

Transamerica General Inc.
Engine and Compressor Division

PART NUMBER(S)

74046-101

NEI

INSTRUCTION MANUAL
OPERATION - MAINTENANCE AND
PARTS LIST FOR
A.C. SYNCHRONOUS GENERATOR
S.O. 17408432/439

Parsons Peebles-Electric Products, Inc.

1725 Clarkstone Road
Cleveland, Ohio 44112

8506100029 850117
PDR FOIA
BELL84-886 PDR

A wholly owned subsidiary of Northern Engineering Industries Ltd., of England.

DESCRIPTIVE DATA

HORIZONTAL, SINGLE INSULATED PEDESTAL BEARING TYPE A. C. SYNCHRONOUS GENERATOR COMPLETE WITH FORGED FLANGED SHAFT, SELF-VENTILATED AND HOUSED IN A DRIPPROOF ENCLOSURE - 10% TWO HOUR OVERLOAD CAPACITY.

RATING

KVA	-----	8125
KW	-----	6500
VOLTAGE	-----	6900
AMPERES	-----	679.9
• PHASE	-----	3 (WYE CONNECTED WITH 6 LEADS OUT)
FREQUENCY	-----	60 Hz
FRAME	-----	190
INSULATION	-----	CLASS "F"
POWER FACTOR	-----	.8
POLES	-----	16
DUTY	-----	CONTINUOUS
SPEED	-----	450 RPM
OVER 40°C AMBIENT	-----	80°C RISE BY RESISTANCE

SERIAL NO. 17408432/439	DASH 200	A.C. SYNCHRONOUS GENERATOR DATA	SALES ORDER NO. 17408432/439	DATE 11-20-74
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TYPE L-11043*	KVA 8125	VOLTS 6900	AMPS 679.9	PHASE 3(6 wire)	HERTZ 60
FRAME 190	INSUL. CLASS F	P.P. .8	POLES 16	DUTY Cont.	RPM 450

GENERATOR:					
1	Direct Axis Synchronous Reactance (Unsaturated)	X _d	1.737	P.U.	
2	Quadrature Axis Synchronous Reactance (")	X _q	.873	P.U.	
3	Direct Axis Transient Reactance (Rated Voltage)	X' _d	.258	P.U.	
4	Direct Axis Subtransient Reactance (" ")	X'' _d	.174	P.U.	
5	Quadrature Axis Subtransient Reactance (" ")	X'' _q	.178	P.U.	
6	Zero Sequence Reactance (" ")	X ₀	.134	P.U.	
7	Negative Sequence Reactance (" ")	X ₂	.176	P.U.	
8	Direct Axis Transient Open Circuit Time Constant	T' _{do}	5.023	Sec.	
9	Short Circuit Transient Time Constant	T' _d	.746	Sec.	
10	Short Circuit Subtransient Time Constant	T'' _d	.040	Sec.	
11	Synchronous Impedance Unit on Rated KVA Base		5.859	ohms	
12	Short Circuit Ratio	SCR	.660		
13	Field Resistance at 25 Deg. C		.241	ohms	
14	Field Current at Full Load, Rated Voltage and Power Factor		281.9	amps	
15	Field Current at No Load, Rated Voltage		111.3	amps	
16	Field Current at No Load 60% Volts		60.2	amps	
17	Continuous Duty Field Voltage		90.2	Volts	
18	Inherent Regulation		39.4	%	
19	Recommended Field Discharge Resistor	1 ohm	50	amps	
20	Synchronizing Power Coefficient at No Load	P _{syn}	9310	W/VA Rad	
21	Synchronizing Power Coefficient at Full Load	P _{syn}	15540	W/VA Rad	
22	Unbalance Magnetic Pull at (1/32) Displacement	P _d (1/32)	17430	Lbs.	
23	Magnetization Characteristics	Curve No.	2524		
24	Reactive Capability	Curve No.	2530		
25	Phase Characteristics	Curve No.	2531		
*Changed-7/11/75					

STATIC EXCITATION

form 2089

SERIAL NO.		D.C. EXCITER DATA	TYPE L-	
-	600			
K _d	VOLTS	AMP	RPM	INSUL. CLASS
2	Field Resistance at 25 Deg. C			ohms
3	Recommended Rheostat:	Plate(s)	ohms	amps
4	Regulation Curve		Curve No.	

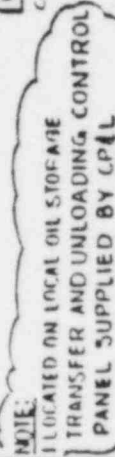
STATIC EXCITER VOLTAGE REGULATOR
FOR
SYNCHRONOUS GENERATOR

Nominal Load 40 KW continuous

Nominal Voltage 125 Volts D. C.

Nominal Current 320 Amps D. C.

Model No. 72 10200 100



DCN-251-077
SERIAL 4 OF 10
CAN-210-0
DRAWN DATE
CHECKED DATE

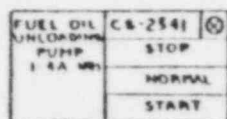
NOTE: MOVE 8

DATE	TIME	REMARKS	BY	DATE	TIME	REMARKS	BY
1	13.51	6.0		1	13.51	6.0	
2				2			
3				3			
4				4			
5				5			
6				6			
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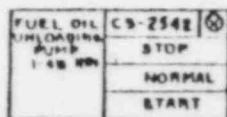
EBASCO SERVICES INCORPORATED

CAROLINA POWER & LIGHT CO
SHEARON HARRIS NUCLEAR PP
UNIT NO. 1
INSTRUMENT SCHEMATICS AND
LOGIC DIAGRAMS

CAR 2166
B-430
BMEET 191

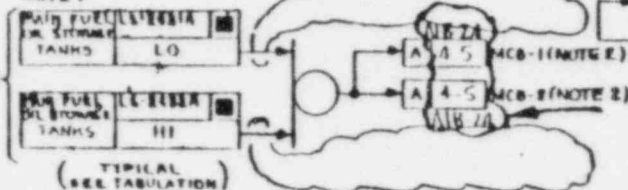


NOTE 1



NOTE 1

NOTE 2



(TYPICAL SEE TABULATION)

NOTES:

1. LOCATED ON LOCAL OIL STORAGE
PANEL SUPPLIED BY CPIL

2. FOR TANK 1-2A, ANNUNCIATION
IS ON MCB-1 (NOTE 2)

DCN-251-017
SHEET 5 OF 10

CAR-318-G R-1
DRAWN DATE
CHECKED DATE

MAIN FUEL OIL STORAGE TANKS AND UNLOADING PUMP LOGIC PMP 1-4A-NNS & 1-4B-NNS

REV	DATE	BY	APPROVED	REV	DATE	BY	APPROVED
1	1-18-79	JP		1	1-18-79	JP	
2	6-12-79	MJ		2	6-12-79	MJ	
3	7-29-79	S.D.		3	7-29-79	S.D.	
4	1-15-81	WJ		4	1-15-81	WJ	

ESABCO SERVICES INCORPORATED
166-0200
MADE ON 1/13/81
DATE 1/13/81

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR PP
UNIT NO. 1
INSTRUMENT SCHEMATICS AND
LOGIC DIAGRAMS

CAR 2166
B-430
SHEET 192

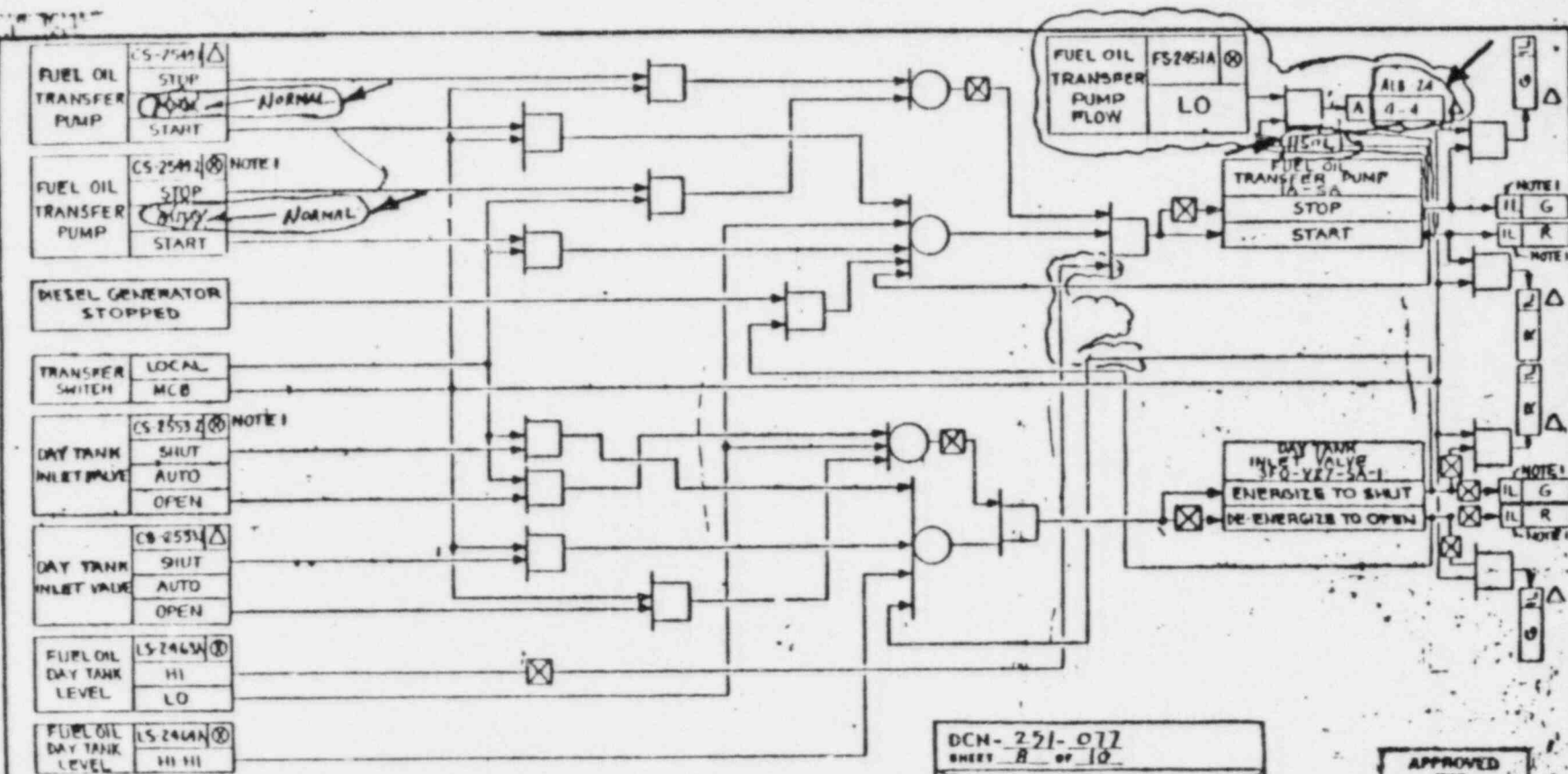
TABULATION

MAIN FUEL TANK	LEVEL SWITCH LO	LEVEL SWITCH HI
1-2A	LS-2431A	LS-2432A
1-2B	LS-2431B	LS-2432B
3-4A	LS-2431A	LS-2432A
3-4B	LS-2431B	LS-2432B

APPROVED
FOR
CONSTRUCTION

CR 05511 5/17/85

NUCLEAR SAFETY
RELATED
IN PART ONLY



DCN- 251- 077
SHEET 8 OF 10
DRAWN DATE
CHECKED DATE

APPROVED
FOR
CONSTRUCTION

CE-05571 5/11/75

NUCLEAR SAFETY
RELATED

NOTES:

1. LOCATED ON THE DIESEL ENGINE
CONTROL PANEL IN THE DIESEL GENERATOR
BOW SEE DWG. 1364-16451

DIESEL GENERATOR DAY TANK IA-SA LOGIC
(TYPICAL FOR 2A-SA) 3A-SA 4A-SA 5A-SA)

REV	DATE	BY	APPROVED	REV	DATE	BY	APPROVED
1	11-15-74	JAN		2	1-10-75	JAN	
2	11-15-74	JAN		3	6-17-75	JAN	
3	11-15-74	JAN		4	1-10-75	JAN	
4	11-15-74	JAN		5	1-10-75	JAN	

ESABCO SERVICES INCORPORATED
1 & C
SCALE 1/8" = 1'-0"
DATE 4-13-77

CAROLINA POWER & LIGHT CO.
SHEARON HARRIS NUCLEAR PP
UNIT NO. 1
INSTRUMENT SCHEMATICS AND
LOGIC DIAGRAMS

CAR 2166
B-430
SHEET 125

SHNPP Unit #1 Emergency Diesel Generators

C.S. Hinnant : Manager-Startup (919) 362-2003

W.T. Shenton : Startup Engineer (919) 362-2700

Address: Shearon Harris Nuclear Power Plant

Nuclear Operations Department

P.O. Box 165

New Hill, N.C. 27562

NRC Reportable Items Outstanding:

1. Defective Valve Springs , TDI P/N 03-360-02-0M
2. Piston Skirts, TDI P/N 03-341-02-AN
3. Starting Air Check valves
4. Starting Air System - Pressure Sensing Line
5. Governor Drive Coupling, Flexible coupling

NRC Reportable Items Resolved

1. Governor Lube Oil Cooler location.

Site Initiated Data & Deficiency Reports:

1. DDR-1255 : D/G Check valves (Starting Air System)
2. DDR-1619 : Generator rotors - Pole washers damaged and rusted.
3. DDR-1785 : Engine Control Panels - welding deficiencies.
4. DDR-1819 : Generator - Dimensional, Electrical & Specification deficiencies

5. DDR-1926 : Emergency Sequencer Panels - Documentation, Welding & Dimensional deficiencies.
6. DDR-1982 : Engine Control Panels - Electrical wiring (vendor) deficiencies.
7. DDR-2019 : Emergency Sequencer Panels - Welding deficiencies
8. DDR-2028 : Generator Control Panels - Electrical wiring (vendor) deficiencies.

Other Items Outstanding

1. Response to N.C. Attorney General re: Shoreham Diesel Failures



State of North Carolina

Department of Justice

P. O. BOX 629
RALEIGH
27602-0629

RUFUS L. EDMISTEN
ATTORNEY GENERAL

September 22, 1983

Mr. Sheldon D. Smith
Vice President, Nuclear Plant Construction
Carolina Power & Light Company
P. O. Box 1551
Raleigh, North Carolina 27602

Re: Shearon Harris Nuclear Station

Dear Mr. Smith:

Nuclear Regulatory Commission IE Information Notice No. 83-58 indicates that Shearon Harris Nuclear plant has Transamerica Delaval diesel generators on site. IE Information Notice No. 83-58 also indicates that diesels from this manufacturer recently failed during testing at Shoreham nuclear plant.

Could you please tell me how many Transamerica Delaval diesel generators are at Harris, what they will be used for, whether they have been installed yet, what checks or inspections CP&L has run or is planning to run on these generators in light of the problems at Shoreham, the results of those checks or inspections and CP&L's plans to remedy any problems.

Thank you.

Sincerely,

RUFUS L. EDMISTEN
Attorney General

Karen E. Long
Karen E. Long
Assistant Attorney General

KEL/lf

cc: Mr. Edward E. Uteley, Executive Vice President

cc. mjm

*cc. mjm
Sharon Harris Nuclear Station*



Carolina Power & Light Company

SHNPP. 82 07 26 018
DIN
10/9890AY

HXPO-202-508-526

NPED-821242

JUL 22 1982

MEMORANDUM TO: Mr. N. J. Chiangi

FROM: L. I. Loflin

SUBJECT: Reportable Item - SENPP
Defective Valve Springs on Diesel Engines
Purchase Order NY-435079

Attached is our interim report covering the defective valve springs installed in the diesel engines supplied by Transamerica DeLaval, Inc. on Purchase Order NY-435079.

As noted in the report, the final report cannot be issued at this time, as the corrective action cannot be completed until after the engines have been placed on their foundations. A final report will be issued once the defective springs have been replaced.

Please contact us if you have any questions concerning this matter.

L I Loflin by J F Loflin

LIL/SFM/jam (835107)

Attachment

cc: Mr. E. R. Banks
Mr. A. B. Cutter
Dr. T. S. Elleman
Mr. G. L. Forehand
~~Mr. J. L. Forehand~~
Mr. P. W. Howe
Mr. A. M. Lucas
Mr. M. A. McDuffie
Mr. C. H. Moseley, Jr.
Mr. R. M. Parsons
Mr. S. D. Smith
Mr. R. B. Starkey, Jr.



Carolina Power & Light Company

Raleigh, North Carolina

Company Correspondence

File: SH N-2/18
Item 61

QA-2376

August 31, 1981

MEMORANDUM TO: Distribution

FROM: N. J. Chiangi

SUBJECT: Reportable Item - SHNPP

On August 28, 1981, Mr. L. E. Jones notified the NRC (Mr. R. Butcher) of a reportable item per the provisions of 10CFR50.55(e) and 10CFR, Part 21. The NRC was informed that valve springs (in the two Unit 1 diesel engines at the site) had been improperly manufactured by the Melrose Springs and Tool Works in that the shot peening operations on the valve springs had been omitted resulting in the potential of a reduced fatigue life.

The diesel engines and generators have been supplied by Transamerica Delaval, Inc., and are Class 1E and provide the emergency power in case of loss of normal on-site and off-site power. Melrose Springs and Tool works is a subvendor of Transamerica Delaval. This problem was brought to CP&L's attention by Transamerica Delaval who has also reported it to the NRC as a 10CFR, Part 21.

NPED's final report on this item is due to E&C QA/QC by September 26, 1981.

KVH/gea

A handwritten signature in cursive script, appearing to read "H. R. Banks", written over a horizontal line.

cc: Mr. H. R. Banks
Mr. A. B. Cutter
Dr. T. S. Elleman
Mr. G. L. Forehand
Mr. T. L. Harrington
Mr. S. Hinnant
Mr. P. W. Howe
Mr. L. L. Loflin
Mr. A. M. Lucas
Mr. M. A. McDuffie
Mr. C. H. Moseley, Jr.
Mr. R. M. Parsons
Mr. Sheldon D. Smith
Mr. R. B. Starkey, Jr.
File

CP&L

Carolina Power & Light Company

COPYFayetteville, North Carolina
December 23, 1982FILE: SH N-2/13
ITEM 111

COAD 82-2227

MEMORANDUM TO: Distribution

FROM: N. J. Chiangi

SUBJECT: Reportable Item - SHNPP - Seismic Qualification
Test Failure of Starting Air Check Valves10-9890AY
026

On December 23, 1982, L. E. Jones notified the NRC (Mr. A. Martin) of a reportable item per the provisions of 10CFR50.55(a) and 10CFR, Part 21. The NRC was informed that Transamerica Delaval, Inc., had notified Carolina Power & Light that during a seismic qualification test one of their starting air check valves was found to leak and valve redesign was required to pass the seismic qualification test. Transamerica Delaval previously notified the NRC of this problem on November 5, 1981 and had invoked in-house controls; however, defective air check valves were inadvertently shipped to Carolina Power & Light's Shearon Harris Plant.

NPES's final report is due to P. M. Parsons by January 19, 1983.

Original Signed By
N. J. Chiangi

WMP/tbm (206)

cc: Mr. H. R. Banks
Mr. A. B. Cutter
Ms. R. Denson
Mr. C. R. Dietz
Dr. T. S. Elleman
Mr. G. L. Forehand (2)
Mr. T. L. Harrington
Mr. E. Harris
Mr. S. Hinnant
Mr. P. W. Howe
Mr. L. I. Loflin
Mr. M. A. McDuffie
Mr. C. H. Moseley, Jr.
Mr. R. M. Parsons
Mr. Sheldon D. Smith
Mr. R. B. Starkey, Jr.
Mr. M. F. Thompson, Jr.
Mr. S. R. Zimmerman
File

CP&L

Carolina Power & Light Company

COPYRaleigh, North Carolina
December 17, 1982FILE: SH N-2/18
ITEM: 11C47
CQAD 82-2175

10-18520

MEMORANDUM TO: Distribution

FROM: N. J. Chiangi

SUBJECT: Reportable Item - Residual Stress in Piston Skirts
of Class IE Diesel Generators

On December 16, 1982, N. J. Chiangi notified the NRC (Mr. C. Hehl) of a reportable item per the provisions of 10CFR50.55(e) and 10CFR, Part 21. The NRC was informed that a potential problem of residual stress in the piston skirt castings of Class IE emergency diesel generators was detected by the supplier, Transamerica Delaval Inc., of Oakland, California.

Original Signed By
N. J. Chiangi

WTH/tbm (206)

cc: Mr. H. E. Banks
Mr. A. B. Cutter
Ms. R. Denson
Mr. C. R. Dietz
Dr. T. S. Elleman
Mr. G. L. Forehand (2)
Mr. T. L. Harrington
Mr. E. Harris
Mr. S. Himant ✓
Mr. P. W. Howe
Mr. L. I. Loflin
Mr. M. A. McDuffie
Mr. C. H. Moseley, Jr.
Mr. R. M. Parsons
Mr. Sheldon D. Smith
Mr. R. B. Starkey, Jr.
Mr. M. F. Thompson, Jr.
Mr. S. R. Zimmerman
File

80

Enclosure 1

TELEPHONE REPORT FORM

Facility Shearon Harris 1&2 Docket No(s). 50-406, 401

Date and Time of Call 4/19/82 1:00 PM

Date and Time of Occurrence 4/19/82 1:00 PM

Type of Report (LER, 50.55e, Part 21, etc.) 50.55e

Subject Potential Loss of Starting Air for Diesel Generator

Description of Occurrence Licensee reported that the pressure sensing line off the ^{diesel generator} Starting Air Receiver Tank is not seismically qualified and could rupture during a seismic event causing a loss of starting air pressure. The diesel generator vendor Transamerica De Laval, has made a part 21 report on

Is there a severity level I or II occurrence per MC 1300? Yes 2 No this matter

Is this a Potential Abnormal Occurrence or Significant Occurrence per MC 1110?

Yes ✓ No

Licensee ID# _____

Regional Action: None _____ Information Only _____ Followup per MC 2.5/2

Region IV notified ✓ Assigned _____ Other _____

Daily Report submitted? _____ No ✓ Yes 4/20/82
(Date)

PR issued? ✓ No _____ Yes _____
(Date)

Preparer of telephone report form C. Julius

Licensee Contact T. Chiangi, C&L

Enclosure 1

TELEPHONE REPORT FORM

Facility Honolulu 1 & 2 Docket No(s). 50-55-4-801

Date and Time of Call 12/16/82 4:15 P

Date and Time of Occurrence 12/16

Type of Report (LER, 50.55e, Part 21, etc.) Part 21 / 50.55-e

Subject Potential failure, Emergency Diesel Generator, Part 21

Description of Occurrence The potential failure of emergency diesel generator sketched previously by reported to NRR on 10/28/82 by Trans-American Petroleum, the manufacturer, as a potential, part 21 report. It has been determined by LPL to reportable under 50.55-e. The residual stresses in combination with the operating stresses could result in piston skirt failure. Another report due on 1/16/83.

Is there a severity level I or II occurrence per MC 1302? Yes Level II

Is this a Potential Abnormal Occurrence or Significant Occurrence per MC 1110?

Yes ☒ No Licensee ID# 110

Regional Action: None Information Only Followup per MC 2512

Region IV notified ☒ Assigned Other

Daily Report submitted? No ☒ Yes 12/17/82
(Date)

PN issued? ☒ No ☒ Yes (Date)

Preparer of telephone report form Harden/Kelley

Licensee Contact Chicago

12/28/82

Harris 1
DN: 50-400

Telecon
12/28

Potential CDR- Carolina Power and Light was notified by Trans American De Laval that three starting air check valves for the diesel generator air tanks, that had failed seismic qualification tests, had been shipped to the site. Trans American De Laval had previously notified the NRC on 11/5 of a potential 10 CFR, Part 21 problem. The valves were manufactured by William Power Company.

Followup per
NC 2512
Region IV
Notified

License No. III

Handwritten notes and signatures at bottom right.

4#

DAILY REPORT INPUT

DIVISION OF CI AND RESIDENT PROGRAMS

DATE Jan. 18,

FACILITY

Harris

DT: 50-400

DESCRIPTION

Section 1/17

TIME OR EVENT

Potential 50.55e - Boiling Material for

Trans American Delaval diesel generators and

engines was not properly identified in

accordance with design recommendations. The

problem is continuing. The problem is

potential generator.

REPORTED BY

Followup per W 2512

Cat. II

Region IV notified

Originator

Regional Administrator (original)

per file

Originator

per Region

APPROVED BY:

Originator

Section Chief

Branch Chief

per Mr. Lewis

CP&L

Carolina Power & Light Company

P. O. Box 101, New Hill, N. C. 27562

February 24, 1983

84

Antine

HUNT

Mr. James P. O'Reilly
United States Nuclear Regulatory Commission
Region II
101 Marietta Street, Northwest (Suite 2900)
Atlanta, Georgia 30303

NRC-185

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
1986 - 900,000 KW - UNIT 1
DEFECTIVE GOVERNOR DRIVE COUPLING
PURCHASE ORDER NY-435079, ITEM 101

Dear Mr. O'Reilly:

Attached is our fourth interim report on the subject item which was deemed reportable per the provisions of 10CFR50.55(e) and 10CFR, Part 21, on September 9, 1982. CP&L is pursuing this matter, and it is currently projected that corrective action and submission of the final report will be accomplished by May 25, 1984.

Thank you for your consideration in this matter.

Yours very truly,

R M Parsons

R. M. Parsons
Project General Manager
Shearon Harris Nuclear Power Plant

RMP/bk

Attachment

cc: Messrs. G. Maxwell/R. Prevatte (NRC-SHNPP)
Mr. R. C. DeYoung (NRC)

~~3443490402~~ — 4PP

#6

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT

UNIT NO. 1

FOURTH INTERIM REPORT

FEBRUARY 21, 1984

DEFECTIVE GOVERNOR DRIVE COUPLING

ITEM 101
(DDR 1056)

REPORTABLE UNDER 10CFR50.55(e) AND 10CFR21

SUBJECT: Shearon Harris Nuclear Power Plant - Unit No. 1
10CFR50.55(e) and 10CFR21 Reportable Deficiency.
Defective governor drive coupling installed in the
emergency diesel engine-generator sets under Purchase
Order NY-435079 from Transamerica DeLaval, Inc.

ITEM: Isoprene governor drive coupling located in the engine's
gear case. Part No. AK-007-000

SUPPLIED BY: Transamerica DeLaval, Inc., Oakland, California
The governor drive coupling is manufactured by Koppers
Co., Inc.

NATURE OF
DEFICIENCY: Transamerica DeLaval, Inc. shipped two diesel engines to
the Shearon Harris site on Purchase Order NY-435079 in
May and June, 1981.

In June, 1982, Transamerica DeLaval notified CP&L that
the engines contain an isoprene governor drive coupling
and there is a potential problem since the material,
isoprene, is designed for atmospheric use and it is not
suitable for use in the high temperature, oil atmosphere
encountered in the engine's gear case.

DATE PROBLEM
OCCURRED: Refer to section above.

DATE PROBLEM
REPORTED: September 9, 1982 - CP&L (N. J. Chiangi) notified the NRC
Region II (A. Hardir.) that this item was reportable under
10CFR50.55(e) and 10CFR21.

SCOPE OF
PROBLEM: The problem involves the two diesel engines shipped on
Purchase Order NY-435079. These engines have isoprene
governor drive couplings installed.

SAFETY
IMPLICATION: The diesel-generator sets supply power to the ESF buses
in case of a loss of both normal on-site and off-site
power sources.

In the high temperature, oil atmosphere encountered in the engine's gear case, the rubber deteriorates rapidly and ultimately fails. While the coupling is "fail safe" and will mechanically lock up when the element fails, sufficient frequency instability could be induced that would result in the engine's tripping off line, thereby affecting engine availability.

REASON DEFICIENCY
IS REPORTABLE:

If left uncorrected, failure of the governor drive coupling could result in the loss of the emergency on-site AC power supply.

CORRECTIVE
ACTION:

The isoprene governor drive coupling will be replaced in accordance with the instructions attached to the Transamerica DeLaval to CP&L letter dated August 18, 1982. This work requires capability to "bar" the engine over. The replacement parts have been received on site. This modification has not been completed to date because work is still underway to complete the installation of the Diesel Engines.

FINAL REPORT:

A final report will be issued once the corrective action described above has been completed. It is currently projected that the submittal date will be May 25, 1984.

CP&L

Carolina Power & Light Company

P. O. Box 101, New Hill, N. C. 27562

December 14, 1983

Cnln

Mr. James P. O'Reilly
United States Nuclear Regulatory Commission
Region II
101 Marietta Street, Northwest (Suite 2900)
Atlanta, Georgia 30303

NRC-156

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
1986-90 - 900,000 KW - UNITS 1 & 2
DEFECTIVE GOVERNOR DRIVE COUPLING
PURCHASE ORDER NY-435079, ITEM 101

Dear Mr. O'Reilly:

Attached is our third interim report on the subject item which was deemed reportable per the provisions of 10CFR50.55(e) and 10CFR, Part 21, on September 9, 1982. CP&L is pursuing this matter, and it is currently projected that corrective action and submission of the final report will be accomplished by February 24, 1984.

Thank you for your consideration in this matter.

Yours very truly,

R. M. Parsons

R. M. Parsons
Project General Manager
Shearon Harris Nuclear Power Plant

RMP/bk

Attachment

cc: Messrs. G. Maxwell/R. Prevatte (NRC-SHNPP)
Mr. R. C. DeYoung (NRC)

8312210190
PDN/ADOCK/50-4005
4pp.

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT

UNIT NO. 1

THIRD INTERIM REPORT

DECEMBER 14, 1983

DEFECTIVE GOVERNOR DRIVE COUPLING

ITEM 101
(DDR 1056)

REPORTABLE UNDER 10CFR50.55(e) AND 10CFR21

SUBJECT:

Shearon Harris Nuclear Power Plant - Unit No. 1
10CFR50.55(e) and 10CFR21 Reportable Deficiency.
Defective governor drive coupling installed in the
emergency diesel engine-generator sets under Purchase
Order NY-435079 from Transamerica DeLaval, Inc.

ITEM:

Isoprene governor drive coupling located in the engine's
gear case. Part No. AK-007-000

SUPPLIED BY:

Transamerica DeLaval, Inc., Oakland, California
The governor drive coupling is manufactured by Koppers
Co., Inc.

NATURE OF
DEFICIENCY:

Transamerica DeLaval, Inc. shipped two diesel engines to
the Shearon Harris site on Purchase Order NY-435079 in
May and June, 1981.

In June, 1982, Transamerica DeLaval notified CP&L that
the engines contain an isoprene governor drive coupling
and there is a potential problem since the material,
isoprene, is designed for atmospheric use and it is not
suitable for use in the high temperature, oil atmosphere
encountered in the engine's gear case.

DATE PROBLEM
OCCURRED:

Refer to section above.

DATE PROBLEM
REPORTED:

September 9, 1982 - CP&L (N. J. Chiangi) notified the NRC
Region II (A. Hardin) that this item was reportable under
10CFR50.55(e) and 10CFR21.

SCOPE OF
PROBLEM:

The problem involves the two diesel engines shipped on
Purchase Order NY-435079. These engines have isoprene
governor drive couplings installed.

SAFETY
IMPLICATION:

The diesel-generator sets supply power to the ESF buses
in case of a loss of both normal on-site and off-site
power sources.

In the high temperature, oil atmosphere encountered in the engine's gear case, the rubber deteriorates rapidly and ultimately fails. While the coupling is "fail safe" and will mechanically lock up when the element fails, sufficient frequency instability could be induced that would result in the engine's tripping off line, thereby affecting engine availability.

REASON

DEFICIENCY

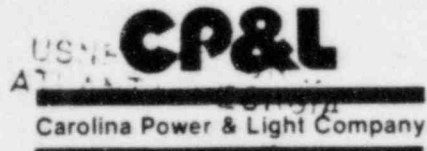
IS REPORTABLE: If left uncorrected, failure of the governor drive coupling could result in the loss of the emergency on-site AC power supply.

CORRECTIVE

ACTION:

The isoprene governor drive coupling will be replaced in accordance with the instructions attached to the Transamerica DeLaval-to-CP&L letter dated August 18, 1982. This work requires capability to "bar" the engine over. The replacement part has been received on site. The installation of this equipment is to begin in mid-January.

FINAL REPORT: A final report will be issued once the corrective action described above has been completed. It is currently projected that the submittal date will be February 24, 1984.



concl

NOV 16 1984
P. O. Box 101, N. C. 27562
November 16, 1984

Mr. James P. O'Reilly
United States Nuclear Regulatory Commission
Region II
101 Marietta Street, Northwest (Suite 2900)
Atlanta, Georgia 30323

NRC-293

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
1986 - 900,000 KW - UNIT 1
DEFECTIVE GOVERNOR DRIVE COUPLING
PURCHASE ORDER NY-435079, ITEM 101

Dear Mr. O'Reilly:

Attached is our sixth interim report on the subject item which was deemed reportable per the provisions of 10CFR50.55(e) and 10CFR, Part 21, on September 9, 1982. CP&L is pursuing this matter, and it is currently projected that corrective action and submission of the final report will be accomplished by April 15, 1985.

Thank you for your consideration in this matter.

Yours very truly,

R. M. Parsons
Project General Manager
Shearon Harris Nuclear Power Plant

RMP/rt

Attachment

cc: Messrs. G. Maxwell/R. Prevatte (NRC-SHNPP)
Mr. R. C. DeYoung (NRC)

8412130557
POD/AD000K/30-400 S
4pp

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT

UNIT NO. 1

SIXTH INTERIM REPORT

NOVEMBER 16, 1984

DEFECTIVE GOVERNOR DRIVE COUPLING

ITEM 101
(DDR-1056)

REPORTABLE UNDER 10CFR50.55(e) AND 10CFR21

SUBJECT: Shearon Harris Nuclear Power Plant - Unit No. 1 10CFR50.55(e) and 10CFR21 Reportable Deficiency. Defective governor drive coupling installed in the emergency diesel engine-generator sets under Purchase Order NY-435079 from Transamerica DeLaval, Inc.

ITEM: Isoprene governor drive coupling located in the engine's gear case. Part No. AK-007-000

SUPPLIED BY: Transamerica DeLaval, Inc., Oakland, California. The governor drive coupling is manufactured by Koppers Co., Inc.

NATURE OF DEFICIENCY: Transamerica DeLaval, Inc. shipped two diesel engines to the Shearon Harris site on Purchase Order NY-435079 in May and June, 1981.

In June, 1982, Transamerica DeLaval notified CP&L that the engines contain an isoprene governor drive coupling and there is a potential problem since the material, isoprene, is designed for atmospheric use and it is not suitable for use in the high temperature, oil atmosphere encountered in the engine's gear case.

DATE PROBLEM OCCURRED: Refer to section above.

DATE PROBLEM REPORTED: September 9, 1982 - CP&L (N. J. Chiangi) notified the NRC Region II (A. Hardin) that this item was reportable under 10CFR50.55(e) and 10CFR21.

SCOPE OF PROBLEM: The problem involves the two diesel engines shipped on Purchase Order NY-435079. These engines have isoprene governor drive couplings installed.

SAFETY IMPLICATION: The diesel-generator sets supply power to the ESF buses in case of a loss of both normal on-site and off-site power sources. In the high temperature, oil atmosphere encountered in the engine's gear case, the rubber deteriorates rapidly and ultimately fails. While the coupling is "fail safe" and will mechanically lock up when the element fails, sufficient frequency instability could be induced that would result in the engine's tripping off line, thereby affecting engine availability.

REASON DEFICIENCY IS REPORTABLE: If left uncorrected, failure of the governor drive coupling could result in the loss of the emergency on-site AC power supply.

**CORRECTIVE
ACTION:**

The isoprene element of the governor drive coupling will be replaced in accordance with the instructions attached to the Transamerica DeLaval to CP&L letter dated August 18, 1982 (FCR-M-1067, Revision I). This work requires capability to "bar" the engine over.

FINAL REPORT:

The corrective action stated above has been delayed due to the time required to implement the TDI owners group inspection program. A final report will be issued once the corrective action has been completed. It is currently projected that the submittal date will be April 15, 1985.

Conlow

Hunt

CP&L

84 APR 24 1984
Carolina Power & Light Company

P. O. Box 101, New Hill, N. C. 27562
April 18, 1984

Mr. James P. O'Reilly
United States Nuclear Regulatory Commission
Region II
101 Marietta Street, Northwest (Suite 2900)
Atlanta, Georgia 30303

NRC-212

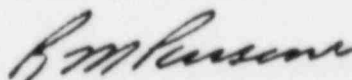
CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
1986 - 900,000 KW - UNIT 1
**PRESSURE SENSING LINE IN THE STARTING AIR SYSTEM
FOR EMERGENCY STANDBY DIESEL-GENERATOR SETS,
PURCHASE ORDER NY-435079, ITEM 80**

Dear Mr. O'Reilly:

Attached is our fifth interim report on the subject item which was deemed reportable per the provisions of 10CFR50.55(e), on April 19, 1982. CP&L is pursuing this matter, and it is currently projected that corrective action and submission of the final report will be accomplished by June 18, 1984.

Thank you for your consideration in this matter.

Yours very truly,



R. M. Parsons
Project General Manager
Shearon Harris Nuclear Power Plant

RMP/sh

Attachment

cc: Messrs. G. Maxwell/R. Prevatte (NRC-SHNPP)
Mr. R. C. DeYoung (NRC)

~~8445070260~~ 4pp

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT

UNIT NO. 1

INTERIM REPORT NO.5

PRESSURE SENSING LINE IN THE STARTING AIR SYSTEM FOR THE
EMERGENCY STANDBY DIESEL ENGINE GENERATOR SETS

ITEM 80
(DDR 870)

APRIL 18, 1984

REPORTABLE UNDER 10CFR50.55(e)

SUBJECT: Shearon Harris Nuclear Power Plant Unit No. 1
10CFR50.55(e) reportable deficiency concerning a potential problem with the pressure sensing lines in the starting air systems for the Emergency Standby Diesel Engine Generator Sets supplied by Transamerica DeLaval, Inc., under Purchase Order NY-435079.

ITEM: The pressure sensing line between the starting air storage tank manual isolation valve and pressure switch mounted on the starting air compressor for the Transamerica DeLaval, Inc. Standby Diesel Engine Generators: Model No. DS RV-16-4.

SUPPLIED BY: The manual isolation valves, compressors, and air tanks are supplied by Transamerica DeLaval, Inc., Oakland, California. The sensing line is furnished and installed by CP&L in accordance with the design documents generated by Ebasco Services, Inc.

NATURE OF DEFICIENCY: In a letter dated March 24, 1982, Transamerica DeLaval notified CP&L that in the event of a pressure sensing line failure during a seismic event, the starting air pressure could bleed down to 150 psig in a minimum of six minutes. The engine will not automatically start when the starting air pressure is less than 150 psig.

DATE PROBLEM OCCURRED: Refer to section above.

DATE PROBLEM REPORTED: April 19, 1982 - CP&L (N. J. Chiangi) notified the NRC (Region II - C. Julian) that this item was reportable under 10CFR50.55(e). Transamerica DeLaval reported this to the NRC under 10CFR, Part 21 on March 19, 1982.

SCOPE OF PROBLEM: The potential problem affects the four pressure sensing lines (two per diesel engine).

SAFETY IMPLICATION: The Emergency Standby Diesel Engine-Generator Sets supply power to the emergency safety features buses in the event of a loss of normal on-site and off-site power sources. Failure of the pressure sensing line could affect engine availability.

REASON

DEFICIENCY IS

REPORTABLE:

If left uncorrected, the diesel engines might not start during a pressure sensing line failure and emergency on-site A.C. power would not be available.

CORRECTIVE

ACTION:

Transamerica DeLaval recommends the installation of an 1/8" restrictive orifice between the manual isolation valve and the starting air tank, which would increase the time to reach 150 psig to 53 minutes if the sensing line failed. This orifice will be installed during installation of the diesel-generator.

FINAL REPORT:

The fabrication of the orifice has been delayed due to the inability to find a qualified machine shop willing to bid the purchase requisition. The requisition for this fabrication has been reissued and is scheduled to be completed by May 18, 1984. It is currently projected that the installation will be completed by May 30, 1984. The projected submittal date of a final report is June 18, 1984.

CP&L

Carolina Power & Light Company

84 JUN 20

P.O. Box 103, New Hill, N.C. 27562
June 18, 1984

Boatman
M. Hunt

Mr. James P. O'Reilly
United States Nuclear Regulatory Commission
Region II
101 Marietta Street, Northwest (Suite 2900)
Atlanta, Georgia 30323

NRC-232

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
1986 - 900,000 KW - UNIT 1
PRESSURE SENSING LINE IN THE STARTING AIR SYSTEM
FOR EMERGENCY STANDBY DIESEL-GENERATOR SETS,
PURCHASE ORDER NY-435079, ITEM 80

Dear Mr. O'Reilly:

Attached is the sixth interim report on the subject item which was deemed reportable per the provisions of 10CFR50.55(e), on April 19, 1982. CP&L is pursuing this matter, and it is currently projected that corrective action and submission of the final report will be accomplished by August 17, 1984.

Thank you for your consideration in this matter.

Yours very truly,

R. M. Parsons

R. M. Parsons
Project General Manager
Shearon Harris Nuclear Power Plant

RMP/rtj

Attachment

cc: Messrs. G. Maxwell/R. Prevatte (NRC-SHNPP)
Mr. R. C. DeYoung (NRC)

8406280459
POA/ADOCAL/50-400S
4pp.

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT

UNIT NO. 1

INTERIM REPORT NO. 6

PRESSURE SENSING LINE IN THE STARTING AIR SYSTEM FOR THE
EMERGENCY STANDBY DIESEL ENGINE GENERATOR SETS

ITEM 80
(DDR 870)

JUNE 18, 1984

REPORTABLE UNDER 10CFR50.55(e)

SUBJECT: Shearon Harris Nuclear Power Plant Unit No. 1
10CFR50.55(e) reportable deficiency concerning a potential problem with the pressure sensing lines in the starting air systems for the Emergency Standby Diesel Engine Generator Sets supplied by Transamerica DeLaval, Inc., under Purchase Order NY-435079.

ITEM: The pressure sensing line between the starting air storage tank manual isolation valve and pressure switch mounted on the starting air compressor for the Transamerica DeLaval, Inc. Standby Diesel Engine Generators: Model No. DS RV-16-4.

SUPPLIED BY: The manual isolation valves, compressors, and air tanks are supplied by Transamerica DeLaval, Inc., Oakland, California. The sensing line is furnished and installed by CP&L in accordance with the design documents generated by Ebasco Services, Inc.

NATURE OF DEFICIENCY: In a letter dated March 24, 1982, Transamerica DeLaval notified CP&L that in the event of a pressure sensing line failure during a seismic event, the starting air pressure could bleed down to 150 psig in a minimum of six minutes. The engine will not automatically start when the starting air pressure is less than 150 psig.

DATE PROBLEM OCCURRED: Refer to section above.

DATE PROBLEM REPORTED: April 19, 1982 - CP&L (N. J. Chiangi) notified the NRC (Region II - C. Julian) that this item was reportable under 10CFR50.55(e). Transamerica DeLaval reported this to the NRC under 10CFR, Part 21 on March 19, 1982.

SCOPE OF PROBLEM: The potential problem affects the four pressure sensing lines (two per diesel engine).

SAFETY IMPLICATION: The Emergency Standby Diesel Engine-Generator Sets supply power to the emergency safety features buses in the event of a loss of normal on-site and off-site power sources. Failure of the pressure sensing line could affect engine availability.

REASON

DEFICIENCY IS
REPORTABLE:

If left uncorrected, the diesel engines might not start during a pressure sensing line failure and emergency on-site A.C. power would not be available.

CORRECTIVE

ACTION:

Transamerica DeLaval recommends the installation of an 1/8" restrictive orifice between the manual isolation valve and the starting air tank, which would increase the time to reach 150 psig to 53 minutes if the sensing line failed. This orifice will be installed during installation of the diesel-generator.

FINAL REPORT:

The Q-related stock material for the orifice arrived on site June 1, 1984. It is currently projected that the fabrication and installation will be completed by July 30, 1984. The projected submittal date of a final report is August 17, 1984.

CP&L

Carolina Power & Light Company

P.O. Box 101, New Hill, N.C. 27522
August 16, 1984

PRP
OFFICIAL COPY

Common
Hunt
info

Mr. James P. O'Reilly
United States Nuclear Regulatory Commission
Region II
101 Marietta Street, Northwest (Suite 2900)
Atlanta, Georgia 30323

NRC-256

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
1986 - 900,000 KW - UNIT 1
PRESSURE SENSING LINE IN THE STARTING AIR SYSTEM
FOR EMERGENCY STANDBY DIESEL-GENERATOR SETS,
PURCHASE ORDER NY-435079, ITEM 80

Dear Mr. O'Reilly:

Attached is the final report on the subject item which was deemed reportable per the provisions of 10CFR50.55(e), on April 19, 1982. With this report, Carolina Power & Light Company considers this matter closed.

If you have any questions regarding this matter, please do not hesitate to contact me.

Yours very truly,

R. M. Parsons

R. M. Parsons
Project General Manager
Shearon Harris Nuclear Power Plant

RMP/jam

Attachment

cc: Messrs. G. Maxwell/R. Prevatte (NRC-SHNPP)
Mr. R. C. DeYoung (NRC)

8409100101 4pp.
POA/ADOC/50-4005

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT

UNIT NO. 1

FINAL REPORT

PRESSURE SENSING LINE IN THE STARTING AIR SYSTEM FOR THE
EMERGENCY STANDBY DIESEL ENGINE GENERATOR SETS

ITEM 80
(DDR 870)

AUGUST 17, 1984

REPORTABLE UNDER 10CFR50.55(e)

SUBJECT: Shearon Harris Nuclear Power Plant Unit No. 1
10CFR50.55(e) reportable deficiency concerning a potential problem with the pressure sensing lines in the starting air systems for the Emergency Standby Diesel Engine Generator Sets supplied by Transamerica DeLaval, Inc., under Purchase Order NY-435079.

ITEM: The pressure sensing line between the starting air storage tank manual isolation valve and pressure switch mounted on the starting air compressor for the Transamerica DeLaval, Inc. Standby Diesel Engine Generators: Model No. DS RV-16-4.

SUPPLIED BY: The manual isolation valves, compressors, and air tanks are supplied by Transamerica DeLaval, Inc., Oakland, California. The sensing line is furnished and installed by CP&L in accordance with the design documents generated by Ebasco Services, Inc.

NATURE OF DEFICIENCY: In a letter dated March 24, 1982, Transamerica DeLaval notified CP&L that in the event of a pressure sensing line failure during a seismic event, the starting air pressure could bleed down to 150 psig in a minimum of six minutes. The engine will not automatically start when the starting air pressure is less than 150 psig.

DATE PROBLEM OCCURRED: Refer to section above.

DATE PROBLEM REPORTED: April 19, 1982 - CP&L (N. J. Chiangi) notified the NRC (Region II - C. Julian) that this item was reportable under 10CFR50.55(e). Transamerica DeLaval reported this to the NRC under 10CFR, Part 21 on March 19, 1982.

SCOPE OF PROBLEM: Upon objective review of the design documents, it was determined that this potential problem does not affect the SHNPP diesel generator sets.

SAFETY IMPLICATION: The Emergency Standby Diesel Engine-Generator Sets supply power to the emergency safety features buses in the event of a loss of normal on-site and off-site power sources. The pressure sensing line is Seismic Category I and should not fail during a seismic event.

REASON

DEFICIENCY IS
REPORTABLE:

This item was not reportable since the sensing line is Seismic Category I.

CORRECTIVE
ACTION:

Transamerica DeLaval had recommended the installation of an 1/8" restrictive orifice between the manual isolation valve and the starting air tank, which would increase the time to reach 150 psig to 53 minutes if the sensing line failed. This orifice will not be installed since the sensing line used at SHNPP is Seismic Category I and should not fail during a seismic event.

CP&L

Carolina Power & Light Company

COPY

Shearon Harris Nuclear Power Plant
Nuclear Operations Department
P. O. Box 165
New Hill, North Carolina 27562
January 29, 1982

FILE: SHF/10-5095/5105/5110

SERIAL: SHNPP-82-091

MEMORANDUM TO: File

FROM: C. S. Hinnant

SUBJECT: 10 CFR 21 Report Concerning Standby Diesel Generator-
Governor Lube Oil Cooler

On December 9, 1981, Transamerica Delaval Inc. notified the U. S. Nuclear Regulatory Commission of a potential problem in the Standby Diesel Generator Governor Lube Oil Cooler assembly. On December 18, 1981, Transamerica Delaval Inc. notified Shearon Harris Nuclear Power Plant of this problem.

An inspection by B. M. Hynds of the Nuclear Power Engineering Department of Shearon Harris Nuclear Power Plant on January 6, 1982 revealed the problem does not exist on the Diesel Engines supplied to Shearon Harris Nuclear Power Plant. Copies of pertinent correspondence from a part of this memorandum.

✓ GJL/ewb*

cc: Document Control
Day File

CAROLINA POWER & LIGHT COMPANY
CORPORATE QUALITY ASSURANCE DEPARTMENT

DDR No. 1255

Page 1 of 3

RFT No. 5095.001

Rev. 10

DEFICIENCY AND DISPOSITION REPORT

(Procedure CQC-2)

Item/Activity Name or Description	Shop Order	Code Class	Quantity	Unit	Quality Assurance (PO & Item No.)
<u>Diesel Generator Check Valves</u>	<u>N/A</u>	<u>IE-Generator</u>	<u>2 GENERA.</u>	<u>1, 2</u>	<u>QA- 435079</u>
Serial, Heat or Other Identification No.	Supplier or Manufacturer		Type of Procurement		
<u>Generator SN 74046 +75047</u>	<u>TRANSMEKA Check Val. Inc.</u>		<input type="checkbox"/> CP&L PO <input type="checkbox"/> Transfer <input type="checkbox"/> A-E PO <input type="checkbox"/> NSSS PO		
Violation (Specification, Drawing, Procedure or Other)		NCR No.	Reporting Inspector		
<u>CAR-SH-E-11 (SEE DEF DETAILS)</u>		<u>N/A</u>	<u>Rhet Hunt</u>		

CAR-SH-E-11 (SEE DEF DETAILS)

Deficiency Details:

TRANSMEKA Check Val. Inc. HAS IDENTIFIED a problem with a starting air check valve.

During a seismic qualification test, one of these valves was found to leak

TDI corrected this by installing a modified disc in the valve, but inadvertently shipped 3 valves that had not been modified

The subject TDI part nos are items 3252 and 5252 SHIPPED 7/14/82 in boxes # 71 and # 65 respectively

See attached documentation for further explanation

DDR Evaluation

<input type="checkbox"/>	Construction Phase
<input checked="" type="checkbox"/>	Engineering Phase
<input type="checkbox"/>	QA Program Violation
<input type="checkbox"/>	Specification Deviation
<input type="checkbox"/>	Procedural Deviation
<input type="checkbox"/>	Unacceptable Workmanship
<input checked="" type="checkbox"/>	Damage/Defect
<input type="checkbox"/>	Other
<input type="checkbox"/>	Not Reportable

Eval.	Site	QA		
By -	QA/QC	Engr.	HPES	NPT
Date				

Rhet Hunt HC
QA/QC Specialist/Engineer

12/20/82
Date

5 Hold Tags Applied

Final Disposition:

Verified ☐

Hold Tags Removed ☐

Remarks:

QA/QC Inspector

Date

Accepted by:

QA/QC Specialist/Engineer

Date

ANI Concurrence (ASME Code Section III Items Only):

Authorized Nuclear Inspector

Date

Report Closed:

Director - QA/QC - SHNPP

Date

Distribution:

Orig: Director - QA/QC - SHNPP
CC: Proj. Gen. Mgr./Sr. Res. Engr.
Gen. Mgr. (SU/Operations)
Reg. Comp. Unit (SU/Operations)
Initiating QA/QC Specialist
Accounting
Mgr. - E&C QA/QC
☒ Mgr. - HPES (CAR)
☒ Start-Up K. Halc
☐ NSSS Site Rep.
☐ SAT

QA-1
5/30/82
Rev. 10

CAROLINA POWER & LIGHT COMPANY
CORPORATE QUALITY ASSURANCE DEPARTMENT

DDR No. 1619

Page 1 of 1

RFT No. _____

DEFICIENCY AND DISPOSITION REPORT

(Procedure CQC-2)

Item/Activity Name or Description	Shop Order	Code Class	Quantity	Unit	Quality Assurance (PO & Item No.)
GENERATOR ROTORS	N/A	SEISMIC 1	2	1	QA-435079-1
Serial, Heat or Other Identification No.	Supplier or Manufacturer		Type of Procurement		
1A-SA & 1B-SB	TRANSAMERICA DELAVAL		<input type="checkbox"/> CP&L PO <input type="checkbox"/> Transfer <input checked="" type="checkbox"/> A-E PO <input type="checkbox"/> NSSS PO		
Violation (Specification, Drawing, Procedure or Other)	NCR No.	Reporting Inspector			
SEE DEFICIENCY DETAILS	N/A	Richard N. Nauen			

Deficiency Details: THE FOLLOWING DEFICIENCIES WERE NOTED ON THE ABOVE GENERATOR ROTORS.

1A-SA

6 POLE WASHERS (3 INTERIOR AND 3 EXTERIOR) WERE DAMAGED.

RUST WAS EXHIBITED ON THE ROTATING ELEMENT

1B-SB

ONE LOOSE WIRE

A MEGGER WOULD NOT REGISTER

RUST WAS EXHIBITED ON THE ROTATING ELEMENT

DDR Evaluation				
<input checked="" type="checkbox"/>	Construction Phase			
<input checked="" type="checkbox"/>	Engineering Phase			
<input type="checkbox"/>	QA Program Violation			
<input checked="" type="checkbox"/>	Specification Deviation			
<input type="checkbox"/>	Procedural Deviation			
<input checked="" type="checkbox"/>	Unacceptable Workmanship			
<input checked="" type="checkbox"/>	Damage/Defect			
<input type="checkbox"/>	Other			
<input checked="" type="checkbox"/>	Not Reportable			
	Site	QA	HPES	NPCD
	QA/QC	Engr.		
Eval.				
By -	ALF	KWH	DTM	
Date	6/10/83			

Richard N. Nauen
QA/QC Specialist/Engineer

6/10/83
Date

2 HOLD TAGS APPLIED

Final Disposition:

Verified ☐

Hold Tags Removed ☐

Remarks:

Distribution:

Orig: Director - QA/QC - SHNPP
CC: Proj. Gen. Mgr./Sr. Res. Engr.
Gen. Mgr. (SU/Operations)
Reg. Comp. Unit (SU/Operations)
Initiating QA/QC Specialist
Accounting
Mgr. - E&C QA/QC
☒ Mgr. - HPES (CH2)
☒ Start-Up (CARLIE ROSE)
☐ NSSS Site Rep.
☐ ANI

QA/QC Inspector _____ Date _____

Accepted by:

QA/QC Specialist/Engineer _____ Date _____

ANI Concurrence (ASME Code Section III Items Only):

Authorized Nuclear Inspector _____ Date _____

Report Closed:

Director - QA/QC - SHNPP _____ Date _____

CLOSED

QA-1

CAROLINA POWER & LIGHT COMPANY
CORPORATE QUALITY ASSURANCE DEPARTMENT

DDR No. 1785

Page 1 of 38

7-22-82

CONSTR. QUALITY ASSURANCE DEFICIENCY AND DISPOSITION REPORT
(Procedure CQC-2)

RFT No. 1-5095000004

Item/Activity Name or Description	Shop Order	Code Class	Quantity	Unit	Quality Assurance N (PO & Item No.)
ENGINE CONTROL PANELS	N/A	IE	2	1	QA-435079-1a, 1b
Serial, Heat or Other Identification No.	Supplier or Manufacturer TRANSMERICA DELAVAL Oakland, California		Type of Procurement <input type="checkbox"/> CP&L PO <input type="checkbox"/> Transfer <input type="checkbox"/> A-E PO <input type="checkbox"/> NSSS PO		
Violation (Specification, Drawing, Procedure or Other)	NCR No.		Reporting Inspector		
TRANSMERICA DELAVAL WELDING Criteria	N/A		Clay Rude Reginald L. Faulkner / Phil Hunt for		
Deficiency Details:			DDR Evaluation		

QC RELEANT INSPECTION REVEALED WELDING DEFICIENCIES ON 2 OF 2
ENGINE CONTROL PANELS.
SEE ATTACHMENTS FOR DETAILS.
ITEMS RECEIVED ON QUALITY RELEASE dated 5/31/83

<input type="checkbox"/> Construction Phase	Site	QA		
<input checked="" type="checkbox"/> Engineering Phase	QA/QC	Engr.	HPES	NPCD
<input type="checkbox"/> QA Program Violation				
<input checked="" type="checkbox"/> Specification Deviation				
<input checked="" type="checkbox"/> Procedural Deviation				
<input checked="" type="checkbox"/> Unacceptable Workmanship				
<input checked="" type="checkbox"/> Damage/Defect				
<input type="checkbox"/> Other				
<input checked="" type="checkbox"/> Not Reportable				
Eval. By -	GLF	FS	DCM	
Date	8-9-83			

* DETERMINED NOT TO BE REPORTABLE
UNDER 10CFR21 & 10CFR50.55 (C)
RP 8-17-83

2 Conditional Release Tags Applied
2 Hold Tags Applied for 1785 PER REA

Final Disposition:

Verified ☒

Hold Page Removed ☒
4 B Conditional Release Tags
6/29/83

Remarks:

QA/QC Specialist/Engineer

7/26/83
Date

Reginald L. Faulkner
QA/QC Inspector

9-12-83
Date

Accepted by:

Phil Hunt
QA/QC Specialist/Engineer

9/15/83
Date

Distribution:

- Orig: Director - QA/QC - SHNPP
CC: Proj. Gen. Mgr./Sr. Res. Engr.
Gen. Mgr. (SU/Operations)
Reg. Comp. Unit (SU/Operations)
Initiating QA/QC Specialist
Accounting
Mgr. - E&C QA/QC
☒ Mgr. - HPES (CAR) T. Cokerill
☒ Start-Up C. Rose
☐ NSSS Site Rep.
☐ ANI
☒ Ed Willett

ANI Concurrence (ASME Code Section III Items Only):

NA

Authorized Nuclear Inspector

Date

Report Closed:

Director - QA/QC - SHNPP

Date

QA-1
7/30/82
Rev. 10

CAROLINA POWER & LIGHT COMPANY
CORPORATE QUALITY ASSURANCE DEPARTMENT
DEFICIENCY AND DISPOSITION REPORT

DDR No. 1619
Page 1 of 6
RFT No. 5095.00
5095.00

(Procedure CQC-2)

Item/Activity Name or Description	Shop Order	Code Class	Quantity	Unit	Quality Assurance (PO & Item No.)
DIESEL GENERATOR (ROTOR STATOR ACB)	N/A	IE	2	1.2	QA-455079-14, 1
Serial, Heat or Other Identification No.	Supplier or Manufacturer		Type of Procurement		
TAG 1A-SA 12-SB	S/N 1740-B432-200 1740-B433-200		TRANSAMERICA DELAVAL, INC. 550 BSW AVE. OAKLAND, CA. 94621		<input type="checkbox"/> CP&L PO <input type="checkbox"/> Transfe <input type="checkbox"/> A-E PO <input type="checkbox"/> NSSS P
Violation (Specification, Drawing, Procedure or Other)	NCR No.		Reporting Inspector		
CAR-SH-E11 R/G, DRAWINGS, CQC-6, FSAR-SECTION B.3.1.3	N/A		John S. Baulow 8/2/82		

Deficiency Details:

PRIMARY INSPECTION REVEALED DIMENSIONAL,
ELECTRICAL, SPECIFICATION DEFICIENCIES AS
REFERENCED ON PAGES 2 THRU 6.

DDR Evaluation

<input checked="" type="checkbox"/> Construction Phase
<input checked="" type="checkbox"/> Engineering Phase
<input checked="" type="checkbox"/> QA Program Violation
<input checked="" type="checkbox"/> Specification Deviation
<input checked="" type="checkbox"/> Procedural Deviation
<input checked="" type="checkbox"/> Unacceptable Workmanship
<input checked="" type="checkbox"/> Damage/Defect
<input type="checkbox"/> Other
<input type="checkbox"/> Not Reportable *

Site	QA	HPES	NP
QA/QC	Engr.		
Eval.			
By -			
Date			

* Under evaluation by HPES

REFERENCES: DDR-1619 FOR DAMAGE & STORAGE
DEFICIENCIES.

DDR-1692-GENERATOR 1B-SB WELD
DEFICIENCIES.

DDR-1751-GENERATOR 1A-SA WELD
DEFICIENCIES.

QA/QC Specialist/Engineer

8-3-82

Date

Final Disposition:

Verified ☐

Hold Tags Removed ☐

Remarks:

QA/QC Inspector

Date

Accepted by:

QA/QC Specialist/Engineer

Date

Distribution:

Orig: Director - QA/QC - SHNPP
CC: Proj. Gen. Mgr./Sr. Res. Engr.
Gen. Mgr. (SU/Operations)
Reg. Comp. Unit (SU/Operations)
Initiating QA/QC Specialist
Accounting
Mgr. - E&C QA/QC
☒ Mgr. - HPES (CAR)
☒ Start-Up CHARLIE ROSE
☐ NSSS Site Rep.
☐ ANI
☒ Tom Johnson

ANI Concurrence (ASME Code Section III Items Only):

Authorized Nuclear Inspector

Date

Report Closed:

Director - QA/QC - SHNPP

Date

T. Cokerill

QA-1
8/15/83
Rev. 11

CAROLINA POWER & LIGHT COMPANY
CORPORATE QUALITY ASSURANCE DEPARTMENT
DEFICIENCY AND DISPOSITION REPORT
(Procedure CQC-2)

DDR No. 1926

Page 1 of 2

RFT No. 1-5045.007
1-5045.008

Item/Activity Name or Description	Shop Order	Code Class	Quantity	Unit	Quality Assurance No. (PO & Item No.)
SEQUENCER PANELS	N/A	IE	2	1	QA-435248-1
Serial, Heat or Other Identification No.	Supplier or Manufacturer		Type of Procurement		
1A-SA AND 1B-SB	SYSTEM CONTROL IRON MOUNTAIN, MICHIGAN		<input type="checkbox"/> CP&L PO <input type="checkbox"/> Transfer <input checked="" type="checkbox"/> A-E PO <input type="checkbox"/> NSSS PO		
Violation (Specification, Drawing, Procedure or Other)	NCR No.		Reporting Inspector		
SEE DETAILS (PAGES 2 THRU 8), AND BELOW.	N/A		John Barbour 8/25/83		

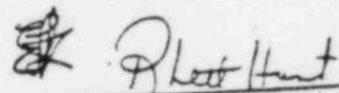
Deficiency Details:

RECEIPT INSPECTION REVEALED DEFICIENCIES
AS NOTED BELOW.
REFERENCE PAGES 2 THRU 8 FOR DETAILS ON
ELECTRICAL INSPECTION. 8/25/83

- NOTE 1. WELDING AND DIMENSIONAL INSPECTION WILL
BE PERFORMED AT A LATER DATE.
- NOTE 2. SUBJECT PANELS WERE RECEIVED UNDER
EASCO QUALITY RELEASE DATED JUNE 10, 1983.
- NOTE 3. VENDOR INSTRUCTION MANUALS (25 COPIES) HAVE
NOT BEEN RECEIVED ON SITE AS REQUIRED.
REFERENCE CAR-SH-IN-27 REV. 5 PARAGRAPH 12.
- NOTE 4. SEISMIC CERTIFICATION FOR SUBJECT PANELS
HAVE NOT BEEN PROVIDED AS REQUIRED.
REFERENCE CAR-SH-IN-27 REV. 5 PARAGRAPH 8.

DDR Evaluation			
<input checked="" type="checkbox"/>	Construction Phase		
<input checked="" type="checkbox"/>	Engineering Phase		
<input checked="" type="checkbox"/>	QA Program Violation		
<input checked="" type="checkbox"/>	Specification Deviation		
<input checked="" type="checkbox"/>	Procedural Deviation		
<input checked="" type="checkbox"/>	Unacceptable Workmanship		
<input checked="" type="checkbox"/>	Damage/Defect		
<input type="checkbox"/>	Other		
<input type="checkbox"/>	Not Reportable		
	Site	QA	
	QA/QC	Engr.	
Eval.			
By -			
Date			

UNDER EVALUATION BY HPES


QA/QC Specialist/Engineer

8-26
Date

5 HOLD TAGS APPLIED.

Final Disposition:

Hold Tags Removed ☐

Remarks:

Accepted By: _____ Date _____
QA/QC Specialist/Engineer

Verified By: _____ Date _____
QA/QC Inspector

Reviewed By: _____ Date _____
QA/QC Specialist/Engineer

Distribution:

- Orig: Director - QA/QC SHNPP
cc: Proj. Gen. Mgr./Sr. Res. Engr.
Gen. Mgr. (SU/Operations)
Initiating QA/QC Specialist
Accounting
Mgr. - QA/QC - Harris Plant
☒ Mgr. HPES
☒ Start-Up C. ROSE
☐ NSSS Site Rep.
☐ ANI
☐ NRC Resident Inspector

ANI Concurrence (ASME Code Section III Items Only)

Authorized Nuclear Inspector Date _____

Report Closed:

Director - QA/QC - Harris Plant Date _____

QA-1
8/15/83
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CAROLINA POWER & LIGHT COMPANY
CORPORATE QUALITY ASSURANCE DEPARTMENT
DEFICIENCY AND DISPOSITION REPORT
(Procedure CQC-2)

DDR No. 1982

Page 1 of 14

RFT No. 1-5095-003
.004

Item/Activity Name or Description	Shop Order	Code Class	Quantity	Unit	Quality Assurance No. (PO & Item No.)
ENGINE CONTROL PANELS	N/A	1E	2	1	QA-435079-1a, 1b
Serial, Heat or Other Identification No.	Supplier or Manufacturer		Type of Procurement		
TAG NO. -1A-SA S/N-74046/2643	TRANSAMERICA DELAVAL, INC.		<input type="checkbox"/> CP&L PO <input type="checkbox"/> Transfer		
TAG NO. -1B-SB S/N-74047/2644	OAKLAND, CA.		<input checked="" type="checkbox"/> A-E PO <input type="checkbox"/> NSSS PO		
Violation (Specification, Drawing, Procedure or Other)			NCR No.	Reporting Inspector	
SEE DETAILS			N/A	JOHN BARBOW 9/3/83	

Deficiency Details:

RECEIPT INSPECTION OF SUBJECT ENGINE CONTROL PANELS REVEALED ELECTRICAL DEFICIENCIES AS NOTED ON PAGES 2 OF 14 THRU 14 OF 14.

NOTES

- A. REFERENCE DDR-1785 FOR WELDING DEFICIENCIES.
- B. DIMENSIONAL INSPECTION WILL BE FORTHCOMING.
- C. SUBJECT PANELS WERE RECEIVED UNDER EBASCO QUALITY RELEASE DATED MAY 31, 1983.

DDR Evaluation			
<input checked="" type="checkbox"/>	Construction Phase		
<input checked="" type="checkbox"/>	Engineering Phase		
<input checked="" type="checkbox"/>	QA Program Violation		
<input checked="" type="checkbox"/>	Specification Deviation		
<input checked="" type="checkbox"/>	Procedural Deviation		
<input type="checkbox"/>	Unacceptable Workmanship		
<input type="checkbox"/>	Damage/Defect		
<input type="checkbox"/>	Other		
<input type="checkbox"/>	Not Reportable		
	Site QA	HPES	WPC
	QA/QC Engr.		
Eval.			
By -			
Date			

Under evaluation by HPES

QA/QC Specialist/Engineer

9-9-83
Date

2 HOLD TAGS APPLIED.

Final Disposition:

Hold Tags Removed ☐

Remarks:

Accepted By:

QA/QC Specialist/Engineer

Date

Verified By:

QA/QC Inspector

Date

Reviewed By:

QA/QC Specialist/Engineer

Date

Distribution:

- Orig: Director - QA/QC SHNPP
cc: Proj. Gen. Mgr./Sr. Res. Engr.
Gen. Mgr. (SU/Operations)
Initiating QA/QC Specialist
Accounting
Mgr. - QA/QC - Harris Plant
☒ Mgr. HPES
☒ Start-Up C. ROSE
☐ NSSS Site Rep.
☐ ANI
☐ NRC Resident/Inspector

ANI Concurrence (ASME Code Section III Items Only)

Authorized Nuclear Inspector

Date

Report Closed:

Director - QA/QC - Harris Plant

Date

QA-1
8/15/83
Rev. 11

CAROLINA POWER & LIGHT COMPANY
CORPORATE QUALITY ASSURANCE DEPARTMENT
DEFICIENCY AND DISPOSITION REPORT
(Procedure CQC-2)

DDR No. 2019
Page 1 of 12
RFT No. 1-3075.00
1-5075.008

Item/Activity Name or Description <u>Sequencer Panels</u>	Shop Order <u>NA</u>	Code Class. <u>Seismic 19</u> <u>IE</u>	Quantity <u>2</u>	Unit <u>1</u>	Quality Assurance No. (PO & Item No.) <u>QA-NY43524E-1</u>
Serial, Heat or Other Identification No. <u>1ASA & 1RSR</u>	Supplier or Manufacturer <u>SYSTEMS CONTROL</u>		Type of Procurement <input type="checkbox"/> CP&L PO <input type="checkbox"/> Transfer <input checked="" type="checkbox"/> A-E PO <input type="checkbox"/> NSSS PO		
Violation (Specification, Drawing, Procedure or Other) <u>AWS D11 PW-AS-3677</u>		NCR No. <u>NA</u>	Reporting Inspector <u>William Perce 9/15/83</u>		

Deficiency Details:

Welding Deficiencies for

The above Panels were noted at Receipt
inspection. See weld inspection reports

for welding deficiencies
see attached drawings for pc to pc.

Location where No 3

DDR Evaluation

<input type="checkbox"/> Construction Phase	Site QA/QC	QA Engr.	HPES	NPCD
<input checked="" type="checkbox"/> Engineering Phase				
<input type="checkbox"/> QA Program Violation	Eval. By -	Date		
<input checked="" type="checkbox"/> Specification Deviation				
<input checked="" type="checkbox"/> Procedural Deviation				
<input type="checkbox"/> Unacceptable Workmanship				
<input type="checkbox"/> Damage/Defect				
<input type="checkbox"/> Other				
<input type="checkbox"/> Not Reportable				

* Under Evaluation by HPES

8/26-83

Robert H. W.
QA/QC Specialist/Engineer

9-16-83
Date

Final Disposition: 24 Hold Tags Applied ☐ Hold Tags Removed

Remarks:

Accepted By: _____ Date _____
QA/QC Specialist/Engineer
Verified By: _____ Date _____
QA/QC Inspector
Reviewed By: _____ Date _____
QA/QC Specialist/Engineer

Distribution:

Orig: Director - QA/QC SHNPP
cc: Proj. Gen. Mgr./Sr. Res. Engr.
Gen. Mgr. (SU/Operations)
Initiating QA/QC Specialist
Accounting
Mgr. - QA/QC - Harris Plant
☒ Mgr. HPES
☒ Start-Up C. Rose
☐ NSSS Site Rep.
☐ ANI
☒ NRC Resident Inspector
CRAB - 21 DUAL

ANI Concurrence (ASME Code Section III Items Only):

Authorized Nuclear Inspector Date _____

Report Closed:

Director - QA/QC - Harris Plant Date _____

QA-1
8/15/83
Rev. 11

CAROLINA POWER & LIGHT COMPANY
CORPORATE QUALITY ASSURANCE DEPARTMENT
DEFICIENCY AND DISPOSITION REPORT
(Procedure CQC-1)

DDR No. 2028
Page 1 of 10
RFT No. 1-5095-200

Item/Activity Name or Description	Shop Order	Code Class	Quantity	Unit	Quality Assurance No. (PO & Item No.)
Diesel Generator Control Panels	N/A	IE	2	1	QA-435079-1
Serial, Heat or Other Identification No.	Supplier or Manufacturer		Type of Procurement		
TAG No. 1A-SA	Transamerica DeLoval		<input type="checkbox"/> CP&L PO <input type="checkbox"/> Transfer		
TAG No. 1B-SB	INC. OAKLAND, C.A.		<input checked="" type="checkbox"/> A-E PO <input type="checkbox"/> NSSS PO		
Violation (Specification, Drawing, Procedure or Other)	WCR No.	Reporting Inspector			
	83-112	SAMUEL A. Stewart K-2282			

See Details for itemized problems.

Deficiency Details:

1. ^{Receipt} Inspection of subject Diesel Generator Control Panels revealed electrical deficiencies as noted on pages 2 of 10 thru 10 of 10.
2. Panels were received under EBASCO Quality release dated 2-18-83

DDR Evaluation

<input checked="" type="checkbox"/> Construction Phase	
<input checked="" type="checkbox"/> Engineering Phase	
<input checked="" type="checkbox"/> QA Program Violation	
<input checked="" type="checkbox"/> Specification Deviation	
<input checked="" type="checkbox"/> Procedural Deviation	
<input checked="" type="checkbox"/> Unacceptable Workmanship	
<input checked="" type="checkbox"/> Damage/Defect	
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Not Reportable	
Site QA HPES NPS	
QA/QC Engr.	
Eval.	
By -	
Date	

*Under evaluation by HPES

Conditionally 9-16-83

2 hold tags applied

Photo L X
QA/QC Specialist/Engineer

9-20-83
Date

Final Disposition: Hold Tags Removed ☐

Remarks:

Accepted By: _____ Date _____
QA/QC Specialist/Engineer

Verified By: _____ Date _____
QA/QC Inspector

Reviewed By: _____ Date _____
QA/QC Specialist/Engineer

Distribution:

- Orig: Director - QA/QC SHNPP
cc: Proj. Gen. Mgr./Sr. Res. Engr.
Gen. Mgr. (SU/Operations)
Initiating QA/QC Specialist
Accounting
Mgr. - QA/QC - Harris Plant
- ☒ Mgr. HPES
☒ Start-Up C. Rose
☐ NSSS Site Rep.
☐ ANI
☒ NRC Resident Inspector
☒ CAR - Robert Prunty

ANI Concurrence (ASME Code Section III Items Only):

Authorized Nuclear Inspector _____ Date _____

Report Closed: _____

Director - QA/QC - Harris Plant _____ Date _____

Instruction Manual

Engine Data

Model DSRV-16-4		<input checked="" type="checkbox"/> Stationary <input type="checkbox"/> Marine <input checked="" type="checkbox"/> Nuclear Standby <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Dual Fuel <input type="checkbox"/> Heavy Fuel <input checked="" type="checkbox"/> V-type <input type="checkbox"/> Inline					
Serial No(s): 74046-2644, 74047-2645 74048-2646, 74049-2647							
No. Cylinders 16	Bore 17 IN.	Stroke 21 IN.	Cycles 4	Displacement/Cylinder 4766.6 CU-IN.	Total Displacement 76,266 CU-IN.		
bmeep 209 PSI	bhp 9074	rpm 450	Crankshaft Rotation CLOCKWISE, WHEN VIEWED FROM THE FLYWHEEL END				
Controls RIGHT HAND			Starting System PILOT AIR, GEAR DRIVEN DISTRIBUTOR				
Firing Order 1L-8R-4L-5R-7L-2R-3L-6R-8L-1R-5L-4R-2L-7R-6L-3R							
Fuel Injection Timing SEE ENGINE NAMEPLATE							
Fuel Injection Pump Rack at Full Load SEE ENGINE NAMEPLATE							
Valve Clearance - Cold Engine INTAKE: 0.040 IN. EXHAUST: 0.040 IN.							
Remarks SEE APPENDIX IX FOR FACTORY TEST RESULTS							

Always include serial numbers when communicating with Transamerica Delevall Inc., Engine and Compressor Division concerning engine performance, or when ordering spare or replacement parts. Refer to Appendix IX for copies of the Factory Test Logs, and a summary of factory test results.

JACKET WATER SYSTEM.

The jacket water system is individual for each engine, and provides the cooling medium for the engine, oil cooler, turbochargers, exhaust manifold jackets, the governor and the intercoolers. The recommended water treatment is sodium dichromate and boiler compound. Refer to Section 6 of this manual for the method of treatment. The jacket water system consists of an engine-driven jacket water pump to circulate the coolant, a temperature control valve to regulate the temperature of the water, passages within the engine through which the water flows, and where heat is absorbed from the engine, a cooler to cool the water and a standpipe to maintain a constant head on the pump and to allow for expansion and bleeding of entrained air. The standpipe is fitted with a heater for warming the water and a "keep warm" pump for circulating the warm water through the system to keep the engine warmed while in a standby status. The pump, engine and cooler are connected in a series circuit, and drains must be installed at all low points and vents at all high points. All piping must be properly supported to minimize pipe vibration and flange loading. Flexible couplings are not recommended at customer connections because of potential failure hazard during operation. Refer to the jacket water piping schematic drawing in the "Drawings" section of the manual for the relative location of system components, pipe sizes and direction of flow.

RAW WATER SYSTEM.

No specific raw water system is provided by Transamerica Delaval for this system. Rather, raw water from the owner's systems is provided at 1,205 gpm at connection 276 and is returned at connection 277 for cooling the jacket water. Refer to the jacket water piping schematic for details.

FUEL OIL SYSTEM.

The fuel system provides the means for storing fuel in the day tank, removal from the day tank and delivery to the fuel injection pumps at the cylinders. The fuel oil system piping schematic drawing in the "Drawings" section of this manual show the pipe sizes, connections, direction of flow and relative location of all major components. Fuel injection equipment on the engine is hand lapped to extremely close tolerances, therefore, fuel cleanliness is of the utmost importance. The fuel system must be kept clean as possible during installation and assembly, and should be cleaned internally and blown clean before initial start up. All piping must be properly supported to minimize pipe vibration and flange loading. Flexible connections are not recommended at customer connections because of the potential failure hazard during operation. All piping must be mechanically cleaned after welding and preserved to prevent rust. The day tank should be mounted high enough to provide adequate suction at the engine-driven fuel oil booster pump. Drains should be provided at all low points and vents at all high points.

LUBRICATING OIL SYSTEM.

The lubricating oil system is of the dry sump type which has a sump tank for holding the oil supply. Oil is circulated through the system by an engine-driven pump. Refer to the lubricating oil piping schematic drawing in the "Drawings" section of this manual for the specific details of the system, relative location of major components, direction of flow, and notes relative to installation of the system.

FLOW PRINCIPLE.

Pump suction draws the lubricating oil from the sump tank and discharges it to the lubricating oil cooler. Flow from the cooler is through a lubricating oil filter and pressure strainer to the engine main headers. A branch line from the strainer takes oil to the turbochargers. Return is by gravity flow from the engine base to the sump tank. Separate lines direct return flow from the turbochargers from the sump tank. A relief valve, set at 70 psi, provides protection to the system, and pressure regulating valves regulate the system pressure.

KEEP WARM CIRCUIT.

A "keep warm" circuit is provided to maintain the lubricating oil charge, and thereby the engine, in a warmed and lubricated condition when in the standby status. Heaters at the sump tank warm the oil which is then pumped by the keep-warm pump to the keep-warm filter and strainer and then to the main engine lubricating oil header. To prevent flooding of the turbochargers, there is no supply to the turbochargers in this circuit.

AUXILIARY LUBRICATING OIL PUMP.

An auxiliary lubricating oil pump, sometimes called a Before and After (B&A) pump is normally furnished. It is motor driven and installed in the system to provide a means for pre-lubrication of the engine before starting and to aid in cooling the engine after it has stopped.

PLACING LUBRICATING OIL SYSTEM IN SERVICE.

Before the engine is first started, the assembled lubricating oil piping system must be thoroughly flushed with oil. Disconnect the pipe at the pressure strainer inlet and arrange a temporary bypass from this pipe to the sump tank. The bypass will permit oil circulation through the pipes without filling the internal lubricating oil system of the engine. Several thicknesses of cloth sack should be secured to the outlet of the bypass to catch debris as it is flushed out. The sump tank and engine base must be thoroughly cleaned before being filled. The auxiliary lubricating oil pump, or any other continuous duty pump of sufficient capacity, can be used to pump oil during flushing operations. Flushing should continue for at least eight hours if care was exercised during fabrication of the system. As much as 24 hours of flushing may be required for a dirty system. When oil is circulating through the system, the pipes should be thoroughly pounded several times with a heavy hammer to loosen dirt and debris. Hot flushing oil will clean better than cold oil. Piping around the oil cooler requires special attention to insure that the pipes and oil cooler are properly flushed. Precautions must be taken to insure the complete removal of testing fluids, water or other liquids before attempting to flush the cooler.

Note

Engines may be received with the strainer mounted on the engine and connected to the engine lubricating oil header. If it is certain that the connections between the strainer and the engine oil header have not been disconnected since the engine left the factory, the following paragraph may be omitted.

Disconnect jumper tubes between the engine lubricating oil header and the main bearings, and between main headers and auxiliary headers. Secure a fine screen such as a nylon stocking over each main header fitting to catch debris that may be washed through as the system is flushed. Cover main bearing fittings and open ends of auxiliary header feeders to prevent the entry of dirt. Engine oil should be pumped through the open system for at least four hours to be sure that any foreign material remaining in the headers is removed. Reassemble internal tubes and brackets as required.

INTAKE SYSTEM.

Each engine has an independent intake system, the combustion air being piped from outside the engine room through a remotely installed air filter. An inline silencer is fitted in the pipe just ahead of the turbocharger air inlet. The air filter protects the working parts of the engine from the entry of dust. Filters should be cleaned at regular intervals to maintain adequate protection against abrasion and wear. Refer to the piping schematic in the "Drawings" section for connections, pipe sizes and relative locations of components.

EXHAUST SYSTEM.

Each engine is provided with an individual, independent exhaust system. The water jacketed, multi-pipe passage manifold discharges directly into the engine mounted turbocharger(s), and the gas then discharges from the turbocharger(s) through exhaust piping and a silencer to atmosphere. As few bends as possible should be used when laying out exhaust piping. Necessary bends should be of long radius. If three to six bends are used, the entire pipe should be increased to the next nominal size. If more than six bends are necessary, pipe size should be increased two nominal sizes. The length of exhaust piping is not critical, however, if an unusually long pipe is used, the pipe size should be increased to reduce back pressure. A length of flexible metal tubing should be installed in the exhaust line as near the engine as possible to allow for movement, heat expansion, and for isolation of vibration. The exhaust line should be lagged to minimize heat radiation in the engine room. A separate support should be provided so the weight of the exhaust silencer and line is not borne by the engine. Refer to the piping schematic in the "Drawings" section for connections, pipe sizes and relative locations of components.

Instruction Manual

STARTING AIR SYSTEM.

The required redundancy of the starting air system is accomplished by utilizing two separate systems. Each consists of a motor-driven air compressor, an air dryer, an aftercooler and a storage tank. Each storage supply is then piped to solenoid valves, two for each system, which block air flow until a starting signal is applied. Check valves downstream of the solenoid valves prevent back flow from one system to the other. When a start signal is applied, the solenoid valves open, admitting starting air to the interconnected headers on the engine. The two starting air distributors then send timed pilot signals to the starting air valves in the cylinder heads in the correct sequence and, as each starting air valve opens, starting air is admitted to the combustion chamber of that cylinder, forcing the piston downward and rotating the crankshaft. This system permits the engine to be cranked even though one supply system fails to operate, or if three of the four solenoid valves fail to function. Reference should be made to the starting air piping schematic drawing in the "Drawings" section of this manual for complete details of the system.

OK-1
5/30/82
Rev. 10

Shenton

CAROLINA POWER & LIGHT COMPANY
CORPORATE QUALITY ASSURANCE DEPARTMENT
DEFICIENCY AND DISPOSITION REPORT

DDR No. 1751

Page 1 of 9

RFT No. original

(Procedure CQC-2)

Item/Activity Name or Description	Shop Order	Code Class	Quantity	Unit	Quality Assurance (PO & Item No.)		
<u>Final Generator Rotor and Stator</u>	<u>N/A</u>	<u>Electric</u>	<u>1</u>	<u>1</u>	<u>QA-435079-1</u>		
Serial, Heat or Other Identification No.	Supplier or Manufacturer		Type of Procurement				
<u>7N</u>	<u>Porter Lnc.</u>		<input type="checkbox"/> CP&L PO <input type="checkbox"/> Transfer				
<u>1740-8432-200-74046-2643</u>	<u>1725 Clarkston Road, Cleveland</u>		<input checked="" type="checkbox"/> A-E PO <input type="checkbox"/> NSSS PO				
Violation (Specification, Drawing, Procedure or Other)			NCR No.	Reporting Inspector			
<u>Porter Engineering Spec. EQ-1.5.2</u>			<u>N/A</u>	<u>Clay Rhodes, Jackson, Tennessee</u>			
Deficiency Details:			DDR Evaluation				

"Ult inspection of Rotor and Stator revealed welding deficiencies. See attachments for details."

Construction Phase ☐
Engineering Phase ☒
QA Program Violation ☐
Specification Deviation ☒
Procedural Deviation ☒
Unacceptable Workmanship ☒
Damage/Defect ☒
Other ☐
Not Reportable ☒

Eval.	By	Date	Site QA/ QC	QA Engr.	HPES	NPC

Electrical and dimensional inspections have not been performed. If deficiencies are noted they will be covered on a separate DDR

* UNCLASSIFIED BY 11123

3

Shenton

7/21/83

QA/QC Specialist/Engineer

Date

(4 Conditionally Accept Tags Applied)

Final Disposition: Verified ☐

Hold Tags Removed ☐

Remarks:

QA/QC Inspector

Date

Accepted by:

QA/QC Specialist/Engineer

Date

ANI Concurrence (ASME Code Section III Items Only):

Authorized Nuclear Inspector

Date

Report Closed:

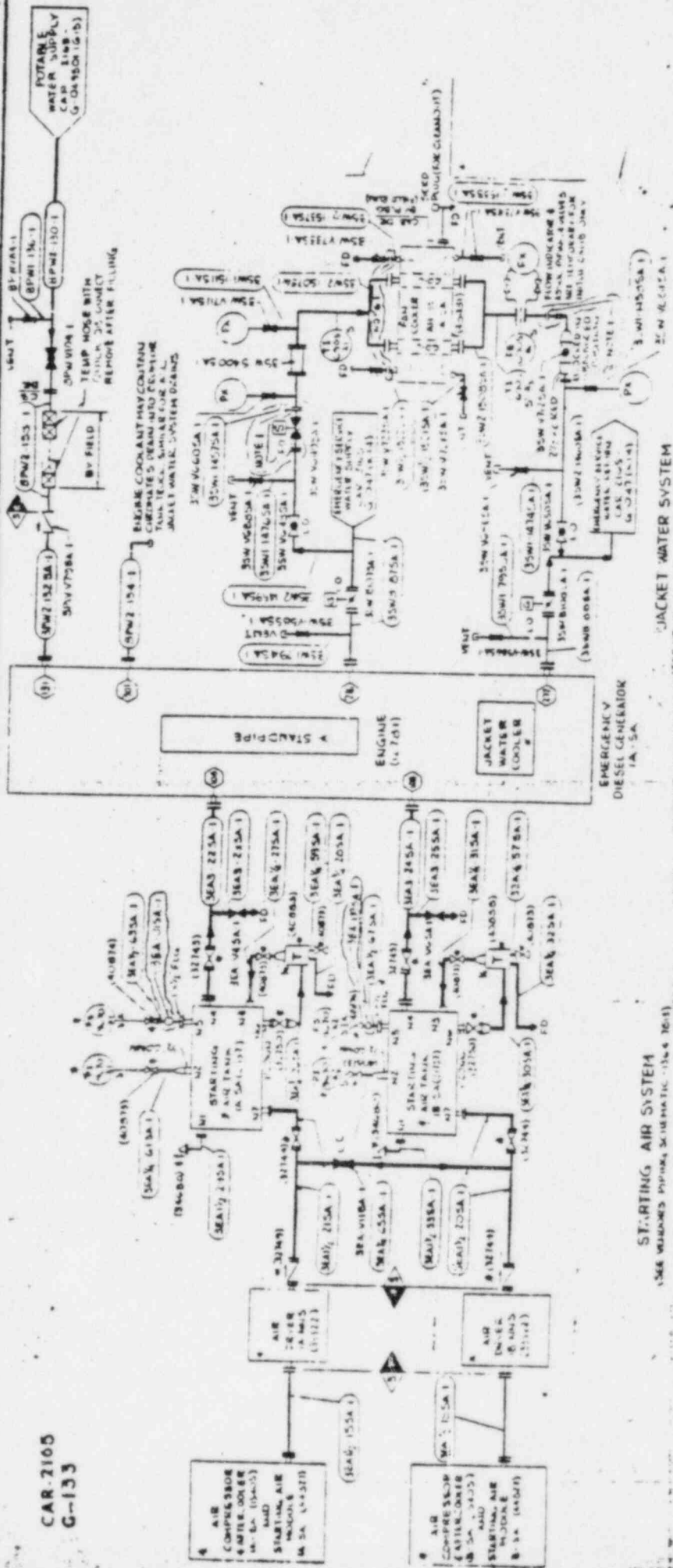
Director - QA/QC - SHNPP

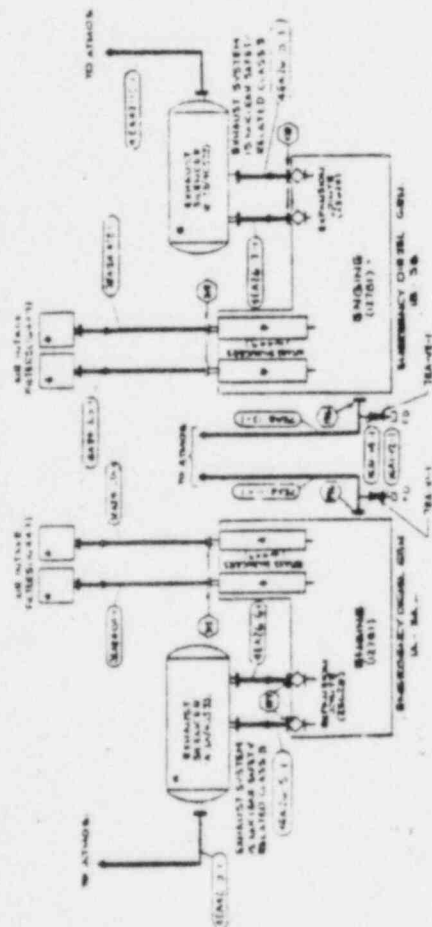
Date

Distribution:

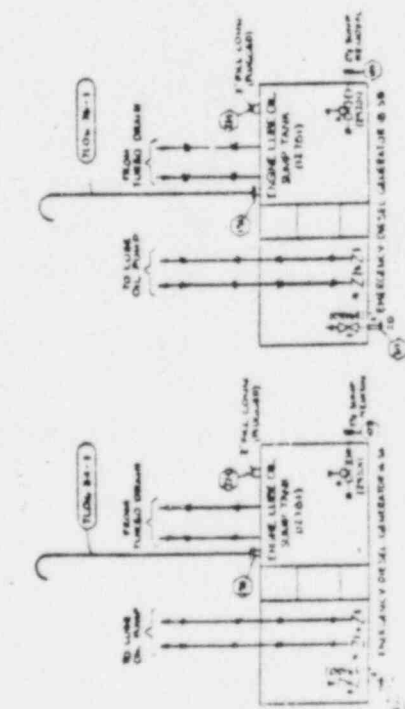
Orig: Director - QA/QC - SHNPP
CC: Proj. Gen. Mgr./Sr. Res. Engr.
Gen. Mgr. (SU/Operations)
Reg. Comp. Unit (SU/Operations)
Initiating QA/QC Specialist
Accounting
Mgr. - ESC QA/QC
☒ Mgr. - HPES (CAR) ☒ Tom Johnson
☒ Start-Up C. Rose
☐ NSSS Site Rep.
☐ ANI
☒ T Cockerill

CAR-2105
G-133

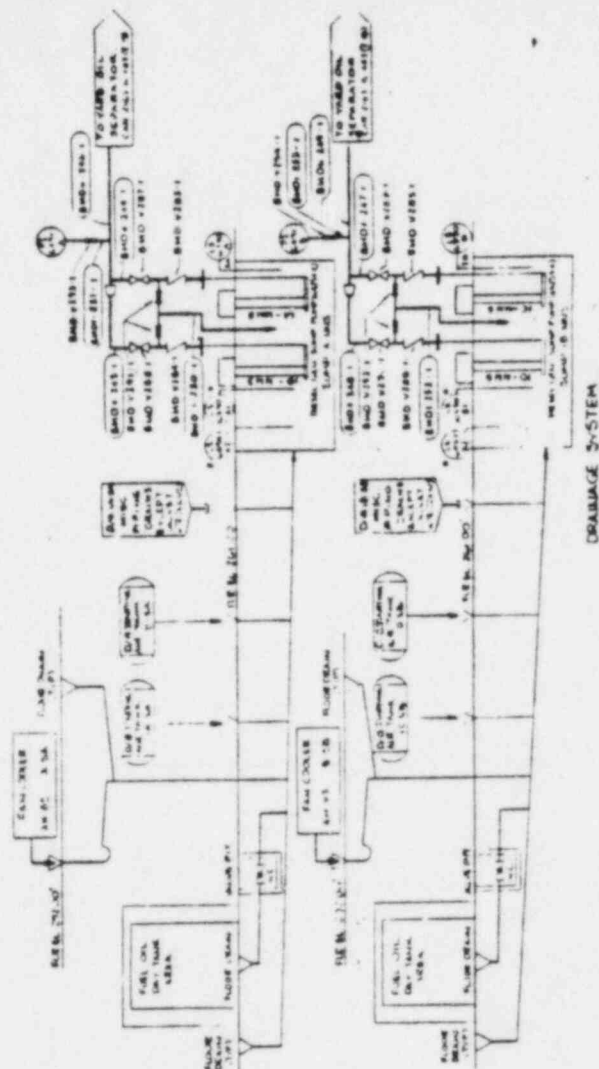




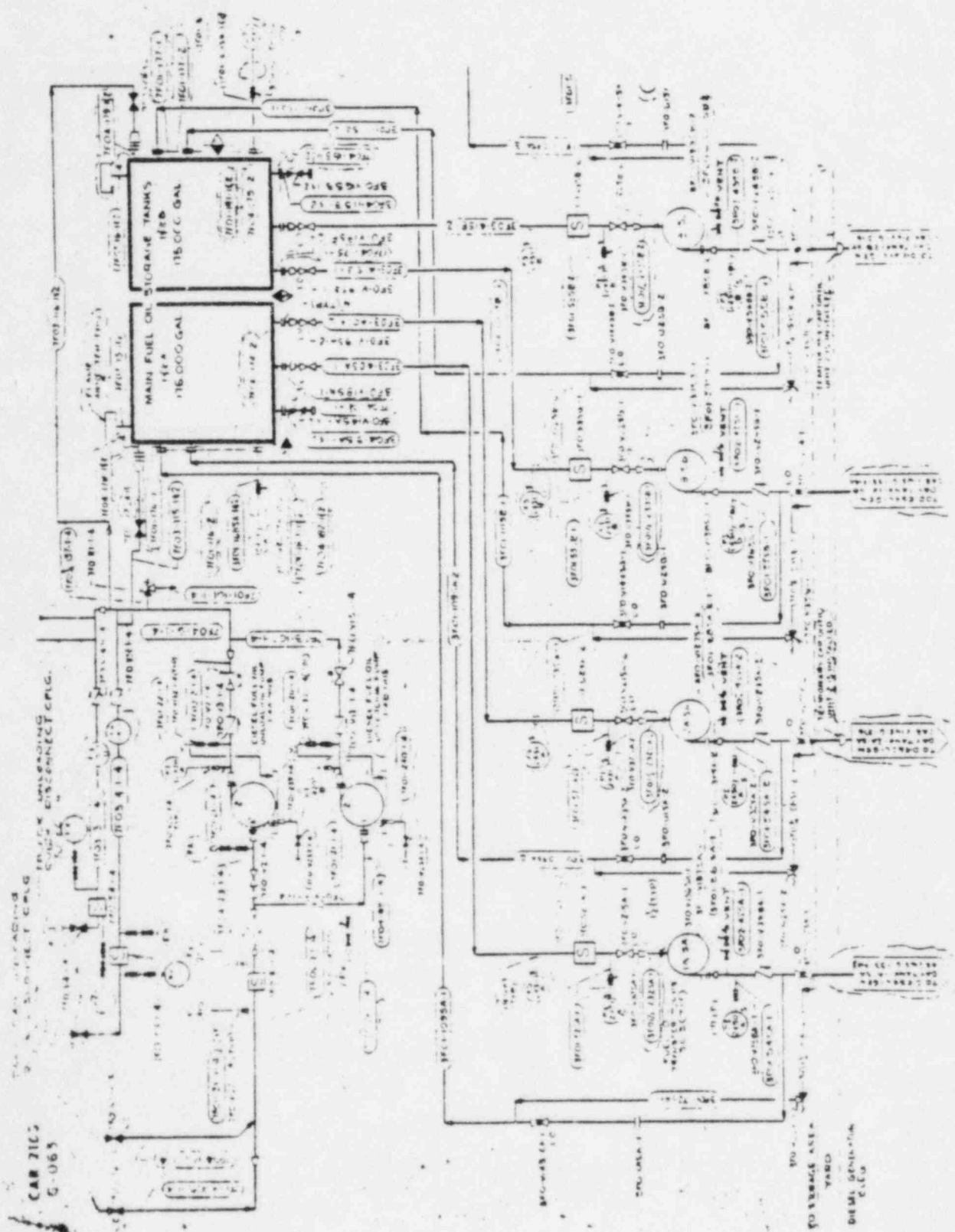
FUEL OIL SYSTEM

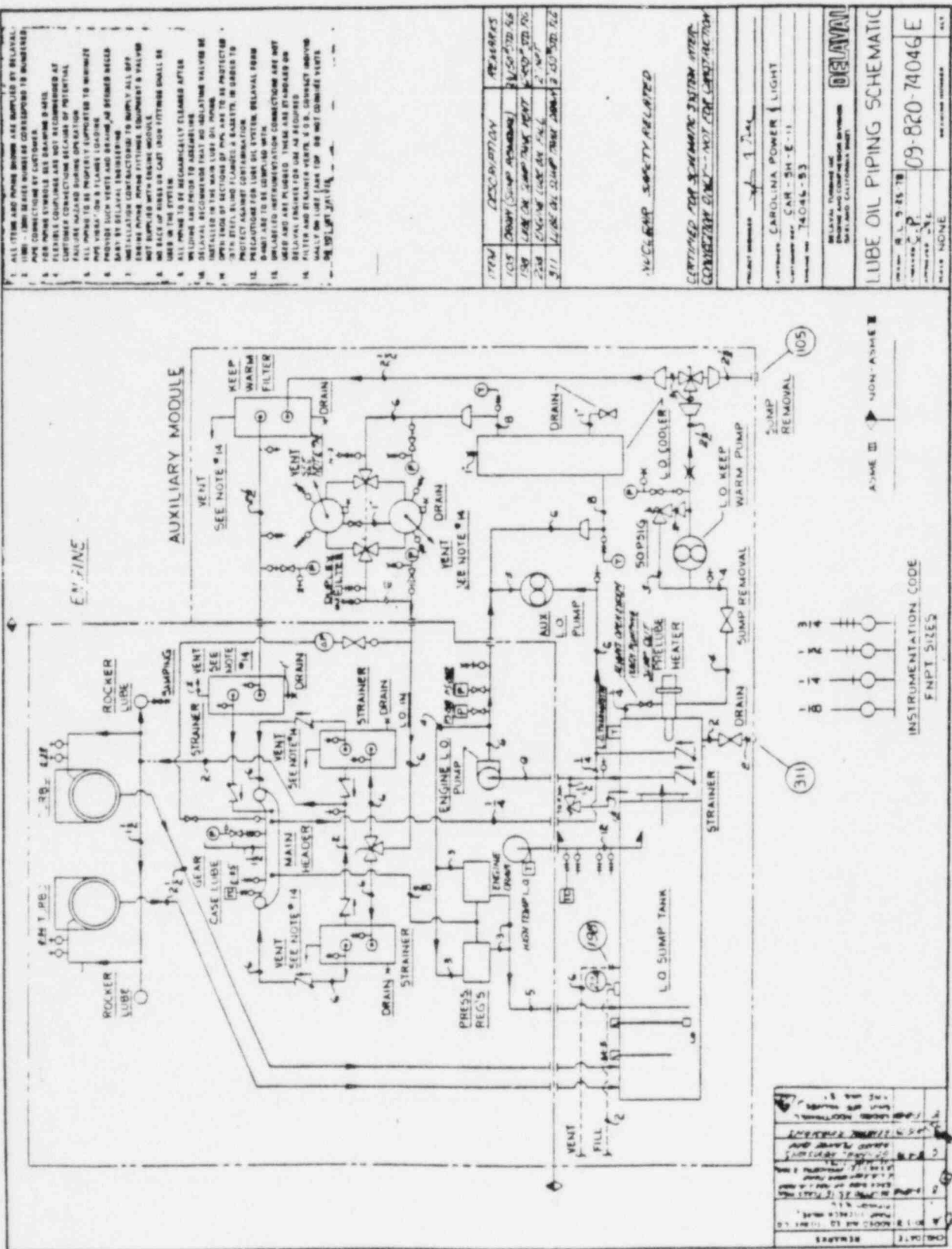


LUBE OIL SYSTEM



STORAGE SYSTEM





ITEM	DESCRIPTION	REMARKS
105	DRUM (Sump Assembly)	W/50-500 G2
106	LUBE OIL PUMP (Sump Pump)	W/50-500 G2
204	LUBE OIL COOLER (Sump Cooler)	W/50-500 G2
311	LUBE OIL TANK (Sump Tank)	W/50-500 G2

NOTES:

- ALL ITEMS AND PUMP BODIES ARE SUPPLIED BY DELVAL.
- 1000 - 1000 MAINTENANCE KIT CORRESPONDING TO NUMBERED PUMP CONNECTION BY CUSTOMER.
- FOR PUMP SYMBOLS SEE DRAWING 3-401.
- DELVAL PUMPS ARE NOT RECOMMENDED AT HIGH SPEEDS OR IN APPLICATIONS WHERE POTENTIAL FAILURE COULD BE DANGEROUS.
- ALL PUMPS TO BE INSTALLED IN ACCORDANCE WITH DELVAL VENTILATION & FLAME LOCKING.
- PREVENT SUCH VENTS AND FLAMES FROM BEING USED BY DELVAL ENGINEERING.
- INSTALLATION CONFORMANCE TO SUPPLY ALL O.P.P. (OIL PUMP) PUMP FITTINGS, TUBING & VALVES.
- NO BACK UP PRESSURE ON O.P.P. FITTINGS SHALL BE USED ON THE SYSTEM.
- ALL PUMPS TO BE MECHANICALLY CLEANED AFTER WELDING AND PRIOR TO ASSEMBLING.
- DELVAL RECOMMENDS THAT NO RELATING VALVES BE INSTALLED IN THE MAIN LUBE OIL PUMP.
- OPEN END OF SECTION OF PUMP ARE TO BE PROTECTED BY DELVAL PLUGS OR OTHER MEANS TO PREVENT CONTAMINATION.
- PRECAUTIONS FOR LUBE OIL SYSTEM, DELVAL FORM 8-001 ARE TO BE COMPLIED WITH.
- UNLUBRICATED INFORMATION CONNECTIONS ARE NOT USED AND ARE PLUGGED. THESE ARE STANDARD ON DELVAL ENGINES FOR USE AS REQUIRED.
- FILTER AND STRAINER VENTS & O.P.P. CONNECTIONS ARE TO BE INSTALLED IN THE MAIN LUBE OIL PUMP. DO NOT CONNECT VENTS TO THE MAIN LUBE OIL PUMP.

WARNING: SAFETY RELATED

CAUTION: FOR EXHAUST SYSTEMS, DELVAL FORM 8-001 - NOT FOR SAFETY ACTION

DELVAL

LUBE OIL PIPING SCHEMATIC

INSTRUMENTATION CODE

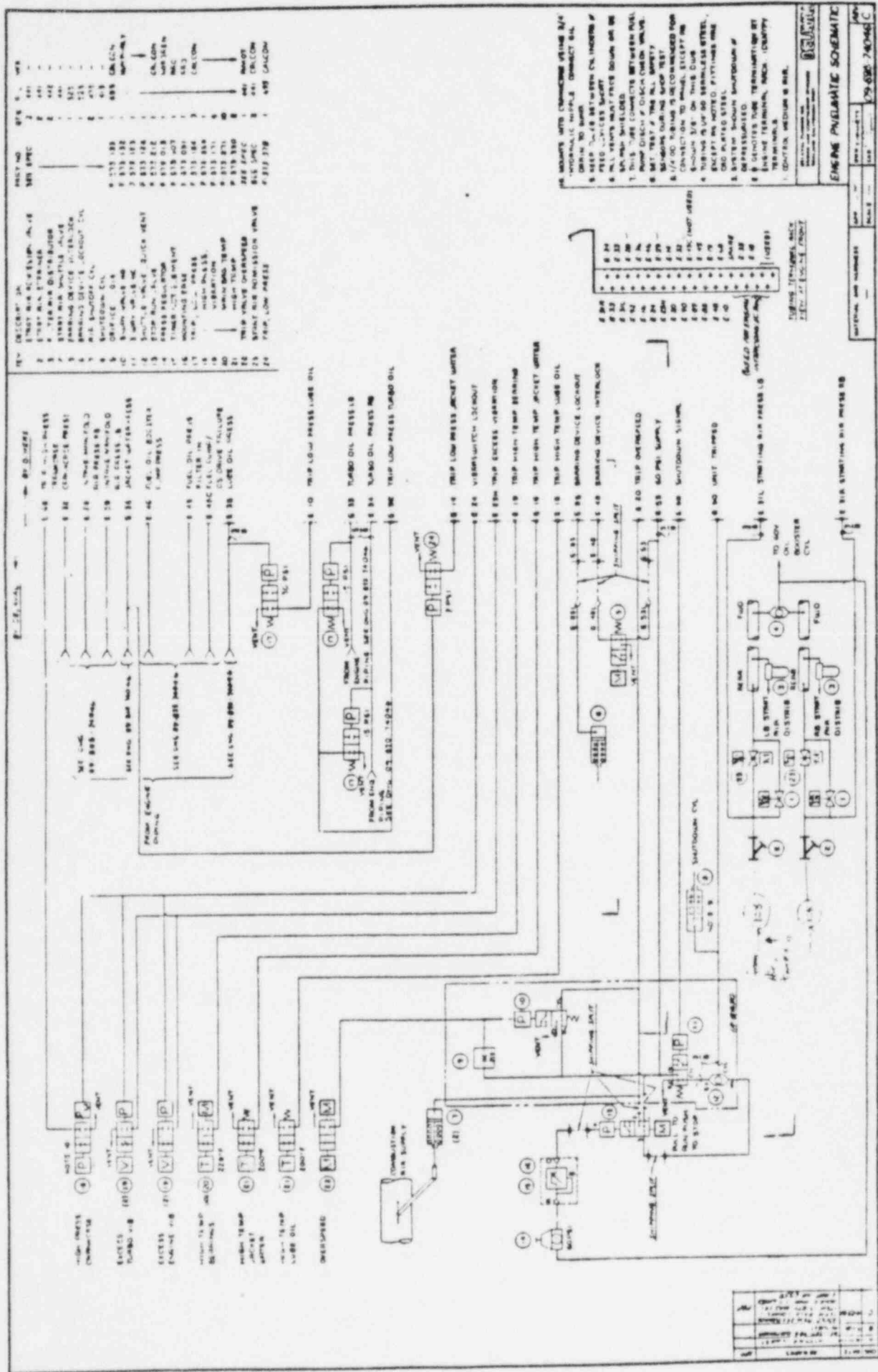
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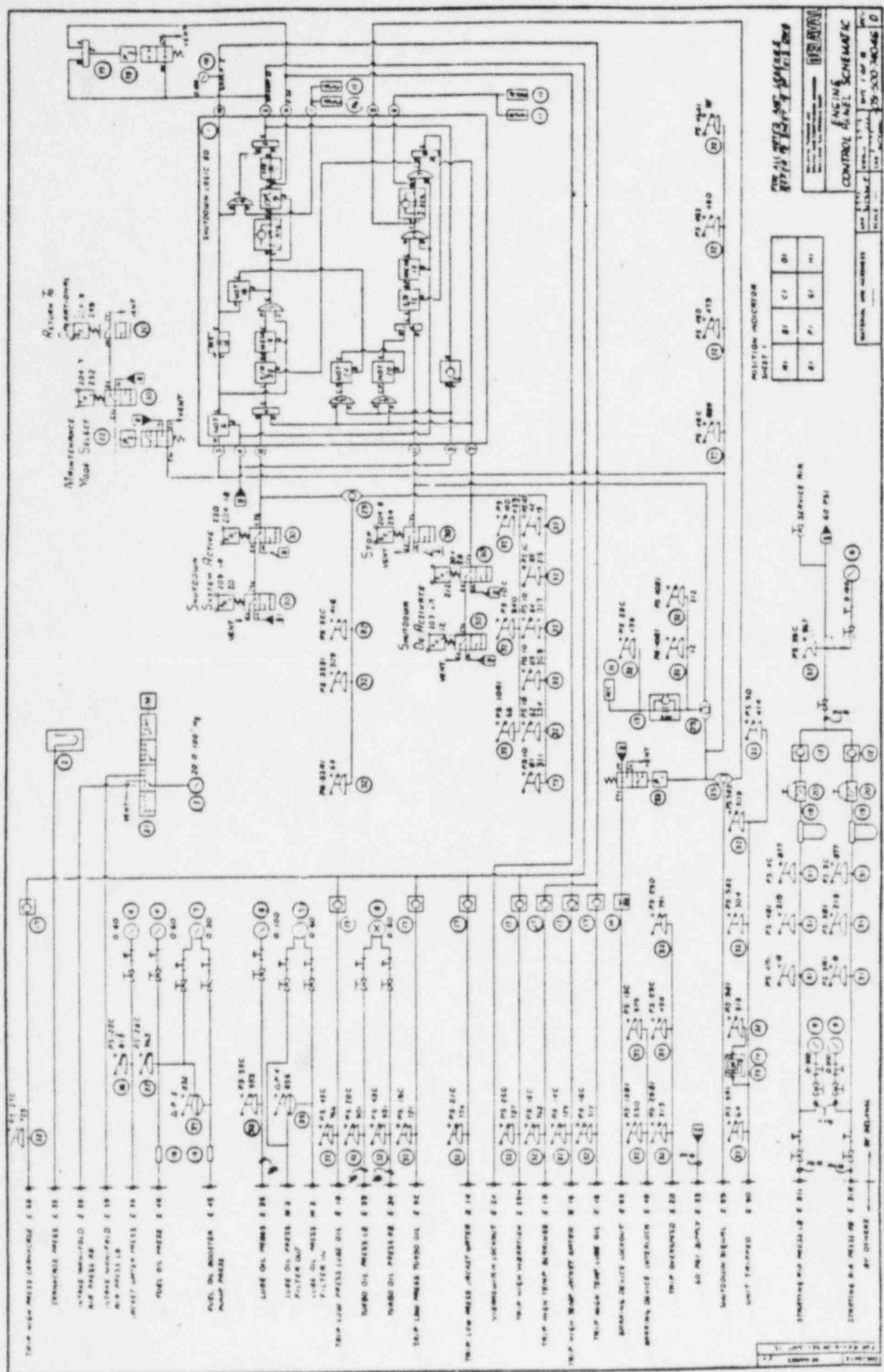
REVISION

DATE

BY

09-820-74046 E







Nuclear Information and Resource Service

1346 Connecticut Avenue NW, 4th Floor, Washington, D.C. 20036 (202) 296-7552

November 28, 1984

J.M. Felton, Director
Division of Rules and Records
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

FREEDOM OF INFORMATION
ACT REQUEST

FOIA 84-886
Rec'd 11-29-84

FREEDOM OF INFORMATION ACT REQUEST

Previous related FOIA request: 84-275 (BELL)

Dear Mr. Felton:

Pursuant to the Freedom of Information Act, 5 U.S.C. 522, as amended, the Nuclear Information and Resource Service requests the following documents regarding Transamerica Delaval Inc. (TDI) diesel generators installed at the Shearon Harris nuclear plant. Please consider "documents" to include reports, studies, test results, correspondence, memoranda, meeting notes, meeting minutes, working papers, graphs, charts, diagrams, notes and summaries of conversations and interviews, computer records, and any other forms of written communication, including internal NRC Staff memoranda. The documents are specifically requested from, but not limited to, the Office of Inspection and Enforcement (I&E); Office of the Executive Legal Director (OELD); and the Office of Nuclear Reactor Regulation (NRR).

Pursuant to this request, please provide all documents prepared or utilized by, in the possession of, or routed through the NRC related to:

1. The TDI diesel generators at the Shearon Harris nuclear plant; and
2. The schedule(s) for NRC Staff, NRC consultants, applicant, and TDI Owner's Group analysis and reporting of the adequacy of Shearon Harris TDI diesel generators, including issuance of a supplemental safety evaluation report, prefiled testimony in the operating license proceeding, and a technical evaluation report.

In our opinion, it is appropriate in this case for you to waive copying and search charges, pursuant to 5 U.S.C. 552(a)(4)(A) "because furnishing the information can be considered as primarily benefiting the general public." The Nuclear Information and Resource Service is a non-profit organization serving local organizations concerned about nuclear power and

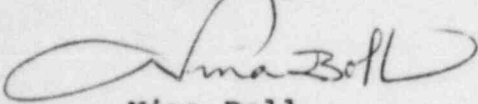
~~85-228-413~~

2pp.

- 2 -

providing information to the general public. This request is being made on behalf of Wells Eddleman, the intervenor in the licensing proceeding on Shearon Harris.

Sincerely,

A handwritten signature in cursive script, appearing to read "Nina Bell", written in dark ink.

Nina Bell
Nuclear Safety Analyst

cc: File