

## RELATED CORRESPONDENCE

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of )

Duke Power Company, et al. )(Catawba Nuclear Station,  
Units 1 and 2) )DOCKETED  
USNRC  
OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCHDocket Nos. 50-413  
50-414

April 1, 1984

PALMETTO ALLIANCE AND CAROLINA ENVIRONMENTAL STUDY GROUP  
RESPONSES TO APPLICANTS' INTERROGATORIES AND REQUESTS TO  
PRODUCE DOCUMENTS ON BOARD CONTENTION CONCERNING CERTAIN  
DIESEL GENERATOR PROBLEMS

Palmetto Alliance and Carolina Environmental Study Group hereby provide their responses to Applicants' Interrogatories And Requests To Produce dated March 19, 1984, with respect to the Licensing Board sponsored contention reflecting certain testing problems encountered by Applicants in the testing of Catawba Nuclear Station emergency diesel generator 1-A. The Board contention was admitted by Memorandum and Order dated February 27, 1984. In that Memorandum and Order the Board admitted the following contentions:

whether there is a reasonable assurance that the TDI emergency diesel generators at the Catawba station can perform their function and provide reliable service because of the problems reported in the Applicants' letter to the Board of February 17, 1984.

Memorandum and Order (Admitting a Board contention concerning certain diesel generator problems) at p. 2, February 27, 1984.

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Applicants' February 17, 1984, letter described the problems encountered in testing as follows:

More specifically, a minor amount of cylinder head leakage was noted during a run; when the engine was shut down it was discovered, during the week of February 5, that there was a slight crack in that cylinder head. Also during that week, the push rods for diesel generator 1-A were checked, and it was determined that some had flaws in the welds joining the ball to the pipe. We would note that all the push rods on diesel generator 1-A were subsequently replaced with push rods of an approved design. During the same week, one of the turbo chargers showed excessive ware (sic) on the rear bearing due to inadequate lubrication, a lube oil drain line leak, and a rupture of the lube oil prelude (sic) line for that turbo charger. Finally, during this run, a fuel oil injection pump nozzle was found to be cracked.

Id., attachment.

In the same Order the Licensing Board observed that:

(A)s the Applicants' letter points out, "these matters are similar in nature to matters found with other TDI diesels." We expect, therefore, that litigation of this contention may involve us in proof of diesel operating histories from other nuclear plants with diesels of the same design.

Id., at p. 3. The Board further provides that discovery on this newly admitted contention should commence by a simultaneous exchange of interrogatories on March 19, 1984, with responses to be exchanged by April 2, 1984. Intervenors Palmetto and CESG have served their Interrogatories and Requests for Production upon Applicants and the NRC Staff. Such discovery requests remain unanswered and outstanding at this time.

While this contention was admitted, sua sponte, by the Licensing Board, it is premised upon the same background and NRC Staff investigation as to the reliability of TDI emergency diesel

generators as was the Intervenor's original diesel generator contention which was the subject of the Memorandum and Order (Referring Certain Diesel Generator Issues to the Appeal Board) of February 23, 1984. That Memorandum and Order summarizes the Board Notification and related Staff documents which have served as the primary source of documentary information upon which Intervenor's base their knowledge and position as to these matters. In addition to the generally circulated Staff documents, of which Intervenor's believe Applicants and the NRC Staff have full knowledge since they, too, are recipients of such documents, Intervenor's Palmetto and CESG have received a limited number of documents from Applicants with respect to this subject: Applicants 2/17/84 letter to the Board and parties describing the operational problems which are the subject of this contention; a 2/20/84 Mississippi Power and Light Company submittal to the NRC with respect to the problems and operating history of its emergency diesel generators at its Grand Gulf Nuclear Station, upon which Applicants rely in large measure for qualifying the similar DSRV-16 diesels at Catawba; Applicants 2/22/84 submittal to the NRC Staff in response to the Staff's questions regarding the TDI diesel generators at Catawba with the attached "extended operation test of diesel generator 1-A" description; and, handouts distributed by Applicants at a 3/21/84 meeting in Bethesda, Maryland with the NRC Staff with regard to the TDI diesel generator issue together with handwritten notes of Nina Bell, Esq., who attended the meeting as representative of Palmetto.

The above background sets forth the substance of Intervenor's knowledge and documentary sources on the basis of which we respond to Applicants' discovery.

#### REQUEST FOR DOCUMENTS

Palmetto and CESG have identified herein certain documents in their possession, mostly documents known to be in the possession of Applicants themselves, which documents Palmetto and CESG will make available for inspection and copying by Applicants at a mutually agreeable time and place. In addition Palmetto and CESG have handwritten notes of their counsel and authorized representative prepared as hearing preparation materials or attorney work products which are privileged and not subject to production. Included in the latter category are notes of Nina Bell, Esq.

#### INTERROGATORIES

##### A. General Interrogatories

1. Robert Guild, Esq., Attorney for Palmetto Alliance and Jesse L. Riley, authorized representative of Carolina Environmental Study Group.
2. No witnesses have been identified at this time although Intervenor anticipates the identification of various persons known to Applicants with knowledge of the results of Applicants' diesel generator testing program and the problems which have occurred in the 1-A diesel generator.
3. No.
4. Intervenor understands that the problems reflected in this contention were the result of its own testing program of its diesel generator 1-A.



5. The documents identified above reflect the basis for our position on this contention.
6. Among the above documents are various Staff documents such as Board Notifications and related circuit circulations known to Applicants.

B. Specific Interrogatories

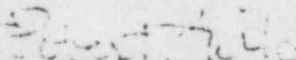
1. The lube oil prelube line is believed to provide lubrication for the turbo charger bearing while the diesel is in a standby mode.
2. See 1.
3. While in a standby mode.
4. According to Applicants' 3/21/84 meeting handout, "Improper Installation".
5. According to the same source Applicants had taken the following corrective action: "oil lines replaced properly, additional tubing clamps added, improved design to be installed June '84." Intervenors have insufficient information to know whether or not such fixes or modifications are adequate.
6. A rupture of the lube oil prelube line would appear to present the potential for a lubrication deficiency in the turbo charger during a standby mode.
7. Possible interference with startup and limitation on diesel generator power output. Such limited output might prevent effective functioning during a station blackout where eighty percent capacity is required according to Applicants' submittals.
8. Insufficient information to answer at this time.
9. Not necessarily. The problem could induce failure at any time, including just after completion of the specified number of hours of operation. A more predictive test might be multiple quick starts from a standby mode; however, more relevant quantitative data is required in order to specify an adequate demonstration.
10. As the name appears to suggest it drains lube oil from the turbo charger.
11. See 10.

12. Apparently in both the standby and operational modes.
13. According to Applicants' 3/21/84 meeting handouts, "drain line hose fatigue."
14. Also according to this same source Applicants took the following corrective action: "drain line hose replaced and improved design could be installed May '84." Additional data is required in order to express a view as to the adequacy of such fix or modification.
15. Leakage from the turbo charger lube oil drain line would appear to bleed off needed lubrication oil.
16. As described above loss of lubrication to the turbo charger bearing could result in a reduction of the diesel generator capacity by 25% power level. Such levels appear to be inadequate in the event of a station blackout emergency.
17. Insufficient information to answer at this time.
18. Not necessarily. The component might well fail later.
19. Don't understand question.
20. Poor design. Apparently variable thickness in the metal creates hot spots with differential expansion rates. Such a design may in part have caused the cylinder head cracking problem which has occurred at Catawba and in other TDI diesel generators.
21. Competant redesign.
22. If such leakage rate is stable, a minimal effect.
23. Depends on crack size stability. The crack in question at Catawba was once much smaller than it was upon discovery. Cracks grow and propagate; a sufficiently large crack could lead to an overheating failure in the diesel generator.
24. All other cracking experience appears to be relevant.
25. Not necessarily. As explained above such failure could occur at any time, not necessarily during the testing period. Insufficient empirical data exists to accurately predict the adequacy of a demonstration run.
26. Don't know.
27. Apparently functions in some fashion in injecting fuel oil.
28. Apparently during engine operation.

29. According to Applicants' 3/21/84 meeting handout, "material defect."
30. According to the same source Applicants took the following corrective action: "pump replaced." Insufficient information exists to express a view as to the adequacy of this fix or modification.
31. Don't know.
32. Don't know, except that if the failure interrupts fuel oil supply to the diesel it will cease operation.
33. Don't know.
34. Not necessarily. As described above such a failure might occur at any time, not necessarily during the testing period.
35. While Intervenors lack sufficient information to respond to the question about continued operation with the linkage disconnected it appears that unless such a ruptured injection pump is replaced with a redundant system, an interruption of fuel flow to the engine would prevent its functioning in an emergency. Without fuel the engine will not run.
36. Push rods connect the cam shaft through the rocker arm to the valve stems.
37. They perform a linkage function in the operation of the valves.
38. Whenever the engine is running.
39. Apparently poor welds and fatigue stress.
40. Insufficient information is available to express an opinion as to the adequacy of a particular fix or modification.
41. The failure of a push rod could cause a loss of output for the affected cylinder.
42. Several failed push rods could reduce the diesel's output below the minimum required for emergency performance.
43. Any similar problems would be relevant to Catawba.
44. Don't know.
45. Yes, given the posited assumptions.
46. Yes, as well as a manufacturing deficiency.

47. Don't know.
48. No. The fatigue limit may not have yet been reached.
49. Yes.
50. According to Applicants' 3/21/84 pleading handout, "Improper Lubrication."
51. (a) by drip process in the standby mode; (b) by regular lube oil pressure in operation.
52. Reduction of diesel generator output by 25%.
53. By Applicants' own performance requirement description diesels would not meet such requirements in a station blackout emergency or during a lowca when any other output limiting faults occurred such as loss of one cylinder or more.
54. The problem appears to be generic, including similar failures at San Onofre and Grand Gulf and in marine applications.
55. A series of quick start tests would appear to be a better measure.
56. The TDI proposal of March 23, 1984 is not yet known to Intervenor. Insufficient information exists to Intervenor to express an opinion as to the adequacy of this fix or modification.
57. No. Output would be reduced by 25% according to Applicants.
58. No. Even according to Applicants' 3/21/84 meeting handouts a greater than 18.4 percent reduction in output would prevent effective operation during a station blackout emergency.

Respectfully submitted,

  
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April 1, 1984



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket Nos. 50-413
	)	50-414
DUKE POWER COMPANY, <u>et al.</u>	)	
	)	
(Catawba Nuclear Station,	)	April 2, 1984
Units 1 and 2)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of PALMETTO ALLIANCE AND CESC RESPONSES TO APPLICANTS' INTERROGATORIES AND REQUESTS TO PRODUCE DOCUMENTS ON BOARD CONTENTION CONCERNING CERTAIN DIESEL GENERATOR PROBLE in the above captioned matter has been served upon the following by deposit in the United States mail this 2nd day of April, 1984.

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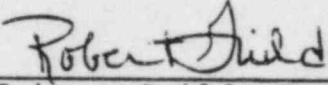
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\* Designates those served by overnight mail or delivery  
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