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SUBJECT: Responds to NRC review of Rev 90-1 of revised emergency plan re emergency action levels.

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**DUKE POWER**

October 22, 1990

US Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Subject: Oconee Nuclear Station  
Docket Nos. 50-269, 50-270, 50-287  
Response to Evaluation of Oconee Nuclear Station  
Emergency Plan Revision, Revision 90-1

Gentlemen:

The attached enclosure is my response to the issues described in the NRC letter dated September 7, 1990, concerning review of Oconee Nuclear Station Emergency Plan dated March 1, 1990. Certain changes outlined concerning Emergency Action Levels (EALS) were considered by the NRC as inconsistent with NUREG-0654, Appendix 1 and according to the NRC appeared to decrease the effectiveness of the Plan. I do not believe the proposed changes decrease the effectiveness of the Oconee Nuclear Station Emergency Plan; however, I acknowledge a genuine difference of opinion on these changes. I feel that the best way to resolve this issue is to request NRC review and approval of the changes prior to implementation according to 10CFR50.54q.

I very strongly believe that accurate event classification during an emergency is in the best interest of the public. Inappropriate classification of events stemming from overly conservative emergency action levels serves to alarm the public and not protect their welfare. For this reason, Oconee Nuclear Station began an intensive self-study in 1988 to review and analyze the initiating conditions and emergency action levels described in Section D of Volume A, Oconee Nuclear Station Emergency Plan. During this study, it was determined that NUREG-0654 was silent in differentiating the consequences or risks associated with events which occur during shutdown conditions as opposed to power operation.

NUREG-1410 was recently issued by the NRC documenting the results of the Incident Investigation Team for the Vogtle Loss of AC Power During Shutdown. A quote from page 1-5, Section 1 of NUREG-1410 states "the guidance in NUREG-0654 for classification of loss of power events is unclear. NUREG-0654 is generally focused on events initiating from power operation." I believe that emergency action levels for events occurring during cold shutdown or refueling should have thresholds different from those that occur from power operation.

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Justification for my position for emergency action levels for loss of AC and DC power during shutdown/refueling modes of operation utilizes the generic guidance established by the NRC in Generic Letter 88-17, Loss of Decay Heat Removal. This document recognizes the consequences of a loss of decay heat removal capability during shutdown conditions and outlines specific guidance which should be in place to mitigate these consequences.

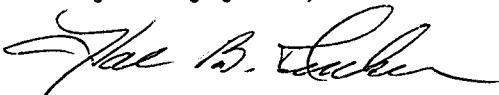
A complete rewrite of Section D, Emergency Classification System, of the Oconee Nuclear Station Emergency Plan (Volume A) was provided to the NRC as Revision 89-1, in February, 1989. The revision included, in addition to the initiating condition and its corresponding emergency action level, a basis statement which provided the justification for event classification. The NRC provided the results of their review of Revision 89-1 on January 11, 1990. A meeting was held with NRC Region II on February 26, 1990 to discuss the changes that appeared to have decreased the effectiveness of the station emergency plan. Following that meeting, Revision 90-1, dated March 1, 1990 was provided to the NRC for review. The NRC responded to the submittal of Revision 90-1 on September 7, 1990.

Enclosure 1 outlines my response to the issues as described in the NRC letter dated September 7, 1990. This enclosure also includes a confirmation of a verbal commitment concerning General Emergency Initiating Conditions for "Loss of 2 or 3 Fission Product Barriers with a Potential Loss of 3rd Barrier..." as documented in a letter from the NRC dated August 30, 1990.

An informal meeting was held in Atlanta on Wednesday, October 17, 1990 between representatives of the Oconee Nuclear Station and NRC Region II Emergency Preparedness personnel. This meeting was held to provide Region II prior knowledge of my intended response to the Nuclear Regulatory Commission.

The Oconee Nuclear Station Emergency Plan will be revised upon final resolution of all issues identified by your September 7, 1990 letter. Accordingly, a revised plan will be forwarded to you within 30 days of final resolution of all the issues. Your timely assistance in this effort is greatly appreciated.

Very truly yours,



H. B. Tucker

LBJ4/td

Attachment

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cc: W/Enclosure

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OCONEE NUCLEAR STATION

Enclosure 1

The proposed emergency action levels for loss of AC and DC power are listed below. The action levels described below are in addition to what is presently described in the Emergency Plan. The format used for this submittal will follow the numbering system shown in Section D of Volume A, Oconee Nuclear Station Emergency Plan.

Initiating Conditions - Notification of Unusual Event

7. **LOSS OF OFFSITE AC POWER OR LOSS OF ONSITE AC POWER CAPABILITY.**

**OPERATING MODE: COLD SHUTDOWN THRU REFUELING**

EAL: MFB 1 and 2 de-energized for >1 but <15 minutes.

BASIS: One minute is provided to allow the onsite AC emergency power source (Keowee Hydro) and associated automatic switching logic to function as designed. Declaring an Unusual Event for momentary loss of AC power will require a heightened awareness of the event. Offsite agencies and regulatory agencies will be notified.

18. **LOSS OF ALL VITAL ONSITE DC POWER**

**OPERATING MODE: COLD SHUTDOWN THRU REFUELING**

EAL: Momentary loss of DC power to all vital panelboards >1 but <15 minutes.

BASIS: Declaring an Unusual Event for momentary loss of DC power will require a heightened awareness of the event. Offsite agencies and regulatory agencies will be notified.

Section D - Volume A, Oconee Nuclear Station Emergency Plan

Initiating Conditions-Alert

8. LOSS OF ALL VITAL ONSITE DC POWER

OPERATING MODE: COLD SHUTDOWN THRU REFUELING

EAL: Loss of DC power to all vital panelboards for >15 minutes.

BASIS: A loss of DC power will decrease the level of control over low pressure injection pump flow and heat exchanger outlet temperature, and possible loss of core thermocouple indications and radiation monitor readings.

18. OTHER HAZARDS BEING EXPERIENCED OR PROJECTED.

E. Entry into facility environs of uncontrolled toxic substances or flammable gases.

OCONEE: Hazardous substance or flammable gas release.

EAL: Uncontrolled entry of a toxic substance or flammable gas into an area of the plant which jeopardizes the operation of safety equipment necessary to establish and maintain cold shutdown.

Note: The word jeopardizes replaces the word prevent.

Initiating Conditions - Site Area Emergency

6. **LOSS OF OFFSITE AC POWER AND LOSS OF ONSITE AC POWER  
FOR MORE THAN 15 MINUTES.**

**OPERATING MODE: COLD SHUTDOWN THRU REFUELING**

**EAL:** MFB 1 and 2 de-energized for >15 minutes AND temperature in the core is >200°F.

**BASIS:** The unit is no longer considered to be in cold shutdown and maybe within range of boiling temperature. A wide variety of core heat and coolant inventory conditions may exist which may support safe operation in this condition for an extended period of time. Inability to maintain the unit in a cold shutdown condition indicates a significant degradation in plant safety.

7. **LOSS OF ALL VITAL ONSITE DC POWER FOR MORE THAN 15  
MINUTES.**

**OPERATING MODE: COLD SHUTDOWN THRU REFUELING**

**EAL:** Loss of all vital onsite DC power for >15 minutes AND temperature in the core is >200°F.

**BASIS:** The unit is no longer considered to be in cold shutdown and maybe within range of boiling temperature. A wide variety of core heat and coolant inventory conditions may exist which may support safe operation in this condition for an extended period of time. Inability to maintain the unit in a cold shutdown condition indicates a significant degradation in plant safety.

### Initiating Conditions - General Emergency

A verbal commitment was made to the NRC, Region II to reinstate the phrase "Five highest core thermocouples 700°F to General Emergency initiating condition 2. A letter from the NRC dated August 30, 1990 documents the commitment.

2. **LOSS OF 2 OF 3 FISSION PRODUCT BARRIERS WITH A POTENTIAL LOSS OF 3RD BARRIER, (E.G.; LOSS OF PRIMARY COOLANT BOUNDARY, CLAD FAILURE, AND HIGH POTENTIAL FOR LOSS OF CONTAINMENT.)**

**OCONEE:** Same as NUREG 0654.

**EAL:** Cladding failure is defined as one of the following: total failed fuel is equal to or greater than 5% per Chemistry analysis (Condition 2) or RIA 57 or 58 reading 2500 R/hr or Average of five highest thermocouples reading 700°F

**BASIS:** Cladding failure can be caused by mechanical or flow-induced damage, over-temperature, and core melting. It is assumed that radiochemical analysis will be used to determine the extent of damage to the fuel and/or cladding; RIA 57/58 reading 2500 R/hr is an indicator that damage has been sustained to the cladding and that some amount (approx. 20%) of GAP activity is present in containment; Average of the five highest thermocouples reading 700°F is an indication that the potential exists to lose the cladding boundary.