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February 22, 1984

Docket No. 50-348

Director, Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Mr. S. A. Varga

Joseph M. Farley Nuclear Plant - Unit 1  
10CFR50.49 - Environmental Qualification  
of Regulatory Guide 1.97 Equipment

Gentlemen:

In letters dated May 20, August 24, and September 27, 1983, Alabama Power Company requested an extension to the schedule provided in 10CFR50.49(g) for upgrading the environmental qualification of accident monitoring equipment (Regulatory Guide 1.97) for Units 1 and 2. The NRC granted an extension to March 31, 1985 for Unit 2 Regulatory Guide 1.97 (R.G. 1.97) equipment in a letter dated October 21, 1983. For Unit 1, the NRC requested that Alabama Power Company make every effort "to complete the qualifications within the goals established and approved by the Commission. If, in spite of your best efforts, specific deficiencies for Unit 1 will remain beyond April 1984, an extension can be requested." Alabama Power Company has expended significant resources and efforts, as described herein, to improve the Unit 1 degree of compliance with the 10CFR50.49(g) schedule. In spite of this improvement, certain equipment qualification will exceed the April 1984 date. Alabama Power Company, therefore, submits a revised request to extend the schedule of 10CFR50.49(g) for specific R.G. 1.97 accident monitoring equipment for Farley Nuclear Plant - Unit 1.

Effective February 22, 1983, 10CFR50.49 establishes a goal for final environmental qualification of electrical equipment within the scope of the rule "by the end of the second refueling outage after March 31, 1982." The Unit 1 fifth refueling outage is the second refueling outage after March 31, 1982; this outage commenced on February 10, 1984 and is scheduled to end during April 1984. Attachment 1 presents the current schedule for refueling outages at Farley Nuclear Plant - Unit 1.

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Alabama Power Company stated in a letter dated November 16, 1981 that efforts to respond to R.G. 1.97 [presently addressed by 10CFR50.49 (b)(3)], safety parameter display system, emergency operating procedures, emergency response facilities and control room design review would not commence until the NRC finalized all applicable regulatory criteria. Finalized NRC regulatory criteria associated with emergency response capabilities was provided in Supplement 1 to NUREG-0737 dated December 17, 1982. In response to Supplement 1 to NUREG-0737, Alabama Power Company made specific commitments related to R.G. 1.97 including completion dates for modifications in letter dated April 15, 1983.

From the April 15, 1983 commitment date of NUREG-0737, Supplement 1, 10CFR50.49(g) allowed only ten months to evaluate the appropriate Farley Nuclear Plant Unit 1 instrumentation against the provisions of R.G. 1.97 and to complete design, procure equipment, finalize design change packages and perform modifications.

In order to be responsive to the schedule of 10CFR50.49(g), Alabama Power Company evaluated each piece of electrical equipment requiring environmental qualification to determine the maximum feasible outage scope. This determination was made based on the premise that environmental qualification modifications of all R.G. 1.97 instruments must be completed by the Unit 1 fifth refueling outage. The maximum feasible outage scope was based on developing engineering evaluations and conceptual design, identifying potential vendors and procurement lead times, reviewing qualification test reports, and finalizing detailed design. These activities have lead to the preparation of six implementation packages for feasible modifications addressing numerous R.G. 1.97 components during the Unit 1 fifth refueling outage. These items are identified in Attachment 2.

It should be recognized that the R.G. 1.97 outage activities identified in Attachment 2 are not considered within the schedule of 10CFR50.49 and the requested extension to 10CFR50.49 is not dependent on their completion. If circumstances beyond the control of Alabama Power Company occur to prevent the completion of these outage activities during the Unit 1 fifth refueling outage, then these outage activities will be completed in accordance with R.G. 1.97 implementation schedule submitted in response to NUREG-0737, Supplement 1. The criteria to determine those outage activities addressed by the schedule of 10CFR50.49(g) was developed subsequent to the determination of the maximum feasible equipment qualification work for the Unit 1 fifth refueling outage.

Alabama Power Company, in consultation with the INPO NUTAC on Emergency Response Capabilities and the NRC Staff, determined that 10CFR50.49(g) does not necessarily require all environmental qualification modifications to R.G. 1.97 instruments be completed by the Unit 1 fifth refueling outage. Based on this guidance, Alabama Power Company developed criteria to clarify the qualification requirements, schedule priorities and scope of instruments addressed by 10CFR50.49(b)(3). These criteria allowed Alabama Power Company

to plan, to the extent possible, a single coordinated modification concept addressing all twelve R.G. 1.97 provisions for each instrument, rather than performing a series of potential modifications addressing only individual R.G. 1.97 provisions (e.g. environmental qualification). These criteria, presented in Attachment 3, are consistent with 10CFR50.49 and were discussed with the NRC Staff during a meeting on January 11, 1984 in Bethesda, Maryland. It is Alabama Power Company's understanding that these criteria are acceptable to the Staff.

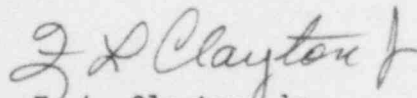
As a result of this revision to the R.G. 1.97 implementation schedule, the specific equipment qualification activities required to be completed for compliance with the schedule of 10CFR50.49(g) were identified. This equipment qualification activities list is provided in Attachment 4. It is emphasized that the qualification activities list of Attachment 4 could not have been completed during the present Unit 1 fifth refueling outage due to their design duration and procurement lead-times even considering that the clarifying criteria of Attachment 3 were available.

Consequently, Alabama Power Company requests, pursuant to 10CFR50.49(g), that the schedule to upgrade the environmental qualification of accident monitoring equipment items identified in Attachment 4 be extended to the Unit 1 sixth refueling outage, but no later than November 30, 1985.

It is proposed that this requested extension to the schedule of 10CFR50.49(g) be provided by April 12, 1984. This proposed date is approximately two weeks prior to return to power from the Unit 1 fifth refueling outage, which is the date for compliance to 10CFR50.49. Granting this requested extension by April 12, 1984 would prevent unnecessary loss of power generation from the extended outage required to design, procure and install equipment necessary for compliance with 10CFR50.49.

If there are any questions, please advise.

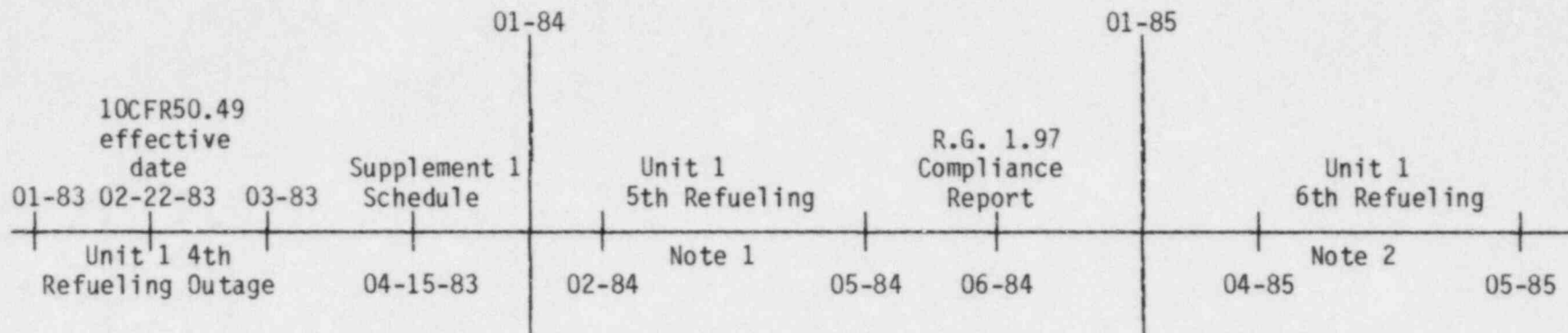
Yours very truly,

  
F. L. Clayton, Jr.

FLCJr/MAL:1sh-D1  
Attachments

cc: Mr. R. A. Thomas  
Mr. G. F. Trowbridge  
Mr. J. P. O'Reilly  
Mr. E. A. Reeves  
Mr. W. H. Bradford

Attachment 1  
Current Refueling Outage Schedule for  
Farley Nuclear Plant - Unit 1



Note 1: The Unit 1 fifth refueling outage is the second refueling outage after March 31, 1982.

Note 2: Completion of R.G. 1.97 equipment upgrade within 10CFR50.49.



Attachment 2  
R.G. 1.97 Equipment Scheduled to be  
Qualified During the Unit 1 Fifth Refueling Outage

It should be recognized that the R.G. 1.97 outage activities identified below are not considered within the schedule of 10CFR50.49 and the requested extension to 10CFR50.49 is not dependent on their completion. If circumstances beyond the control of Alabama Power Company occur to prevent the completion of these outage activities during the Unit 1 fifth refueling outage, then these activities will be completed in accordance with R.G. 1.97 implementation schedule submitted in response to NUREG-0737, Supplement 1.

A. Post-Accident Sampling System to Determine Activity  
Level of Reactor Coolant

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Outage Activity</u>
Q1P15SV3333	Solenoid Valve	ASCO	NP8320A184E	Replace
3765	Solenoid Valve	ASCO	NP8320A184E	Replace
3101	Solenoid Valve	ASCO	NP8320A184E	Replace
3102	Solenoid Valve	ASCO	NP8320A184E	Replace
Q1P15ZS3333	Limit Switch	NAMCO	EA-170	Replace
3101	Limit Switch	NAMCO	EA-170	Replace
3102	Limit Switch	NAMCO	EA-170	Replace

B. Containment Isolation Valve Position Indication

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Outage Activity</u>
N1E21ZS8961	Limit Switch	NAMCO	EA-170	Replace
8880	Limit Switch	NAMCO	EA-170	Replace
N1B31ZS8033	Limit Switch	NAMCO	EA-170	Replace
8028	Limit Switch	NAMCO	EA-170	Replace
N1G21ZS7136	Limit Switch	NAMCO	EA-170	Replace
N1E21ZS8152	Limit Switch	NAMCO	EA-170	Replace
Q1P15ZS3331	Limit Switch	NAMCO	EA-170	Replace
3332	Limit Switch	NAMCO	EA-170	Replace
3333	Limit Switch	NAMCO	EA-170	Replace
Q1P19ZS3611	Limit Switch	NAMCO	EA-170	Replace
Q1E14ZS3657	Limit Switch	NAMCO	EA-170	Replace
3658	Limit Switch	NAMCO	EA-170	Replace
Q1P13ZS3198D	Limit Switch	NAMCO	EA-170	Replace
3198A	Limit Switch	NAMCO	EA-170	Replace
Q1G21ZS3337	Limit Switch	NAMCO	EA-170	Replace
Q1P17ZS3045	Limit Switch	NAMCO	EA-170	Replace
3095	Limit Switch	NAMCO	EA-170	Replace
3067	Limit Switch	NAMCO	EA-170	Replace
N1E21ZS8860	Limit Switch	NAMCO	EA-170	Replace
Q1P15ZS3334	Limit Switch	NAMCO	EA-170	Replace
N1G21ZS7150	Limit Switch	NAMCO	EA-170	Replace
Q1G21ZS3380	Limit Switch	NAMCO	EA-170	Replace
Q1P11ZS3659	Limit Switch	NAMCO	EA-170	Replace

## Attachment 2

R.G. 1.97 Equipment Scheduled to be

Qualified During the Unit 1 Fifth Refueling Outage

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## B. Containment Isolation Valve Position Indication (continued)

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Outage Activity</u>
Q1E11MOV8701A	Motor Operator	Limatorque	N/A	Acquire Test Data
8701B	Motor Operator	Limatorque	N/A	"
8702B	Motor Operator	Limatorque	N/A	"
Q1P16MOV3019A	Motor Operator	Limatorque	N/A	"
3019B	Motor Operator	Limatorque	N/A	"
3019C	Motor Operator	Limatorque	N/A	"
3019D	Motor Operator	Limatorque	N/A	"
3023A	Motor Operator	Limatorque	N/A	"
3023B	Motor Operator	Limatorque	N/A	"
3023C	Motor Operator	Limatorque	N/A	"
3023D	Motor Operator	Limatorque	N/A	"
Q1P17MOV3052	Motor Operator	Limatorque	N/A	"
3182	Motor Operator	Limatorque	N/A	"
Q1P23MOV3238	Motor Operator	Limatorque	N/A	"
3239	Motor Operator	Limatorque	N/A	"
Q1E21MOV8886	Motor Operator	Limatorque	N/A	"
Q1P16MOV3134	Motor Operator	Limatorque	N/A	"
3135	Motor Operator	Limatorque	N/A	"
Q1E23MOV3739A	Motor Operator	Limatorque	N/A	"
3739B	Motor Operator	Limatorque	N/A	"
3745A	Motor Operator	Limatorque	N/A	"
3745B	Motor Operator	Limatorque	N/A	"
Q1E23MOV3740	Motor Operator	Limatorque	N/A	"
Q1E15MOV3361A	Motor Operator	Limatorque	N/A	"
3361B	Motor Operator	Limatorque	N/A	"
3362A	Motor Operator	Limatorque	N/A	"
3362B	Motor Operator	Limatorque	N/A	"
Q1E21MOV8100	Motor Operator	Limatorque	N/A	"
Q1F13SV3196		Delete Auxiliary Relay		Modification
3197		Delete Auxiliary Relay		"
N1P13SV3198B		Delete Auxiliary Relay		"
Q1P13SV3198D		Delete Auxiliary Relay		"
Q1P15SV3103		Delete Auxiliary Relay		"
3104		Delete Auxiliary Relay		"
3765		Delete Auxiliary Relay		"
3766		Delete Auxiliary Relay		"
3331		Delete Auxiliary Relay		"
3332		Delete Auxiliary Relay		"
3333		Delete Auxiliary Relay		"
3334		Delete Auxiliary Relay		"

## Attachment 2

R.G. 1.97 Equipment Scheduled to be

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## B. Containment Isolation Valve Position Indication (continued)

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Outage Activity</u>
Q1E14SV3657		Delete Auxiliary Relay		Modification
3658		Delete Auxiliary Relay		"
Q1P17SV3045		Delete Auxiliary Relay		"
3067		Delete Auxiliary Relay		"
3095		Delete Auxiliary Relay		"

## C. Penetration Room Vent Damper Position Indication

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Outage Activity</u>
Q1E15MOV3361A	Motor Operator	Limitorque	N/A	Acquire Test Data
3361B	Motor Operator	Limitorque	N/A	"
3362B	Motor Operator	Limitorque	N/A	"
Q1E15HV3356A	Limit Switch	NAMCO	EA-170	Replace
q356B	Limit Switch	NAMCO	EA-170	Replace
3357A	Limit Switch	NAMCO	EA-170	Replace
3357B	Limit Switch	NAMCO	EA-170	Replace
Q1V48HV3538A	Limit Switch	NAMCO	EA-170	Replace
3538B	Limit Switch	NAMCO	EA-170	Replace

## D. Containment Atmosphere Temperature Indication

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Outage Activity</u>
N1T12TE3187E	Temperature Element	Conax	N/A	Replace
3187F	Temperature Element	Conax	N/A	Replace
3187G	Temperature Element	Conax	N/A	Replace
3187H	Temperature Element	Conax	N/A	Replace

## E. Accumulator Pressure

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Outage Activity</u>
N1E21PT921	Transmitter	Foxboro	NE11GMIID2BF	Replace
925	Transmitter	Foxboro	NE11GMIID2BF	Replace
929	Transmitter	Foxboro	NE11GMIID2BF	Replace

Attachment 2

R.G. 1.97 Equipment Scheduled to be

Qualified During the Unit 1 Fifth Refueling Outage

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F. Neutron Monitor (Scheduled for partial implementation only)

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Outage Activity</u>
5060B	Cable	Gamma-Metrics	N/A	Replace



Attachment 3  
Criteria for Accident Monitoring Instrumentation Subject to  
Environmental Qualification

1. Schedular Criteria

Alabama Power Company believes that a single coordinated modification is the intent of Supplement 1 to NUREG-0737 and 10CFR50.49. Alabama Power Company has therefore interpreted Supplement 1 to NUREG-0737 and 10CFR50.49 to mean that an instrument channel would be subject to the schedule of 10CFR50.49(g) if the instrument channel satisfies all R. G. 1.97 criteria except for environmental qualification. An instrument channel that does not satisfy one or more provisions of Regulatory Guide 1.97, other than environmental qualification, would be subject to the schedule submitted in response to Supplement 1 to NUREG-0737 for completing R.G. 1.97 modifications. As an example, if an instrument channel is not environmentally and seismically qualified in accordance with R.G. 1.97, then modifications to these instrument channels would be implemented in accordance with the R.G. 1.97 schedule of Supplement 1 to NUREG-0737. If an instrument channel satisfied all provisions of Regulatory Guide 1.97 except environmental qualification, then qualification of the instrument channel would be subject to the schedule of 10CFR50.49(g).

2. Qualification Criteria

Alabama Power Company interprets the phrase of 10CFR50.49(k), "are not required to requalify electrical equipment important to safety in accordance with the provisions of this section [10CFR50.49] if the Commission has previously required qualification of that equipment", to be a reference to the intended use of equipment. The intended use of equipment considered by Alabama Power Company to be within the scope of NUREG-0588 and the DOR Guidelines is to monitor and/or mitigate an accident. The minimum accident monitoring instrumentation exposed to a harsh environment was included in Alabama Power Company's submittal to NUREG-0588 and the DOR Guidelines.

Subsequent to these submittals, 10CFR50.49(b)(3) required that "certain post-accident monitoring equipment" (i.e., R.G. 1.97 equipment) be qualified. This provision significantly increased the scope of Alabama Power Company's accident monitoring equipment previously identified in NUREG-0588 and DOR Guidelines submittals. Alabama Power Company, therefore, interprets the provision of 10CFR50.49(k) to permit qualification of the expanded scope equipment to the NUREG-0588 and DOR Guidelines if such instrumentation is presently installed and has been or can be shown to meet those provisions. Otherwise, qualification of equipment to be installed to satisfy R.G. 1.97 will be subject to 10CFR50.49 provisions.

Attachment 3  
Criteria for Accident Monitoring Instrumentation Subject to  
Environmental Qualification  
Page 2

3. Criteria for Scope of 10CFR50.49(b)(3)

Alabama Power Company has interpreted the scope of 10CFR50.49(b)(3) to be those equipment items:

- (a) defined as Category 1 and 2 instruments in Alabama Power Company's R.G. 1.97 Compliance Report, and
- (b) not addressed by 10CFR50.49(b)(1) and (b)(2), and
- (c) located in a harsh environment.

Attachment 4  
Accident Monitoring Equipment For Which an  
Extension to the Schedule of 10CFR50.49 is Requested

Identified below are manufacturer and model numbers for presently installed equipment that is located in a harsh environment and for which environmental qualification documents have not been located. These components are scheduled to be replaced with qualified components during the Unit 1 sixth refueling outage.

A. Containment Spray Flow

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Location</u>
N2E13FT0958A	Transmitter	Foxboro	E13DMISAH2	Auxiliary Building E1-100'
N2E13FT0958B	Transmitter	Foxboro	E13DMISAH2	Auxiliary Building E1. 100'

B. Charging Line Flow

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Location</u>
N2E21FT0122	Transmitter	Foxboro	E13DHISAH2	Auxiliary Building E1. 100'

C. Letdown Flow

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Location</u>
Q2E21FT0150	Transmitter	Foxboro	E13DMISAH2	Auxiliary Building E1. 100'

D. Volume Control Tank Level

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Location</u>
Q2E1LT0115	Transmitter	Barton	396	Auxiliary Building E1. 121

Attachment 4  
 Accident Monitoring Equipment for Which an  
 Extension to the Schedule of 10CFR50.49 is Requested  
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E. Reactor Coolant Pump Seal Injection Flow

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Location</u>
N2E21FT0124	Transmitter	Foxboro	E13DH1SAM2	Auxiliary Bldg. El. 121'
127	Transmitter	Foxboro	E13DH1SAM2	Auxiliary Bldg. El. 121'
130	Transmitter	Foxoboro	E13DH1SAM2	Auxiliary Bldg. El. 121'
N2E21FI0124B	Local Indicator	To be Determined	To be Determined	Auxiliary Bldg. El. 121'
127B	Local Indicator	To be Determined	To be Determined	Auxiliary Bldg. El. 121'
130B	Local Indicator	To be Determined	To be Determined	Auxiliary Bldg. El. 121'

F. Containment High Range Radiation Monitor

<u>Plant ID No.</u>	<u>Generic Name</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Location</u>
2VAI5011F	Cable	Belden	8263	Auxiliary Building El. 139'
2VAI5011H	Cable	Belden	8263	Auxiliary Building El. 139'

Discussion: As part of the R.G. 1.97 Compliance Report preparation, Alabama Power Company has performed an evaluation of the areas in which these components are located and has determined that these areas would be exposed to a radiation dose from post-accident recirculating fluids. While all other components of the instruments have been determined to be either environmentally qualified or not located in an area of potential harsh environment, it has been determined that no test data is available for the above components.

Since the completion of this evaluation, Alabama Power Company has developed conceptual designs to upgrade the environmental qualification of these components and identified potential vendors and procurement lead times. The resulting design and procurement, based on this evaluation, cannot be completed within the schedule of 10CFR50.49 for Unit 1.

The modifications to these instruments can only be completed during scheduled refueling outages since this instrumentation is needed for power operation except for containment spray flow and the containment high range radiation monitors. The containment spray flow instruments are used in a system that is needed to satisfy the Technical Specifications and to perform safety related functions. The containment high range radiation monitors form a portion of a system that is needed to satisfy the Technical Specifications. These modifications are currently scheduled to be implemented during the Unit 1 sixth refueling outage.

Justification: Alabama Power Company emphasizes that this extension request applies only to certain post-accident monitoring equipment of 10CFR50.49(b)(3). During the time necessary to upgrade the qualification of equipment addressed by this extension request, the safe operation of Farley Nuclear Plant will not be compromised. In letter dated May 20, 1983, Alabama Power Company indicated that equipment within 10CFR50.49, Section (b)(1), safety-related equipment relied upon to remain functional during and following design basis events, and Section (b)(2), nonsafety-related equipment whose failure could prevent satisfactory accomplishment of safety functions, have been previously qualified to the provisions of the DOR Guidelines. Additionally, as stated in letter dated April 15, 1983, Alabama Power Company interprets the provisions of Supplement 1 to NUREG-0737 to enhance the present emergency response capabilities and not to provide the sole safety function. Currently, the Farley Nuclear Plant computer and main control board are being utilized to monitor parameters necessary for normal and emergency conditions.

Extension Request: The end of the Unit 1 sixth refueling outage but no later than November 30, 1985.