Entergy

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2CAN010208

January 31, 2002

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

SUBJECT: Arkansas Nuclear One, Unit 2
Docket No. 50-368
Supplement to Amendment Request
ESFAS/RPS Sensor Response Time Testing

REFERENCES:
1. Letter Dated October 2, 2001, Technical Specification Change Request ESFAS/RPS Sensor Response Time Testing (2CAN100103)

Dear Sir or Madam:

By letter (reference 1), Entergy Operations, Inc. (Entergy) proposed a change to the Arkansas Nuclear One, Unit 2 (ANO-2) Technical Specifications (TSs) to change the definitions of "response time" for reactor trip system and for engineered safety features. The proposed change is based on a Combustion Engineering Owners Group topical report and Technical Specification Task Force (TSTF) Traveler 368, Revision 0, which was incorporated into revision 2 of the *"Standard Technical Specifications Combustion Engineering Plants"* (NUREG-1432).

On January 28, 2002, Entergy and members of your staff held a call to discuss the inconsistency between the proposed wording of the TS definitions and the approved NUREG-1432 wording. Entergy agreed to change the proposed TS definitions and associated bases to be consistent with the previously approved wording contained in NUREG-1432 and TSTF 368. The words in the original submittal (reference 1) were consistent with the words contained in the topical report. For convenience all the previously submitted TS pages and TS bases pages are included in this letter. A markup of the Index, which was not previously included, is included to reflect the two definitions that moved from page 1-5 to page 1-6. The words in the definitions for response time and bases are the only changes that are proposed.

There are no technical changes proposed. The original no significant hazards considerations included in reference 1 are not affected by any information contained in this supplemental letter. There are no new commitments contained in this letter.

If you have any questions or require additional information, please contact Dana Millar at 601-368-5445.

A001

I declare under penalty of perjury that the foregoing is true and correct. Executed on January 31, 2002.

Sincerely,

Glenn R. Ashley
Manager, Licensing

GRA/dm

Attachments:
1. Revised Markup of Technical Specification Pages
2. Revised Markup of Technical Specification Bases Pages

cc: Mr. Ellis W. Merschoff
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U. S. Nuclear Regulatory Commission
Region IV
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NRC Senior Resident Inspector
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U. S. Nuclear Regulatory Commission
Attn: Mr. Thomas W. Alexion MS 07-D1
Washington, DC 20555-0001

Mr. Bernard R. Bevill
Director Division of Radiation
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Arkansas Department of Health
4815 West Markham Street
Little Rock, AR 72205

Attachment 1

To

2CAN010208

Revised Markup of Technical Specification Pages

INDEX

DEFINITIONS

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AXIAL SHAPE INDEX

1.22 The AXIAL SHAPE INDEX shall be the power generated in the lower half of the core less the power generated in the upper half of the core divided by the sum of these powers.

REACTOR TRIP SYSTEM RESPONSE TIME

1.23 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its trip setpoint at the channel sensor until electrical power is interrupted to the CEA drive mechanism. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

ENGINEERED SAFETY FEATURE RESPONSE TIME

1.24 The ENGINEERED SAFETY FEATURE RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

PHYSICS TESTS

1.25 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation and 1) described in Chapter 14.0 of the FSAR, 2) authorized under the provisions of 10 CFR 50.59, or 3) otherwise approved by the Commission.

SOFTWARE

1.26 The digital computer SOFTWARE for the reactor protection system shall be the program codes including their associated data, documentation and procedures.

PLANAR RADIAL PEAKING FACTOR F_{xy}

1.27 The PLANAR RADIAL PEAKING FACTOR is the ratio of the peak to plane average power density of the individual fuel rods in a given horizontal plane, excluding the effects of azimuthal tilt.

LIQUID RADWASTE TREATMENT SYSTEM

1.28 A LIQUID RADWASTE TREATMENT SYSTEM is a system designed and installed to reduce radioactive liquid effluents from the unit. This is accomplished by providing for holdup, filtration, and/or demineralization of radioactive liquid effluents prior to their release to the environment.

~~MEMBER(S) OF THE PUBLIC~~

~~1.29 MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the plant. This category does not include employees of the utility, its contractors or vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational or other purposes not associated with the plant.~~

~~PURGE-PURGING~~

~~1.30 PURGE or PURGING is the controlled process of discharging air or gas from a confinement to reduce airborne radioactive concentrations in such a manner that replacement air or gas is required to purify the confinement.~~

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EXCLUSION AREA

1.31 The EXCLUSION AREA is that area surrounding ANO within a minimum radius of .65 miles of the reactor buildings and controlled to the extent necessary by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials.

UNRESTRICTED AREA

1.32 An UNRESTRICTED AREA shall be any area at or beyond the exclusion area boundary.

CORE OPERATING LIMITS REPORT

1.33 The CORE OPERATING LIMITS REPORT is the ANO-2 specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Technical Specification 6.9.5 Plant operation within these operating limits is addressed in individual specifications.

Attachment 2

To

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Revised Markup of Technical Specification Bases Pages

BASES

Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements, provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by ~~either~~ 1) in place, onsite or offsite test measurements or 2) utilizing replacement sensors with certified response times or 3) utilizing allocated response time for selected sensors. Topical Report CE NPSD-1167-A, "Elimination of Pressure Sensor Response Time Testing Requirements," provides the basis and methodology for using allocated sensor response times in the overall verification of the channel response time for specific sensors identified in the Topical Report. Response time verification for sensor types must be demonstrated by test. The allocation of sensor response times must be verified prior to placing a new component in operation and re-verified after maintenance that may adversely affect the sensor response time.

Plant Protective System (PPS) logic is designed for operation as a 2-out-of-3 logic, although normally it is operated in a 2-out-of-4 mode.

The RPS Logic consists of everything downstream of the bistable relays and upstream of the Reactor Trip Circuit Breakers. The RPS Logic is divided into two parts, Matrix Logic, and Initiation Logic. Failures of individual bistables and their relays are considered measurement channel failures.

The ESFAS Logic consists of everything downstream of the bistable relays and upstream of the subgroup relays. The ESFAS Logic is divided into three parts, Matrix Logic, Initiation Logic, and Actuation Logic. Failures of individual bistables and their relays are considered measurement channel failures.

Matrix Logic refers to the matrix power supplies, trip channel bypass contacts, and interconnecting matrix wiring between bistable relay cards, up to, but not including the matrix relays. Matrix contacts on the bistable relay cards are excluded from the Matrix Logic definition since they are addressed as part of the measurement channel.

Initiation Logic consists of the trip path power source, matrix relays and their associated contacts, all interconnecting wiring, and the initiation relays (including contacts).

ESFAS Actuation Logic consists of all circuitry housed within the Auxiliary Relay Cabinets (ARCs) used to house the ESF Function; excluding the subgroup relays, and interconnecting wiring to the initiation relay contacts mounted in the PPS cabinet.

For the purposes of this LCO, de-energization of up to three matrix power supplies due to a single failure, such as loss of a vital instrument bus, is to be treated as a single matrix channel failure, providing the affected matrix relays de-energize as designed to produce a half-trip. Although each of the six matrices within an ESFAS Function (e.g., SIAS, MSIS, CSAS, etc.) uses separate power supplies, the matrices for the different ESFAS Functions share power supplies. Thus, failure of a matrix power supply may force entry into the Condition specified for each of the associated ESFAS Functional Units.

Table 3.3-3 Action 10 allows for continued operation in the applicable MODES with the number of channels OPERABLE one less than the Total Number of Channels provided the inoperable channel is placed in the bypassed or tripped condition within 1 hour.