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FACIL:50-261 H. B. Robinson Plant, Unit 2, Carolina Power and Ligh 05000261
AUTH.NAME AUTHOR AFFILIATION
ZIMMERMAN,S.R. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
VARGA,S.A. Operating Reactors Branch 1

SUBJECT: Forwards tables re diesel generator operations data, scheduled & unscheduled down time record & auxiliary equipment mods record for 1976-80, in support of review of Unresolved Safety Issue A-44 re station blackout.

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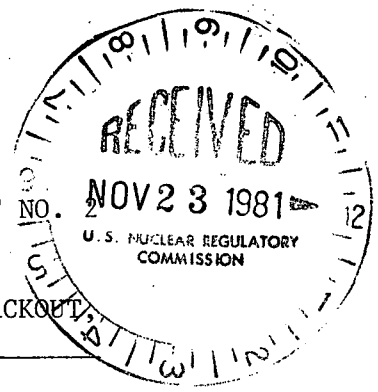
Carolina Power & Light Company

November 19, 1981

File: NG-3514(R) Serial No.: NO-81-1913

Office of Nuclear Reactor Regulation
ATTN: Mr. S. A. Varga, Chief
Operating Reactors Branch No. 1
United States Nuclear Regulatory Commission
Washington, D.C. 20555



H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
INFORMATION REQUEST REGARDING STATION BLACKOUT,
UNRESOLVED SAFETY ISSUE A-44

Dear Mr. Varga:

Carolina Power & Light Company (CP&L) has received your letter of July 9, 1981 requesting information to be used in the Unresolved Safety Issue (USI) A-44, Station Blackout, effort. Pursuant to your request, the information enclosed for the Robinson Plant should assist your efforts at determining the generic reliability of onsite standby diesel generators.

Specifically, your letter requested the completion of the following four tables: (1) Diesel Generator Operations Data, (2) Diesel Generator Scheduled Down Time Record, (3) Diesel Generator Unscheduled Down Time Record, and (4) Onsite Emergency Diesel Generator and Auxiliary Equipment Modifications Record. The information requested for the years 1976 to 1980 is provided in the completed tables. We hope that the information enclosed will assist you in incorporating as much actual experience as possible into the reliability model for emergency power systems being developed as a part of the resolution of USI A-44.

If any additional information is needed, please contact us.

Yours very truly,

S. R. Zimmerman
Manager
Licensing & Permits

DCW/lr (0570)

Enclosures

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411 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

Plant Name H. B. Robinson
Unit No. Unit 2

TABLE 1

Diesel Generator Operations Data
Calendar Year 1976

Reason for DG Operation, & scheduled Duration of Run	DG No.	Number of Starts	Number of Failures	Percent Loading of DG (KW)	Duration of Run Before Stop For Each DG Failure	Identification of Failure (Refer to attached LERs or Table 3)
Tech. Spec Req'd Test						
Bi-Weekly (PT 23.1) (1 hour)	2A	26	0	100		
	2B	27	1	100		LER #4, LER #5
Refueling Outage (PT 23.2) (Start only) (1 start/test)	2A	1	0	100		
	2B	1	0	100		
Refueling Outage (PT 23.3)(1 start/test)	2A	1	0	100		
	2B	1	0	100		
DG Actual Demand Starts not for Testing						
	2A	2	0	100		
	2B	2	0	100		
Miscellaneous Tests (Specify Type) (PT 23.1) To verify operability	2A	3	0	100		
	2B	3	0	100		

Plant Name H. B. Robinson
Unit No. 2

TABLE 1

Diesel Generator Operations Data
Calendar Year 1977

Reason for DG Operation, & scheduled Duration of Run	DG No.	Number of Starts	Number of Failures	Percent Loading of DG (KW)	Duration of Run Before Stop For Each DG Failure	Identification of Failure (Refer to attached LERs or Table 3)
Tech. Spec Req'd Test						
Bi-Weekly (PT 23.1) (1 hour) (1 start/test)	2A	27	1	100		LER #3
	2B	26	0	100		
Refueling Outage (PT 23.2) (Start only) (1 start/test)	2A	0	0	0		No Refueling Outage in 1977
	2B	0	0	0		
Refueling Outage (PT 23.3) (1 start/test)	2A	0	0	0		No Refueling Outage in 1977
	2B	0	0	0		
DG Actual Demand Starts not for Testing						
	2A	3	0	100		
	2B	3	0	100		
Miscellaneous Tests (Specify Type) PT 23.1 to verify operability	2A	13	0	100		
	2B	13	0	100		

Plant Name H. B. Robinson
Unit No. 2

TABLE 1

Diesel Generator Operations Data
Calendar Year 1978

Reason for DG Operation, & scheduled Duration of Run	DG No.	Number of Starts	Number of Failures	Percent Loading of DG (KW)	Duration of Run Before Stop For Each DG Failure	Identification of Failure (Refer to attached LERs or Table 3)
Tech. Spec Req'd Test						
Bi-Weekly (PT 23.1	2A	28	2	100	Not available	Trip due to high coolant temp. 7/3/78/
(1 hour)	2B	26	0	100		
(1 start/test)						LER-2
Refueling Outage	2A	1	0	100		
(PT 23.2) (Start only)	2B	1	0	100		
(1 start/test)						
Refueling Outage	2A	1	0	100		
(PT 23.3)	2B	1	0	100		
(1 start/test)						
DG Actual Demand Starts not for Testing						
	2A	0	0	100		
	2B	0	0	100		
Miscellaneous Tests (Specify Type)						
PT 23.1 to verify operability	2A	12	0	100		
	2B	11	0	100		

Plant Name H. B. Robinson
Unit No. 2

TABLE 1

Diesel Generator Operations Data
Calendar Year 1979

Reason for DG Operation, & scheduled Duration of Run	DG No.	Number of Starts	Number of Failures	Percent Loading of DG (KW)	Duration of Run Before Stop For Each DG Failure	Identification of Failure (Refer to attached LERs or Table 3)
Tech. Spec Req'd Test						
Bi-weekly - Weekly (PT 23.1) (1 hour) (1 start/test)	2A	39	0	100		
	2B	40	0	100		
Refueling Outage (PT 23.2) (Start only) (1 start/test)	2A	2	1	100		LER #1
	2B	2	1	100		LER #1
Refueling Outage (PT 23.3)	2A	1	0	100		
	2B	1	0	100		
DG Actual Demand Starts not for Testing						
	2A	2	0	100		
	2B	2	0	100		
Miscellaneous Tests (Specify Type)						
PT 23.1 to verify operability	2A	14	0	100		
	2B	15	0	100		

Plant Name H. B. Robinson
Unit No. 2

TABLE 1

Diesel Generator Operations Data
Calendar Year 19 80

Reason for DG Operation, & scheduled Duration of Run	DG No.	Number of Starts	Number of Failures	Percent Loading of DG (KW)	Duration of Run Before Stop For Each DG Failure	Identification of Failure (Refer to attached LERs or Table 3)
Tech. Spec Req'd Test						
Weekly (PT 23.1 (1 hour) (1 start/ test)	2A	52	0	100		
	2B	52	0	100		
Refueling Outage (PT 23.2) (Start only) (1 start/test)	2A	1	0	100		
	2B	1	0	100		
Refueling Outage (PT 23.3)(1 start/ test)	2A	1	0	100		
	2B	1	0	100		
DG Actual Demand Starts not for Testing	2A	1	0	100		
	2B	1	0	100		
Miscellaneous Tests (Specify Type) PT 23.1 to verify operability	2A	4	0	100		
	2B	6	0	100		

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 1976

Enclosure 1 - Page 2
Plant Name H. B. Robinson
Unit No. 2

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG# 2A	DG# 2B	DG#	DG#	DG#	DG#	DG#	DG#	DG#	DG#	
Scheduled Maintenance											
Refueling Outage Inspection	Est. 48 hr.	Est. 48 hr.									
Time DG is unavailable for emergency service because of required tests											

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 1977

Enclosure 1 - Page 2
Plant Name H. B. Robinson
Unit No. 2

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG# 2A	DG# 2B	DG#	DG#	DG#	DG#	DG#	DG#	DG#	DG#	
Scheduled Maintenance											
None											
Time DG is unavailable for emergency service because of required tests											

Plant Name H. B. Robinson

Unit No. 2

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 1978

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG# 2A	DG# 2B	DG#	DG#	DG#	DG#	DG#	DG#	DG#	DG#	
Scheduled Maintenance											
Refueling Outage Inspection	Est. 72 hr	Est. 72 hr									
Time DG is unavailable for emergency service because of required tests											

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 19 79

Enclosure 1 - Page 2
Plant Name H. B. Robinson
Unit No. 2

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG# 2A	DG# 2B	DG#	DG#	DG#	DG#	DG#	DG#	DG#	DG#	
Scheduled Maintenance											
Refueling Outage Inspection	Est. 96 hr	Est. 96 hr									
Time DG is unavailable for emergency service because of required tests											

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 19 80

Plant Name H. B. Robinson
Unit No. 2

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG# 2A	DG# 2B	DG#	DG#	DG#	DG#	DG#	DG#	DG#	DG#	
Scheduled Maintenance											
Refueling Outage Inspection	Est. 330 hr.	Est. 330 hr.									
Time DG is unavailable for emergency service because of required tests											

TABLE 3

Diesel Generator Unscheduled Downtime Record
Calendar Year 19__

Plant Name H. B. Robinson
Unit No. 2

LER Abstract No (Refer to attched LER Abstracts)	Downtime Hours				Comments - If any of the reported failures would not have been a failure under emergency conditions, please explain here. Refer to attached LERs or the failures listed in Table 1.
	Total Hours	Trouble-shooting	Parts, Delivery, etc	Repair/ Replace	
1	0	0	0	0	Diesels did not assume rated load within 50 seconds after initial starting signal.
2	4	0	0	4	
3	11	0	0	11	
4	5	0	0	5	

TABLE 4

Onsite Emergency Diesel Generator and Auxiliary Equipment Modification Record

Plant Name H. B. Robinson
Unit No. 2

Equipment or procedure modified	Date of Mod.	Reason for Modification and Desired Improvement	Description of Modification
Diesel Cooling Water System	7/71	To provide early notice of leak in the diesel cooling water system and allow surveillance of expansion tank filling operation.	Connect an alarm in parallel with the cooling water expansion tank auto refill solenoid valve to provide remote and locate indication of cooling water make up.
Trips Defeat Switches	2/72	To eliminate the diesel trips (except when testing) and make the system more dependable for emergency use.	Install key operated switches on both units so the normal position with thekey removed will block the diesel trips into this system. The operate position will reinstall the trips for test runs and will alarm in the control room when operated.
DG Start Up	10/75	Provide redundant startup system for DGs for increased reliability.	Addition of a second air start solenoid on each diesel.
Emergency Field Flashing Batteries	10/74	Provide more reliable Emergency Field Flashing batteries.	Replace existing lead-acid type batteries with nickel-cadmium batteries and locate in diesel generator rooms.
Fuel Supply Lines	8/74	Eliminate possibility of fuel line rupture, providing more reliability per vendor recommendations.	Replace existing synthetic hoses with new designed steel fuel supply tubes.
DG Control Panels	8/74	Replace components in W-2 switches which may be defective.	Install replacement parts in Westinghouse type W-2 control switches with the "pull-to-lock" feature.
Starting Circuit	6/78	Prevent "dry starts" of the DGs preventing possible bearing damage.	Replace the emergency diesel generator starting circuit time delay relay for prelube of the DGs. Prelube time will be increased from 15 seconds to 2 minutes.

TABLE 4

Onsite Emergency Diesel Generator and Auxiliary Equipment Modification Record

Plant Name H. B. Robinson
Unit No. 2

Equipment or procedure modified	Date of Mod.	Reason for Modification and Desired Improvement	Description of Modification
DG Fuel Oil Tanks Level Column Lines	11/77	Allow testing of level alarms and opening of the fuel transfer solenoid valves.	Install drains on Fuel Oil Tanks Level Column Lines to allow draining of the column without draining the the tank.
DG Annunciation	8/80	Give immediate warning if the DGs have a disabling condition.	Provide alarming of any disabling condition on a separate window to ensure the operator knows the dies is out of service.
Normal Start Circuit	2/81	Assure ample time for the diesels to crank on routine starts.	Change a relay in the normal start circuit of the DGs to increase the duration of a start signal from 1 second to 10 seconds.
DG Prelube Time	8/81	Prevent failures of DGs. Recommended by manufacturer.	This setpoint change will increase the prelube time of the DGs from 2 minutes to 4 1/2 minutes.
DG Air Dryer Service Water Piping	In Progress	Existing carbon steel piping has become fouled. Must be replaced to permit sufficient Service Water flow. Stainless Steel piping should lessen the chance of subsequent fouling.	Replace carbon steel piping with stainless steel pipi