

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of )

FLORIDA POWER & LIGHT COMPANY )

(St. Lucie Nuclear Power Plant,  
Unit No. 2) )

) Docket No. 50-389

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AFFIDAVIT OF GEORGE E. LIEBLER

I am George E. Liebler. I hold the position of Manager, Power Resources, Nuclear Services within the Florida Power & Light Company. In this capacity I have previously testified in this proceeding. My educational and professional qualifications are already part of the record (Fol. Tr. 404) and are incorporated herein by reference.

In my Affidavit of March 14, 1980, I provided information which the Appeal Board had requested concerning the performance of diesel generator units at St. Lucie 1. (Tr. 867, 879-85.) I also noted there that "using the existing data, a more accurate appraisal of diesel generator performance under emergency conditions can be achieved by eliminating unsuccessful start attempts that occurred during maintenance and troubleshooting, or that can definitely be attributed to spurious operation of a trip that is bypassed in the emergency mode, to a malfunction of equipment that is not operative in the emergency operating mode or is not part of the present diesel generator unit design, and to operating conditions which would not be present in an

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emergency, e.g., a diesel generator output bus already energized by offsite power. (See also Reg. Guide 1.108, Rev. 1, §§C.2.e(2), C.2.e(7).) Applying this guideline, the diesel generator units failed to operate a total of 10 times." (Affidavit, p.2.)

By its order of April 16, 1980, the Board requested the applicant to furnish it the number of such eliminated attempts together with any additional explanatory material it wished to provide. That information is contained in this Affidavit.

Upon review of all start attempts, a total of twenty-three (23) instances are noted in which the diesel generator sets failed to operate according to design but which were not considered valid failures. Each such event is now identified with an "X" in the Fail Column on Attachment A submitted with my Affidavit of March 14, 1980 and resubmitted with this Affidavit as Attachment A (Revised 4/28/80). These attempts are listed below by type, with a further explanation of the reason why each was not considered a valid failure.

#### Reverse Current Trips

- . Number of Occurrences - 3
- . Reason for not counting as a failure:

This trip can only occur if the D.G. is operating in parallel with another generator and the D.G. output is low enough to allow the other generator to motorize the D.G. This situation is impossible under emergency operation since the bus is deenergized and all loads on the D.G. bus are shed prior to output breaker closure. Because the D.G. is brought onto a dead bus in automatic

operation, there can be no reverse current problem.

#### Failure To Synchronize With A Loaded Bus

- . Number of Occurrences - 1
- . Reason for not counting as a failure:

As stated above, the D.G. bus is deenergized and automatically unloaded prior to closing the D.G. output breaker under emergency conditions. For that reason, failure to synchronize with a loaded bus does not indicate an inability to perform the emergency task.

#### Successful Start And Loading - Low Output

- . Number of Occurrences - 1
- . Reason for not counting as a failure:

During a test of "A" D.G., the unit failed to pick up design load; however, load was assumed in excess of the safeguards load. At no time during the test was the D.G. unable to carry out its emergency function of supplying safeguards power.

#### Trouble-Shooting/Maintenance

- . Number of Occurrences - 16
- . Reason for not counting as a failure:

This type of start attempt occurs in two instances:

- (1) A component that has undergone maintenance is tested to assure that the work was done properly and the system has been returned to its operational configuration. A failure

during these start attempts should not be counted since their sole purpose is to identify problems prior to returning the D.G. to service.

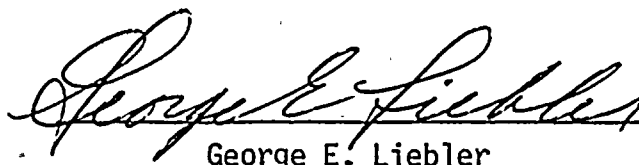
- (2) A component that has failed to function properly must be diagnosed to identify the source of difficulty. In many situations the best method of identifying the source is to start the machine and observe its response. A failure during such diagnosis is to be expected since the purpose is to identify a failure that is known to exist.

#### Turbocharger Breakdown

- . Number of Occurrences - 2
- . Reason for not counting as a failure:

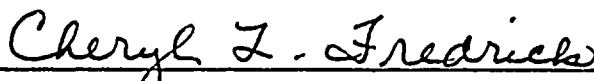
As a result of a design deficiency in the lube oil system for the D.G.s, oil flow was interrupted during startup. Investigation revealed that the electric "soap-back" pumps were turning off before the mechanically driven lube oil pumps were supplying oil to the turbocharger bearings. The result was bearing failure due to insufficient lube oil supply. To eliminate this failure mode, the system was modified to keep the "soap-back" pumps running at all times to assure a continuous flow of oil. Subsequent

to this change, no turbocharger failures have been experienced.

  
George E. Liebler

State of Florida )  
County of Dade ) ss

Subscribed and sworn to before me this 2nd day of May, 1980.

  
NOTARY PUBLIC, in and for the County of Dade,  
State of Florida

My commission expires: Notary Public, State of Florida at Large  
My Commission Expires October 30, 1983  
Bonded thru Maynard Bonding Agency

St. Lucie 1 Diesel Generator Data

Abbreviation Key:

C.I.S.	--	Containment Isolation Signal
C. R.	--	Control Room
D/G	--	Diesel Generator
Maint.	--	Maintenance
Op Check	--	Operational Check
Op Test	--	Operational Test
P. M.	--	Preventive Maintenance
P. W. O.	--	Plant Work Order
Surv. Run	--	Surveillance Run
S. U. T.	--	Startup Transformer
Tech. Rep.	-	Technical Representative

SET	DATE	START	LOAD	FAIL	REMARKS
B	1/18/80	Y	N		Op check prior to removing SUT
B	1/18/80	Y	N		Op check prior to removing SUT
B	1/16/80	Y	Y		Periodic surv. run
A	1/16/80	Y	N		Op check
B	1/8/80	Y	N		Op check to return to service
A	1/8/80	Y	N		Op check-B out of service
A	1/8/80	Y	N		Op check
A	1/7/80	Y	N		Op check to return to service
B	1/7/80	Y	N		Op check-A out of service
B	1/7/80	Y	N		Op check-A out of service
A	1/2/80	Y	Y		Surv. run
B	12/19/79	Y	N	X	Tripped due to reverse current while trying to load
B	12/19/79	Y	Y		Surv. run
B	12/5/79	Y	N		Op check-A out for maint.
B	12/5/79	Y	N		Op check
A	12/5/79	Y	Y		Periodic test
B	11/21/79	Y	Y		Periodic test
A	11/7/79	Y	Y		Periodic test
B	11/2/79	Y	N		Op check
A	11/1/79	Y	N		Op check prior to A SUT out of service
A	11/1/79	Y	N		Op check
A	10/31/79	Y	N		Op check prior to A SUT out of service
A	10/31/79	Y	N		Op check
B	10/18/79	Y	Y		Surv. run-24 hrs.
A	10/18/79	Y	Y		Op check
A	10/17/79	Y	Y		Surv. run-24 hrs.
A	10/16/79			Y	Attempted to start-out for maint.
A	10/16/79	Y	Y		Back in service
B	10/16/79	Y	N		Op check
A	10/3/79	Y	Y	X	Low kw output (3290 kw); sufficient for safeguards load

SET	DATE	START	LOAD	FAIL	REMARKS
B	10/3/79	Y	N		Op check
A	10/3/79	Y	Y		Surv. run
B	9/26/79	Y	Y		Periodic test-Sync to 1B3 4160 Bus
B	9/19/79	Y	Y		Surv. run
B	9/7/79	Y	N		Op check
B	9/5/79	Y	Y		Verification
A	9/5/79	Y	Y		Surv. run
B	9/3/79	Y	Y		Manual start
B	9/3/79	N	N	Y	Relay in start circuit failed; unit would not start automatically but was capable of manual start
A	9/3/79	Y	Y		Op check
A	9/2/79	Y	Y		Verification
A	9/2/79	Y	Y		Op check-H <sub>2</sub> meter in C.R. put on P.W.O.
B	9/2/79	Y	Y		Op check
A	9/2/79	Y	Y		Op check-due to hurricane the H <sub>2</sub> meter in the C.R. did not register
B	8/15/79	Y	Y		Surv. run
A	8/1/79	Y	Y		Surv. run
B	7/18/79	Y	Y		Surv. run
A	7/4/79	Y	Y		Surv. run
B	6/29/79	Y	N		Op check
B	6/28/79	Y	Y		Op check
A	6/27/79	Y	N		Op check
A	6/27/79	Y	N		Op check prior to taking B out of service
B	6/27/79	Y	N		Op check
B	6/27/79	Y	N		Op check prior to taking A out of service
A	6/26/79	Y	N		Op check
B	6/26/79	Y	N		Op check-A out of service
B	6/26/79	Y	N		Op check-A out of service



SET	DATE	START	LOAD	FAIL	REMARKS
A	6/22/79	Y	N		Op check
B	6/22/79	Y	N		Op check
B	6/22/79	Y	N		Op check--prior to removing A from service
B	6/19/79	Y	Y		Surv. run
A	6/7/79	Y	N		Op check after maint.
B	6/7/79	Y	N		Op check-prior to removing A from service
A	6/6/79	Y	Y		Surv. run
B	5/31/79	Y	N		Op check after maint.
A	5/31/79	Y	N		Op check-B out of service
B	5/31/79	Y	N		Op check-prior to removing B from service
B	5/26/79	Y	N		Op check after maint.
A	5/25/79	Y	N		Op check-prior to removing B from service
A	5/24/79	Y	N		Maintenance Dept. Checkout
A	5/24/79	Y	N		Test run
B	5/15/79	Y	Y		Surv. run
A	5/9/79	Y	N		Op check-prior to removing B from service
A	5/6/79	Y	N		Op check after maint.
A	5/6/79	Y	N		Test run for Maint. Dept. observation
A	5/5/79	Y	N		Op check
B	5/4/79	Y	Y		Surv. run
B	5/4/79	Y	Y		Op check
B	5/4/79	Y	N		Op check
B	5/4/79	Y	Y		Op check
A	5/1/79	Y	Y		Surv. run
A	4/25/79	Y	N		Op check-prior to removing B from service
A	4/24/79	Y	Y		Op check after maint.
A	4/24/79	Y	N	X	Tripped due to reverse current while trying to load
A	4/23/79	Y	Y		Surv. run
B	4/17/79	Y	Y		Surv. run
A	4/4/79	Y	Y		Unit run at 1500 kw

SET	DATE	START	LOAD	FAIL	REMARKS
B	4/4/79	Y	Y		Unit run at 1500 kw
A	4/4/79	Y	Y		Surv. run
A	4/3/79	Y	Y		Surv. run
A	3/31/79	Y	N		Verification of oil transfer pump operation
B	3/31/79	Y	Y		Safeguards Test-accepted full load 3 minutes after speed droop trip.
B	3/31/79	Y	Y	Y	Safeguards Test-speed droop problem; D/G tripped.
A	3/31/79	Y	Y		Safeguards Test.
B	3/20/79	Y	Y		Surv. run
A	3/19/79	Y	N		Op check
A	3/6/79	Y	Y		Surv. run
B	2/20/79	Y	Y		Surv. run
A	2/14/79	Y	N		Op check-A SUT out of service
A	2/6/79	Y	Y		Surv. run
B	1/31/79	Y	N		Op check-prior to removing B SUT
A	1/17/79	Y	N		Op check-after maint.
B	1/17/79	Y	N		Op check
B	1/16/79	Y	Y		Surv. run
A	1/16/79	Y	N		Op check-prior to removing B from service
A	1/2/79	Y	Y		Surv. run
A	12/21/78	Y	N		Op check-prior to removing A SUT
B	12/21/78	Y	N		Op check-prior to removing A SUT
A	12/21/78	Y	Y		Op check-prior to removing A SUT
B	12/21/78	Y	Y		Op check-prior to removing A SUT
B	12/19/78	Y	Y		Surv. run
A	12/5/79	Y	Y		Surv. run
A	12/1/78	Y	N		Op check-prior to removing A SUT
B	11/21/78	Y	Y		Surv. run
A	11/15/78	Y	N		Test run
A	11/14/78	Y	N		Op check
B	11/14/78	Y	N		Op check-prior to removing A from service

SET	DATE	START	LOAD	FAIL	REMARKS
A	11/7/78	Y	Y		Surv. run
A	11/4/78	Y	N		Low voltage during bus transfer
B	10/17/78	Y	Y		Surv. run
B	10/12/78	Y	N		Op check
B	10/12/78	Y	N		Op check-prior to removing B SUT
A	10/4/78	Y	N		Check petcock leak
A	10/4/78	Y	N		Check petcock leak
A	10/3/78	Y	Y		Surv. run
B	10/3/78	Y	N		Op check
A	9/19/78	Y	N		Op check
B	9/19/78	Y	Y		Surv. run
A	9/5/78	Y	N	Y	Dirty relay prevented the output breaker from closing from the control room
B	9/5/78	Y	N		Op check
A	9/5/78	Y	Y		Surv. run
B	8/15/78	Y	Y		Surv. run
	8/15/78	Y	N		Stopped manually due to low lube oil level-can add oil when running if needed
A	8/10/78	Y	N		Reactor tripped
B	8/10/78	Y	Y		Surv. run
A	8/10/78	Y	N		Op check
A	8/10/78	Y	N		Op check
A	8/1/78	Y	Y		Surv. run
A	7/19/78	Y	N		Test run
B	7/19/78	Y	N		Test run-prior to removing A from service
B	7/18/78	Y	Y		Surv. run
A	7/18/78	Y	N		Op check-B out of service
A	7/18/78	Y	N		Op check-prior to removing B from service
A	7/4/78	Y	Y		Surv. run
B	6/20/78	Y	Y		Surv. run

SET	DATE	START	LOAD	FAIL	REMARKS
B	6/15/78	Y	N		Op check
A	6/15/78	Y	N		Op check-B out of service
B	6/5/78	Y	Y		Run for tech rep inspection
A	6/5/78	Y	Y		Surv. run
A	5/24/78	Y	Y		Troubleshoot-unloaded sat.
A	5/23/78	Y	Y		Would not unload from the control room
B	5/22/78	Y	Y		Surv. run
B	5/21/78	Y	N	X	Troubleshoot
B	5/21/78	Y	N	X	Troubleshoot
B	5/21/78	N	N	X	Troubleshoot
B	5/21/78	N	N	X	Troubleshoot
B	5/21/78	N	N	X	Troubleshoot
B	5/21/78	N	N	X	Troubleshoot
B	5/21/78	Y	N	Y	Output breaker would not close
A	5/14/78	Y	Y		Loss of offsite power-B out of service
A	5/2/78	Y	Y		Surv. run
A	4/21/78	Y	N		Manually stopped because the switchgear door was found open
A	4/21/78	Y	Y		Surv. run
B	4/18/78	Y	Y		Surv. run
A	4/4/78	Y	Y		Surv. run
A	3/25/78	Y	Y		Surv. run
B	3/25/78	Y	Y		Surv. run
B	3/21/78	Y	Y		Surv. run
A	3/13/78	Y	Y		Surv. run-B out of service
B	3/13/78	Y	N		Op check-return to service
A	3/10/78	Y	Y		Op check-return to service
B	3/10/78	Y	N		Op check-prior to removing A from service
A	2/28/78	Y	N		Op check-prior to returning to service
B	2/27/78	Y	N		Op check-prior to removing A from service

SET	DATE	START	LOAD	FAIL	REMARKS
A	2/26/78.	Y	N		Op check-prior to removing B from service
B	2/21/78	Y	Y		Surv. run
A	2/14/78	Y	N		Op check-prior to removing B from service
B	2/14/78	Y	Y		Op check-return to service
A	2/7/78	Y	Y		Surv. run
B	1/29/78	Y	Y		Reactor trip
B	1/17/78	Y	Y		Surv. run
A	1/3/78	Y	Y		Surv. run
A	12/21/77	Y	N		Op check-prior to removing B for maint.
B	12/21/77	Y	Y		Surv. run
B	12/16/77	Y	Y		Op check after maint.
A	12/16/77	Y	N		Op check after maint.
A	12/6/77	Y	Y		Surv. run
B	11/18/77	Y	Y		Op check-return to service
A	11/18/77	Y	Y		Op check-B out of service
A	11/18/77	Y	N		Op check-prior to removing B from service
B	11/16/77	Y	Y		Test run
A	11/15/77	Y	N		Op check
B	11/15/77	Y	Y		Test after maint.-Stopped due to low coolant level; water could have been added during operation; stop was discretionary
B	11/15/77	Y	Y		Surv. run
A	11/15/77	Y	N		Op check
A	11/1/77	Y	Y		Surv. test
A	10/28/77	Y	Y		Test after maint.
B	10/28/77	Y	N		Test prior to taking A out of service
B	10/23/77	Y	N		Op check
B	10/23/77	Y	N		Op check-A out of service
B	10/23/77	Y	N		Surv. run
A	10/23/77	Y	Y		Surv. run

SET	DATE	START	LOAD	FAIL	REMARKS
B	10/22/77	Y	Y		Op check-A out of service
B	10/22/77	Y	Y		Op check-A out of service
B	10/22/77	Y	Y		Op check-A out of service
B	10/21/77	Y	Y		Op check-A out of service
B	10/21/77	Y	Y		Op check-A out of service
B	10/21/77	Y	Y		Op check prior to taking A out of service
A	10/21/77	Y	Y		Under voltage relay dropped on 1A3 bus
B	10/18/77	Y	Y		Surv. run
A	10/8/77	Y	Y		Loss of offsite power test on A side
A	10/4/77	Y	Y		Surv. run
A	10/4/77	Y	N	X	Troubleshooting
A	10/4/77	Y	N	X	Troubleshooting
A	10/4/77	Y	N	X	Troubleshooting
A	10/4/77	Y	N	X	Troubleshooting
A	10/3/77	Y	N	X	Troubleshooting
A	10/3/77	Y	N	X	Troubleshooting
A	10/3/77	Y	Y		Surv. run
A	10/3/77	Y	Y		Surv. run
A	9/26/77	Y	Y	X	Turbocharger breakdown
A	9/25/77	Y	Y		Surv. run
A	9/24/77	Y	Y		Surv. run
B	9/24/77	Y	Y		Surv. run
B	9/23/77	Y	Y		Op check-SUT out of service
B	9/23/77	Y	Y		Op check-SUT out of service
B	9/22/77	Y	Y		Op check-SUT out of service
B	9/22/77	Y	Y		Op check-SUT out of service
B	9/21/77	Y	Y		Op check-SUT out of service
A	9/21/77	Y	Y		Op test-SUT back in service
A	9/21/77	Y	Y		Op test-SUT out of service
B	9/21/77	Y	Y		Op check-SUT out of service

SET	DATE	START	LOAD	FAIL	REMARKS
A	9/21/77	Y	Y		Op check-SUT out of service
B	9/21/77	Y	Y		Op check-SUT out of service
B	9/20/77	Y	Y		Surv. run
B	9/6/77	Y	N		Op check
A	9/6/77	Y	Y		Surv. run
A	8/24/77	Y	Y		Surv. run
B	8/24/77	Y	N		Op check
B	8/23/77	Y	Y		Test run
A	8/23/77	Y	Y		Test run
A	8/23/77	Y	Y		Test run
A	8/18/77	Y	Y		Op check-prior to taking B out of service
A	8/18/77	Y	Y		Op check
B	8/17/77	Y	Y		Op check-prior to taking A out of service
B	8/16/77	Y	Y		Surv. run
A	8/16/77	Y	Y		Op check
A	8/2/77	Y	Y		Surv. run
B	7/19/77	Y	Y		Surv. run
A	7/5/77	Y	Y		Surv. run
A	7/5/77	Y	Y		Surv. run-stopped due to load fluctuations-stop was discretionary (added oil to gov.)
B	6/28/77	Y	Y		Surv. run
B	6/21/77	Y	Y		Surv. run
A	6/7/77	Y	Y		Surv. run
B	6/7/77	Y	Y		Op check-P.M. on air start relay valves
A	6/7/77	Y	Y		Op check after P.M.
A	5/31/77	Y	Y		Reactor trip
B	5/31/77	Y	Y		Reactor trip
A&B	5/16/77	Y	Y		Loss of offsite power following a reactor trip-all systems responded as designed
A	5/3/77	Y	Y		Test run-B out of service

SET	DATE	START	LOAD	FAIL	REMARKS
B	5/3/77	Y	Y		Test run after repairs
B	5/2/77	Y	Y		Op check-A out of service
A	5/2/77	Y	Y		Test run after oil change
A	4/30/77	Y	Y		Reactor trip-loss of 1A2 and 1A3
B	4/30/77	Y	Y		Reactor trip-loss of 1B2 and 1B3
A	4/22/77	Y	Y		Op check
B	4/22/77	Y	Y		Op check
B	4/19/77	Y	Y		Op check-stopped due to low tube oil level; could add oil during operation
B	4/19/77	Y	Y		Op check-stopped due to low lube oil level; could add oil during operation
B	4/19/77	Y	Y		Surv. run
A	4/10/77	Y	Y		Test run after fixing air leak
B	4/10/77	Y	Y		Op check-air leak on A airstart sys.
A	4/9/77	Y	Y		Surv. run
B	4/9/77	Y	Y		Surv. run
A	4/5/77	Y	Y		Surv. run
B	3/15/77	Y	Y	X	Surv. run-was completed satisfactorily-tripped on reverse current when taking D/G off the line
B	3/15/77	Y	Y		Surv. run
A	3/15/77	Y	Y		P.W.O. test
A	3/8/77	Y	Y		Surv. run
B	3/8/77	Y	N		Op check
A	3/8/77	Y	N		Op check-stopped due to low lube oil level; could add oil during operation
B	3/8/77	Y	Y		Op check-A out of service
A	3/2/77	Y	N		Test run
A	3/1/77	Y	Y		Surv. run
B	3/1/77	Y	N		Op check-A out of service
A	3/1/77			Y	Attempted to start for surv. run (failed to start because of unreset overspeed trip following generator lockout)
B	2/22/77	Y	N		Generator trip test
A	2/22/77	Y	N		Generator trip test



SET	DATE	START	LOAD	FAIL	REMARKS
A	2/22/77	Y	N		Support for reactor trip
B	2/22/77	Y	N		Support for reactor trip
B	2/15/77	Y	Y		Surv. run
A	2/2/77	Y	N		Op Check
B	2/2/77	Y	N		Op check
A	2/1/77	Y	Y		Surv. run
B	1/21/77	Y	Y		Op run
B	1/20/77	Y	Y		Op run 1 1/2 hrs
A	1/20/77	Y	Y		Op run 1/2 hr
A	1/20/77	Y	N		Op run
A	1/20/77	Y	N		Op run
A	1/19/77	Y	N		Op run
A	1/19/77	Y	N		Op run
A	1/19/77	Y	N		Op run
A	1/19/77			X	Failed to start - troubleshooting
A	1/19/77			Y	Failed to start
A	1/18/77	Y	Y		Op check
A	1/18/77	Y	N		Op check
B	1/18/77	Y	Y	X	Turbocharger breakdown
B	1/7/77	Y	Y		Surv. run
A	1/7/77	Y	N		Op check
A	1/7/77	Y	N		Op check
A	1/6/77	Y	N		Op check
A	1/6/77	Y	N		Op check-B out of service
A	1/5/77	Y	Y		Surv. run
B	1/3/77	Y	N		Run to check oil level after maint.
B	12/21/76	Y	Y		Surv. run
A	12/7/76	Y	Y		Surv. run
B	11/29/76	Y	Y		Surv. run
A	11/19/76	Y	N		Op check

SET	DATE	START	LOAD	FAIL	REMARKS
A	11/7/76	Y	N		Test run
A	11/2/76	Y	N		Maint. test run
A	11/2/76			X	Troubleshooting associated with the failure of 11/1/76
B	11/1/76	Y	N		Op check
A	11/1/76			Y	Failed to start
B	10/19/76	Y	Y		Surv. run
A	10/5/76	Y	Y		Surv. run
B	10/1/76	Y	N		Test run-working on the Kw-hr meter
B	9/27/76	Y	N		Op check-stopped to add coolant - water could have been added during operation, stop was discretionary
A	9/24/76	Y	N		Op check
B	9/24/76	Y	N		Op check
A	9/17/76	Y	N		Started to do periodic test of C.I.S.
A	9/7/76	Y	Y		Surv. run
A	9/2/76	Y	N		Test run
B	8/17/76	Y	Y		Surv. run
A	8/13/76	Y	N		D/G A channel check
A	8/10/76	Y	N		Op check
B	8/10/76	Y	Y		Surv. run
A	8/6/76	Y	N		Op check-prior to removing B from service
A	8/3/77	Y	Y		Surv. run
B	8/1/76	Y	N		Initiation of 1B C.I.S.
B	8/1/76	Y	N		Initiation of 1B C.I.S.
B	7/31/76			X	Troubleshooting failure to start on C.I.S.
B	7/31/76			Y	Initiation of 1B C.I.S.-B failed to start
A	7/31/76	Y	N		Initiation of 1A C.I.S.
B	7/20/76	Y	Y		Surv. run
A	7/6/76	Y	Y		Surv. run
A	6/21/76	Y	N		Op check-prior to maint.
B	6/21/76	Y	N		Op check-prior to maint.
B	6/15/76	Y	Y		Surv. run

SET	DATE	START	LOAD	FAIL	REMARKS
B	6/2/76	Y			Tripped due to abnormal current phase 1
B	6/2/76	Y	Y	X	Troubleshooting
B	6/2/76	Y	N		Test of relay
A	6/2/76	Y	Y		Test sync. verification
A	6/1/76	Y	N	X	Would not sync. with loaded bus (would not occur in emergency operation)
B	5/26/76	Y	N		Op check
A	5/26/76	Y	N		Op check-prior to removing B from service
A	5/26/76	Y	N		Op check-prior to removing B from service
B	5/20/76	Y	N		Test after maint.
A	5/20/76	Y	N		Op check-prior to removing B from service
B	5/18/76	Y	N		Test run
A	5/18/76	Y	N		Op check after maint. (sluggish start)
B	5/18/76	Y	Y		Surv. run
B	5/17/76	Y	N		Op check-A out of service
A	5/17/76	Y	N		Op check-B out of service
B	5/17/76	Y	Y		Surv. run
A	5/4/76	Y	Y		Surv. run
A&B	5/1/76	Y	N		Op check-prior to taking out line #1
A&B	5/1/76	Y	N		Op check-prior to taking out line #2
A	4/30/76	Y	Y		Pick up B SUT- 1 1/2 hrs.
B	4/30/76	Y	Y		Pick up B SUT- 2 hrs.
B	4/20/76	Y	Y		Surv. run
B	4/20/76	Y	Y		Surv. run
A	4/6/76	Y	Y		Surv. run-KW indicator chart indicated fluctuations; problem was in the chart not the generator