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R. P. Barkhurst
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**W3P90-1182
A4.05
QA**

November 9, 1990

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

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
Technical Specification Change Request NPF-38-111

Gentlemen:

The attached safety analysis justifies revising the limiting condition for operation of the incore detectors in Waterford 3 Technical Specification 3.3.3.2, and the entries associated with the movable incore detectors on Table 3.8-1, CONTAINMENT PENETRATION CONDUCTOR OVER-CURRENT PROTECTIVE DEVICES. This change is being requested to support a plant modification to disconnect the movable incore detector system. This is scheduled for the fourth refueling outage which is to commence in March, 1991.

Should you have any questions or comments on this matter, please feel free to contact L.W. Laughlin at (504) 739-6726.

Very truly yours,

RPB/DAR/ssf

Attachments: NPF-38-111
Affidavit

cc: Messrs. R.D. Martin, NRC Region IV
D.L. Wigginton, NRC-NRR
E.L. Blake
R.B. McGehee

NRC Resident Inspectors Office
Administrator Nuclear Energy Division (State of Louisiana)
American Nuclear Insurers

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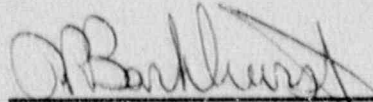
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of)
)
Entergy Operations, Incorporated) Docket No. 50-382
Waterford 3 Steam Electric Station)

AFFIDAVIT

R.P. Barkhurst, being duly sworn, hereby deposes and says that he is Vice President Operations - Waterford 3 of Entergy Operations, Incorporated; that he is duly authorized to sign and file with the Nuclear Regulatory Commission the attached Technical Specification Change Request NPF-38-111; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.



R.P. Barkhurst
Vice President Operations - Waterford 3

STATE OF LOUISIANA)
) ss
PARISH OF ORLEANS)

Subscribed and sworn to before me, a Notary Public in and for the Parish and State above named this 9th day of November, 1990.



Notary Public

My Commission expires for life.

DESCRIPTION AND SAFETY ANALYSIS
OF PROPOSED CHANGE NPF-38-111

The following justifies changing the limiting condition for operation of the incore detectors in Waterford 3 Technical Specification 3.3.3.2, and the entries associated with the movable incore detectors on Table 3.8-1, CONTAINMENT PENETRATION CONDUCTOR OVER-CURRENT PROTECTIVE DEVICES.

Existing Specifications

See Attachment A

Proposed Specifications

See Attachment B

Description

The requested change revises the definition of "operable incore detector location" in Specification 3.3.3.2. The present text is:

An OPERABLE incore detector location shall consist of a fuel assembly containing a fixed detector string with a minimum of four OPERABLE rhodium detectors or an OPERABLE movable incore detector capable of mapping the location.

The requested amendment deletes the alternative to have the mapping performed by the movable incore detectors. As such, the amended text becomes:

An OPERABLE incore detector location shall consist of a fuel assembly containing a fixed detector string with a minimum of four OPERABLE rhodium detectors.

Additionally, the proposed amendment replaces the movable incore detector over-current protective device descriptions on Table 3.8-1 with statements that they have been disconnected.

The movable incore detector acts as a back-up to the fixed incore detectors. It consists of two detector drive machines, two transfer machines for routing and positioning the movable detectors, two drive cables with detectors, and the interconnecting tubing. The transfer machine enables the detectors to be shifted between locations such that flux data independent of the fixed incore detectors can be taken at all axial locations.

Since the initial start-up of Waterford 3, recurring hardware problems have troubled the movable incore detector system (MICDS). Several CIs (Condition Identification report) document the problems. These difficulties have prevented the Plant Monitoring Computer (PMC) software for the MICDS from being tested using anything else but a simulated signal. Due to inadequate operation of the MICDS, all measurements requiring incore instrumentation have been performed using only the fixed incore detector system.

Near the end of the refueling 3 outage (September 23, 1989 through November 20, 1989) and during a two week mid-cycle outage (January, 1990), Waterford 3 staff suspected that reactor coolant was leaking from one or more of the movable incore detector calibration tubes. This was confirmed during the January, 1990 outage. Operation of the MICDS was only required when the more reliable fixed incore detector system failed. Since the MICDS was already inoperable, the benefit of sealing a reactor coolant system (RCS) leak path clearly outweighed any benefit an inoperable MICDS may provide by backing up the fixed incore detectors. However, hardware problems had become too numerous for repairs to be completed timely and efficiently during the outage. As a result, all the MICDS calibration tubes were pressure capped as a temporary alteration. The movable detectors were withdrawn and a section of each guide tube removed.

Before the January outage, a station modification was suggested in the Post Refueling Outage 3 Report to disable the MICDS. This modification is scheduled for the refueling 4 outage. It will make the above temporary alteration permanent, disable power supply permanently, and remove the controlling software. In this state the MICDS will never be functional. As such, a revision to Technical Specification 3.3.3.2 is necessary to remove the reference to the MICDS.

The proposed change narrows the definition in Technical Specification 3.3.3.2 of "operable incore detector" by excluding the alternate means to map a location using the MICDS. In the Bases to the Instrumentation section of the Technical Specifications, it states:

The OPERABILITY of the incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the reactor core.

The accurate representation of the spatial neutron flux distribution in the reactor core has always been provided for by the fixed incore instrumentation. Therefore, the operability, as specified in the Bases, remains unchanged by this proposed amendment.

The limiting condition for operation has two requirements to verify incore detection system operability:

1. At least 75% of all incore detector locations shall be OPERABLE, and
2. A minimum of two quadrant symmetric incore detector locations per core quadrant.

These criteria make no distinction as to which detection system is to be employed to verify operability. The level of protection they provide remains unchanged by the proposed amendment to the Technical Specification. Because of the unavailability of the MICDS, the fixed incore detectors have always been used. Should the fixed incore detectors fail such that we violate the specification, the remedial action would remain unchanged.

As stated in the specification, absolute operability of the MICDS is not required; it is only to supplement the fixed incore detection system. Given the reliability problems associated with the system, and that it represents a RCS leak path, there is essentially no operational benefit to the MICDS. Since this system is not required for the establishment of any safety margin, nor is it assumed operable in any safety analysis, the disabling of the MICDS does not impact the safe, reliable operation of Waterford 3.

Safety Analysis

The proposed changes described above shall be deemed to involve a significant hazards consideration if there is a positive finding in any of the following areas:

1. Will operation of the facility in accordance with these proposed changes involve a significant increase in the probability or consequence of any accident previously evaluated?

Response: No

The operability of the movable incore detectors is not required for any accidents previously evaluated. All assumptions and results for previously evaluated accidents remain unchanged by the proposed amendment. Therefore, the alteration of the Technical Specification 3.3.3.2 definition for "operable incore detector" will not involve an increase in the probability or consequence of any accident previously evaluated.

2. Will the operation of the facility in accordance with the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The exclusion of the MICDS from the definition for "operable incore detector" means the mapping is to be accomplished by the fixed incore detector system only rather than a combination of the two. Since the fixed system provides the same information as the movable and the qualification criteria for Technical Specification 3.3.3.2 remains unchanged, the protection afforded by the limiting condition for operation remains unchanged. Consequently, the requested amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Will the operation of this facility in accordance with these proposed changes involve a significant reduction in the margin of safety?

Response: No

The proposed change narrows the definition in Technical Specification 3.3.3.2 of "operable incore detector" by excluding the alternate means to map a location using the MICDS. In the Bases to the Instrumentation section of the Technical Specifications, it states:

The OPERABILITY of the incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the reactor core.

The accurate representation of the spatial neutron flux distribution in the reactor core is best provided by the fixed incore detectors. The fixed detectors have always been used, since the MICDS is essentially unavailable. Therefore, the operability, as specified in the Bases, remains unchanged by this proposed amendment.

The limiting condition for operation has two requirements to verify incore detection system operability:

1. At least 75% of all incore detector locations shall be OPERABLE, and
2. A minimum of two quadrant symmetric incore detector locations per core quadrant.

These criteria make no distinction as to which detection system is to be employed to verify operability. The protection they provide is unchanged by the proposed amendment to the Technical Specification. Since this change does not affect any of the assumptions or results of the safety analyses, does not diminish the protection provided by the limiting condition for operation in the Technical Specifications, and does not change the bases, it does not involve a reduction in a margin of safety.

Safety and Significant Hazards Determination

Based on the above Safety Analysis, it is concluded that: (1) the proposed changes do not constitute a significant hazards consideration as defined by 10CFR50.92; (2) there is a reasonable assurance that the health and safety of the public will not be endangered by the proposed changes; and (3) this action will not result in a condition which significantly alters the impact of the station of the environment as described in the NRC Final Environmental Statement.

NPF-38-111

ATTACHMENT A