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January 22, 1990

Mr. A. Bert Davis
 Regional Administrator
 U.S. Nuclear Regulatory Commission
 Region III
 799 Roosevelt Road
 Glen Ellyn, IL 60137

Subject: Braidwood Station Unit 1
Diesel Generator 1DG01KA and 1DG01KB Failures
NRC Docket No. 50-456

Reference: (a) NUREG-1276, Technical Specification,
 (b) April 17, 1989, S.C. Hunsader letter to
 A.B. Davis

Dear Mr. Davis:

Section 4.8.1.1.3 of reference (a) requires that all diesel generator failures, valid or non-valid, be reported to the NRC pursuant to Specification 6.9.2. The enclosure provides the report that addresses one invalid test failure experienced on diesel generator 1DG01KA and one invalid test failure experienced on diesel generator 1DG01KB. The criteria used to determine valid tests and failures is taken from section C.2.C of Regulatory Guide 1.108.

Reference (b) is the most recent report addressing diesel generator failures, submitted per Section 4.8.1.1.3.

Please direct any questions concerning this submittal to this office.

Very truly yours,

S.C. Hunsader

S.C. Hunsader
 Nuclear Licensing Administrator

/scl:0081T:4

cc: S. Sands-NRR
 W. Shafer-RIII
 Resident Inspector-Braidwood
 NRC Document Control Desk

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1A D/G VALID FAILURE REPORT

On July 6, 1989, the 1A Diesel Generator (DG) was started in performance of the monthly operability surveillance, 1BwOS 8.1.1.2.a-1. Following a successful start and warm up period, the Nuclear Station Operator (NSO-licensed) closed the DG's output breaker in an attempt to load the DG to the grid. Within approximately 10 seconds after the breaker closed, the DG tripped on reverse power. The Technical Staff System Engineer, present at the DG during the load attempt, noted that no apparent load (Kilowatt) had been applied to the DG. Discussion with the NSO revealed that he had not immediately applied load to the DG as he was adjusting the DG's applied kilovars. The NSO was reminded of the need to apply a load immediately to the DG after the output breaker is closed.

A maintenance/troubleshooting run was performed to verify that no equipment problems contributed to the event. At 1337, the 1A DG was restarted in performance of the monthly operability surveillance. The surveillance was successfully completed at 1459.

In addition to counseling the NSO involved in the event, the corrective actions will include a procedure change to BwOP DG-11, Diesel Generator Startup, to direct immediate loading of the DG following the closure of the output breaker. Action Item Record 456-225-06100 will ensure completion of this procedure change.

This failure had been determined to be invalid in accordance with Regulatory Guide 1.108, Section C.2.e.2. The 1A and the 1B Diesel Generators continued to be tested monthly in accordance with Technical Specification 4.8.1.1.2. Pursuant to Regulatory Guide 1.108, regulatory position C.3.b.7, item 1, the 1A DG had 6 valid failures and the 1B DG had 1 valid failure in the last 100 valid Unit 1 tests as of the date of this event. Attachment "A" provides a summary of all Unit 1 DG tests performed during these 100 valid tests.

1B D/G INVALID FAILURE REPORT

On 10-26-89, at 1810, the 1B Diesel Generator (DG) was started for a maintenance/troubleshooting run. The 1B DG had been inoperable since 10-2-89 for performance of its initial 5-year teardown/inspection. This run was the sixth maintenance run since the reassembly of the DG on 10-25-89. At 1836 the DG tripped on a bearing high temperature trip signal. An inspection of the DG revealed that the locknut on the number 4 bearing high temperature detector had backed out and contacted the high temperature trip switch. These detectors had been replaced during the outage. Corrective action involved the replacement of the affected temperature detector and its trip switch, and the retightening of the locknuts on all of the detectors that had been replaced during the teardown. Following completion of the work the DG was restarted at 0904 on 10-27-89 for a maintenance/troubleshooting run. After running at varying loads including 3 hours 47 minutes at full load, the DG was shutdown at 1423. This failure has been determined to be invalid in accordance with Regulatory Guide 1.108, Sections C.2.e.2 and C.2.e.7.

The 1A and the 1B Diesel Generators continued to be tested monthly in accordance with Technical/Specification 4.8.1.1.2. Pursuant to Regulatory Guide 1.108, regulatory position C.3.b.7, item 1, as of the date of this event, the 1A DG had 3 valid failures and the 1B DG had 1 valid failure in the last 100 valid Unit 1 tests.

ATTACHMENT A

Valid Tests and Failures = (I, II, III, _ _ _ _)
 Valid Successful Tests = (1, 2, 3, _ _ _ _)

<u>DATE</u>	<u>DIESEL</u>	<u>ACTIVITY</u>
1) 7-26-87	1B	Performed the Monthly Operability Surveillance 1BwOS 8.1.1.2.a-2 and Quarterly Auto Start Surveillance, 1BwOS 3.2.1-816. The 1B DG was run for greater than 1 hour at full load. Valid Test - Successful (1).
2) 7-27-87	1B	Performed the Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-2. the 1B DG was run for greater than 1 hour at full load. Valid Test - Successful (2).
3) 7-28-87	1B	Performed the Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-2. The 1B DG was run for greater than 1 hour at full load. Valid Test - Successful (3).
4) 7-29-87	1B	Performed the Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-2. The 1B DG was run for greater than 1 hour at full load. Valid Test - Successful (4).
5) 8-7-87	1A	The 1A DG Monthly Operability surveillance was stopped after approx. 5 minutes due to operator error in recording the start time. Invalid Test - Successful.
6) 8-7-87	1A	The 1A DG Monthly Operability surveillance was stopped after approx. 5 minutes due to operator error in recording the start time. Invalid Test - Successful.
7) 8-7-87	1A	The 1A DG was shutdown while loading during the performance of the 1A DG monthly Operability Surveillance due to a fuel oil leak. Valid Test - Failure (I)
8) 8-7-87	1A	Performed the 1A DG Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (5).
9) 8-8-87	1B	Performed a maintenance, troubleshooting run following the installation of new rocker arms and valve tappet adjustments. The 1B DG was run at full load for approx. 45 minutes. Invalid Test - Successful.
10) 8-8-87	1B	Performed the Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-2. The 1B DG was run for greater than 1 hour at full load. Valid Test - Successful (6).
11) 8-15-87	1A	Performed the 1A DG Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (7).

- 12) 8-16-87 1A The 1A DG was run for approx. 15 minutes to troubleshoot an annunciator power supply panel replacement. Invalid Test - Successful.
- 13) 8-16-87 1A The 1A DG was run for 1.5 hours at varying loads to support start-up testing (AP-30). Invalid Test - Successful.
- 14) 8-16-87 1B 1B DG started on an undervoltage signal for startup test AP-30. The DG accepted load satisfactorily. The 1B DG was run for 2 hours at varying loads. Invalid Test - Successful.
- 15) 8-16-87 1A The 1A DG was started for the second performance of AP-30. The engine dropped in rpm and began recovering. The engine then tripped on Incomplete Sequence. Valid Test - Failure (II).
- 16) 8-19-87 1A A troubleshooting run was performed to investigate the previous failure. The DG started and ran for approx. 20 minutes. No abnormalities found. Invalid Test - Successful.
- 17) 8-19-87 1A Performed the 1A DG Monthly Operability Surveillance, 1BWOS 8.1.1.2.a-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (8).
- 18) 8-19-87 1A Partial retest of startup test AP-30 was performed the 1A DG was run at varying loads for approx. 40 minutes. Invalid Test - Successful.
- 19) 8-21-87 1B Performed the Monthly Operability Surveillance, 1BWOS 8.1.1.2.a-2. the 1B DG was run greater than 1 hour at full load. Valid Test - Successful (9).
- 20) 8-20-87 1A Partial retest of startup test AP-30 was performed the 1A DG was run at varying loads for approx. 40 minutes. Invalid Test - Successful.
- 21) 8-26-87 1A Performed the Monthly 1A DG Operability Surveillance, 1BWOS 8.1.1.2.a-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (10).
- 22) 9-2-87 1A Performed the Monthly 1A DG Operability Surveillance 1BWOS 8.1.1.2.a-1. A large load oscillation was experienced approx. 30 minutes into the full load run. No other problems were experienced during the 130 minute run. The 1A DG was run at full for greater than 1 hour. Valid Test - Successful (11).
- 23) 9-2-87 1A Ran the 1A DG for 11 minutes unloaded to troubleshoot emergency relay. Invalid Test - Successful.
- 24) 9-2-87 1A Performed a troubleshooting run following replacement of an emergency master run relay. The 1A DG was run at full load for over one hour. Invalid Test - Successful.
- 25) 9-2-87 1A Started the 1A DG for the Monthly Operability Surveillance 1BWOS 8.1.1.2.a-1. Unstable frequency response was experienced in both the emergency and non-emergency modes. Valid Test - Failure (III)

- 26) 9-3-87 1A Installed another replacement emergency master run relay and performed a troubleshooting run. The 1A DG tripped on "Incomplete Sequence" due to leads on the emergency run relay being loose. Invalid Test - Failure.
- 27) 9-3-87 1A Started the 1A DG for a troubleshooting run. The DG was run unloaded for 40 minutes in both emergency and non-emergency modes. Unstable frequency response was observed in the non-emergency mode. Invalid test - Successful.
- 28) 9-3-87 1A Performed a troubleshooting run on the 1A DG following relay cleaning and relay socket replacement. The 1A DG was run for 1.5 hours at varying loads in the emergency and non-emergency modes. Invalid Test - Successful.
- 29) 9-3-87 1A Performed the 1A DG Monthly Operability Surveillance, 1BWOS 8.1.1.2.a-1 and the Quarterly Auto-Start Surveillance 1BWOS 3.2.1-806. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (12).
- 30) 9-3-87 1B Performed the Monthly Operability Surveillance, 1BWOS 8.1.1.2.a-2. the 1B DG was run greater than 1 hour at full load. Valid Test - Successful (13).
- 31) 9-4-87 1A The 1A DG was run for approx. 90 minutes of varying loads to support the performance of start-up test AP-30, Loss of Offsite Power. Invalid Test - Successful.
- 32) 9-10-87 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (14).
- 33) 9-11-87 1A The 1A DG Emergency Started and provided safe shutdown loads following a loss of offsite power to Unit 1. The Unit was returned to normal electrical line-ups in 1 hour 3 minutes. Invalid Test - Successful.
- 34) 9-11-87 1B The DG Emergency Started and provided safe shutdown loads following a loss of offsite power to Unit 1. The Unit was returned to normal electrical line-ups in 1 hour 3 minutes. Invalid Test - Successful.
- 35) 9-18-87 1B The 1B DG was run for 35 minutes unloaded for completion of an operating test. Invalid Test - Successful.
- 36) 9-19-87 1A 1A DG was started for a troubleshooting run following rocker arm replacements. The 1A DG was run at full load for approx. 45 minutes. Invalid Test - Successful.
- 37) 9-20-87 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (15).

- 38) 9-21-87 1B Performed the Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-2. The 1B DG was run greater than 1 hour at full load. Valid Test - Successful (16).
- 39) 9-28-87 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (17).
- 40) 10-3-87 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (18).
- 41) 10-10-87 1A The 1A DG was started for the performance of the Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-1. The 1A DG was shutdown after running at full load for 5 minutes due to a fuel oil leak. Valid Test - Failure (IV).
- 42) 10-10-87 1A The 1A DG was run for a troubleshooting run following repair of the fuel oil leak. The 1A DG was run at varying loads for 30 minutes. Invalid Test - Successful.
- 44) 10-10-87 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (19).
- 45) 10-16-87 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (20).
- 46) 10-19-87 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (21).
- 47) 10-19-87 1B Performed the Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-2. The 1B DG was run greater than 1 hour at full load. Valid Test - Successful (22).
- 47) 10-23-87 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (23).
- 48) 10-24-87 1B The 1B Diesel Generator was run for 5 minutes at 1500kw to ensure operability of output breaker following VA-11 Testing. Invalid Test - Successful.
- 49) 10-26-87 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (24).
- 50) 11-02-87 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (25).

- 51) 11-9-87 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (26).
- 52) 11-16-87 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (27).
- 53) 11-19-87 1B Performed the Monthly Operability Surveillance, 1BWOS 8.1.1.2.a-2. The 1B DG was run greater than 1 hour at full load. Valid Test - Successful (28).
- 54) 11-23-87 1B The 1B DG was started and run unloaded for 10 minutes to satisfy the requirements of LCOAR 1BWOS 8.1.1-1A. Invalid Test - Successful.
- 55) 11-23-87 1A Performed a troubleshooting run on the 1A DG following replacement of the 4R Intake Rocker Arm and repair of a minor fuel oil leak on 7R fuel injector. The 7R fuel injector continued to leak. Invalid Test - Successful.
- 56) 11-23-87 1A Performed a troubleshooting run on the 1A DG following repair of the minor fuel oil leak on 7R fuel injector. The 7R fuel injector continued to leak. Invalid Test - Successful.
- 56) 11-23-87 1A Performed a troubleshooting run on the 1A DG following replacement of the 7R fuel injector. The 1A DG was run at full load for approx one half hour. Invalid Test - Successful.
- 58) 11-23-87 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (29).
- 59) 11-30-87 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (30).
- 60) 12-7-87 1A The 1A DG was started per 1BWOS 3.2.1-806. The 1A DG was run unloaded for 13 minutes. Invalid Test - Successful.
- 61) 12-7-87 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (31).
- 63) 12-14-87 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (32).
- 63) 12-20-87 1B Performed the Monthly Operability Surveillance, 1BWOS 8.1.1.2.a-2. The 1B DG was run greater than 1 hour at full load. Valid Test - Successful (33).
- 64) 12-21-87 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (34).

- 65) 12-28-87 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1, the 1A DG was run at full load for greater than one hour. Valid Test - Successful (35).
- 66) 1-6-88 1B The 1B DG was started and run at varying loads for approximately 7 1/2 hours to perform engine analysis and monitor cylinder peak firing pressures. Valid Test - Successful (36).
- 67) 1-10-88 1A The 1A DG was started and run at full load for approximately 2 1/2 hours to monitor cylinder peak firing pressures. Valid Test - Successful (37).
- 68) 1-12-88 1A Ran the 1A DG for a troubleshooting run following engine timing inspection. The 1A DG was run for 20 minutes at full load. Invalid Test - Successful (38).
- 69) 1-12-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (39).
- 70) 1-13-88 1B The 1B DG was started to cross-tie busses 142 and 242. The 1B DG was run for 14 minutes at varying power levels. Invalid Test - Successful.
- 71) 1-18-88 1A The 1A DG was started to cross-tie busses 241 and 141. The 1A DG was run for approximately one half hour with a max load of 2500kw Invalid Test - Successful.
- 72) 1-22-88 1B The 1B DG was started and run 2 hours and 40 minutes at full load to monitor cylinder peak firing pressures following cam timing adjustments. Invalid Test - Successful.
- 73) 1-25-88 1B The 1B DG was started and run for approximately 20 minutes at full load to monitor cylinder peak firing pressures following shimming of several fuel oil pumps. Minor fuel oil leaks developed on the 4R and 8R high pressure fuel oil injection lines. Invalid Test - Successful.
- 74) 1-26-88 1B Performed a trouble shooting run on the 1B DG following repair of the minor fuel oil leaks on 4R and 8R cylinders. The 8R high pressure fuel oil line continued to leak. The 1B DG ran for 35 minutes at full load. Invalid Test - Successful.
- 75) 1-26-88 1B Performed a trouble shooting run on the 1B DG following replacement of the 8 cylinder fuel pump. In addition, cylinder peak firing pressures were monitored. The 1B DG ran for 2 hours and 32 minutes at full rated load. Invalid Test - Successful.
- 76) 1-27-88 1B 1B DG was started on a UV and SI signal per 1BwVS 8.1.1.2.f-14. DG frequency response did not meet the acceptance criteria as defined in 1BwVS 8.1.1.2.f-14. Valid Test - Failure (V)

- 77) 1-27-88 1B Started the 1B DG for a troubleshooting run. The 1B DG was run for 2 hours at various power levels in both the emergency and non-emergency modes following Emergency Mode Master Run Relay replacement (4EX3). Invalid Test - Successful.
- 78) 1-27-88 1B 1B DG was started on a UV and SI signal per 1BwVS 8.1.1.2.f-14. All DG measured parameters indicated proper during the load sequencing and subsequent steady state operation. The 1B DG was run for approximately 30 minutes. Invalid Test - Successful.
- 79) 1-28-88 1B 1B DG was started to perform "Override of Test Mode Surveillance" 1BwVS 8.1.1.2.f-20. Invalid Test - Successful.
- 80) 1-28-88 1B Performed the Semi-Annual Operability Surveillance, 1BwOS 8.1.1.2.a-2 in conjunction with 1BwOS 3.2.1-816. The 1B DG was run for greater than one hour at full load. Valid Test - Successful (40).
- 81) 2-1-88 1A The 1A DG was started and run at full load for 1 hour and 40 minutes to monitor cylinder peak firing pressures following cam timing adjustment. Invalid Test - Successful.
- 82) 2-4-88 1A The 1A DG was started to check operability of installed chart recorders prior to performance of load sequencing test. Invalid Test - Successful.
- 83) 2-4-88 1A The 1A DG was inadvertently started during performance of 1BwVS 8.1.1.2.f-13 on an SI signal due to operator mis-communication. The 1A DG ran for 15 minutes unloaded. Invalid Test - Successful.
- 84) 2-4-88 1A The 1A DG was started on a UV and SI signal for performance of 1BwVS 8.1.1.2.f-13 Load Sequence Surveillance. The 1A DG ran for 48 minutes at various loads. Invalid Test - Successful.
- 85) 2-4-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (41).
- 86) 2-7-88 1A The 1A DG was started for performance of 1BwOS 3.2.1.1.a-1. The 1A DG ran for 1 hour and 4 minutes at an average load of 3050kw. Valid Test - Successful (42).
- 87) 2-8-88 1B 1B DG was started for performance of 1BwOS 3.2.1.1.a-2 and 1BwOS 8.1.1.1.b-1. The 1B DG was run for > 1 hour at various loads. Invalid Test - Successful.
- 88) 2-9-88 1A The 1A DG was started for surveillance 1BwOS 8.1.1.1.B-1. The 1A DG was run at various loads for 47 minutes. Invalid Test - Successful.
- 89) 2-14-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (43).

- 90) 2-19-88 1A The 1A DG was run for performance of engine analysis. The 1A DG ran at various loads for 5 hours and 54 minutes. Valid Test - Successful (44).
- 91) 2-20-88 1B The 1B DG was run for performance of engine analysis. The 1A DG ran at various loads for 4 hours and 24 minutes. Valid Test - Successful (45).
- 92) 2-25-88 1B Performed the Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-2. The 1B DG was run greater than 1 hour at full load. Valid Test - Successful (46).
- 93) 3-6-88 1A The 1A DG was run for a maintenance/troubleshooting following maintenance and room painting. The 1A DG ran for 23 minutes at full load. Invalid Test - Successful.
- 94) 3-6-88 1A The 1A DG was run for performance of modification test M20-1-86-007-1 and monthly operability surveillance 1BwOS 8.1.1.2.a-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (47).
- 95) 3-17-88 1A Performed the 1A DG Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-1 and the Quarterly Auto-Start Surveillance 1BwOS 3.2.1-806. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (48).
- 96) 3-24-88 1A Performed the 1A DG Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-1 and the Quarterly Auto-Start Surveillance 1BwOS 3.2.1-806. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (49).
- 97) 3-27-88 1B Performed the Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-2. The 1B DG was run greater than 1 hour at full load. Valid Test - Successful (50).
- 98) 4-11-88 1A The 1A DG was started for performance of monthly operability surveillance 1BwOS 8.1.1.2.a-1. The Equipment Operator timed the start at 10.21 seconds while the Control Room and Tech Staff engineer both timed the start at <8 sec. The DG was shutdown for re-performance of start. Invalid Test - Successful.
- 99) 4-11-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (51).
- 100) 4-27-87 1A Performed the Semi-Annual Operability Surveillance, 1BwOS 8.1.1.2.a-2 in conjunction with 1BwOS 3.2.1-816. The 1B DG was run for greater than one hour at full load. Valid Test - Successful (52).

- 101) 5-10-88 1B The 1B DG was started to perform applicable sections of Monthly Operability Surveillance 1BwOS 8.1.1.2.a-2 to satisfy Technical Specification Action Requirements for 1A DG OOS. Invalid Test - Successful.
- 102) 5-11-88 1A The 1A DG was run for a maintenance/troubleshooting run following maintenance. The 1A DG ran for 40 minutes at full load. Invalid Test - Successful.
- 103) 5-11-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (53).
- 104) 5-23-88 1A The 1A DG was started to perform applicable sections of monthly Operability Surveillance 1BwOS 8.1.1.2.a-1 to satisfy Technical Specification Action Requirement for 1B DG OOS. Invalid Test - Successful.
- 105) 5-25-88 1B The 1B DG was run for troubleshooting following maintenance. The 1B DG ran for 40 minutes at full load. Invalid Test - Successful.
- 106) 5-25-88 1B Performed the Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-2. The 1B DG was run greater than 1 hour at full load. Valid Test - Successful (54).
- 107) 6-8-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (55).
- 108) 6-22-88 1B The 1B DG was run for performance of the Semi-Annual Operability Surveillance 1BwOS 8.1.1.2.a-2. Following loading the 1B DG tripped on "Turbo Thrust Bearing Failure". Invalid Test - Failure.
- 109) 6-23-88 1B The 1B DG was run for performance of a maintenance/troubleshooting run following replacement of the Turbo Charge Thrust Bearing wear detector. The 1B DG ran for 1 hour and 21 minutes at full load. Invalid Test - Successful.
- 110) 6-23-88 1A The 1A DG was started to perform applicable sections of monthly Operability Surveillance 1BwOS 8.1.1.2.a-1 to satisfy Technical Specification Action Requirement for 1B DG OOS. Invalid Test - Successful.
- 111) 6-23-88 1B The 1B DG was started for performance of the Semi-Annual Operability Surveillance 1BwOS 8.1.1.2.a-2. The 1B DG was run for greater than one hour at full load. Valid Test - Successful (56).
- 112) 7-13-88 1A The 1A DG was run for performance of a maintenance/troubleshooting run following fuel oil system maintenance. Invalid Test - Successful.

- 113) 7-13-88 1A The 1A DG was started for the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1. The DG was shut down without loading to install a chart recorder due to a conflict in the starting time. Invalid Test - Successful.
- 114) 7-13-88 1A The 1A DG was run for the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1. The 1A DG was shutdown after running at full load for 35 minutes due to unstable KVAR's. Valid Test - Failure (VI).
- 115) 7-13-88 1B The 1B DG was started to perform applicable sections of Monthly Operability Surveillance 1BwOS 8.1.1.2.a-2 to satisfy Technical Specification Action Requirements for 1A DG OOS. Invalid Test - Successful.
- 116) 7-14-88 1A The 1A DG was run for performance of a maintenance/troubleshooting run to investigate unstable KVAR's. Invalid Test - Successful.
- 117) 7-14-88 1A The 1A DG was run for performance of a maintenance/troubleshooting run following replacement of the Automatic Voltage Regulator. Invalid Test - Successful.
- 118) 7-14-88 1A Performed the Monthly Operability Surveillance, 1BwOS 8.1.1.2.a-1. The 1A DG was run greater than 1 hour at full load. Valid Test - Successful (57).
- 119) 7-14-88 1B The 1B DG was started in performance of the Quarterly ESFAS Instrumentation Slave Relay Surv. 1BwOS 3.2.1-816. Invalid Test - Successful.
- 120) 7-20-88 1B Performed the 1B DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (58).
- 121) 8-5-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (59).
- 122) 8-15-89 1B Performed the 1B DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (60).
- 123) 8-29-88 1A The 1A DG was run for performance of a maintenance/troubleshooting run to investigate slow start times. Invalid Test - Successful.
- 124) 8-29-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (61).
- 125) 9-12-88 1B Performed the 1B DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (62).

- 126 9-26-88 1A The 1A DG was started in performance of the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1. Due to a discrepancy between the local & remote start times, it was decided to shutdown the DG and reperform using a strip chart recorder. Invalid Test - Successful.
- 127 9-27-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (63).
- 128 10-10-88 1B Performed the 1B DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (64).
- 129 10-16-88 1A The 1A DG Emergency started and provided safe shutdown leads following a loss of offsite power to Unit 1. The 1A DG operated for 3 hours and 45 minutes. Invalid Test - Successful.
- 130 10-16-89 1B The 1B DG Emergency started and provided safe shutdown leads following a loss of offsite power to Unit 1. The 1B DG operated for 3 hours and 36 minutes. Invalid Test - Successful.
- 131 10-24-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (65).
- 132 11-8-88 1B Performed the 1B DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (66).
- 133 11-14-88 1A The 1A DG was run to collect Peak Firing Pressure data. The DG was run at full load for 2 hours 39 minutes. Valid Test - Successful (67).
- 134 11-14-88 1A The 1A DG was for performance of a maintenance/troubleshooting run following repairs to correct a fuel oil leak. Invalid Test Successful.
- 135 11-15-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (68).
- 136 11-17-88 1A The 1A DG was run to collect Cylinder compression Pressures. The DG was run at 1/2 load for 2 hours and 12 minutes. Valid Test - Successful (69).
- 137 11-17-88 1B The 1B DG was run to collect Peak Firing Pressures and Cylinder Compression Pressures. The DG was run at full load for 3 hours and at 1/2 load for 1 hour and 55 minutes. Valid Test - Successful (70).
- 138 11-21-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (71).

- 139 12-6-88 1A The 1A DG was started to perform applicable sections of Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1 to satisfy Technical Specification Action Requirements for 1B DG OOS. Invalid Test - Successful.
- 140 12-6-88 1B The 1B DG was run for performance of a maintenance/troubleshooting run following replacement of a kiene valve and Essential Service Water Valve repairs. Invalid Test - Successful.
- 141 12-7-88 1B Performed the 1B DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (72).
- 142 12-19-88 1B The 1B DG was started to perform applicable sections of Monthly Operability Surveillance 1BwOS 8.1.1.2.a-2 to satisfy Technical Specification Action Requirements for 1A DG OOS. Invalid Test - Successful.
- 143 12-20-88 1A The 1A DG was run for performance of a maintenance/troubleshooting run following an inspection of the injectors and a valve tappet adjustment. Invalid Test - Successful.
- 144 12-20-88 1A The 1A DG was run for performance of a maintenance/troubleshooting run to investigate a slow start during the prior run. Invalid Test - Successful.
- 145 12-20-88 1A The 1A DG was run for performance of a maintenance/troubleshooting run following adjustment of interlock. Invalid Test - Successful.
- 146 12-20-88 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (73).
- 147 12-30-88 1B Performed the 1B DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (74).
- 148 1-5-89 1A The 1A DG was started to perform applicable sections of Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1 to satisfy Technical Specification Action Requirements for 1B DG OOS. Invalid Test - Successful.
- 149 1-6-89 1B The 1B DG was run for performance of a maintenance/troubleshooting run following an inspection of the injectors and a valve tappet adjustment. Invalid Test - Failure.
- 150 1-6-89 1B The 1B DG was run for performance of a maintenance/troubleshooting run following a fuel oil leak repair. Invalid Test - Successful.
- 151 1-6-89 1B Performed the 1B DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (75).

- 152 1-16-89 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (76).
- 153 1-30-89 1B Performed the 1B DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (77).
- 154 2-15-89 1A The 1A DG was started in performance of the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The DG was stopped when a post-start DG inspection identified several broken flange screws on the 6R fuel injection pump. Valid Test - Failure (VII).
- 155 2-16-89 1A The 1A DG was run for performance of a maintenance/troubleshooting run following replacement of the 6R fuel pump. Invalid Test - Successful.
- 156 2-16-89 1A The 1A DG was run for performance of a maintenance/troubleshooting run to identify source of fuel oil weeping from 6R fuel pump. Invalid Test - Successful.
- 157 2-16-89 1A The 1A DG was run for performance of a maintenance/troubleshooting run after tightening hex plug on pump body. Invalid Test - Successful.
- 158 2-16-89 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (78).
- 159 2-22-89 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (79).
- 160 2-27-89 1B Performed the 1B DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (80).
- 161 3-1-89 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (81).
- 162 3-8-89 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (82).
- 163 3-15-89 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (83).
- 164 3-22-89 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (84).

- 165 3-27-89 1B Performed the 1B DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (85).
- 166 3-29-89 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (86).
- 167 4-5-89 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (87).
- 168 4-24-89 1B Performed the 1B DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (88).
- 169 5-4-88 1B The 1B DG was started to perform applicable sections of Monthly Operability Surveillance 1BWOS 8.1.1.2.a-2 to satisfy Technical Specification Action Requirements for 1A DG OOS. Invalid Test - Successful.
- 170 5-5-89 1A The 1A DG was run for performance of a maintenance/troubleshooting run following repairs of minor fuel oil leaks, VD fan breaker inspection, scheduled lubrication, and temp controller setpoint change. Invalid Test - Successful.
- 171 5-5-89 1A The 1A DG was run for performance of a maintenance/troubleshooting run following tightening of a fuel oil fitting. Invalid Test - Successful/
- 172 5-5-89 1A The 1A DG was run for performance of a maintenance/troubleshooting run following replacement of a fuel oil fitting. Invalid Test - Successful.
- 173 5-5-89 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (89).
- 164 5-22-89 1B Performed the 1B DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (90).
- 175 6-5-89 1A Performed the 1A DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (91).
- 176 6-19-89 1B Performed the 1B DG Monthly Operability Surveillance 1BWOS 8.1.1.2.a.-2. The 1B DG was run at full load for greater than one hour. Valid Test - Successful (92).

- 177 7-6-89 1A The 1A DG was started in performance of the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a-1. Following a successful start and warmup the 1A DG tripped on reverse power when the operator failed to apply an adequate initial load to the DG after the output breaker closure. Invalid Test - Failure
- 178 7-6-89 1A The 1A Dg was run for performance of a maintenance/troubleshooting run to verify that equipment problems did not contribute to the failure of the prior run.
- 179 7-6-89 1A Performed the 1A DG Monthly Operability Surveillance 1BwOS 8.1.1.2.a.-1. The 1A DG was run at full load for greater than one hour. Valid Test - Successful (93).