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October 30, 1998  
JAFP-98-0352

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  
**Explanation of Notes associated with Table 3.2-2 Contained in  
Proposed Technical Specification Amendment**

Reference: NYPA Letter to NRC, dated February 6, 1998 (JAFP-98-0046), "Response to  
Request for Additional Information Regarding Changing Technical  
Specification Table 3.2-2, Core & Containment Cooling System Initiation &  
Control Instrumentation Operability Requirements" (JPTS-96-002)

Dear Sir:

This letter transmits additional information regarding the proposed technical specification  
(TS) amendment (Reference). Attached are explanations as to how the notes for TS Table  
3.2-2 "Core and Containment Cooling System Initiation and Control instrumentation  
Operability Requirements" might be applied under different inoperable instrument channel  
scenarios. The attached explanation is an attempt to provide reasonable  
explanations/scenarios for each note, but is not meant to be all inclusive.

There are no commitments contained in this letter.

If you have any further questions, please contact Art Zarembo at (315) 349-6365.

Very truly yours,

A handwritten signature in black ink, appearing to read 'M. Colomb'.

MICHAEL J. COLOMB

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EXPLANATION OF NOTES FOR TABLE 3.2-2

There are 24 items contained in Table 3.2-2. Below notes 1 through 10 are explained as to how they are applied under different inoperable instrument channel scenarios. The application of note 1 is explained in detail. Notes 2 through 10 explanations are brief and discuss differences between the channels.

Table 3.2-2, Note 1, is for instrumentation inoperability conditions that affect HPCI, RCIC, and SGT functions. The required actions and completion times for the conditions described in Note 1 are contained in Notes 1.A, 1.B, and 1.C. Shown below are several examples and explanations for the conditions, required actions, and associated completion times.

Example 1 (For Note 1 including required actions and completion times 1.A, 1.B, and 1.C.)

Reactor Low-Low Water Level (Table 3.2-2, item 1)

This trip function has four instruments total, two in each of two trip systems. The associated logic is arranged as a one-out-of-two taken twice logic.

- A. With one instrument channel inoperable, one of the two trip systems will not contain the required two operable instrument channels per trip system and Note 1 is applicable as stated in the second column of Table 3.2-2.
1. Note 1.A is met because system initiation capability is maintained.
  2. Note 1.B requires the inoperable instrument channel to be placed in trip within 24 hours (unless the condition is sooner exited due to restoration of the instrument channel to an operable status.) If the instrument channel can not be placed in a trip condition (or tripping the channel is undesirable), action C (Note 1.C) is taken.
  3. Note 1.C requires HPCI and RCIC to be declared inoperable if the required actions and completion times stated in Notes 1.A and 1.B were not met. Note that the reactor Low-Low water level function also affects a portion of the SGT system. The same logic system signal that initiates operation of HPCI provides an open signal to motor operated valves which connect the SGT suction plenum to the HPCI turbine shaft seal exhaust piping. The actual initiation (system starting) of SGT is controlled by other instrumentation, and initiation occurs at the reactor Low water level, prior to HPCI initiation.

EXPLANATION OF NOTES FOR TABLE 3.2-2

These required actions and completion times are identical to those stated in Standard Technical Specifications (Reference 1) LCO 3.3.5.1, Required Actions B.2, B.3, and H.1 for HPCI and LCO 3.3.5.2, Required Actions B.1, B.2, and E.1 for RCIC, except that NUREG 1433 LCO 3.3.5.1 does not address opening of the SGT suction valves for the HPCI turbine shaft seal gland exhaust function. They are also identical to the draft "Improved Technical Specifications" (ITS) being prepared for conversion of the current FitzPatrick Plant Technical Specifications to ITS.

- B. With one instrument channel inoperable in each trip system, both of the two trip systems will not contain the required two operable instrument channels per trip system and Note 1 is applicable as stated in the second column of Table 3.2-2.
1. Note 1.A is met because system initiation capability is maintained.
  2. Note 1.B requires both of the inoperable instrument channels to be tripped within 24 hours (unless the condition is sooner exited due to restoration of both instrument channels to an operable status.) If both instrument channels cannot be placed in a tripped condition (or if tripping of both instrument channels is not desirable), action C (Note 1.C) is entered.
  3. Note 1.C requires HPCI and RCIC to be declared inoperable if the required actions and completion times stated in Notes 1.A and 1.B were not met.

These required actions and completion times are identical to those stated in Standard Technical Specifications (Reference 1) LCO 3.3.5.1, Required Actions B.2, B.3, and H.1 for HPCI and LCO 3.3.5.2, Required Actions B.1, B.2, and E.1 for RCIC, and the draft FitzPatrick Plant ITS.

- C. With two instrument channels inoperable in one trip system, one of the two trip systems will not contain the required two operable instrument channels per trip system and Note 1 is applicable as stated in the second column of Table 3.2-2.
1. Note 1.A is not met because system initiation capability is lost. (One of the two trip systems required for completion of the one-out-of-two taken twice logic cannot be tripped for the reactor Low-Low water level trip function.) The affected systems are required to be declared inoperable within one hour (unless action 1.A. is met sooner due to restoration of one or both instrument channels to an operable status.)
  2. Note 1.B requires both inoperable instrument channels to be tripped within 24 hours (unless the condition is exited sooner due to restoration of both instrument channels to an operable status.) If both instrument channels cannot be placed in a tripped condition (or if tripping both instrument channels is not desirable), action C (Note 1.C) is entered.

EXPLANATION OF NOTES FOR TABLE 3.2-2

3. Note 1.C requires HPCI and RCIC to be immediately declared inoperable if the required actions and completion times in Notes 1.A and 1.B were not met.

These required actions and completion times are identical to those stated in Standard Technical Specifications (Reference 1) LCO 3.3.5.1, Required Actions B.2, B.3, and H.1 for HPCI and LCO 3.3.5.2, Required Actions B.1, B.2, and E.1 for RCIC, and the draft FitzPatrick Plant ITS.

Similar details apply to the remaining notes 2 through 10. The following is a brief explanation for the remainder of the notes and instrument channels.

Notes 2 and 3 are for instrumentation inoperability conditions that affect Core Spray, RHR (LPCI mode), and ADS functions contained in Table 3.2-2, item 2. The notes are applied similarly to note 1 above, except there are time differences for Note 3. Also Note 2 is different from Note 1 in that it is applied to features rather than systems. For item 2 there are 4 instrument channels, 2 per trip system, as indicated in columns 2 and 5 of the table.

Note 4 applies to Table items 3 and 4. Both instrument trip functions are to trip the HPCI turbine and close the RCIC steam supply valve respectively on reactor water high water level. There are a total of 2 Instruments in 1 trip system. Any one inoperable instrument channel will result in a loss of system initiation capability. Note 4.A requires any inoperable channel be restored to operable within 24 hours. (A risk based analysis (Reference 2) determined that an allowable out of service time of 24 hours is acceptable to permit restoration of any inoperable instrument channel to an operable status.) If the channels cannot be restored to an operable status within 24 hours, the associated system is declared inoperable per note 4.B.

Note 5 applies to items 5 and 6. The difference between these items is the number of channels per trip system. Item 5 has 2 trip systems, 1 channel per each trip system, and for item 6 there are 4 channels, 2 per each of the 2 trip systems. Note 5.A. requires the inoperable channels to be placed in the tripped condition within 24 hours. This is similar to above items 3 and 4. However, placing the channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. If it is undesirable to place a channel in trip ( i.e., in cases where placing the channel in trip will result in initiation), then the supported feature is declared inoperable per note 5.B.

EXPLANATION OF NOTES FOR TABLE 3.2-2

For Table item 7, page 67, Note 3 applies and is different from the explanation above for Table item 3 in that there is only one channel per trip system. With a channel inoperable, initiation capability would still be maintained if the channel was placed in trip and note "3.B." or "3.C." would apply depending on the availability of the HPCI or RCIC systems. If for some reason it was undesirable to place the channels in trip (i.e., in cases where placing the channel in trip will result in initiation), or the LCO time expired, the ADS system would be declared inoperable. Upon discovery that initiation capability is lost, note 3.A. would be entered and the ADS system would be declared inoperable within one hour. (As discussed in Reference 1, LCO 3.3.5.1 Bases for Required Action F.1 and F.2 for Functions 4.d. and 5.d., the one hour completion time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.)

Table item 8 requires Notes 1 and 2 to be followed. This trip function initiates Core Spray, RHR (LPCI mode), HPCI, and SGT on Drywell High Pressure. Note 1 applies to the HPCI and SGT systems and Note 2 applies to the Core Spray and RHR systems. These notes are applied to a Table item 8 similarly to the explanation of Notes 1 and 2 for Table items 1 and 2 above.

Note 6 for Table item 9 is different from explanation of Table item 1 above in that it is not desirable to place the channels in trip (to prevent pressurizing low pressure system piping), so they are required to be restored to an operable status within 24 hours. If initiation capability of the supported features (i.e., opening of the Core Spray and RHR injection valves) is inoperable, then the Core Spray or RHR injection valves would be declared inoperable and the associated system LCO would be entered.

Note 6 also applies to Table item 24 and is different from explanation of Table item 1 above in that the channels are required to be restored to an operable status within 24 hours. If the initiation capability for the features in both divisions is lost, within one hour the supported features are required to be declared inoperable. For example: With only one channel inoperable or two channels inoperable in the same trip system, Note 6.A does not apply. The affected channel(s) would be required to be restored within 24 hours per note 6.B. or the associated feature would be declared inoperable per note 6.C. With two channels inoperable, one in each trip system, note 6.A. would apply.

Note 7 for Table items 11 and 12 applies to the low pressure ECCS start timers. There is only one channel per trip system (i.e., 1 channel for each low pressure ECCS pump). Note 7.A requires a single inoperable timer to be restored within 24 hours. Note 7.B requires the associated ECCS subsystems to be declared inoperable within 1 hour, if there were two or more inop pump start timers. For example, the "A" Core Spray pump and the "B" LPCI pump. The associated subsystems would be declared inoperable and the associated LCO's for those systems would be entered. Note 7.C requires that the associated ECCS subsystems be declared inop if the required actions of 7.A and 7.B cannot be met.

EXPLANATION OF NOTES FOR TABLE 3.2-2

Note 8 applies to Table items 13, 14, and 15 and is different from note 3 described above in that inoperable channels are required to be restored to operable within 24 hours versus placed in trip. The difference in the items are the number of channels per trip system. Dependent on the number of inoperable channels and failure mode (whether in the tripped position or not) would determine if initiation capability of ADS would be affected and whether or not note 8.A. applies. If initiation capability is maintained, then Notes 8.B, 8.C, and 8.D apply.

Note 9 applies to Table items 16, 17, and 18. These items are for features that realign the HPCI and RCIC pump suction from the condensate storage tank to the suppression chamber. There are two channels for one trip system for each of these items. If a channel becomes inoperable, note 9.B. applies and 24 hours is allowed to either trip the channel or align the pump suction to the suppression chamber. If the initiation capability of the swap over feature is lost, note 9.A. applies and 1 hour is allowed to either align the suction to the suppression chamber or declare the associated system (HPCI or RCIC) inoperable.

Note 10 applies to Table items 19, 20, 21, 22, and 23. These items are for features that detect a degraded or loss of voltage condition on the 4kV emergency bus. Items 19 and 22 have 4 channels, 2 per 4kV bus. Items 20, 21, and 23 have 2 channels, 1 per 4kV bus. Note 10 requires that inoperable channels be placed in trip within one hour. If this cannot be done or is elected not to be done to prevent starting the Emergency Diesel Generator (EDG), the affected EDG system is declared inoperable and the appropriate LCO for the EDGs would be entered.

References:

1. NUREG-1433, Revision 1, Standard Technical Specifications, General Electric Plants, BWR/4, April 1995
2. NEDC-30936-P-A, BWR Owners' Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation), Part 2, December 1988