

ARGONNE NATIONAL LABORATORY

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August 28, 1980
NAP-436

Mr. Faust Rosa, Chief
Power Systems Branch
Mail Stop P-822
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

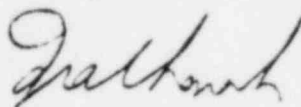
Dear Faust:

Subject: Supplemental Round 1 Questions for Waterford Steam Electric Station
Unit No. 3, FIN No. A-2115

We have received Amendment No. 11 to the Waterford FSAR which incorporates the responses to the Power Systems Branch request for additional information. We have evaluated those responses; enclosed for your review are two (2) copies of our comments which are stated as Supplemental Round 1 Questions.

Our next transmittal will be the draft of the Waterford SER which is now scheduled to be completed on or about January 12, 1981. If there are any questions, please call Mike Musko.

Sincerely yours,



Ira Charak, Manager
NRC Assistance Project

MM/IC/ve
enclosure

cc: P. Check, w/o enclosure
A. Ungaro
N. Trehan

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1/1

**PRELIMINARY INFORMATION
NOT FOR GENERAL RELEASE**

Waterford 3

Draft

Supplemental Round 1 Questions

NOTE: In the initial submittal of questions, there was an apparent duplication of numbers for the Waterford questions 040.72 thru 040.77. Louisiana Power and Light Company responded to the questions by using number 040.72 for the Waterford question which the Power System Branch had numbered 040.77. These supplemental questions will be numbered to agree with the Waterford response numbers. The Power Systems Branch numbers are shown in parentheses.

040.126 (040.131)

8.3

The response to 040.75 (040.80) is not acceptable. The response states that all DC safety and non-safety loads are identified on Ebasco Drawing LOU 1564-B-289 sheets 108, 108a, 109, 109a, 110, 110a, 111, 112, 114, and 204. The safety loads should be identified on single line drawings that are included in the FSAR. Submit these drawings with the corrected response to this question.

Provide justification, including calculations and single line drawings, used to size battery chargers. Particular attention should be given to justifying a battery charger with a DC output that is less than the connected loads. Such a design is in conflict with requirements of IEEE 308 and RG 1.32. Reference 040.127.

040.127 (040.132)

8.3

The response to 040.79 (040.84) states that the DC loads greater than 26 amperes for batteries 3A-S and 3B-S and greater than 45 amperes for battery 3AB-S are "either not steady state dc loads or are normally supplied from an ac source of power". This statement appears to be the justification for providing Class 1E battery chargers with a DC output that is much lower than the load on the battery.

The above arrangement is not in agreement with IEEE 308-6.3.4 (3) - 1978. Provide further justification as to why the battery charger should not have the capacity to carry the combined demands of the steady state loads, including the AC supplied power supplies, plus restore the battery to the fully charged state.

040.128 (040.133)
8.3

The response to 040.83 requires additional clarification. The purpose of question 040.83 (040.88) was to clarify which diesel generator alarms are provided in the control room. State whether the Waterford 3 control room has the following diesel generator status indications as required by RG 1.108:

- A. Diesel Generator Under Test
- B. Diesel Generator Ready - Standby
- C. Diesel Generator Not Available (Lockout).

You are requested to specify which of the required signals are displayed in the control room and to identify the panel where the signal is displayed.

040.129 (040.134)
8.3

The responses to 040.86 (040.91) and 040.103 (040.108) refer to FSAR Sub-section 8.3.2.1.8 which states that the 125V DC system meets requirements of IEEE Std 323-1971 and the battery capacity test is performed at the factory to meet Section 4.1 of IEEE Std 323-1972. (Note: IEEE did not publish Standard 323 in 1972.) Section 4.1 of IEEE Standard 323-1971 states, "The qualification of Class I Electric Equipment shall include: 4.1 Identification of the Class I Electric Equipment being qualified". Provide the proper reference for your test program.

Review your battery test program and revise the FSAR to eliminate the obvious discrepancies and errors and provide complete response to 040.86.

040.130 (040.135)
8.3

The response to 040.95 (040.100) has an apparent conflict in operating procedures between the second and third paragraphs.

Response to 040.95:
(second paragraph)

"During a loss of all offsite power it would not be prudent to have one diesel generator undergo periodic testing while the other supplies the emergency loads. In fact during such emergencies both redundant systems will be energized and loaded even though only one system is required for emergency shutdown.

(third paragraph)

In a situation where only one diesel generator is supplying power to the loads and the other is in a standby condition, the diesel-generator in standby will undergo periodic testing."

Review your procedures and submit a statement which describes whether or not the standby generator will be tested while the second diesel generator is supplying the emergency load.

040.131 (040.136)
8.3

The onsite emergency power is furnished by the diesel generator which must have the capability to deliver its rated output for seven days. In order to demonstrate the ability to fulfill this requirement, Regulatory Guide 1.108 position C.2.a.(3) states that at least once every 18 months the machine be operated fully loaded for 22 hours and loaded to the equipment two hour rating for two hours. This test would require only ten days of testing every fifteen years of plant operation. If the equipment is capable of operating for one year at full load as stated in the FSAR, then the testing should not cause any undue wear and tear on the machine.

Your response to Q040.110 (040.115) is not acceptable because it does not comply with requirements of R.G. 1.108 C 2a.3. We require that you revise the FSAR to reflect the requirements of R.G. 1.108 and test the diesel generator for a full 24 hours.

040.132 (040.137)

8.3

The response to 040.119(2) (040.124) is not acceptable because it refers to responses 040.51 and 040.110 which state that the periodic testing will not comply with R.G. 1.108. Revise the response to agree with R.G. 1.108.

040.133 (040.138)

8.2

FSAR section 8.2.2.1a)5)(b) states that on an assumed loss of all grid system ties while importing 1500 megawatts into the south Louisiana area the probable grid frequency decay rate, due to system separation, would be less than three hertz per second. Provide a graph of frequency decay versus time for the grid frequency decay situation described in the referenced paragraph. The graph should show the condition before, during, and after the separation of the Waterford grid from the rest of the system.

040.134 (040.139)

8.3

FSAR Figure 8.1-7 has a line separating Safety-Related Class 1E equipment from the Non-Safety-Related equipment. The line is not specific about the equipment connected to 4.16KV buses 3B3-S, 3AB3-S, and 3A3-S. Revise the drawing to include the Class 1E equipment on the 4.16KV buses within the Safety-Related Class 1E envelope.

Q40.135 (040.140)

8.3

Figure 8.3-7 is titled 6.9 KV Containment Penetrations - 125V d-C Control Power for RCP Motor Chain Breakers. Provide an explanation of the term "Motor Chain Breakers".

040.136 (040.141)
8.3

Amendment No. 11 dated 7/80 revised Sheet 8.3-34. The revision deleted the title for subsection "8.3.1.4 - Independence of Redundant Systems". Replace the title for the subsection.

040.137 (040.142)
8.3

The FSAR does not identify any auxiliary system as being vital to the operation of Class 1E loads and systems. Provide a list of vital supporting systems required for the proper functioning of the Class 1E system. (Ref: SRP 8.3.1, Part III, item 6, Vital Supporting Systems.)

040.138 (040.143)

Amendment No. 11 did not include responses to the following nine questions: 040.74 (040.79), 040.84 (040.89), 040.94 (040.99), 040.98 (040.103), 040.108 (040.113), 040.111 (040.116), 040.114 (040.119), 040.116 (040.121), and 040.118 (040.123).

Advise us of the date on which you intend to respond to the above questions.

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