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DENTON,H.R. Office of Nuclear Reactor Regulation, Director
STOLZ,J.F. Operating Reactors Branch 4

SUBJECT: Forwards response to 850610 request for addl info re Generic Ltr 83-28,Items 2.1,2.2.2,4.4,4.5.2 & 4.5.3.Verification that B&W Owners Group component listing includes safety-related reactor trip sys components will be provided.

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August 9, 1985

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

Attention: Mr. J. F. Stolz, Chief
Operating Reactors Branch No. 4

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

Dear Sir:

By letter dated June 10, 1985, the NRC staff requested additional information for evaluation of Duke Power Company's (Duke) response to Generic Letter 83-28, Items 2.1(1), 2.1(2), 2.2.2, 4.4, 4.5.2 and 4.5.3. Please find attached Duke's response to the requested supplemental information with respect to aforementioned Generic Letter 83-28 Items.

Very truly yours,

H.B. Tucker 1/50

Hal B. Tucker

MAH:slb

Attachment

cc: Dr. J. Nelson Grace, Regional Administrator
U. S. Nuclear Regulatory Commission
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101 Marietta Street, NW, Suite 2900
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Ms. Helen Nicolaras
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Washington, D. C. 20555

Mr. J. C. Bryant
NRC Resident Inspector
Oconee Nuclear Station

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records of the disposition of vendor information and provides followup to ensure timely action. Records and list of vendor technical information are maintained in the General Office as part of Duke's Operating Experience program; files are not currently available at each reactor site.

Item 2.2.2

In letters dated November 4, 1983 and May 7, 1984, Duke's response was based on the NUTAC report. Duke needs to present its evaluation of the NUTAC program and describe how it will be implemented at Oconee. The staff found that the NUTAC program fails to address the concern about establishing and maintaining an interface between all safety-related equipment vendors and the utility. Accordingly, Duke will need to supplement its response to address this concern. This additional information should describe how current procedures will be modified and new ones initiated to meet the elements of this concern.

Response

The vendor equipment technical information program (VETIP) as defined in the March, 1984 NUTAC Document is considered a valid response to Section 2.2.2 of the NRC Generic Letter 83-28. Duke Power Company has implemented the program as described therein. Accordingly, it is requested that NRC reanalyze and reconsider your request for additional information.

Item 4.4

Duke has stated that it is revising surveillance testing and maintenance procedures and is reviewing the Technical Specifications to determine what, if any, changes should be proposed. Duke should submit the results of its review and propose changes to the Technical Specifications to include the silicon controlled rectifiers in the appropriate surveillance and test sections of the Technical Specifications.

Response

Duke has reviewed the need for a change in Technical Specifications with reference to surveillance and test of the silicon controlled rectifiers (SCR's) in the reactor protection system. Currently, Duke is developing proposed Technical Specifications in response to Generic Letter 85-10 which include the silicon controlled rectifiers in the appropriate surveillance and test sections. These proposed Technical Specifications will be submitted upon completion of Duke's internal review and approval.

Item 4.5.2

Duke should identify the periodic on-line testing features and indicate if this testing covers all components of the Reactor Trip System.

Duke Power Company
Oconee Nuclear Station
Response to the NRC Request for Additional Information
GL 83-28 Items 2.1(1), 2.1(2), 2.2.2, 4.4, 4.5.2 and 4.5.3

Item 2.1, Part 1

Duke Power Company needs to verify that B&W Owner's Group listing referred to in the response includes all Reactor Trip System (RTS) components for Oconee Nuclear Station, Units 1, 2 and 3, and make a statement that all RTS components are identified as safety-related on documents, drawings, procedures, and in information handling systems used in the plant to control and execute safety-related activities.

Response

As discussed in Duke's response to Item 2.2 dated November 4, 1984, Duke has in place at Oconee a program to assure that components are properly identified as safety-related. Through the application of this program, with respect to components whose function is required to trip the reactor, Duke has been evaluating the referenced listing of components developed by B&W Owners Group. All safety related RTS components in the referenced listing have been identified as safety-related on Oconee Nuclear Station procedures to control and execute safety-related activities. However, the evaluation of the referenced listing with respect to the other documents, drawings and information handling systems is not complete at this time. Duke will provide schedular information by August 30, 1985 for completion of this work and verification that the referenced listing includes all safety-related RTS components for Oconee Nuclear Station, Units 1, 2 and 3.

Item 2.1, Part 2

Duke Power Company needs to submit a description of its program that specifically shows a program of periodic contacts with RTS component vendors that assures all vendor technical information is being received, kept current, complete and controlled throughout the life of the plant. Also, Duke should indicate that lists of vendor information are available for audit at each reactor site. This description should also indicate how this program will be implemented at Oconee Nuclear Station, Units 1, 2 and 3.

Response

Duke has a program in place for Oconee which ensures evaluation and implementation of vendor information transmitted by B&W. This program includes maintaining periodic contacts with the NSSS vendor, B&W (not with the RTS component vendor), at a frequency not to exceed one year, to assure all vendor technical information has been received, kept current, complete and controlled throughout the life of the plant. The program also ensures that the information is referenced or incorporated in plant instructions and procedures.

Important information concerning safety related equipment are transmitted by B&W via Operating Plant Service Bulletins. The information received at Duke Power is processed by a vendor information coordinator. The vendor information coordinator transmits the information to the appropriate technical group or organization within Duke Power to determine applicability and safety significance. If applicable, the information is transmitted to the station staff by the appropriate technical group for implementation. The station staff would incorporate the information into plant procedures and instructions as appropriate. The vendor information coordinator maintains

Response

The features built into the Reactor Trip System allow all components of the system to be tested.

The following is a description of these features.

The use of 2-out-of-4 logic between channels permits a channel to be tested on-line without initiating a reactor trip. Maintenance to the extent of removing and replacing any module within a channel may also be accomplished in the on-line state without a Reactor Trip.

To prevent either the on-line testing or maintenance features from creating a means for unintentionally negating protective action, a system of interlocks initiates a Channel Trip when a module is placed in the Test mode or is removed from the system.

A test scheme for the Reactor Protection System is based on the use of comparative measurements between like variables in the four channels, and the substitution of externally introduced Digital and Analog signals as required, together with measurements of actual protective function trip points. A Digital voltmeter is provided for making accurate measurements of trip point and Analog Signal Voltages. The Test circuits allow the operator to test the system channels from the input of any Bistable up to the final actuating device at any time during reactor operation. The Bistable Test consists of inserting an Analog input from one of the channel test modules and varying the input until the Bistable Test Point is reached. The value of the inserted test signal as monitored by both the system Analog indicator and the test Digital voltmeter represents the true value of the Bistable Trip Point. Thus, the test verifies not only that the Bistable functions, but that the trip point is correctly set. During the test, satisfactory operation of the Bistable can be observed by watching the "trip-status" light in the Reactor Trip Module.

The Reactor Trip Module 2-out-of-4 logic and the associated control rod drive breaker are tested by pressing various combinations of two logic test switches in the Reactor Trip Module to simulate the six combinations of trips inherent in a 2-out-of-4 coincidence logic. During the test, satisfactory performance of the Trip Logic Relays can be observed by watching the "Trip-logic-relay" lights and the "breaker-trip" lights on the Reactor Trip Module. This test verifies not only all the combinations of 2-out-of-4 logic, but also that the trip logic relays and the Control Rod Drive Breakers will trip.

On line testing may be performed at different intervals and levels within the system consistent with satisfactory system reliability characteristics. The reliability of the system for random failures has been assured by careful selection of components, failure-testing of logic elements, environmental testing of the system modules, and long term prototype proof-testing.

The reliability of the system logic, primarily the relays and coincidence networks in the reactor trip modules has been made very high to eliminate the need for frequent test of the logic. The logic relays are of two classes: one class designed for high-speed light electrical loads and more than 10 to the 7th power operations under load; the other class for switching electric loads of up to 10 amperes and more than 10 to the 6th power operations.

The system test scheme includes frequent visual checks and comparisons within the system on a regular schedule in which all channels are checked at one time, together with less-frequent electrical tests conducted on a rotational plan in which the tests are conducted on different channels at different times.

The shunt trip, being part of the trip system, features the ability to be on-line tested for functional operability.

Item 4.5.3

Duke needs to describe what is contained in the B&W Owner's Group response and how it applies to the Oconee Station. Duke should provide the basis for the statement that monthly testing is adequate.

Response

Duke's initial response (dated November 4, 1983) to Item 4.5.3 stated that Duke intends to support the B&W Owners Group effort on this matter. By letter of April 8, 1985 from J. T. Enos, Chairman of the BWOG ATWS Committee, the B&W Owners Group provided the NRC with the summary and results of the BWOG evaluation for this item. The evaluation considered the Oconee group Reactor Trip System, and the results demonstrate the current one month surveillance test interval for the RTS is consistent with achieving high reliability. Duke endorses the referenced BWOG response.