of the dual engine D/G was supplying power. Due to a failure of the governor's speed changer motor, the 16 cylinder was not receiving any fuel oil. The speed changer motor was replaced. At 1440 hours, 20 December, the 2B D/G was again declared operable having successfully completed the operable test run.

This is the second failure of the Unit 2 D/G's in the last 100 valid tests. The Unit remained at normal full power during the 27.5 hours that the 2B D/G was out of service. The 2A D/G was fully operable during the 2B D/G failure.

The current surveillance interval for St. Lucie Unit 2 is not more than 14 days in accordance with Regulatory Position C.2.d of Reg. Guide 1.108.

C. A. Pell
Technical Supervisor
St. Lucie Plant

CAP:SEM:kam

To: Distribution

From: J.W. Williams, Jr.

Subject: L-85-39
January 21, 1985

NRC CORRESPONDENCE

ST. LUCIE UNITS 1 & 2

GO: J.W. Dickey
J.H. Francis
D.A. Chaney
D.C. Poteralski

JB: S.G. Brain
R.F. Englmeier
F.G. Flugger
F.P. Green
C.S. Kent
W.B. Lee
H.D. Mantz
F.A. Panzani
J.L. Parker
J.E. Vessely

PSL 1: C.A. Pell
Vault Custodian
C. Fierabend (NRC)

PSL 2: C.T. Hamilton
E. Preast
N.T. Weems
G.E. Crowell (ISEG)

PTP 3/4: Document Control (K. York)

OTHER: T.P. Gates (Combustion) SL 1
W.J. Harris (Combustion) SL 2
Harold Reis, Esq. (Newman)
M. Horrell (Ebasco)

PSL/TECH
Ltr. Bk. #1106

FLORIDA POWER & LIGHT COMPANY
INTER-OFFICE CORRESPONDENCE

TO: C. O. Woody

FROM: C. A. Pell

LOCATION: St. Lucie Plant

DATE: August 6, 1986

SUBJECT: LICENSEE EVENT REPORT 389-86-011
BOTH DIESEL GENERATORS SIMULTANEOUSLY OUT OF SERVICE DUE TO ONE PERSONNEL ERROR AND ONE COMPONENT FAILURE-
ST. LUCIE 2

COPIES TO: J. W. Dickey
A. W. Bailey
P. L. Fincher
N. G. Roos
H. N. Paduano
S. A. Verducci
D. H. West
K. N. Harris
R. V. Crenjak(NRC)

On July 9, 1986, both diesel generators were simultaneously out of service on St. Lucie Unit 2. One diesel generator was out of service due to personnel error and the other diesel generator was out of service due to a component failure.

In accordance with 10 CFR 50.73 (a)(2)(v) the attached LER is generated. This report was reviewed by the Facility Review Group and is forwarded to you.

D H West for

C. A. Pell
Technical Department Supervisor
St. Lucie Plant

CAP:MSD:kmt

PEOPLE... SERVING PEOPLE

Form 1008 (Stocked) Rev. 10/8!