

January 22, 2003

Mr. Michael R. Kansler  
Senior Vice President and  
Chief Operating Officer  
Entergy Nuclear Operations, Inc.  
440 Hamilton Avenue  
White Plains, NY 10601

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 2 - REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING IMPROVED TECHNICAL SPECIFICATION (ITS) SECTIONS: 3.3.2, ENGINEERED SAFETY FEATURE ACTUATION SYSTEM (ESFAS) INSTRUMENTATION; ITS 3.3.3, POST ACCIDENT MONITORING INSTRUMENTATION; 3.3.4, REMOTE SHUTDOWN INSTRUMENTATION; 3.3.5, LOSS OF POWER DIESEL GENERATOR (LOPDG) START INSTRUMENTATION; 3.3.6, CONTAINMENT PURGE AND EXHAUST ISOLATION INSTRUMENTATION; 3.3.7 CONTROL ROOM VENTILATION SYSTEM (CRVS) ACTUATION INSTRUMENTATION (TAC NO. MB4739)

Dear Mr. Kansler:

The Nuclear Regulatory Commission staff is reviewing your application for a license amendment dated March 27, 2002, to change the format and content of the current Technical Specifications (TSs) for the Indian Point Nuclear Generating Unit No. 2 to be generally consistent with NUREG-1431, "Standard Technical Specifications Westinghouse Plants Technical Specifications," Revision 2, dated April 2001.

On the basis of our review of the changes proposed for ITS Sections 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.6, and 3.3.7 we find that additional information identified in Enclosure 1 is needed. Also, Enclosure 2 is a list of acronyms that may be used in the RAI.

We have discussed this with your staff and it was agreeable to your staff to respond to this RAI and provide comments within 60 days from receipt of this letter.

M. Kansler

- 2 -

If you have questions regarding this letter or are unable to meet this response schedule, please contact me by phone on (301) 415-1441 or by electronic mail at [gsv@nrc.gov](mailto:gsv@nrc.gov).

Sincerely,

*/RA/*

Guy S. Vissing, Senior Project Manager, Section 1  
Project Directorate 1  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-247

Enclosures: As stated

cc w/encls: See next page

M. Kansler

- 2 -

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REQUEST FOR ADDITIONAL INFORMATION (RAI)

CONCERNING

INDIAN POINT UNIT 2

IMPROVED TECHNICAL SPECIFICATIONS (ITS) REVIEW AND COMMENT

CURRENT TECHNICAL SPECIFICATIONS (CTS) MARKUP AND NUREG-1431 RAIs

3.3.2 - ENGINEERED SAFETY FEATURE ACTUATION SYSTEM (ESFAS)  
INSTRUMENTATION

**RAI 3.3.2-01 (Item 1)**

CTS: 3.5.1

DOC A.33

CTS requires that during specified operations the initiation instrumentation settings limits shall be as stated in Table 3.5-1. In the ITS, the CTS requirements are deleted. DOC A.33 discusses the change in the context of establishing applicability requirements for each ESFAS function in ITS 3.3.2, Table 3.3.2-1. Revise justification A.33 to include discussion regarding initiation instrumentation settings.

**ENTERGY Response:**

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Item 2 - not used

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**RAI 3.3.2-02 (Item 3)**

CTS: 3.5.2

DOC L.2

This DOC writeup includes CTS changes for A.34, that during specified operations the initiation instrumentation setting limits shall be as stated in Table 3.5-1 and for L.2, that by definition, an instrument channel failure shall not be regarded as a channel being tested. Explain their connection/dependency. Also, DOC L.2 does not evaluate the proposed CTS 3.5.2 deletion.

**ENTERGY Response:**

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**RAI 3.3.2-03 (Item 4)**

CTS: 3.5.2 and 3.5.3

ITS: Required Action A.1

Both CTS 3.5.2 and 3.5.3 are marked up to show they represent ITS Required Action A.1.

One, not both CTS requirements can be Required Action A.1.

**ENTERGY Response:**

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**RAI 3.3.2-04 (Item 5)**

CTS: Table 3.5-3, Item 4.a.i (Start Motor Driven Pumps),

Table 3.5-3, Item 4.a.ii (Start Turbine Driven Pumps)

ITS: Table 3.3.2, Function 6.b (Auxiliary Feedwater - SG Water Level - low low)

ITS proposes to represent two CTS items with one ITS function, however, the pump start logics in Column 2 of Table 3.5-3 are different, in addition the logics start different pumps, thus it is unclear how a single ITS function can represent two CTS items. Revise Table 3.3.2-1, Function 6.b into two functions per CTS Table 3.5-3, items 4.a.i and 4.a.ii showing 4.a.i logic is 2 out of 3 in any steam generator and 4.a.ii is 2 out of 3 in each of two steam generators.

**ENTERGY Response:**

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**RAI 3.3.2-05 (Item 6)**

DOC A.30

CTS: Table 3.5-3, Item 4.c, Station Blackout Start Motor-Driven and Turbine Driven Pumps

ITS: Table 3.3.2-1, Function 6.d

CTS nomenclature for AFW start of Motor-Driven and Turbine Driven Pumps on Station Blackout is revised in the ITS to Undervoltage (Emergency Bus 5A or 6A). This nomenclature change is not explained. It appears that the change loses the identity of the trip functions which are better preserved with the NUREG nomenclature, "Loss of Offsite Power Start of AFW Pumps." Provide appropriate change discussion, or cite existing plant documents which generated this proposed change.

**ENTERGY Response:**

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**RAI 3.3.2-06 (Item 7)**

DOC M.1

CTS: 3.5.3, 3.5.4

ITS C.1, D.1, E.1, G.1

In the event of a subsystem instrumentation channel failure, the CTS state that the requirements of Tables 3.5-2 through 3.5-4 (Instrumentation Operating Conditions for Engineered Safety Features) need not be observed "short period of time." In the ITS, a "short period of time" becomes the bypass allowed outage times (AOTs) in ITS Required Actions C.1, D.1, E.1, and G.1. The bypass AOTs contained in the NUREG are based on the staff's SE for Topical Reports WCAP-10271 and WCAP-14333. Provide an SE citation that show these bypass allowances are approved for use at IP2 or submit information required for plant specific use of topical report allowances.

**ENTERGY Response:**

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**RAI 3.3.2-07 (Item 8)**

ITS: Table 3.3.2-1, insert 3.3.2-14-01 (Auxiliary Feedwater)

The insert also proposes note (f), a notation that limits the applicability of AFW start on Trip of Main Boiler Feedwater Pumps to "not required if AFW pump is not required to be Operable" in Modes 1 and 2. These proposed notes deviate from the NUREG presentation for AFW actuation functions. This information is related to design detail and rules for TS usage and therefore represent information that belong in procedures or other owner controlled documents.

**ENTERGY Response:**

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**RAI 3.3.2-08** (Item 9)

CTS Table 3.5-3, item 6, Engineered Safety Feature (SI) Logic  
Provide an L-DOC discussion for deleting this CTS functional unit.

**ENTERGY Response:**

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**RAI 3.3.2-09** (Item 10)

DOC M.5

DOC A.37

CTS: Table 3.5-3, item 4.i

ITS: Table 3.3.2-1, F6.d

Revise the ITS applicability per CTS mark up (Table 3.5-3, item 4.i) to "3 per bus."

**ENTERGY Response:**

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Item 11 - not used

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**RAI 3.3.2-10** (Item 12)

CTS: Table 3.5-4, item 3

ITS: Table 3.3.2-1, Function 5.a

Provide an M-DOC for new function 5.a (Feedwater Isolation on SG Water Level - High, High)

Include a design-basis discussion for MODES, Required Channels, Conditions, Surveillance Requirements and Allowable Values.

**ENTERGY Response:**

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Item 13 - not used

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Item 14 - not used

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**RAI 3.3.2-11** (Item 15)

ITS 3.3.2, Function 1.a, Safety Injection, Manual Initiation

DOC M.2,

DOC A.3.b

Explain the need to discuss actions and CTS when justifying the new 2 channel requirement.

**ENTERGY Response:**

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**RAI 3.3.2-12** (Item 16)

DOCs A.3.c, A.4.c, A.5.c, A.11.c, A.14.c, A.17.c, A.20.c, A.24.c, A.27.c, and L.5

These DOCs discuss topical report allowances that are included in the ITS Conditions and SRs but which are not in CTS. Provide an SE citation or submit information required for plant specific use of topical report allowances.

**ENTERGY Response:**

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**RAI 3.3.2-13** (Item 17)

CTS Table 3.5-3

Provide a new M-DOC to justify the change to ITS Condition "Be in Mode 3 in 6 hours" from CTS Table 3.5-3, be in Shutdown per LCO 3.0.1 in 7 hours.

**ENTERGY Response:**

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**RAI 3.3.2-14** (Item 18)

DOC A.39

Provide further explanation of the CTS markup which deletes Table 3.5-3, Note # which allows a 24-hour bypass time and replaces it with an 8-hour test AOT per Amendment No. 212 . This appears to be unjustified since ITS retains these allowances.

**ENTERGY Response:**

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**RAI 3.3.2-15** (Item 19)

ITS Table 3.3.2-1, Function 2.a, Containment Spray - Manual Initiation

DOC A.10.b

DOC A.10.b and the Bases for Containment Spray - Manual Initiation state 2 channels (pushbuttons) are required like SI manual. Revise ITS to "1 per train, 2 trains."

**ENTERGY Response:**

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**RAI 3.3.2-16** (Item 20)

CTS 4.7

ITS SR 3.3.2.6

DOC A.19.e, Manual Main Steam Line Isolation

Provide additional justification to show that CTS 4.7 required testing of main steam stop valves is equivalent to ITS SR 3.3.2.6 TADOT test requirement of the instrument loop.

**ENTERGY Response:**

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Item 21 - not used

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Item 22 - not used

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**RAI 3.3.2-17** (Item 23)

DOC A.35

CTS 3.5.3

DOC A.35 does not discuss deleting the CTS 3.5.3 allowance to reduce the minimum degree of redundancy. Provide additional justification.

**ENTERGY Response:**

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Item 24 - not used

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Item 25 - not used

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**RAI 3.3.2-18 (Item 26)** - BSI

CTS Table 3.5-1, Instrument Setting

Changes to instrument settings require review and comment on proposed limits and supporting documentation for the Allowable Values in Table 3.3.2-1.

**ENTERGY Response:** (under separate staff review)

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**RAI 3.3.2-19 (Item 27)**

CTS Table 3.5-3, SI High Steam Flow

ITS Table 3.3.2-1, Function 1.f, Function 1.g

DOC M.3

Provide SE references for the DOC M.3 citation of the 72-hour repair AOT per WCAP-14333 and 92-day STI per WCAP-10271.

**ENTERGY Response:**

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Item 28 - not used

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**RAI 3.3.2-20 (Item 29)**

DOC A.9.b

Editorial changes to the DOC, last paragraph. Revise "Tave Low" to "Steam Line Pressure" and "ITS 3.3.2, Function 1.f to "ITS 3.3.2, Function 1.g."

**ENTERGY Response:**

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**RAI 3.3.2-21 (Item 30)**

The referenced DOCs below contain CTS mark-up errors or there is a DOC discussion mismatch with DOC Summary.

DOC A.3.b, A.13.b, A.16.b, A.19.b: "In conjunction with this change. . . ."

DOC A.6.d, A.7d, A.8d, A.9.d, A.12.d, A.18.d, A.21.d, A.22.d, A.23.d: . . . Completion Time "or complete loss of manual initiation function," CTS Table . . .

DOC A.15 - Justification for Change is not applicable to the DOC

DOC A.20.d, A.24.d, A.27.d: "CTS 3.5.3, in conjunction with" is not applicable to Automatic Actuation Logic

**ENTERGY Response:**

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**RAI 3.3.2-22 (Item 31)**

DOC A.5.e, Safety Injection - Containment Pressure High

Provide a DOC for adopting the ITS SR 3.3.2.7 Note.

**ENTERGY Response:**

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**RAI 3.3.2-23 (Item 32)**

DOC A.3.e, Safety Injection - Manual

Provide a DOC for adopting the ITS SR 3.3.2.6 Note.

**ENTERGY Response:**

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Item 33 - not used

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Item 34 - not used

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**RAI 3.3.2-24 (Item 35)**

DOC A.8

DOC A.9

CTS Surveillance Table 4.1-1, item 24 (Turbine 1<sup>st</sup> Stage Pressure) is translated in the ITS as Table 3.3.2-1, footnote (b) which is an allowable value trip setpoint for High Steam Flow in Two Steam Lines (Table 3.3.2-1 functions 1.f and 1.g). This discussion is unclear. CTS Table 4.1-1 does not contain instrument trip setpoints or allowable values.

**ENTERGY Response:**

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**RAI 3.3.2-25 (Item 36)**

DOC A.8.e, A.9.e, A.22.e and A.23.e

The DOC Summaries for these DOCs explain Surveillance Requirements for ITS 3.3.2, Function 1.f, Safety Injection - High Steam Flow in Two Steam Lines Coincident with Tave-Low. The DOC for these DOCs reference CTS Table 4.1-1, Item #4 (Reactor Coolant Temperature (i.e., Tave) and CTS Table 4.1-1, Item #23 (Steam Line Pressure) as requiring a channel check every shift. Explain how items #4 and #23 are channel inputs for the IP2 designed SI on High Steam Flow in Two Steam Lines Coincident with either Tave or Steam Line Pressure Low.

**ENTERGY Response:**

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**RAI 3.3.2-26 (Item 37)**

DOC A.8.e and DOC A.9.e

DOC M.7

The DOC Summaries for these DOCs explain Surveillance Requirements for ITS 3.3.2, Function 1.f, Safety Injection - High Steam Flow in Two Steam Lines Coincident with Tave-Low. The DOC discussion states that CTS Table 4.1-1 does not identify any explicit requirement for testing the high steam flow function. ITS adds SRs for testing high steam flow. Explain why the proposed tests are appropriate. WCAP-10271 and WCAP-14333 citations for SR frequencies are not part of the current license basis and need to be established by analysis with a submittal from IP2 and approval by the staff.

**ENTERGY Response:**

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**RAI 3.3.2-27 (Item 38)**

DOCs A.12, A.18 and A.21

DOC M.6

CTS requirements to perform a channel check every 24 hours is changed in the ITS to a 12-hour channel check for DOCs A.12, A.18, and A.21. The Justification for Change discussion states that the periodic verification of the Operability of the Containment Pressure (Wide Range) input to the ESFAS containment isolation functions are consistent with the assumptions in WCAP-10271 and WCAP-14333. Explain the topical report assumptions for the 12-hour channel check frequency.

**ENTERGY Response:**

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**RAI 3.3.2-28 (Item 39)**

DOC A.28.e

ITS 3.3.2, Function 6.b, Auxiliary Feedwater - Steam Generator Level - low-low

Revising the channel test requirement to "monthly" from "refueling" requires a new M-DOC for this proposed change in the ITS submittal.

**ENTERGY Response:**

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**RAI 3.3.2-29 (Item 40)**

DOC M.5

The ITS Bases contains a mismatch on page B 3.3.2-29-03 with the text of DOC M.5 in describing the signal coincidence for starting the motor driven and turbine driven feedwater pumps.

**ENTERGY Response:**

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**RAI 3.3.2-30 (Item 41)**

DOC A.30.c - Undervoltage AFW Pump Start

For a loss of redundancy for the

DOC A.30.c explains the Required Actions for one inoperable channel. The JFC states the 48-hour allowable out of service time to restore an inoperable channel is acceptable based on current licensing basis. The JFC also states that the IP2 plant design for this Function is not addressed in WCAP-10271, even after requirement were revised to require 1 channel per bus and 2 busses. The JFC also states that the AOTs and surveillance test intervals are more conservative than CTS requirements, and that accident scenarios are protected by functions addressed in WCAP-10271 and the requirements specified in ITS 3.3.2 are consistent with the plant design.

Discuss the JFC statement that a "48 hour allowable out of service time to restore an inoperable channel is acceptable based on current licensing basis." The basis for the proposed use of the WCAP-10271 is not provided in DOC M.5.

**ENTERGY Response:**

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**RAI 3.3.2-31 (Item 42)**

DOC A.30.d - Undervoltage AFW Pump Start

DOC A.30.d repeats DOC A.30.c discussion. DOC A.30.d does not discuss CTS requirements

for failure to place a channel in trip. Nor is the 48-hour trip requirement evaluated. Provide the additional justification.

**ENTERGY Response:**

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Item 43 - not used

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Item 44 - not used

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**RAI 3.3.2-32 (Item 45)**

DOC A.31.c, one inoperable channel

DOC A.31.d, two inoperable channels

Revise proposed Condition H (one inoperable channel) to adopt the STS required actions for this condition. Provide a technical basis for a 48-hour channel repair AOT. Adopt STS Actions J.1 and J.2 for one Main Boiler Feedwater Pump trip channel inoperable because the 24-month TADOT is the only required surveillance and thus any need for actions other than for a random active failure during operation is moot.

**ENTERGY Response:**

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**RAI 3.3.2-33 (Item 46)**

DOC A.31.f - Allowable Value for Trip of Main Boiler Feedwater Pump

NUREG markup shows that the "AV" is "tbd." Explain the A.31.f write-up.

**ENTERGY Response:**

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Item 47 - not used

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**RAI 3.3.2-34 (Item 48)**

CTS 4.8.A.1

ITS SR 3.3.2.5 & SR 3.3.2.6

The CTS requirements in CTS 4.8.A.1 are shown to be an instrument channel test, but it appears to be an ESF (AFW) system actuation test. Show where CTS 4.8.A.1 is referenced in CTS Table 4.1-1.

**ENTERGY Response:**

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### 3.3.3 - POST ACCIDENT MONITORING SYSTEM INSTRUMENTATION

#### General Comment

Resolution of the items that follow will require revising and resubmitting the documentation for ITS LCO 3.3.3. Therefore, the staff will perform its acceptance review of the associated LCO 3.3.3 Bases after revised TS and Bases are submitted.

#### **RAI 3.3.3-01 (Item 1)**

CTS: Table 3.5-5

ITS : Table 3.3.3-1, Functions 1, 2, 13, 21, 22

DOC: A.3, A.4, A.19, A.20, A.24

PAM instrumentation functions in Table 3.3.3-1 for Core Exit Temperature (Functions 15,16, 17, and 18) specify 4 required channels. As proposed, the channel requirements do not account for monitoring the core radial temperature gradient. Revise the table entries for these functions to account for monitoring radial temperature gradients using qualified thermocouples by specifying each quadrant contain required channels as "2 trains (c)" with footnote (c) stating that a train consists of 2 core exit thermocouples. Also, PAM instrumentation functions in Table 3.3.3-1 for Steam Generator Water Level (Wide Range) (Function 13), Auxiliary Feedwater Flow (Function 19), RCS Subcooling Margin Monitor (Function 21), and RWST Level (Function 22) instrumentation specify requirements for only 1 channel to be operable. Provide TS for redundant channels of these functions including Conditions and Required Actions for the required redundant channels capability for these functions not met.

#### **ENTERGY Response:**

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Item 2 - not used

---

Item 3 - not used

---

Item 4 - not used

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#### **RAI 3.3.3-02 (Item 5)**

CTS: Table 4.1-1, Table 3.5-5

ITS: Table 3.3.3-1

DOC: M.1

The proposed changes to CTS will add requirements for 2 channels of Containment Pressure (wide range). If 2 or more channels are inoperable, the ITS proposes a 7-day AOT with an alternate monitoring method requirement if the channel is inoperable past 7 days. The STS provide alternate monitoring for loss of instrument function if at least one instrument channel cannot be restored to operable status if the instrument detectors are inaccessible during plant operation. Revise the DOC and proposed ITS to require a plant shutdown if 2 channels of ITS Function 8, Containment Pressure (wide range) are inoperable for more than 7 days.

#### **ENTERGY Response:**

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Item 6 - not used

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Item 7 - not used

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**RAI 3.3.3-03** (Item 8)

CTS: Table 4.1-1, Table 3.5-5

ITS: Table 3.3.3-1

DOC: n/a

NUREG markup of Required Action C.1 adds the phrase "all but" to the requirement to "restore one channel to operable status." Delete this change to the ITS; it is unnecessary based on Note 2 to ITS Actions which permits separate condition entry for each Function.

**ENTERGY Response:**

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Item 9 - not used

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**RAI 3.3.3-04** (Item 10)

CTS: 3.3.A.1.k, Table 4.1-1

ITS: Table 3.3.3-1, LCO 3.5.4

DOC: L.4

The ITS proposes to decrease the required Calibration Frequency of the RWST Level indication from every 92 days to every 24 months, whereas the ITS SR 3.5.4.4 will retain existing TS for calibration of the RWST Level alarms every 92 days. Provide a technical basis for applying different test intervals to test of the level instrument channel components. Explain how the two tests can be distinct from one another.

**ENTERGY Response:**

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**RAI 3.3.3-05** (Item 11)

CTS: Table 3.5-5

ITS: Table 3.3.3-1

DOC: L.6, M.5

The ITS proposes only one Subcooling Margin Monitor instrument channel required to be operable. The staff notes the following current design basis for PAM subcooling margin instrumentation:

- |         |                                                                                                                                                                                                                                                                                                                           |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8/30/85 | Licensee declared RCS Subcooling Margin monitor to be Type A, but Category 2 because the monitor is not seismically qualified and there is not a redundant monitor.                                                                                                                                                       |
| 9/12/86 | Licensee stated that the RCS Subcooling Margin monitor is a single readout and a second readout is provided by the SAS/Safety Parameter Display System. However, these are not seismically qualified. Inputs to existing RCS Subcooling Margin monitor and SAS/SPDS are redundant and qualified. During and after seismic |

events qualified RCS pressure and temperature instrumentation can be used.

- |          |                                                                                                                                                                                                      |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10/18/88 | Upgrade to redundant SMM scheduled for 1990.                                                                                                                                                         |
| 9/27/90  | Staff SER accepted monitor and computer not seismically qualified and use of RCS pressure and temperature used to calculate subcooling margin based on staff acceptance for NUREG-0737, Item II.F.2. |

Provide safety basis discussion to show that post-accident management objectives can be met, as required by RG 1.97, without a redundant Subcooling Margin Monitor instrument channel required to be operable. Include discussion regarding any reduction in commitment that may result from proposed TS.

**ENTERGY Response:**

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**RAI 3.3.3-06 (Item 12)**

CTS: n/a

ITS: Table 3.3.3-1

DOC: M.5

The ITS proposes only one RWST Level instrument channel is required to be operable. The staff notes the following current design basis for PAM RWST instrumentation:

- |         |                                                                                                                                 |
|---------|---------------------------------------------------------------------------------------------------------------------------------|
| 8/30/85 | Licensee declared RWST Level to be Type A, but Category 2 because it was not redundant.                                         |
| 9/12/85 | Licensee stated that upgrade is required to meet Category 1 requirements and that a second qualified channel will be installed. |

Provide a safety basis evaluation to show that post-accident management objectives can be met as required by RG 1.97 without an operable redundant RWST level instrument channel.

**ENTERGY Response:**

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### 3.3.4 - REMOTE SHUTDOWN INSTRUMENTATION

#### **RAI 3.3.4-01 (Item 1)**

CTS: none

DOC: M.4, M.5

ITS: SR 3.3.4.2, SR 3.3.4.3

DOC Summary M.4 states that requirements are added (SR 3.3.4.2) to verify every 24 months that each remote shutdown control circuit and transfer switch performs the intended function.

DOC Summary M.5 states that requirements are added (SR 3.3.4.3) to perform a Channel Calibration every 24 months on each remote shutdown instrumentation channel with the exception of the neutron detectors. DOCs M.4 and M.5 justify the addition of requirements to perform the noted surveillances. Provide revised DOCs that include justification for the specified frequency since the CTS do not include these specific surveillance requirements.

CTS Table 4.1-1.

**ENTERGY Response:**

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#### **RAI 3.3.4-02 (Item 2)**

CTS: none

DOC: none

ITS: none

The ITS Bases Table 3.3.4-1 specifies that the Reactor Trip & Bypass Breaker Trip Switch; or 21 MG Set & 22 MG Set Trip Switch remote shutdown Function (1.c) are required to be operable. The ITS proposes to delete SR 3.3.4.4, "Perform TADOT of the reactor trip breaker open/closed indication" which specifies an 18-month frequency. This proposed STS deviation is not evaluated. Show that the proposed ITS Surveillance Requirements for Bases Table 3.3.4-1, Function 1.c will verify operability of the reactor trip breakers open and closed indication to ensure plant remote shutdown requirements and capabilities are met.

**ENTERGY Response:**

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#### **RAI 3.3.4-03 (Item 3)**

Revise the IP2 Bases to be consistent with IP3 Remote Shutdown Bases.

**ENTERGY Response:**

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#### **RAI 3.3.4-04 (Item 4)**

Revise Insert 3.3.4-1-01 to include "Reference 2"

**ENTERGY Response:**

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#### **RAI 3.3.4-05 (Item 5)**

Bases Table B 3.3.4-1, Remote Shutdown Instrumentation and Controls lists required GDC-19 Functions/Instruments or Control Parameters in the first column and the required number of Functions in the second column. The Reviewers Note to Bases Table B 3.3.4-1 permits a requirement of only one channel per a given Function if the unit has justified such a design, and the Nuclear Regulatory Commission's SER accepted the justification. Provide a citation of an NRC SER for IP2 approving only one channel of a given GDC-19 function for those Bases

Table B 3.3.4-1 functions with one required channel, otherwise submit appropriate justification for staff review. Clarify the Bases references in Bases insert 3.3.4-1-01.

**ENTERGY Response:**

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### 3.3.5 - LOSS OF POWER DIESEL GENERATOR (LOP-DG) START INSTRUMENTATION

#### General Comment

Resolution of the comments below will probably require revising and resubmitting the documentation for ITS LCO 3.3.5. Therefore, the staff will perform an acceptance review of the associated LCO 3.3.5 Bases following resolution of the items below.

#### **RAI 3.3.5-01 (Item 1)**

CTS: Table 3.5-3, Function 3.a, 480 V Emergency Bus Undervoltage

ITS : Required Actions

DOC: M.1, A.3.c, A.3.d

The proposed LOP DG Start Instrumentation LCO requires one of two installed undervoltage channels to be operable. These proposed limits are consistent with current TS. However, the proposed ITS Actions are a relaxation of CTS Actions and the actions represent an unapproved generic change to NUREG-1431 required actions for undervoltage instrumentation when the LCO is not met. The staff finds the proposed licensing basis changes unacceptable. For undervoltage instrumentation channels, the staff notes that the proposed ITS permit startup and operation with one of two undervoltage channels inoperable on all 480 volt buses. The ITS also relax current TS required actions to permit 1 hour to restore an inoperable channel (during which time no operable LOP DG Start channels would be monitoring bus voltage) and add required actions to declare the supported AC power source inoperable for the degraded conditions specified in proposed ITS Condition C. The DOCs do not provide sufficient safety analysis for proposed TS changes. Revise the ITS to require a plant shutdown for one Undervoltage Function channel inoperable, current TS Table 3.5-3 action, for Function 3.a.

#### **ENTERGY Response:**

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#### **RAI 3.3.5-02 (Item 2)**

CTS: 3.5.1

ITS : Applicability requirements

DOC: A.3.a

This DOC Category is Administrative; no technical changes. This DOC should be revised to clearly discuss the administrative changes that are proposed by the submittal in order to retain CTS applicability requirements in the ITS. All other applicability requirements need to be discussed in separate DOCs.

#### **ENTERGY Response:**

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#### **RAI 3.3.5-03 (Item 3) - BSI**

CTS: Table 3.5-1, Item 8.a, 480 V Emergency Bus Undervoltage (Loss of Voltage)

ITS: Allowable Values and Setpoints

DOC: A.3.f, A.4.f, L.1

ITS proposed Allowable Value trip setpoint are under development by the licensee to be submitted in a future revision to ITS.

**ENTERGY Response:** (under separate staff review)

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**RAI 3.3.5-04 (Item 4)**

CTS: Table 3.5-3, Function 3.b

ITS: 3.3.5, degraded voltage function

DOC: A.4.b

This DOC explains the requirements for the number of channels. There is a change to the number of required channels to two channels per trip logic from one channel per trip logic. The proposed TS is more restrictive than CTS requirements. Revise the submittal to provide appropriate discussion.

**ENTERGY Response:**

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**RAI 3.3.5-05 (Item 5)**

CTS: Table 3.5-3, Function 3.b

ITS: 3.3.5, degraded voltage function

DOC: A.4.b

This DOC makes a statement that a 480 V undervoltage channel and a 480 V degraded voltage channel will trip when an undervoltage signal from any two of the three 480 V bus phases exceeds the specified limits. The DOC also states that a channel is inoperable when the sub channel for any phase is inoperable. Explain the proposed ITS requirements for the 2 out-of-3 bus phase trips and the sub channel phase operability requirements. Explain how the trip logic design supports CTS action completion times.

**ENTERGY Response:**

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**RAI 3.3.5-06 (Item 6)**

CTS: Table 3.5-3, Function 3.b, Note (3)

ITS: 3.3.5, degraded voltage function

DOC: A.4.c, A.4.d, M.2

This DOC explains the required actions for one inoperable channel. The description of change states that the Note (3) specified Actions can be interpreted to be consistent with ITS action to trip an inoperable channel within 1 hour and the action to declared the associated DG inoperable. Note (3)(a) and (3)(b) discuss actions if the 138 kV sources of offsite power and the 13.8 kV source of offsite power are available. Clarify how the ITS proposed actions are based on CTS interpretations. Include discussions of which parts of Table 3.5-3, Note (3) are translated into ITS Actions B.1 and C.1. Evaluate any parts of the CTS Table Note (3) that are deleted from ITS.

**ENTERGY Response:**

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**RAI 3.3.5-07 (Item 7)**

CTS: Table 4.1-1, No. 29.c

ITS: none, relocated detail

DOC: LA.2

Provide discussion in DOC LA.2 which states the safety basis for proposing the relocation of the affected CTS details.

**ENTERGY Response:**

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### 3.3.6 - CONTAINMENT PURGE AND EXHAUST ISOLATION INSTRUMENTATION

#### General Comment

Resolution of the items that follow will require revising and resubmitting the documentation for ITS LCO 3.3.6. Therefore, the staff will perform its acceptance review of the associated LCO 3.3.6 Bases after revised TS and Bases are submitted.

#### **RAI 3.3.6-01 (Item 1)**

CTS: CTS 3.8.A.1 and CTS 3.8.B.11

ITS : ITS 3.3.6 Applicability, Table 3.3.6-1 footnote (a)

DOC: L.1, A.3.a, A.4.a

JFD: DB.1, X.1

This RAI is based on RAI 3.6-1. RAI 3.6-1 noted inconsistencies with approved TSTF-51 for operability requirements "during movement of recently irradiated fuel." The Entergy (IP2) response to RAI 3.6-1 dated October 6, 2002, committed to incorporate NUREG-1431 requirements that are applicable only during movement of "recently irradiated fuel." The response concluded IP2 ITS 3.3.6, Containment Purge System and Pressure Relief Line Isolation Instrumentation will be revised. Provide revised ITS 3.3.6 Applicability, Actions and Table 3.3.6-1 in response to RAI 3.6-1.

#### **ENTERGY Response:**

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#### **RAI 3.3.6-02 (Item 2)**

CTS: 3.1.F.1.a(6)(a)

ITS : Table 3.3.6-1, Function 2.a, Gaseous monitors

DOC: A.4.b

FSAR Figure 7.2-12 shows that containment ventilation is isolated by radiation monitors R-41, R-42, and R-44. FSAR Table 7.2-1, item 17, "Containment or plant ventilation activity" states that a one out of three (1/3) coincidence on High-High activity signal from the containment particulate or the plant ventilation radiogas detector directly actuate the containment purge supply and exhaust valves and the containment pressure relief valves. FSAR Sections 11.2.3.2.2 and 11.2.3.2.3 discuss the containment air monitor and plant vent air monitors, respectfully. FSAR 11.2.3.2.2 states that R-41 and R-42 isolate the containment purge vent and exhaust and pressure relief valves. FSAR 11.2.3.2.3 states that R-44 initiates a containment ventilation isolation as described in FSAR 11.2.3.2.2. The containment isolation on the gaseous R-44 monitor is not in the CTS and not in the ITS. Revise Table 3.3.6-1 to include R-44. In addition, DOC A.4.b Justification for Change should be revised to provide applicable justification for the DOC Summary.

#### **ENTERGY Response:**

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#### **RAI 3.3.6-03 (Item 3)**

CTS: 3.5.2

ITS: LCO 3.3.6 Applicability

DOC: A.4.a

The CTS markup shows CTS 3.5.1 as the basis for requiring Modes 1, 2, 3, and 4 applicability for ITS LCO 3.3.6 Function 4.a. However, it appears that CTS 3.5.2 and CTS 3.1.F.1.a govern

the applicability for Table 3.5-4, Function 4.a. Revise the discussion in DOC A.4.a to reflect CTS applicability requirements for containment purge/pressure relief isolation.

**ENTERGY Response:**

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**RAI 3.3.6-04 (Item 4)**

CTS: 3.5.2

ITS: LCO 3.3.6 Applicability

DOC: A.4.a

Description of Change discussion regarding CTS 3.8.A.1 and CTS 3.8.B.11 should be moved to DOC L.1

**ENTERGY Response:**

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Item 5 - not used.

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Item 6 - not used.

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**RAI 3.3.6-05 (Item 7)**

CTS: Table 3.5-4

ITS: 3.3.6, Functions 2.a and 2.B (R-42/R-41)

DOC: A.4.f

The description of change states that "isolation on a high radiation signal is a backup that is not directly credited in the accident analysis" and the DOC concludes that placing the allowable values for the Table 3.3.6-1 Functions in the IP2 Offsite Dose Calculation Manual is not a change to the existing requirement and is administrative. The STS require allowable values in TS to ensure channel operability limits are met during the channel calibration. Placing the TS operability limit for a containment ventilation isolation signal in a licensee-controlled document is not consistent with the provisions of 50.36. TS operability limits such as Allowable Values that are cycle-specific may, however, be relocated to licensee-controlled documents when there is prior review and approval of changes to those limits. Revise Table 3.3.6-1 to include TS Allowable Values.

**ENTERGY Response:**

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**RAI 3.3.6-06 (Item 8)**

CTS: LCO 3.3.2, Function 3.a, Phase A ESFAS signal

ITS: LCO 3.3.6, Function 3, Purge and Pressure Relief Isolation on Phase A

DOC: A.5, DB.1

DOC A.5 description of change states that the addition of the ESFAS actuation signal to LCO 3.3.6 is an administrative change with no impact on safety because this is an explicit statement of an existing requirement. Since the ITS surveillance requirements for ESFAS include Master Relay testing (SR 3.3.2.3) and Slave Relay Testing (SR 3.3.2.5) and addition of these requirements is also considered an administrative change to CTS, then it follows that current TS also require testing the master and slave relays for radiation monitoring functions in Table

3.3.6-1. Justify why the STS master and slave relay tests, ITS SR 3.3.6.3, and SR 3.3.6.5 respectfully, are not included in LCO 3.3.6.

**ENERGY Response:**

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**RAI 3.3.6-09 (Item 9)**

CTS: Table 4.1-1, Item 19

ITS: SR 3.3.6.2

DOC: L.2, A.3.e

Current TS require a monthly test of the Process Radiation Monitoring System. The CTS monthly test is translated as requiring a 31-day COT. DOC A.3.e infers that the CTS monthly test includes a requirement to perform a monthly actuation logic test and that this test is maintained in ITS as SR 3.3.6.2, however the test frequency is extended to 31 days on a staggered test basis as justified by DOC L.2. Provide documentation that current plant procedures require a monthly actuation logic test of both trains of logic that actuate containment purge and pressure relief isolation instrumentation. Revise DOC L.2 to support the conclusion that adopting a 31-day staggered test basis actuation logic test interval is based on instrument reliability documentation for IP2 instrumentation.

**ENERGY Response:**

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### 3.3.7 - CONTROL ROOM VENTILATION SYSTEM (CRVS) ACTUATION INSTRUMENTATION

#### General Comment

Resolution of the items that follow will require revising and resubmitting the documentation for ITS LCO 3.3.7. Therefore, the staff will perform its acceptance review of the associated LCO 3.3.7 Bases after revised TS and Bases are submitted.

#### **RAI 3.3.7-01 (Item 1)**

CTS: CTS 3.8.A.1 and CTS 3.8.B.11

ITS : ITS 3.3.7 Applicability, Table 3.3.7-1 footnote (a)

STS: Condition D

JFD: X.1

This RAI is based on RAI 3.6-1. RAI 3.6-1 noted inconsistencies with approved TSTF-51 for operability requirements "during movement of recently irradiated fuel." The Entergy (IP2) response to RAI 3.6-1 dated October 16, 2002, committed to incorporate NUREG-1431 requirements that are applicable only during movement of "recently irradiated fuel." The response concluded IP2 ITS 3.3.7, CRVS Actuation Instrumentation will be revised. Provide revised ITS 3.3.7 Applicability, Actions and Table 3.3.7-1 in response to RAI 3.6-1.

#### **ENTERGY Response:**

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#### **RAI 3.3.7-02 (Item 2)**

CTS: Table 4.1-1, Item 19a

ITS: Table 3.3.7-1, Function 1

DOC: R.21

DOC R.21 proposes relocating CTS Table 4.1-1, Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels, Item No. 19a, Area Radiation Monitoring System to a licensee-controlled document because the CTS do not meet requirements for retention in improved TS. ITS Section 3.3.7 for CRVS Actuation Instrumentation uses the same Table 4.1-1 entry, Item No. 19a, to show that this CTS requirement is translated into ITS Table 3.3.7-1, Function 1, Control Room Air Intake Radiation (R-38-2). Reconcile the LAR request to both relocate and retain the same CTS requirement.

#### **ENTERGY Response:**

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#### **RAI 3.3.7-03 (Item 3)**

CTS: n/a

ITS: Bases Background

DOC: n/a

The CRVS Actuation System is described in the Bases for LCO 3.7.10, "Control Room Ventilation System." LCO 3.7.10 Bases state that the original CRVS design was not required to meet single failure criteria but has been upgraded so that the pressurization mode (mode 2) meet the design basis single active failure criterion. To meet this criterion, the CRVS is divided into two trains. SI is a proposed CRVS Actuation System function in Table 3.3.7-1. This function is also divided into two trains. Provide discussion for not including Actuation logic and Actuation Relays and manual initiation TS requirement in Table 3.3.7-1 to support actuation of the trains of CRVS using SI or radiation monitor signals. Additionally, the SI actuation signals are redundant and therefore protected from a single active failure. Is there a radiation monitor

which is redundant to R-38-2? The staff notes that the Bases for CRVS references control room monitor (RE-38-2) as required by LCO 3.3.7. Is RE-38-2 a redundant monitor to R-38-2?

**ENTERGY Response:**

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**RAI 3.3.7-04 (Item 4)**

CTS: n/a

ITS: n/a

DOC: n/a

The Bases state that a SI signal or a high radiation signal from the control room area monitor (RE-38-2) as required by LCO 3.3.7 will automatically place the CRVS in the pressurization mode (mode 2). In the pressurization mode, either of the two filter booster fans (CCRBF-21 or CCRBF-22) will maintain the control room at a slight positive pressure relative to adjacent areas. Identify any CRVS actuation instrumentation failures that could render one CRVS train inoperable.

**ENTERGY Response:**

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**RAI 3.3.7-05 (Item 5)**

CTS: Table 4.1-1, Item 19

ITS: SR 3.3.6.2 (DOC L.2, A.3.e)

DOC: n/a

Current TS require a monthly test of the Process Radiation Monitoring System (item 19). In LCO 3.3.6, the CTS monthly test is translated as requiring a 31-day COT. LCO 3.3.6 DOC A.3.e infers that the CTS monthly test includes a requirement to perform a monthly actuation logic test and that this test is maintained in ITS as SR 3.3.6.2, however the same test frequency exists for LCO 3.3.7 without including a monthly actuation logic test for the CRVS Actuation Instrumentation. Provide documentation that current plant procedures do not require a monthly actuation logic test for CRVS Actuation Instrumentation.

**ENTERGY Response:**

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**RAI 3.3.7-06 (Item 6)**

CTS: LCO 3.3.2, Function 1, SI ESFAS signal

ITS: n/a

DOC: n/a

In ITS LCO 3.3.6 DOC A.5 describes the addition of Purge and Pressure Relief Isolation on Phase A as an administrative change with no impact on safety because this is an explicit statement of an existing requirement. In ITS LCO 3.3.7 an SI actuation of CRVS function is added to Table 3.3.7-1. Provide a DOC for this change to CTS. Additionally, since the ITS SRs for ESFAS include Master Relay testing (SR 3.3.2.3) and Slave Relay Testing (SR 3.3.2.5) and addition of these testing requirements is also considered an administrative change to CTS, then it follows that current TS would also require testing the master and slave relays for radiation monitoring functions in Table 3.3.7-1. Justify why the STS master and slave relay tests, STS SR 3.3.7.4 and SR 3.3.7.5, respectfully, are not included in LCO 3.3.7.

**ENTERGY Response:**

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**RAI 3.3.7-07 (Item 7)**

CTS: 3.3.H.2

ITS: Action A

DOC: L.2, M.1

JFD: DB.1

CTS 3.3.H.2 requires that the control room ventilation system (CRVS) be operable. There are no specified instrumentation TS requirements for CRVS, therefore, the interpretation of CTS is that 3.3.H.2 also applies to the supporting instrumentation for CRVS actuation. According to CTS 3.3.H.2 the plant must be shutdown when the requirements are not met and not restored within the stated 3.5-day completion time. DOC L.2 proposes to eliminate the requirement to shutdown if the CRVS is placed in the filtered pressurization mode.

CTS 3.3.H.1 requires that CRVS, including actuation instrumentation, is operable. The licensee states there is no requirement for redundancy for either the CRVS or the actuation instrumentation because CTS 3.3.H.2 establishes requirements when the CRVS is not operable but does not distinguish between a loss of CRVS redundancy and a loss of CRVS functions. Therefore, CTS 3.3.H.2 specifies no Required Actions for a loss of CRVS redundancy and provides an allowable AOT of 3.5 days for a loss of CRVS function.

DOC M.1 proposes changes to the STS for CRVS. STS specify a 7-day AOT to place a train in operation for loss of CRVS actuation instrumentation or actuation train redundancy. STS specify an immediate action to place CRVS in operation and enter the CRVS LCO for one train inoperable or place both CRVS trains in operation for loss of CRVS actuation instrumentation or actuation train function.

ITS LCO 3.7.10 requires that two CRVS trains are operable to provide redundant CRVS capability; however, ITS LCO 3.3.7, maintains the licensee's interpretation for a single train of CRVS actuation instrumentation inoperable. Thus, ITS LCO 3.3.7, specifies a new AOT of 72 hours when one or both CRVS actuation instrumentation functions are inoperable. Provide an FSAR citation to justify the DOC M.1 statement that the requirement for a single train of CRVS actuation instrumentation is consistent with the IP2 design.

**ENTERGY Response:**

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**RAI 3.3.7-08 (Item 8)**

CTS: n/a

ITS: 3.3.7, Function 1 (R-38-2)

DOC: none

Provide a DOC for placing the Control Room Air Intake Radiation Monitor Allowable Value in the IP2 Offsite Dose Calculation Manual. The STS require allowable values in TS to ensure channel operability limits are met during the channel calibration. Placing the TS operability limit for a containment ventilation isolation signal in a licensee-controlled document is not consistent with the provisions of 50.36. TS operability limits such as Allowable Values that are cycle-specific may, however, be relocated to licensee-controlled documents when there is prior review and approval of changes to those limits. Revise Table 3.3.7-1 to include TS Allowable Values.

**ENTERGY Response:**

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## List of Acronyms

AC	Air Conditioning or Alternating Current
ADS	Automatic Depressurization System
AOT	Allowed Outage Time
APLHGR	Average Planar Linear Heat Generation Rate
APRM	Average Power Range Monitor
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATWS	Anticipated Transient Without Scram
ATWS-RPT	Anticipated Transient Without Scram - Recirculation Pump Trip
BPWS	Banked Position Withdrawal Sequence
BWR	Boiling-Water Reactor
BWROG	Boiling Water Reactor Owners Group
CFR	Code of Federal Regulations
CFT	Channel Functional Test
COLR	Core Operating Limits Report
CRD	Control Rod Drive
CRDA	Control Rod Drop Accident
CREF	Control Room Envelope Filtration
CRVS	Control Room Ventilation System
CST	Condensate Storage Tank
CTS	Current Technical Specification
DBA	Design-Basis Accident
DC	Direct Current
DG	Diesel Generator
DOC	Discussion of Change (from the CTS)
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EFCV	Excess Flow Check Valve
EOC-RPT	End of Cycle - Recirculation Pump Trip
EPA	Electrical Protection Assembly
ESF	Engineered Safeguard Feature
FR	Federal Register
FRTTP	Fraction of Rated Thermal Power
GDC	General Design Criteria
GE	General Electric
HEPA	High Efficiency Particulate Air
HPCS	High Pressure Core Spray
Hz	Hertz
IRM	Intermediate Range Monitor
ISI	Inservice Inspection
ITS	Improved (converted) Technical Specifications
Kv	Kilovolt
kW	Kilowatt
LCO	Limiting Condition for Operation
LHGR	Linear Heat Generation Rate
LLS	Low-Low Set
LOCA	Loss-of-Coolant Accident

LOOP	Loss of Offsite Power
LOP	Loss of Power
LPCI	Low Pressure Coolant Injection
LPCS	Low Pressure Core Spray
LPRM	Local Power Range Monitor
LSFT	Logic System Functional Test
MCPR	Minimum Critical Power Ratio
MFLPD	Maximum Fraction of Limiting Power Density
MG	Motor Generator
MSIV	Main Steam Isolation Valve
MWD/T	Megawatt Days/short Ton
NMP2	Nine Mile Point Unit 2
NUMAC	Nuclear Measurement Analysis and Control
OPDRV	Operation with a Potential for Draining the Reactor Vessel
PAM	Post-Accident Monitoring
P/T	Pressure/Temperature
QA	Quality Assurance
RAI	Request for Additional Information
RBM	Rod Block Monitor
RCS	Reactor Coolant System
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RG	Regulatory Guide
RHR	Residual Heat Removal
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
RSCS	Rod Sequence Control System
RTP	Rated Thermal Power
RWCUR	Reactor Water Cleanup
RWM	Rod Worth Minimizer
SAS	Safety Actuation System
SCIV	Secondary Containment Isolation Valve
SDC	Shutdown Cooling
SDM	Shutdown Margin
SDV	Scram Discharge Volume
SE	Safety Evaluation
SER	Safety Evaluation Report
SGT	Standby Gas Treatment
SLC	Standby Liquid Control
SPDS	Safety Parameter Display System
SR	Surveillance Requirement
SRM	Source Range Monitor
SRV	Safety/Relief Valve
SSER	Supplemental Safety Evaluation Report
STS	Improved Standard Technical Specification(s), NUREG-1431, Rev. 2
SW	Service Water
TRM	Technical Requirements Manual
TS	Technical Specifications
TSTF	Technical Specifications Task Force (re: generic changes to the STS)

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