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December 1, 2000
JPN-00-044

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

Subject: James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
License No. DPR-59
Response to Request for Additional
Information Regarding Improved Technical Specifications

References:
1. Mr. Tommy Le's E-mail, Beyond Scope Issue (BSI) - 16, dated September 28, 2000
2. NYPA letter, J. Knubel to USNRC dated March 31, 1999, (JPN-99-008) regarding Proposed Technical Specification Change (License Amendment) Conversion to Improved Technical Specifications.

Dear Sir:

The NRC requested in Reference 1 additional information pertaining to the adequacy of one RHR pump vs two RHR pumps for suppression pool cooling with respect to the James A. FitzPatrick (JAF) Nuclear Power Plant (NPP) Improved Technical Specification (ITS) submittal (Reference 2). Attachment 1 to this letter contains the Entergy Nuclear Operations (ENO), Inc.'s response to the request for additional information discussed above. Attachment 2 is a summary of the commitments contained in Attachment 1.

A001

If you have any questions regarding this matter, please contact Mr. George Tasick at 315-349-6572.

Very truly yours,

Michael R. Kansler
Senior Vice President and
Chief Operating Officer

STATE OF NEW YORK
COUNTY OF WESTCHESTER
Subscribed and sworn to before me
this 1st day of December 2000

Patricia L. Terry

PATRICIA L. TERRY
Notary Public, State of New York
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Commission Expires Jan. 27, 2002

JK:KWK:las
Attachments as stated
cc: next page

cc:

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Attachment 2 to JPN-00-044

Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
Responses to NRC Request for Additional Information
Regarding Improved Technical Specifications

Summary of Commitments

Commitment No.	Description	Due Date
JPN-00-044-01	Revise ITS submittal as stated in JPN-00-044 response.	March 7, 2001

Attachment 1 to JPN-00-044

Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
Responses to NRC Request for Additional Information
Regarding Improved Technical Specifications

BACKGROUND

The purpose of this response is to provide information to the NRC with regards to the NRC's E-Mail from Mr. Tommy Le to Mr. Kenneth Korcz dated September 28, 2000, 5:27PM. Specifically, the E-Mail dealt with information pertaining to the adequacy of one RHR Pump vs two RHR Pumps for suppression pool cooling (i.e., ITS 3.6.2.3). Furthermore, the staff also stated the following in the E-Mail:

> The licensee claims that "The heat removal capability of one RHR pump is sufficient to meet the overall DBA pool cooling requirements for LOCAs and transient events such as turbine trip or stuck open SRV." I want to know from the licensee whether suppression pool cooling temperature can be kept below 140 degrees F when HPCI and RCIC are running.

During a teleconference on October 4, 2000, which discussed the above information, the staff indicated that LER 98-003, dated May 29,1998 (JAFP-98-0184) contained additional information that should be addressed in consideration of the staff's question with regard to this matter.

The E-Mail deals with a subject which was also identified in RAI 3.6.2.3-1 as well as BSI-16, TAC No. MA8135, RAI ITS Bases 3.6.2-3. The licensee responded to the RAI in our letter dated April 4, 2000 (JAFP-00-0078) and to the BSI in our letter dated September 13, 2000 (JPN-00-0036). Furthermore, the licensee provided electronic copies of DOC L2 from ITS 3.6.2.3 as well as UFSAR Sections that support the determination that one RHR pump vs two RHR pumps was acceptable.

The information provided below is consistent with that provided in both our letters. New information is also provided which addresses the staff's concerns regarding LER 98-003 as discussed in our October 4, 2000, teleconference.

DISCUSSION

In a matter related to the licensee's response to the staff's questions with regards to ITS 3.6.2.3, the Bases of ITS 3.6.1.9 will be revised to reflect the number of RHR pumps in each subsystem and more clearly reflect the number of pumps required to be OPERABLE in each subsystem. Specifically, on Bases markup page B 3.6-43, second sentence of the second paragraph of the Bases BACKGROUND Section, the phrase "...an RHR pump..." is replaced with "...two RHR pumps...". Also, Bases markup page B 3.6-44, fourth sentence of Bases LCO Section, the phrase "...OPERABLE when the pump..." is replaced with "...OPERABLE when one of the pumps...".

These additional changes to the Bases Sections of ITS 3.6.1.9 are consistent with the wording in the corresponding Bases Sections of ITS 3.6.2.3. These aspects of the Bases Sections of both Specifications should be similar based on the following:

1. the RHR System has two subsystems with two pumps in each subsystem,

2. both Specifications specify in their LCOs that two subsystems shall be operable, and

3. RHR suppression pool cooling or RHR containment spray, per analysis, only requires one RHR pump to make a subsystem OPERABLE and not two RHR pumps.

The staff stated in RAI 3.6.2.3-1 to see comment number 3.6.1.9-2. The NRC stated in RAI 3.6.1.9-2:

> The ITS markup for ITS SR 3.6.1.9.2, ITS B3.6.1.9 Bases - BACKGROUND, ITS B3.6.1.9 Bases-LCO and ITS B3.6.1.9 Bases SR 3.6.1.9.2 states that only one RHR pump per subsystem is required to be OPERABLE and only tests that one "required" RHR pump. This is not in accordance with the current licensing basis as stated in CTS 3.5.B.1 and 4.5.B.1.a. In addition, no justification is provided in the CTS markup to indicate this change.

On CTS markup page 1 of 2 for ITS Specification 3.6.2.3, CTS 3.5.B.1 has been modified by DOC LA1 and DOC L2. DOC LA1 justifies relocating the requirement specifying the number of required RHR pumps per subsystem from the TS to the Bases. DOC L2 justifies relaxing the relocated requirements from two RHR pumps per subsystem to one RHR pump per subsystem.

Specifically, DOC LA1 relocates the requirement concerning the number of pumps required in each containment cooling subsystem and states that two RHR suppression pool cooling subsystems must be operable and the definition of operability suffices. This DOC also references DOC L2.

DOC L2 justifies the reduction in required operable RHR pumps from two to one per RHR subsystem by stating that the containment analysis does not credit both RHR pumps in each subsystem. Furthermore, the DOC states that one RHR pump and two RHR service water pumps are required to function as described in UFSAR Section 14.6.1.3.3 to satisfy the containment analysis requirements.

UFSAR Section 14.6.1.3.3 , Case C assumes one RHR system loop is operating in the containment cooling mode at partial pumping capacity (i.e., one RHR pump, one RHR HX and two RHR service water pumps with containment spray). At this performance level, the analysis as presented on UFSAR Figures 14.6-6 through 14.6-8 and as summarized on UFSAR Table 14.6-1 demonstrate that the primary containment response does not exceed the design parameters for the primary containment as presented by UFSAR Table 5.2-1.

The ITS Background Bases and the LCO Bases of ITS 3.6.2.3 is consistent with the above description of the RHR system and the analysis as presented in the UFSAR Section 14.6.1.3.3. Specifically, the first sentence of the second paragraph of the Background Bases Section states that:

> Each RHR suppression cooling subsystem loop contains two pumps...

This statement describes the physical components which make up an RHR subsystem and do not necessarily relate to the analysis requirements. The first sentence of the second paragraph of the same Bases subsection states that:

> The heat removal capability of one RHR pump is sufficient to meet the overall DBA pool cooling requirement for loss of coolant accidents (LOCAs) and transient events such as a turbine trip or stuck open safety/relief valve (S/RV).

This sentence describes what the analysis credits (i.e., one RHR pump in a RHR subsystem). Accordingly, the ITS LCO Bases of ITS 3.6.2.3 states in the last sentence of the paragraph:

> An RHR suppression pool cooling subsystem is operable when one of the pumps ... are operable.

Consistent with this LCO requirement, ITS SR 3.6.2.3.2 states:

> Verify each required RHR pump develops a flow rate...

In summary, from an ITS Specification and Bases perspective, each RHR subsystem has heat removal capability in excess of what the analysis requires. Accordingly, while an RHR subsystem as described in the Bases has 2 pumps, the LCO only requires 1 pump to be operable in a subsystem. Furthermore, the ITS SR contains the word "required" which means that only the pump which is being credited as satisfying the LCO requirement must satisfy the SR.

The first sentence of the Bases SR 3.6.2.3.2, which reads as follows:

> Verifying that each RHR pump develops a flow rate ...

will be revised to read as follows:

> Verifying that each required RHR pump develops a flow rate...

This change will make the Bases consistent with the ITS SR with regards to the use of the word "required." This change is also consistent with the use of this same word in SR 3.6.1.9.2 and Bases SR 3.6.1.9.2.

LER 98-003, dated May 29,1998 (JAFP-98-0184) evaluated a design condition whereby an assumed single failure results in a loss of redundant ECCS function (HPCI and ADS) that is required for a small break LOCA. The Licensee stated the following in the LER:

> A JAF NPP calculation (non-safety related, currently in final approval) evaluates suppression pool temperature in response to long term HPCI operation. The result of

> this calculation indicate that, under the conditions described in this scenario, the temperature differential between the ultimate heat sink and the suppression pool water is such that a single loop of RHR operating in suppression pool cooling cannot keep suppression pool water temperature below the maximum value assumed for HPCI operability.

As indicated in the LER the calculation was still being prepared. Due to higher priority work assignments, the calculation was not formally approved until August, 2000. The approved calculation concluded the following:

> For a small break, the maximum Suppression Pool temperature will be less than 150 F at the time the RPV is depressurized to the Core Spray injection pressure, and it was found that HPCI would have to operate only for a short period of time after the Suppression Pool temperature exceeds 140 F.

The LER is correct in that the suppression pool water temperature limit of 140 F is exceeded during HPCI operation; however, this limit is for continuous HPCI operation. The calculation states that the HPCI need only operate for a short period of time once the 140 F temperature limit is exceeded. During short term operation of the HPCI System, suppression pool temperature reaches a maximum limit of approximately 150 F. HPCI is still considered operable under short term operating conditions as long as the suppression pool temperature is below 170 F (per UFSAR Figure 6.4-1, titled "Process Diagram High Pressure Coolant Injection System," Note 3).

Even though the calculation evaluates only HPCI operation, the Licensee has evaluated concurrent operation of HPCI and RCIC and concluded that this operational configuration would still result in a short term operating configuration for both systems such that the maximum suppression pool temperature would not exceed 170 F. Likewise, RCIC is considered operable under short term operating conditions as long as the suppression pool temperature is below 170 F (per UFSAR Figure 4.7-3, titled "Reactor Core Isolation Cooling System Process Diagram," Note 3).

In conclusion, the presentation of ITS Specification 3.6.2.3, which stipulates that one RHR is needed to satisfy the operability requirements of an RHR subsystem and that one RHR subsystem is capable of maintaining the primary containment peak pressure and temperature below design limits, is consistent with the Licensing basis of the JAF NPP as described in the UFSAR, supporting calculations, and LER 98-003 as clarified above.