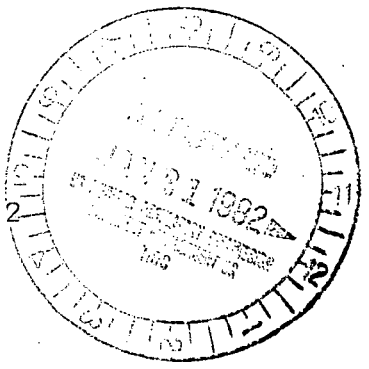
Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

January 12, 1982

Mr. T. A. Ippolito, Chief
Operating Reactors - Branch 2
Division of Operating Reactors
U.S. Nuclear Regulatory Commission
Washington, DC 20555



Subject: Dresden Station Units 2 and 3
Quad Cities Station Units 1 and 2
Information Request Regarding
Station Blackout, USI A-44
(Diesel Generator History)
NRC Docket Nos. 50-237/249 and
50-254/265

References (a): T. A. Ippolito letter to J. S. Abel dated July 9, 1981.

(b): T. A. Ippolito letter to J. S. Abel dated July 20, 1981.

Dear Mr. Ippolito:

References (a) and (b) requested Commonwealth Edison to supply certain Diesel Generator history information for Dresden Units 2 and 3 and Quad Cities Units 1 and 2, respectively. This information, in the form of completed questionnaires, is provided in the attachments to this letter.

Please note that we made our best effort to obtain the requested information, but we were not able to supply everything requested. Where estimates were used, it is noted on the questionnaire.

Please direct any questions you may have concerning this matter to this office.

One (1) signed original and fifty-nine (57) copies of this transmittal with seven (7) copies of the completed questionnaire are provided for your use.

Very truly yours,

Thomas J. Rausch

Thomas J. Rausch
Nuclear Licensing Administrator
Boiling Water Reactors

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cc: Region III Inspector - Dresden
Region III Inspector - Quad Cities

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TABLE 1 Diesel Generator Operational Data
Calendar Year 1976

Plant Name Quad Cities
Unit No. 1&2

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 1)
Tech. Spec Req'd Test						
QOS-6600-1 Monthly Op. Test (2hrs)	1	12	0	100		
	1/2	12	0	100		
	2	12	0	100		
QOS-6600-02 Return to Service or Out of Service required Testing. (2hrs)	1	5	0	100		
	1/2	10	0	100		
	2	5	0	100		
QOS-6600-01 Return to Service or Out of Service required Testing. (2hrs)	1	2	0	100		
	1/2	0	—	—		
	2	2	0	100		
Refueling Outage Tests (1hr)	1	0	—	—		
	1/2	2	0	50		
	2	2	0	50		
DG Actual Demand Starts not for Testing						
Auto Starts	1	0	—	—		
	1/2	0	—	—		
	2	0	—	—		
Miscellaneous Tests ~~(Specify Type)~~ unable to Categorize (2hrs)	1	8	0	100		
	1/2	14	0	100		
	2	4	0	100		

Note: QOS-6600-1 and QOS-6600-02 are sometimes performed at the same time.

TABLE 1

Diesel Generator Operations Data
Calendar Year 1977

Plant Name Rancho Seco, U
Unit No. 12

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						
SOS-6600-1 Monthly Op. Test. (2hrs)	1	12	0	100		
	1/2	12	0	100		
	2	12	0	100		
SOS-6600-02 Return to Service or Out of Service required Testing (2hrs)	1	13	0	100		
	1/2	15	0	100		
	2	15	0	100		
SOS-6600-01 Return to Service or Out of Service required Testing (2hrs)	1	1	0	100		
	1/2	0	—	—		
	2	1	0	100		
Refueling Outage Tests (2hr)	1	1	0	50		
	1/2	1	0	50		
	2	0	—	—		
DG Actual Demand Starts not for Testing						
Auto Starts	1	1	0	100		
	1/2	1	0	100		
	2	1	0	100		
Miscellaneous Tests ~~(Specify Type)~~						
Unable to Categorize (2hrs)	1	0	—	—		
	1/2	6	0	100		
	2	0	—	—		

Note: SOS-6600-1 and SOS-6600-02 are sometimes performed at the same time.

Plant Name Quad Cities
Unit No. 1&2

TABLE 1

Diesel Generator Operations Data
Calendar Year 1975

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 1)
Tech. Spec Req'd Test						
Q05-6600-1 Monthly Op test (2hrs)	1	12	0	100		
	1/2	12	0	100		
	2	12	0	100		
Q05-6600-02 Return to Service or Out of Service Required Testing (2hrs)	1	9	0	100		
	1/2	20	0	100		
	2	9	0	100		
Q05-6600-01 Return to Service or Out of Service Required Testing (2hrs)	1	2	0	100		
	1/2	2	0	100		
	2	2	0	100		
Refueling Outage Tests (1hr)	1	0	—	—		
	1/2	2	0	50		
	2	2	0	50		
DG Actual Demand Starts not for Testing						
Auto Starts	1	1	0	100		
	1/2	1	0	100		
	2	1	0	100		
Miscellaneous Tests (~~Specify Type~~)						
Unable to Categorize (0hrs)	1	0	—	—		
	1/2	11	0	100		
	2	6	0	100		

Note: Q05-6600-1 and Q05-6600-02 are sometimes performed at the same time.

Enclosure [illegible]
Plant Name Quad Cities
Unit No. 1&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						
QOS-6600-1	1	12	0	100		
Monthly Op test	1/2	12	0	100		
(2hr.)	2	12	0	100		
QOS-6600-02	1	9	0	100		
Return to Service or	1/2	20	0	100		
Out of Service Required	2	9	0	100		
Testing (2hrs)						
QOS-6600-01	1	3	0	100		
Return to Service or	1/2	7	0	100		
Out of Service Required	2	3	0	100		
Testing (2hrs)						
Refueling Outage	1	2	0	50		
Tests (1hr)	1/2	2	0	50		
	2	0	—	—		
DG Actual Demand Starts not for Testing						
Auto Starts	1	0	—	—		
	1/2	3	0	100		
	2	0	—	—		
Miscellaneous Tests ~~(Specify Type)~~						
Unable to	1	0	—	—		
Categorize (2hrs)	1/2	11	0	100		
	2	6	0	100		

Note: QOS-6600-1 and QOS-6600-02 are sometimes performed at the same time.

TABLE 1 — Diesel Generator Operational Data
Calendar Year 1980

Plant Name: Quad Cities
Unit No.: 1&2

Reason for DG Operation, & acheduled 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 1)
Tech. Spec Req'd Test						
QOS-6600-1 Monthly Op tests (2hrs)	1	12	0	100		
	1/2	12	0	100		
	2	12	0	100		
QOS-6600-02 Return to Service or Out of Service Required Testing (2hrs)	1	9	0	100		
	1/2	9	1	100		LER #3
	2	9	0	100		
QOS-6600-01 Return to Service or Out of Service Required Testing (2hrs)	1	9	0	100		
	1/2	11	0	100		
	2	9	0	100		
Refueling Outage Tests (1hr)	1	2	0	50		
	1/2	4	0	50		
	2	2	0	50		
DG Actual Demand Starts not for Testing						
Auto Starts	1	0	—	—		
	1/2	1	0	100		
	2	2	0	100		
Miscellaneous Tests (~~Specify Type~~)						
Unable to Categorize (2hrs)	1	0	—	—		
	1/2	0	—	—		
	2	0	—	—		

Note: QOS-6600-1 and QOS 6600-02 are sometimes

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 1976

Plant Name Quad Cities
Unit No. 1 & 2

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG 1	DG 1/2	DG 2	DG	DG	DG 1	DG 1/2	DG 2	DG	DG	
Scheduled Maintenance											
QOS-6600-02 (72 hr limitation)	0	1	0			6	5	4			
QOS-6600-01 (7 day limitation)	0	0	0			4	25.5	0			
Time DG is unavailable for emergency service because of required tests	0	0	0			0	0	0			

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 1977

Plant Name Oyster Creek
Unit No. 182

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG# 1	DG# 1/2	DG# 2	DG#	DG#	DG# 1	DG# 1/2	DG# 2	DG#	DG#	
Scheduled Maintenance											
205-6600-02 (1½ hr. limitation)	2	0	2			10	10	10			
205-6600-01 (7 day limitation)	0	0	0			0	8	0			
Time DG is unavailable for emergency service because of required tests	0	0	0			0	0	0			

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 1978

Plant Name Calvert Cliffs
Unit No. 1+2

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG# 1	DG# 1/2	DG# 2	DG#	DG#	DG# 1	DG# 1/2	DG# 2	DG#	DG#	
Scheduled Maintenance											
EQS-6600-02 (1 1/2 hr limitation)	0	0	1			14	10	10			
						0	24	0			
EQS-6600-01 (7 day limitation)	4	8	0								
Time DG is unavailable for emergency service because of required tests	0	0	0			0	0	0			

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 1979

Plant Name Quad Cities
Unit No. 1&2

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG# 1	DG# 1/2	DG# 2	DG#	DG#	DG# 1	DG# 1/2	DG# 2	DG#	DG#	
Scheduled Maintenance											
QOS-6600-02 (1½ hr limitation)	1	0	2			10	13	9			
QOS-6600-01 7 day limitation	0	0	168			2	50	0			
Time DG is unavailable for emergency service because of required tests	0	0	0			0	0	0			

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 1980

Plant Name Waterford
Unit No. 2

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG# 1	DG# 1/2	DG# 2	DG#	DG#	DG# 1	DG# 1/2	DG# 2	DG#	DG#	
Scheduled Maintenance											
QOS-6600-02 (1½ hr limitation)	3	0	5			3	9	6			
QOS-6600-01 (7 day limitation)	72	0	24			0	142	0			
Time DG is unavailable for emergency service because of required tests	0	0	0			0	0	0			

TABLE 1

Diesel Generator Unscheduled Downtime Record
Calendar Year 1980-'77

Plant Name Quad Cities
Unit No. 1/2

LER Abstract No (Refer to attached LER Abstracts)	Downtime Hours a) Total Hours	Trouble-shooting	Parts, Delivery, etc	Repair/ Replace	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.
(1980) 2	26¼ hr				high engine temperature trip due to trip of cooling water pump - pump found to have a short
(1980) 3	½ hr				failed to start from control room - poor electrical contact between fuse and bent fuse clip in the DG control circuit.
(1979) 4	0				one of two starting air supply valves found closed - personnel error - other starting air system available for start if necessary
(1979) 5	69½ hr				fuel filter found to be fouled - caused by sludge buildup on bottom of fuel storage tank.
(1979) 7	2 hr. 40 min.				air start motor failed to disengage - failure of air motor pilot solenoid valve - also, during subsequent testing, air starting valve sticking
(1977) 9	2 hr. 40 min.				field breaker would not close - failure of diode in the 800 rpm field breaker interlock circuit
(1977) 12	1 hr 25 min.				leak discovered in tubing leading from fuel line to pressure guage.

TABLE 3

Diesel Generator Unscheduled Downtime Record
Calendar Year 19 80 - '77

Plant Name Quad Cities
Unit No. 1/2

LER Abstract No (Refer to attached LER Abstracts)	Downtime Hours a) Total Hours	Trouble-shooting	Parts, Delivery, etc	Repair/ Replace	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.
(1976) 14	55min.				monthly inspection time limit exceeded - maintenance man unaware of time limit
(1976) 15	5min				maintenance time exceeded - procedure inadequacy
(1977) 19 NOT LER	1hr 20min				hole in diaphram of pressure regulator on air start system and air start solenoid partially open

TABLE 3 — Diesel Generator Unscheduled Downtime Record
Calendar Year 1980 - '77

Plant Name Quad Cities
Unit No. 1

LER Abstract No. (Refer to attached LER Abstracts)	Downtime Hours a) Total Hours	Trouble-shooting	Parts, Delivery, etc	Repair/ Replace	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.
(1980) 1	33 hr. 10 min.				cooling water pump motor failure - 1C RHR Vault sump inadequate and therefore DG #1 water pump 2/3 submerged.
(1979) 6	2 hr. 40 min.				fuel line leak discovered - worn gasket on the fuel line filter -
(1978) 8	12 hr 35 min.				preventative maintenance - fuel transfer line rerouted and replaced to prevent possible rust damaged
(1979) 10	2 1/2 hr.				no response registered on the voltage, cycles, or synchronization indicators - tachometer coupling loose on shaft.
(1979) 13	77 hr. 20 min.				field failed to flash - broken wire found on the capacitor across voltage suppression relay also, during retesting, voltage suppression rectifiers were damaged.
(1976) 16	184 1/2 hr.				failed to start - air solenoid valve dirty, consequently not opening to full open.

TABLE 3

Diesel Generator Unscheduled Downtime Record
Calendar Year 1980 - '77

Enclosure [illegible]
Plant Name Quad Cities
Unit No. 2

LER Abstract No. (Refer to attached LER Abstracts)	Downtime Hours a) Total Hours	Trouble-shooting	Parts, Delivery, etc	Repair/ Replace	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.
(1977) 17	46¼ hr				water level decrease in cooling water expansion tank - cooling water heat exchanger had a leak between shell and tube side - .
(1977) 18 NOT LER	1hr. 5min.				upper starter motor Bendix drive found to be defective - Bendix spring on starter broke.

TABLE 4

Quad Cities Emergency Diesel Generator and Auxiliary Equipment Modification Record

Plant Name Quad Cities
Unit No. 1

Equipment or procedure modified	Date of Mod.	Reason for Modification and Desired Improvement	Description of Modification
Diesel Generator m-4-1-73-16	9-4-74	prevent inadvertent isolation of coolers by three-way valves in cooler lines	provide instrumentation that monitors inlet and outlet pressure to raw water cooler gaug inlet and outlet temperatures to water coolers, and lube oil from engine temperature.
Diesel Start Relay m-4-1-73-100	11-21-73	meet as a minimum, applicable NEMA Codes and 0.2G (horizontal acceleration) seismic criteria	replace the "HFA" type Diesel Start Relay with a 125 V D.C. industrial grade heavy duty relay having a contact circuit rating of 10 amps inductive load interrupt capacity utilizing "blow outs"
Start Failure Circuit m-4-1-74-25	4-13-74	prevent diesel from shutting off after an auto-start if the control switch is placed in STOP and then returned to AUTO, also, prevents depletion of starting air	modify the diesel starting circuitry to cover a condition when the start failure circuitry is in the energized configuration
Diesel Generator m-4-1-75-25	2-11-78	improve reliability of transient voltage suppression	replace the existing field diode selenium rectifier transient suppressors with "State of the Art" transient voltage suppressors
D/G Breaker Trip m-4-1-77-21	1-20-80	prevent motorizing of the diesel generator in the event a trip occurs while diesel generator is paralled to the bus	provide a trip to the diesel generator 4kV breaker in the event the SDR relay operates

TABLE 4

Onsite Emergency Diesel Generator and Auxiliary Equipment Modification Record

Plant Name: Quad Cities
Unit No.: 1

Equipment or procedure modified	Date of Mod.	Reason for Modification and Desired Improvement	Description of Modification
D/G Air Compressors m-4-1-77-25	9-15-80	prevent the possibility of blowing down the A-B accumulator set in the event of a rupture in the C-D- set	install a check valve for the C-D diesel generator accumulator set upstream of th tie with the A-B set
Day Tank Oil Transfer Lines m-4-1-78-8	9-28-78	protect transfer lines from possible damage	install pipe sleeves on lines 1-5204-2 "G" and 1-5201-2 "G" under the new duct [illegible] Use the existing pipe as sleeve and instal a new 1-1/4" line inside
Main Feed Breakers m-4-1-78-16	2-23-79	4KV undervoltage functional performance test	install test switches on Unit 1 & 1/2 diese generator auto-start circuits for 4KV undervoltage functional performance test

TABLE 4

Onsite Emergency Diesel Generator and Auxiliary Equipment Modification Record

Enclosure 1 - Page 4

Plant Name: Quad Cities

Unit No.: 1/2

Equipment or procedure modified	Date of Mod.	Reason for Modification and Desired Improvement	Description of Modification
Diesel Generator M-4-½-73-2	9-5-74	prevent inadvertent isolation of coolers by three-way valves in cooler lines	provide instrumentation that monitors inlet and outlet pressure to raw water cooler gauges, inlet and outlet temperatures to wate coolers, and lube oil from engine temperature
Diesel Generator M-4-½-73-29	1-5-74	meet as a minimum, applicable NEMA Codes and 0.2G (horizontal acceleration) seismic criteria	replace "HFA" type Diesel start Relay with a 125 V D.C. industrial grade heavy-duty relay having a contact circuit rating of 10 amps inductive load interrupt capacity utilizing "blowouts"
Start Failure Circuit M-4-½-74-6	4-13-74	prevent diesel from shutting off after an auto-start if the control switch is placed in STOP and then returned to AUTO, also prevent depletion of starting air	modify the diesel starting circuitry to cover a condition when the start failure circuitry is in the energized configuration.
Diesel Generator M-4-½-75-4	1-27-78	improve reliability of transient voltage suppression	replace existing field diode selenium rectifier transient voltage suppressors with "State of the Art" transient voltage suppressors.
DG Air Compressor M-4-½-77-37	2-6-80	prevent the possibility of blowing down the A-B accumulator set in the event of a rupture in the C-D set.	install a check valve for the C-D diesel generator accumulator set upstream of the tie with the A-B set

TABLE 4

Onsite Emergency Diesel Generator and Auxiliary Equipment Modification Record

Plant Name Quad Cities
Unit No. 2

Equipment or procedure modified	Date of Mod.	Reason for Modification and Desired Improvement	Description of Modification
Diesel Generator m-4-2-73-16	9-5-74	prevent inadvertent isolation of coolers by three-way valves in cooler lines	provide instrumentation that monitors inlet and outlet pressure to raw water cooler gauges, inlet and outlet temperatures to water coolers, and lube oil from engine temperatures
Diesel Generator m-4-2-73-100	1-5-74	meet as a minimum, applicable NEMA Codes and 0.2 (horizontal acceleration) seismic criteria	replace "HFA" type Diesel Start Relay with a 125 V D.C. industrial grade heavy-duty relay having a contact circuit rating of 10 amps inductive load interrupt capacity utilizing "blowouts"
Start Failure Circuit m-4-2-74-25	4-13-74	prevent the diesel from shutting off after an auto-start if the control switch is placed in STOP and then returned to AUTO, also will prevent depletion of starting air	modify the diesel starting circuitry to cover a condition when the start-failure circuity is in the energized configuration.
Diesel Generator m-4-2-75-25	1-25-78	improve reliability of transient voltage suppression	replace the existing field diode selenium rectifier transient voltage suppressors with "state of the Art" transient voltage suppressors
DG Air Compressor m-4-2-77-25	1-18-80	prevent the possibility of blowing down the A-B accumulator set in the event of a rupture in the C-D set	install a check valve for the C-D diesel generator accumulator set upstream of the tie with the A-B set

TABLE 4

Quad Cities Emergency Diesel Generator and Auxiliary Equipment Modification Record

Plant Name Quad Cities
Unit No. 2

Equipment or procedure modified	Date of Mod.	Reason for Modification and Desired Improvement	Description of Modification
Main Feed Breakers m-4-2-78-14	12-4-79	4KV undervoltage functional performance test	install test switches on diesel generate auto-start circuits for 4KV under-voltage functional performance test

Enclosure 1 - Page 1
Plant Name Dresden
Unit No. 2 & 3

TABLE 1

Diesel Generator Operations Data
Calendar Year 1980

Reason for DG Operation, & acheduled 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 1)
Tech. Spec Req'd Test						
Monthly Surveillance	2	13	0	100		
(1 hour)	2/3	13	1	100	3 min.	LER #3
(1 start/test)	3	12	1	100	0	LER #2
DG Actual Demand Starts not for Testing	2					
	2/3					
	3					
Miscellaneous Tests (Specify Type)						

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 19 80

Enclosure 1 - Page 2
Plant Name Dresden
Unit No. 2 & 3

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG 2	DG 2/3	DG 3	DG	DG	DG 2	DG 2/3	DG 3	DG	DG	
Scheduled Maintenance						210	270	215			Estimate
Time DG is unavailable for emergency service because of required tests											

Enclosure 1 - Page 3
Plant Name Dresden
Unit No. 2 & 3

TABLE 1

Diesel Generator Unscheduled Downtime Record
Calendar Year 1980

	LER Abstract No. (Refer to attached 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	
(Unit 2)	1	29	2	7	20	
	2	42	2	7	33	
	3	1	0	0	1	
(Unit 3)	1	5	1	1	3	
	2	3	1	1	1	

Enclosure 1 - Page 1
Plant Name Dresden
Unit No. 2 & 3

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 1)
Tech. Spec Req'd Test Monthly Surveillance & Weekly Surveillance (1 hour test)	2	48	1	100	-	LER #22
	2/3	74	2	100	-	LER #16, 17
	3	48	0	0	-	
DG Actual Demand Starts not for Testing						
Miscellaneous Tests (Specify Type)						

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 1978

Enclosure 1 - Page 2
Plant Name Dresden
Unit No. 2 & 3

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG# 2	DG# 2/3	DG# 3	DG#	DG#	DG# 2	DG# 2/3	DG# 3	DG#	DG#	
Scheduled Maintenance											
Quarterly & Semi-Annual & Annual						300	340	312			Estimate
Time DG is unavailable for emergency service because of required tests											

Plant Name Dresden
Unit No. 2 & 3

TABLE 1

Diesel Generator Unscheduled Downtime Record
Calendar Year 1978

LER Abstract No. (Refer to attached 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	
(Unit 2) 16	2	0	0	2	
17	4	0	0	3	
18	8	1	2	5	
19	10	1	1	8	
20	6	1	0	5	
21	10	1	0	9	
22	2	0	0	2	
(Unit 3) 3	0	0	0	0	Day tank low level.
4	0	0	0	0	Fuel storage tank low level.

Enclosure 1 - Page 1
Plant Name Dresden
Unit No. 2 & 3

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						
Monthly Surveillance (1 hour) (1 start/test)	2	21	1	100		LER #12
	2/3	15	3	100		LER #8, 9, 15
	3	12	0	0		
5-Year Surveillance	2	0	0	0		
	2/3	1	0	100		
	3	0	0	0		
DG Actual Demand Starts not for Testing						
Miscellaneous Tests (Specify Type)						

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 1979

Enclosure 1 - Page 2
Plant Name Dresden
Unit No. 2 & 3

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG# 2	DG# 2/3	DG# 3	DG#	DG#	DG# 2	DG# 2/3	DG# 3	DG#	DG#	
Scheduled Maintenance											
Semi-Annual & Annual and Quarterly						330	380	320			Estimate
5-Year Maintenance	-	336	-								
Time DG is unavailable for emergency service because of required tests											

Plant Name Dresden
Unit No. 2 & 3

TABLE 1

Diesel Generator Unscheduled Downtime Record
Calendar Year 1979

LER Abstract No. (Refer to attached 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	
(Unit 2)	4	0	0	0	0	Fuel oil sample was not taken on time.
	5	4	1	0	3	
	6	5	0	0	5	
	7	2	0	0	2	
	8	2	0	0	2	
	9	0	0	0	0	Unable to shutdown D/G from control room.
	10	8	2	1	5	
	11	3	1	0	2	
	12	11	2	2	7	
	13	12	1	3	8	
	14	3	1	0	2	
	15	5	1	0	4	

TABLE 1

Diesel Generator Operations Data
Calendar Year 1976

Enclosure 1 - Page 1
Plant Name Dresden
Unit No. 2/3

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						
Monthly Surveillance (1 hour) (1 start/test)	2	12	3	100	0	34, 36
	2/3	12	1	100	0	37
	3	12	0	0	0	
5-Year Surveillance (1 hour) (1 start/test)	2	1	0	100	0	
	2/3	0	0	100	0	
	3	1	0	100	0	
DG Actual Demand Starts not for Testing	2					
	2/3					
	3					
Miscellaneous Tests (Specify Type)						

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 1976

Enclosure 1 - Page 2
Plant Name Dresden
Unit No. 2/3

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG# 2	DG# 2/3	DG# 3	DG#	DG#	DG# 2	DG# 2/3	DG# 3	DG#	DG#	
Scheduled Maintenance						310	310	310			Estimate for maintenance.
Annually, Bi-Annually & Quarterly											
5-Year Maintenance	336	-	336								
Time DG is unavailable for emergency service because of required tests											

Plant Name Dresden
Unit No. 2/3

TABLE 1

Diesel Generator Unscheduled Downtime Record
Calendar Year 1976

LER Abstract No (Refer to attached 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	
(Unit 2) 34	7	0	0	6	
35	8	0	0	8	
36	0	0	0	0	Cooling pump tripped on high ambient temperature.
37	5	0	1	4	
38	8	0	0	8	
(Unit 3) 12	0	0	0	0	During refueling outage, the engine speed could be decreased but not increased.
13	2	0	0	2	
14	8	0	0	8	
15	10	1	3	7	
16	2	0	0	2	
17	10	1	2	7	

Enclosure 1 - Page 1
Plant Name Dresden
Unit No. 2 & 3

TABLE 1

Diesel Generator Operations Data
Calendar Year 1977

Reason for DG Operation, & acheduled 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						
Monthly & Weekly & Daily Surveillances (1 hour test)	2	62	1	100	0	LER #24
	2/3	78	5	100	4 sec,	LER #32, 25, 26, 29, 30
	3	53	1	100	30 min,	LER #6
DG Actual Demand Starts not for Testing						
	2					
	2/3					
	3					
Miscellaneous Tests (Specify Type)						

TABLE 2

Diesel Generator Scheduled Downtime Record
Calendar Year 1977

Enclosure 1 - Page 2
Plant Name Dresden
Unit No. 2 & 3

Reason for Downtime	Hours of Downtime										Comments
	Reactor shutdown					Reactor not shutdown					
	DG#	DG#	DG#	DG#	DG#	DG# 2	DG# 2/3	DG# 3	DG#	DG#	
Scheduled Maintenance											
Annual, Semi-Annual, & Quarterly						264	312	270			Estimate for annually, bi-annually, & quarterly.
Time DG is unavailable for emergency service because of required tests											

Plant Name Dresden
Unit No. 2 & 3

TABLE 1

Diesel Generator Unscheduled Downtime Record
Calendar Year 1977

LER Abstract No (Refer to attached 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	
(Unit 2)	23	0	0	0	0	River water spill in the 2/3 D/G's.
	24	1	1	0	0	
	25	8	1	1	6	
	26	1	1	0	0	
	27	8	1	0	7	
	28	0	0	0	0	D/G back in service before performing auto. start relay check.
	29	16	2	4	10	
	30	2	2	0	0	
	31	1	1	0	0	
	32	8	1	2	5	
	33	10	1	0	9	
(Unit 3)	5	3	1	0	2	
	6	2	0	0	2	
	7	0	0	0	0	Storage fuel tank level <10K gallons as required per Tech. Specs.
	8	8	0	0	8	
	9	2	0	0	2	
	10	0	0	0	0	Cooling pump breaker trip caused by high ambient temperature.
	11	3	0	0	3	

TABLE 4

Onsite Emergency Diesel Generator and Auxiliary Equipment Modification Record

Plant Name Dresden
Unit No. 2

Equipment or procedure modified	Date of Mod.	Reason for Modification and Desired Improvement	Description of Modification
2 Diesel Generator M12-2-76-86	10-77	Station personnel have means & procedure of manually setting governor at 60 Hz prior to engine shutdown.	Remove & jumper diesel governor raise limit switch over travel.
2 Diesel Generator M12-2-77-48	Cancelled 12-6-77	To provide submersible type pump in D.G. cooling water system.	Install D.G. cooling water submersible type pump.
2 Diesel Generator M12-2-78-15	7-78	To provide capability to blowdown D.G. air start piping.	Add valve to strainer to blowdown air start piping.
2 Diesel Generator M12-2-78-19	10-78	Tachometer needed to provide indication of D.G. RPM.	Install a tachometer on diesel engine.
2 Diesel Generator M12-2-78-21	8-79	This mod. will provide more reliability, supplying the operator with indication of bus tie to emergency bus breaker test position.	Install an alarm in control room to tell when diesel bus tie & emergency bus breaker is in test position.
2 Diesel Generator M12-2-78-22	9-79	Air start shutoff valve was once found closed. This mod. will provide alarm when air start shutoff valve is closed.	Alarm in control room to alarm when the air shutoff valve is in the closed position.
2 Diesel Generator M12-2-78-028	9-79	Increase air start capability of diesel generators.	Install multiple start air system for D.G.
2 Diesel Generator M12-2-78-40	8-79	Insure droop is at correct setting in standby.	Install droop alarm in control room.
2 Diesel Generator M12-2-79-35	11-79	Increases reliability of D.G. multiple air start system.	Revise D.G. multiple start circuitry to provide more positive relay action for multiple start.

Plant Name Dresden
Unit No. 3

TABLE 4

Onsite Emergency Diesel Generator and Auxiliary Equipment Modification Record

Equipment or procedure modified	Date of Mod.	Reason for Modification and Desired Improvement	Description of Modification
3 Diesel Generator M12-3-78-15	6-78	Provide blowdown capability in air start piping.	Add a valve to the strainer on the D.G. air start piping.
3 Diesel Generator M12-3-78-19	10-78	Tachometer needed to provide indication of D.G. RPM.	Install a tachometer on the diesel engine.
3 Diesel Generator M12-3-78-21	8-79	This mod. will provide more reliability, providing the operator with indication of bus tie to emergency bus breaker test position.	Install alarm in control room for diesel bus tie to emergency bus breakers when in test position.
3 Diesel Generator M12-3-78-22	4-79	Air start shutoff valve was once found closed. This mod. will provide alarm when air start shutoff valve is closed.	Alarm in control room to alarm when the air start system shutoff valve is closed.
3 Diesel Generator M12-3-78-28	9-79	Increases air start capability of diesel generators.	Install multiple start system for D.G.
3 Diesel Generator M12-3-78-40	8-79	To insure droop is in correct setting in standby.	Install droop alarm in control room.
3 Diesel Generator M12-3-79-35	N/A	Increases reliability of D.G. air start system.	Provide diesel generator multiple start circuitry to provide more positive relay action for multiple start.

TABLE 4

Onsite Emergency Diesel Generator and Auxiliary Equipment Modification Record

...tion Name Dresden
Unit No. 2/3

Equipment or procedure modified	Date of Mod.	Reason for Modification and Desired Improvement	Description of Modification
2/3 Diesel Generator M12-2/3-78-8	8-78	D.G.'s 2 & 2/3 currently share same window.	Provide annunciator windows for 2 & 2/3 diesel "AUTO STOP BLOCKED."
2/3 Diesel Generator M12-2/3-78-9	7-78	To provide capability to blowdown D.G. air start piping.	Add a valve to the strainer on the diesel generator air start piping to blowdown.
2/3 Diesel Generator M12-2/3-78-13	10-78	Tachometer needed to provide indication of D.G. RPM.	Install a tachometer on the diesel generator.
2/3 Diesel Generator M12-2/3-78-15	9-79	This mod. will provide more reliability, supplying operator with indication of bus tie to emergency bus breaker test position.	Install alarm in control room to tell when diesel bus tie & emergency bus breaker is in test position.
2/3 Diesel Generator M12-2/3-78-16	6-79	Air start shutoff valve was once found closed. This mod. will provide alarm when air start shutoff valve is closed.	Install alarm in control room to alarm when air start shutoff valve is in closed position.
2/3 Diesel Generator M12-2/3-78-19	10-79	Increases air start capability of diesel generators.	Install multiple start system for diesel generator.
2/3 Diesel Generator M12-2/3-78-27	8-79	To insure droop setting is correct when in standby.	Install droop alarm in control room.
2/3 Diesel Generator M12-2/3-79-21	Initiated 10-30-79 Not Comp.	To provide remote operation of valves under emergency conditions.	D.G. cooling water M.O. valve addition to replace hand-operated valves.
2/3 Diesel Generator M12-2/3-76-55	N/A	Failure of new submersible pump dictated installation of old pump.	Reinstall old style D.G. cooling water pump.
2/3 Diesel Generator M12-2/3-76-68	9-77	Existing surge suppressors have been prone to failure at Quad Cities.	Install heavier duty diesel generator surge suppressors.