

Alabama Power Company
40 Inverness Center Parkway
Post Office Box 1296
Birmingham, Alabama 35201
Telephone 205 868 5086

J. D. Woodard
Vice President-Nuclear
Farley Project



May 17, 1991

Docket No. 50-348

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Joseph M. Farley Nuclear Plant - Unit 1
NRR Waiver of Compliance and Amendment Request for
ESF Response Time for Steam Line Isolation Technical Specification

Gentlemen:

By letter dated October 26, 1990, Alabama Power Company submitted a technical specification amendment to support implementation of the RTD Bypass Elimination modification and an increased steam generator tube plugging limit for Farley Nuclear Plant Unit 1. On March 8, 1991, the NRC issued Amendment No. 87 to the Facility Operating License NPF-2, which included the requested technical specification changes and the related NRC safety evaluation. The Amendment No. 87 technical specification changes have been incorporated, the RTD Bypass Elimination modification has been implemented, and Farley Nuclear Plant (FNP) Unit 1 is proceeding with post-refueling outage plant startup activities. However, it was not identified that the ESF response time for steam line isolation from high steam flow coincident with T_{avg} low-low could exceed the current limit of 9 seconds, as discovered during the conduct of RTD response time testing on May 17, 1991. The deletion of the RTD bypass manifold now necessitates the incorporation of an additional 2 seconds for this ESF function response time. Before FNP Unit 1 can enter operational Mode 1, the Unit 1 Technical Specifications must be revised; therefore, Alabama Power Company is requesting an NRR waiver of compliance until the attached technical specification change can be approved by the NRC.

WCAP-12613, Revision 2, "RTD Bypass Elimination Licensing Report for J. M. Farley Nuclear Plant Units 1 and 2," provided the basis for the safe operation of the Farley units following elimination of the RTD bypass manifold system and the subsequent use of fast response RTD's with wells installed directly in the RCS hot and cold leg flow streams. The use of fast response RTD's installed in wells required increasing the technical specification overtemperature delta-T (OTAT) reactor trip response time from 4 seconds to 6 seconds, which was consistent with the maximum allowable time delay assumed in the accident analyses.

9105220086 910517
PDR ADDCK 05000348
P PDR

ADD 11

During response time testing for Unit 1 startup, it was discovered that the technical specification response time for steam line isolation on high steam flow coincident with T_{avg} low-low could not be satisfied for the main steam isolation bypass valves. Since the T_{avg} low-low signal is derived from the same RTD's, a response time increase of 2 seconds is also required for this ESF function. Alabama Power Company therefore proposes that the ESF response time for the main steam line isolation function by high steam line flow coincident with T_{avg} low-low be changed from 9 seconds to 11 seconds. Upon the granting of a temporary waiver of compliance, FNP will be able to demonstrate compliance with the Technical Specification for main steam line isolation response time and continue Unit 1 startup activities.

Attachment 1 is the information requested in NRC letter dated February 22, 1990 concerning Temporary Waivers of Compliance. Alabama Power Company has determined that the proposed changes do not involve a significant hazards consideration. In accordance with 10 CFR 50.92 a significant hazards consideration evaluation is provided as Attachment 2. A revised page to the Unit 1 Technical Specifications is included as Attachment 3.

Alabama Power Company's Plant Operations Review Committee has reviewed the proposed changes and the Nuclear Operation Review Board will review the changes at a future meeting. A copy of these proposed changes is being sent to Dr. C. E. Fox, the Alabama State Designee, in accordance with 10 CFR 50.91(b)(1).

If you have any questions, please advise.

Respectfully submitted,

ALABAMA POWER COMPANY

W. B. Woodard
J. D. Woodard

JDW/MGE:map 8.8

Attachments

cc: Mr. S. D. Ebner
Mr. J. T. Hoffman
Mr. G. F. Maxwell
Dr. C. E. Fox

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 17th DAY OF May 1991
Sherry Ann Mitchell
Notary Public

My Commission Expires: 10/15/92

ATTACHMENT 1

Information Identified in NRC Letter dated February 22, 1990

1. Requirements for Which a Waiver Is Requested:

Technical Specification 4.3.2.3 requires an Engineered Safety Feature Response Time Test for "Steam Flow in Two Steam Lines - High Coincident with T_{avg} --Low-Low". The current response time required is ≤ 9.0 seconds. A waiver is requested to increase the response time to ≤ 11.0 seconds.

2. Circumstances Requiring Prompt Action:

By letter dated October 26, 1990, Alabama Power Company submitted a technical specification amendment to support implementation of the RTD Bypass Elimination modification and an increased steam generator tube plugging limit for Farley Nuclear Plant Unit 1. On March 8, 1991, the NRC issued Amendment No. 87 to the Facility Operating License NPF-2, which included the requested technical specification changes and the related NRC safety evaluation. The Amendment No. 87 technical specification changes have been incorporated, the RTD Bypass Elimination modification has been implemented, and Farley Nuclear Plant (FNP) Unit 1 is proceeding with post-refueling outage plant startup activities. However, it was not identified that the ESF response time for steam line isolation from high steam flow coincident with T_{avg} low-low could exceed the current limit of 9 seconds, as discovered for the main steam isolation bypass valves during the conduct of RTD response time testing on May 17, 1991. Before FNP Unit 1 can enter operational Mode 1, the Unit 1 Technical Specifications must be revised; therefore, Alabama Power Company is requesting a waiver of compliance until a technical specification change can be approved by the NRC.

3. Compensatory Actions:

FNP is following the limitations imposed by Technical Specification 4.3.2.3 for main steam line isolation response time. These limitations require that the steam line isolation valves remain closed in Modes 2 and 3 and entry into Mode 1 is prohibited.

4. Safety Significance and Potential Consequences:

The high steam flow coincident with T_{avg} low-low ESF function is not taken credit for in any accident analysis including main steam pipe rupture, non-LOCA, containment response or in equipment qualification (superheat) outside of containment. Protection for these events are provided by other protection signals. Main steam line isolation on high steam flow in two steam lines coincident with T_{avg} low-low is provided as a diverse signal that provides no primary protection for any event. Protection for main steam pipe breaks is provided by the overpower protection, OTAT, and low pressurizer pressure reactor trip functions and the low steam line pressure, high steam line differential pressure, low pressurizer pressure, High-1 containment pressure ESF functions. Primary main steam line isolation protection is provided by the low steam line pressure and the High-2 containment pressure ESF functions. Therefore, the increase in response time from 9 seconds to 11 seconds will have no effect on any previously analyzed accident.

5. Duration of the Request:

The waiver of compliance is requested until approval of the technical specification change.

6. Significant Hazards Consideration:

See Significant Hazards Evaluation contained in Attachment 2.

7. Environmental Consequences:

Since no credit in accident analysis is taken for the high steam flow and T_{avg} low-low ESF function, the increase in the steam line isolation time response from 9 to 11 seconds does not involve any significant change in the types of effluents that may be released offsite and no significant increase in the individual or cumulative occupational radiation exposure. Therefore, this waiver of compliance does not involve any irreversible environmental consequences.

ATTACHMENT 2

Significant Hazards Evaluation for the Joseph M. Farley Nuclear Plant Unit 1 Increase in ESF Response Time for Steam Line Isolation (Steam Flow in Two Steam Lines--High Coincident with T_{avg} --Low-Low)

10 CFR 50.92 EVALUATION

Pursuant to 10 CFR 50.92 each application for amendment to an operating license must be reviewed to determine if the proposed change involves a significant hazards consideration. The amendment, as defined below, describing the technical specification change associated with increase in the response time for steam line isolation by high steam flow coincident with T_{avg} low-low has been reviewed and deemed not to involve significant hazards considerations. The basis for this determination follows.

PROPOSED CHANGES

The proposed amendment involves the following technical specification change to the Engineered Safety Features (ESF) response time for steam line isolation on high steam flow in two steam lines coincident with T_{avg} low-low. The proposed change involves an increase from the current value of 9 seconds to a new value of 11 seconds. This increase in response time is consistent with the previously NRC approved response time for resistance temperature detector (RTD) bypass manifold elimination and the use of fast response RTD's located in the hot and cold leg piping.

EVALUATION

Modification to Table 3.3-5 (ESF Response Times) for Item 5(a) steam line isolation on high steam flow coincident with T_{avg} low-low is proposed. This modification will make all technical specification response times affected by RTD manifold bypass elimination consistent. The allowable time delays for generating the reactor protection and steam break protection actuation signals by RCS T_{avg} previously included 2 seconds for the RTD bypass manifold loop transport delay. When the RTD's are relocated to the RCS loops for direct temperature measurement, the 2 second time delay should be reallocated to the RTD and well response time, which had previously been done for the overtemperature delta-T (OTΔT) reactor trip function.

The high steam flow coincident with T_{avg} low-low ESF function is not taken credit for in any accident analysis including main steam pipe rupture, non-LOCA, containment response or in equipment qualification (superheat) outside of containment. Protection for these events are provided by other protection signals. Main steam line isolation on high steam flow in two steam lines coincident with T_{avg} low-low is provided as a diverse signal that provides no primary protection for any event. Protection for main steam pipe breaks is provided by the overpower protection, OTΔT, and low pressurizer pressure reactor trip functions and the low steam line pressure, high steam line differential pressure, low pressurizer pressure, High-1 containment pressure ESF functions. Primary main steam line isolation protection is provided by the low steam line pressure and the High-2 containment pressure ESF functions. Therefore, the increase in response time from 9 seconds to 11 seconds will have no effect on any previously analyzed accident.

Based on the information presented above, the following conclusions can be reached with respect to 10 CFR 50.92:

1. The ESF response time increase for this steam line isolation function does not significantly increase the probability or consequences of an accident previously evaluated in the FSAR. This function provides no primary protection for any transient in the FSAR. No new performance requirements are being imposed on any system or component. Consequently, overall plant integrity is not reduced. These changes have no effect on any dose calculations. Therefore, the probability or consequences of an accident will not increase.
2. The ESF response time increase of 2 seconds for the high steam flow coincident with T_{avg} low-low function does not create the possibility of a new or different kind of accident from any previously evaluated in the FSAR. This response time is not an initiator for any transient. No new accident scenarios, failure mechanisms, or limiting single failures are introduced as a result of this 2 second increase. The response time increase does not challenge or prevent the performance of any safety-related system during plant transients. Therefore, the possibility of a new or different kind of accident is not created.
3. This change does not involve a significant reduction in the margin of safety. All primary trip functions and ESF actuations are unaffected by the increase in this ESF response time. Therefore, the change to the response time does not effect the results of any accident analysis, and the margin of safety is maintained and not significantly reduced.

Based upon the preceding information, it has been determined that the ESF response time increase of 2 seconds for steam line isolation on high steam flow in two steam lines coincident with T_{avg} low-low does not involve a significant hazards consideration.