



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

September 23, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Braidwood Station Units 1 and 2
Additional FSAR Information
NRC Docket Nos. 50-456/457

Dear Mr. Denton:

The Commonwealth Edison Company is in receipt of informally transmitted questions from the Mechanical Section of the Power Systems Branch concerning our Braidwood Station. The purpose of this letter is to address those questions.

The Attachment to this letter provides our response to Question No. 40.189. Amendment No. 44 to our FSAR will include this information.

Question No. 40.190 states: "The Byron response for request 040.103 is applicable only to Byron." Please refer to our response to Question 40.103 submitted in Amendment No. 36 dated January, 1982. Contrary to the above statement, our response was clearly applicable to both Byron and Braidwood Stations. Concerning the remaining Question Nos. 40.191 through 40.199, the Diesel Generators and supporting systems at Braidwood Station are identical to those at our Byron Station. Because similar concerns were discussed and resolved on the Byron Station Dockets, and in the spirit of the duplicate plant concept, it is the Commonwealth Edison Company position that these issues have been resolved.

Please address any questions that you or your staff may have concerning this matter to this office.

One (1) signed original and fifteen (15) copies of this letter with Attachment are provided for your use.

Very truly yours,

E. Douglas Swartz
Nuclear Licensing Administrator

Attachment

cc: J. G. Keppler - RIII
RIII Inspector - Braidwood
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BRAIDWOOD-FSAR

QUESTION 040.189

"Verify that the Byron responses to requests 040.15 through 040.35, 040.89, 040.92 through 040.102, and 040.104 through 040.161 inclusive are applicable to Braidwood. For those responses that are not applicable, provide the necessary information requested for Braidwood, and justify why it is not applicable (e.g., site related, design charge, etc.)."

RESPONSE

All of the responses to the subject questions apply to both Byron and Braidwood as they presently appear in the FSAR, except for the responses to Questions 040.101 and 040.112. These two responses have been revised to address both Byron and Braidwood. The responses to Questions 040.92, 040.99, and 040.101 have been reformatted as Byron and Braidwood unique responses. Also, the response to 040.93 has been revised to clarify that each station keeps diesel generator "Work Request" and "LER" files.

The revised responses will be included in the next amendment.

QUESTION 040.92

"Provide a detail discussion (or plan) of the level of training proposed for your operators, maintenance crew, quality assurance, and supervisory personnel responsible for the operation and maintenance of the emergency diesel generators. Identify the number and type of personnel that will be dedicated to the operations and maintenance of the emergency diesel generators and the number and type that will be assigned from your general plant operations and maintenance groups to assist when needed.

"In your discussion identify the amount and kind of training that will be received by persons in each of the above categories and the type of ongoing training program planned to assure optimum availability of the emergency generators.

"Also discuss the level of education and minimum experience requirements for the various categories of operations and maintenance personnel associated with the emergency diesel generators."

RESPONSE

Twenty-six station personnel chosen from the operating, maintenance, quality control, and training departments at Byron Station have attended a one-time basic maintenance course offered by the diesel-generator vendor. Further personnel training on the diesel-generators will be provided by the station training department. In addition, diesel control and instrumentation instruction is planned for future training, the initial course offered by the vendor, and subsequent training provided by the station training department.

There are no dedicated personnel assigned to the diesel generator maintenance or operation. Operation, minor maintenance, and troubleshooting are performed by or under the cognizance of a licensed operator with an equipment attendant observing operation locally. Maintenance is performed under the supervision of a Maintenance Foreman. Further qualification specifications for the above personnel can be found in Sub-section 13.1.3.

BRAIDWOOD-FSAR

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RESPONSE

Braidwood Station is purchasing a contract with the diesel generator vendor for training in four areas: operational, mechanical maintenance and controls, electrical maintenance, and instrumentation and controls. Subsequent training in these areas will be provided by the station training department. Other training is described in Section 13.2 of the FSAR. Onsite training will be of a quality equal to the initial vendor training program.

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position, no loose wires, all test loads have been removed, and all valves are in the proper position to permit a manual start of the equipment. After the unit has been satisfactorily started and load tested, return the unit to ready automatic standby service and under the control of the control room operator.

"Provide a discussion of how the above requirements have been implemented in the emergency diesel generator system design and how they will be considered when the plant is in commercial operation, i.e., by what means will the above requirements be enforced."

RESPONSE

1. Though no load operation is necessary at times (i.e., warm-up periods), surveillance procedures will be written to ensure diesel-generator operation with a minimum loading of 25% of rated load. The duration of no load operation will be maintained below the manufacturer's recommended maximum.
2. Surveillance testing is specified in Chapter 16.0 (Technical Specifications) and meets the recommendations of the diesel-generator manufacturer and applicable NRC guides, with exceptions noted. See Appendix A for further discussion of Regulatory Guide 1.108.
3. Preventive maintenance on the diesel-generators will be done in accordance with the manufacturer's recommendations. Components which repeatedly malfunction or require constant attention will be investigated as required.

Each station keeps "Work Request" files for each diesel generator and "LER" files. Review of these will identify components which repeatedly fail. Commonwealth Edison will participate in vendor programs to identify and correct troublesome components.

4. Upon completion of repairs or maintenance and prior to starting and loading the diesel generator, applicable operating procedures will be used to verify that the diesel generator is ready for operation.

QUESTION 040.99

"Your response to request 040.16 is unacceptable. The outside fill connections and lines and the vent lines of the seven diesel oil storage supply tanks are safety related components, and as such are to be designed seismic Category I and tornado missile protected. Revise your system design accordingly."

RESPONSE

To accommodate the requirement for the vent and fill lines to maintain their integrity during design basic seismic events, additional supports will be added to the lines. The lines are protected from tornado missiles inside the auxiliary building.

The diesel oil storage tank fill and vent lines external to the buildings are not safety-related. The four 25,000-gallon diesel oil storage tanks (two 50,000-gallon tanks on Unit 2) are the only safety-related tanks which are required during a tornado. The river screen house is not designed for tornados and, therefore, no credit is taken for the safety-related essential service water makeup system during tornados. The vents on all tanks are either 2- or 3-inch pipe and exit through the turbine building roof. Impact from tornado missiles will not result in loss of function of the vent. Breakage would occur prior to crimping on pipes of this size. The diesel oil storage tanks are filled from the fuel oil storage tank, rather than from outside connections. The tanks would not require oil addition in the first few days after a tornado which negates the concern about damage to fill lines.

In the event of damage to the fill or vent lines, each tank has a capped-off 4-inch line in the fill system (see Figure 9.5-1, Sheet 1). This Category I line could be opened and used as either an emergency fill or vent line if required. Additionally, the overflow line (4-inch diameter) would serve to vent the tank. The portion of overflow line which penetrates the tank is Category I and could be used as a vent.

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QUESTION 040.101

"Your response to request 040.15 is incomplete. Expand the FSAR to include a more explicit description of proposed protection of underground piping. Where corrosion protective coatings are being considered (piping and tanks) include the industry standards which will be used in their application. Also discuss what provisions will be made in the design of the fuel oil storage and transfer system in the use of a impressed current type cathodic protection system, in addition to water proof protective coatings, to minimize corrosion of buried piping or equipment. If cathodic protection is not being considered, provide your justification. (SRP 9.5.4, Part II, and Part III, item 4)."

RESPONSE

Underground piping in the diesel oil system is cleaned, blasted and coated with high density polyethylene X-TRU-Coat formulation or cleaned, blasted, primed and wrapped with Royston Greenline Accessory Wrap. Test points are provided for buried piping. Periodic tests will be made on the outdoor piping to monitor corrosion.

The internal surfaces of the six diesel oil storage tanks have been cleaned and coated with Mobil Series 78 for corrosion protection in accordance with Regulatory Guide 1.137 and ANSI-N195.

The need for a cathodic protection system is determined by measuring current flow between a buried pipe and the surrounding soil. This current flow is measured by using the test points on the pipe, a volt meter and a galvanic half cell. If the current flow indicates corrosion, an impressed current type of cathodic protection system is used to reduce current flow between the pipe and the surrounding earth. A cathodic protection survey has been made and a cathodic protection system is being installed to protect underground piping.

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QUESTION 040.112

"Indicate the measures to preclude long-term corrosion and organic fouling in the diesel engine cooling water system that would degrade system cooling performance, and the compatability of any corrosion inhibitors or antifreeze compounds used with the materials of the system. Indicate if the water chemistry is in conformance with the engine manufacturers recommendations. (SRP 9.5.5, Part III, Item 1C.)"

RESPONSE

A chemical additive will be used to control corrosion of the diesel engine cooling water system. The diesel engine cooling water corrosion inhibitor to be used at Byron/Braidwood will be NALCO 39L which contains nitrites, borates, and silicates. This product is also in use at La Salle County and Quad-Cities Stations.