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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION '91 MAR 22 P3:55  
ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

In the Matter of  
Georgia Power Company,  
et al.,

(Vogtle Electric  
Generating Plant,  
Units 1 and 2)

DOCKET NO. 50-424-OLA  
50-425-OLA

ASLBP NO. 90-617-03-OLA

APPLICANTS' RESPONSE TO THE BOARD'S MEMORANDUM  
AND ORDER OF JANUARY 22, 1991

INTRODUCTION

On January 22, 1991, this Licensing Board conducted a telephone conference call for the primary purpose of posing certain clarifying questions derived from filings by the Applicants and associated responses submitted by GANE and the NRC Staff. The Board's January 22, 1991 Memorandum and Order set forth eight questions. The Board ordered the Applicants to file their responses to six of the questions by March 22, 1991. The Staff was ordered to file its responses to two of the questions by the same date. GANE was ordered to file a calculation of diesel engine temperature rise to which it had alluded as soon as possible, but in no event later than March 22, 1991; GANE filed its calculation by letter dated January 22, 1991.

On February 4, 1991, the NRC Staff filed a motion for reconsideration of the Licensing Board's January 22, 1991 Order and requested a stay of the effectiveness of that Order. Thereafter, the Board invited the Applicants and GANE to file responses to the Staff motion by no later than February 25, 1991. Both the Applicants and GANE did so. By Memorandum and Order of February 28, 1991, the Board denied the NRC Staff's motion for reconsideration, but permitted the Staff to decline to answer the two questions posed to it.

#### RESPONSES TO QUESTIONS

The Applicants are providing the Board with answers to the six questions posed to it in the Affidavits attached to this Response. The Board will note that the Affidavits not only provide a specific answer to the question, but also set forth additional information associated with the answer in order to avoid the need for further clarifying questions. The Applicants also address one of the questions posed to the NRC Staff. The Applicants believe that, based upon the Affidavits and other information submitted by the Applicants and the NRC Staff coupled with the lack of basis pled or provided by GANE, the Board readily may conclude that the

operator in the control room has sufficient time to react appropriately to an abnormal diesel generator condition.<sup>1</sup>

Question 1.

The Board's inquiry regarding the obligation to dispatch an operator (either licensed or qualified plant equipment operator) to the diesel engine in the event of an automatic diesel start is addressed in the Affidavit of Mr. William F. Kitchens, the Assistant General Manager of the Vogtle Electric Generating Plant. Plant procedures do mandate this dispatch. Mr. John David Lisenby explains in his Affidavit why the use of the permissive word "should" was appropriate in the Design Change Package ("DCP") previously provided the Board: compliance with the design basis requirements does not depend upon the dispatch of a local plant equipment or licensed operator to the diesel generator (Lisenby Affidavit at 6). The affidavits of Mr. Lisenby and the NRC's Mr. Ralph Architzel (pp. 7-8), conclude that regulatory requirements are met. Mr. Lisenby goes on to point out that, indeed, additional assurance exists that scenarios examined by the

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<sup>1</sup>As the Board has observed, the sufficiency of operator response time is not one of the explicit contentions filed by GANE (Memorandum and Order of February 28, 1991 at 4), and GANE has acknowledged that it had not pled anything about adequate operator response time (Tr. 62). Nevertheless, the Applicants' understanding is that its Response will aid the Board in its review of the contentions pled by GANE.

DCP will be handled appropriately in light of the actual practice of dispatching the local operator (Lisenby at 8-9).

Question 2.

Mr. Lisenby also discusses the information which he has been able to glean concerning the nuclear industry's experience with the three-way valve that bypasses the NSCW/jacket water heat exchanger. His conclusion is that a failure of the valve to open is remote given the information provided by the diesel engine vendor, by contacted licensees and by NPRDS data. Additionally, an Electric Power Research Institute study, utilizing Licensee Event Reports from January 1968 through September 1982, for all makes and models of diesel engines at licensed facilities and covering 11,044 total diesel-months of operation, identified five instances of "service water valves and controls" failures, representing a mean failure rate of  $.45 \times 10^{-3}$  failures per diesel-month. (EPRI Report NP-5924, Project 2235-1, entitled "Surveillance Monitoring and Diagnostic Techniques to Improve Diesel Generator Reliability," July, 1988 at p. 2-13). The time frame covered by these LERs is prior to the industry's broad and extensive efforts to increase diesel generator reliability during the 1980s. The Applicants do not know the nature of the "service water valves and controls" failures, since the definition of failures on the LERs frequently

required EPRI to interpret an assignment of a failure to a specific system or subsystem. However, the data supports and confirms Mr. Lisenby's conclusions.

Question 3 and GANE's Calculation of Engine Temperature Rise.

As the Board requested, the calculations used to ascertain the 10°F per minute temperature rise estimated by the Applicants and provided to the NRC Staff in December, 1990, are provided in Mr. Lisenby's Affidavit (Attachment A). The calculation is for the diesel engine under a load of 5517 Kilowatts, the maximum LOSP load specified in the VEGP's FSAR (Table 8.3.1-2). He also explains that the 10°F per minute rise would apply for the temperature rise of the diesel generator prior to the 190°F jacket water temperature alarm. Thus, at least three (3) minutes would be available for a dispatched operator to reach the diesels prior to a temperature of 190°F, assuming three-way valve failure in the closed position, since the standby temperature of the jacket water is approximately 145°F.

GANE's calculation of engine temperature rise provided to the Board has a fundamental error as explained by Mr. Lisenby (Lisenby Affidavit at 11).<sup>2</sup>

With respect to the Board's question concerning start-up observations of diesel generator temperature rise, the Applicants understand the question to relate to temperature rise before the three-way valve opens, as articulated by Judge Carpenter during the January 22 conference call. The standby temperature of the jacket water (i.e., prior to diesel start-up) is approximately 145°F and the three-way valve opens at approximately 151°F. The valve opening, therefore, occurs shortly after start-up. During early April, 1990, the Applicants monitored the jacket water temperature as part of its review of the March 20, 1990 event. The only relevant observation was a 7.5°F temperature drop within 40 seconds of the start. This observation merely confirms the cooling capabilities of the NSCW flow over a short period of time with the expected operation of the three-way valve.

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<sup>2</sup>Accordingly, the Staff and the Applicants have provided the Board with expert opinions containing detailed calculations of engine temperature rise. In stark contrast, GANE has provided only questions, a calculation without attribution to an expert (which is patently erroneous) and no factual basis pled in support of a contrary determination.

Question 4.

Mr. Lewis Ward, who previously provided the Board with an Affidavit concerning the Calcon sensors, refers the Board to previously-submitted technical information and explains the method of sensor calibration in response to the Board's fourth question. An additional diagram of the sensors may be found in Appendix J, p. J-31 of NUREG-1410, which depicts the O-ring in cross-section (black circles above and to the sides of the calibration ring which surrounds and is connected to the "setpoint adjustment disk").

Questions 5 and 6.

The Board's discussion of Reg. Guide 1.9, position 7 during the telephone conference call may have assumed that the "testing" of trip features is conducted from the control room and that such "testing" includes testing of the sensors' actuation. As explained by Mr. Kenneth Stokes in his Affidavit, testing is performed locally at the diesel engines and, further, the verification of the bypassed status of the circuits is the purpose of such testing. Procedural control and visual verification of the manually operated bypass valves achieves this purpose and, therefore, complies with the Reg. Guide. Also explained by Mr. Stokes is the Applicants' position that "abnormal values of all bypassed parameters" as stated in the Reg. Guide refers to abnormal

pressure, abnormal vibration and abnormal temperature (e.g., high temperature lube oil, high vibration, low pressure jacket water). Under the License Amendments, the bypassed HJWT trip currently is not alarmed in the control room, but the trip is a feature, not a parameter, and the presence of abnormal jacket water temperature is still alarmed at 190°F (Stokes Affidavit at 4).

Question 8.

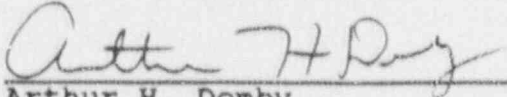
Finally, the normal shift-manning requirements for operators at the facility assures sufficient qualified employees to be dispatched to the diesel engines upon emergency start (Affidavit of Charles Meyer). A representative example of actual shift-manning practices is also provided with Mr. Meyer's Affidavit.

CONCLUSION

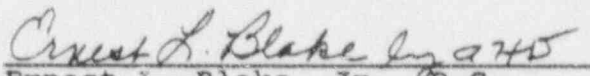
With the information provided by the Applicants and the NRC Staff, in the absence of sufficient pleadings by GANE to provide a factual and legal basis for contentions, and in light of GANE's failure to comply with the Commission's contention pleading requirements, GANE's petition for

intervention should be dismissed and this proceeding terminated.

Respectfully submitted,

  
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Dated: March 20, 1991

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In the Matter of

GEORGIA POWER COMPANY,  
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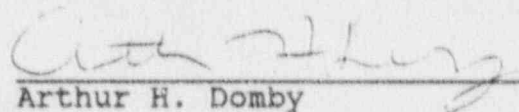
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CERTIFICATE OF SERVICE

This is to certify that copies of the within and foregoing "Applicants' Response to the Board's Memorandum and Order of January 22, 1991" were served, pre-paid to ensure proper delivery, via the United States Mail, First Class, or via Federal Express, overnight delivery, or via hand delivery, to all those listed on the attached service list.

This 20 day of March, 1991.

  
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