

## DESCRIPTION and ASSESSMENT

### 1.0 Description

The proposed change replaces existing Technical Specifications (TS) requirements related to "operations which have the potential for draining the reactor vessel" (OPDRVs) with new requirements on Reactor Pressure Vessel Water Inventory Control (RPV WIC) to protect Safety Limit 2.1.1.3. Safety Limit 2.1.1.3 requires reactor vessel water level to be greater than the top of active irradiated fuel.

### 2.0 Assessment

#### 2.1 Applicability of Published Safety Evaluation

Entergy Operations, Inc. (EOI) has reviewed the safety evaluation provided to the Technical Specification Task Force (TSTF) on December 20, 2016, as well as the information provided in TSTF-542. EOI has concluded that the justifications presented in TSTF-542 and the safety evaluation prepared by the NRC staff is applicable to River Bend Station - Unit 1 (RBS) and justify this amendment for the incorporation of the changes to the RBS TS.

The following RBS TS reference or are related to OPDRVs and are affected by the proposed change:

- 3.3.5.1 Emergency Core Cooling System (ECCS) Instrumentation
- 3.3.5.2 Reactor Pressure Vessel (RPV) Water Inventory Control Instrumentation [Note: New TS]
- 3.3.5.3 Reactor Core Isolation Cooling (RCIC) System Instrumentation [Note: Changed from 3.3.5.2]
- 3.3.6.1 Primary Containment and Drywell Isolation Instrumentation
- 3.3.7.1 Control Room Fresh Air (CRFA) System Instrumentation
- 3.5.1 ECCS-Operating
- 3.5.2 ECCS – Shutdown
- 3.5.3 RCIC System
- 3.6.1.2 Primary Containment Air Locks
- 3.6.1.3 Primary Containment Isolation Valves (PCIVs)
- 3.6.1.10 Primary Containment-Shutdown
- 3.7.2 Control Room Fresh Air (CRFA) System
- 3.7.3 Control Room Air Conditioning (AC) System
- 3.8.2 AC Sources - Shutdown
- 3.8.5 DC Sources - Shutdown
- 3.8.8 Inverters - Shutdown
- 3.8.10 Distribution Systems – Shutdown

#### 2.2 Variations

EOI is proposing variations from the TS changes described in the TSTF-542 or the applicable parts of the NRC staff's safety evaluation. These variations do not affect the applicability of TSTF-542 or the NRC staff's safety evaluation to the proposed license amendment.

The RBS TS do not contain a Surveillance Frequency Control Program. Therefore, the references to a Surveillance Frequency Control Program for Specification 3.5.2 are not included in the updated TS.

## 2.2.1 Administrative Variations

2.2.1.1 The RBS TS utilize different numbering and titles than the Improved Standard Technical Specifications (ISTS) on which TSTF-542 was based. The following table relates the administrative differences between the TS described in the TSTF-542 and the RBS TS:

TSTF-542 TS Number	TSTF-542 TS Title	RBS TS Number	RBS TS Title
3.3.5.2	Reactor Pressure Vessel (RPV) Water Inventory Control Instrumentation	New TS	New TS
3.3.5.3	Reactor Core Isolation Cooling (RCIC) System Instrumentation	3.3.5.2 [Changed to 3.3.5.3]	Reactor Core Isolation Cooling (RCIC) System Instrumentation
3.3.6.1	Primary Containment Isolation Instrumentation	Same	Primary Containment and Drywell Isolation Instrumentation
3.3.6.2	Secondary Containment Isolation Instrumentation	Same	Secondary Containment and Fuel Building Isolation Instrumentation
3.6.4.1	[Secondary] Containment	Same	Secondary Containment - Operating
3.6.4.2	Secondary Containment Isolation Valves (SCIVs)	Same	Secondary Containment Isolation Dampers (SCIDs) and Fuel Building Isolation Dampers (FBIDs)
3.7.3	Control Room Fresh Air (CRFA) System	3.7.2	Same
3.7.4	[ Control Room Air Conditioning (AC) ] System	3.7.3	Same

2.2.1.2 Table 3.3.5.1-1 of the RBS TS contains administrative differences when compared to the ISTS. Functions 1.c and 2.d listed in the RBS TS Table 3.3.5.1-1 are not included in the ISTS. The inclusion of these functions in the RBS TS offset the numbering of the remaining functions from the ISTS.

2.2.1.3 Functions 1.e, Reactor Vessel Pressure-Low (Injection Permissive) and Function 2.e, Reactor Vessel Pressure-Low (Injection Permissive) of Table 3.3.5.1-1 of the RBS TS correspond with Function 1.d, Reactor Steam Dome Pressure – Low (Injection Permissive) and Function 2.d, Reactor Steam Dome Pressure – Low (Injection Permissive) of the ISTS. The functions of these instruments are identical to the corresponding instruments in the ISTS and differ in name only; therefore, this nomenclature is retained in TS Function 1.a and 2.a of the proposed TS Table 3.3.5.2-1.

2.2.1.4 The RBS TS contains a Note in TS 3.5.2 Surveillance Requirement 3.5.2.4 regarding realignment to the Low Pressure Coolant Injection mode. However, this note is located in the LCO of ISTS 3.5.2. This note is updated to reflect the changes made by the TSTF-542 ISTS markup, but the location of the note is maintained in the Surveillance Requirement. This deviation is administrative and has no effect on the adoption of the TSTF-542.

2.2.1.5 The change made by TSTF-542 to Surveillance requirement 3.5.2.2 includes changing the word “the” to the word “a” referring to the required High Pressure Core Spray (HPCS) system. The RBS TS change administratively deviates from this change because RBS has only one HPCS system.

2.2.1.6 The ISTS 3.8.5 LCO Condition B is listed in the RBS TS 3.8.5 as LCO Condition A. The proposed changes made by TSTF-542 to ISTS 3.8.5 Condition B will be applied to RBS TS 3.8.5 Condition A. This deviation is strictly administrative.

## 2.2.2 Technical Variations

2.2.2.1 The changes to TS 3.6.4.1: Secondary Containment – Operating; TS 3.6.4.2: Secondary Containment Isolation Valves (SCIVs), or as titled in the RBS TS: Secondary Containment Isolation Dampers (SCIDs) and Fuel Building Isolation Dampers; and TS 3.6.4.3 Standby Gas Treatment (SGT) System as described in TSTF-542 are not applicable to the RBS TS. These TS will not be updated as a result of the adoption of TSTF-542.

2.2.2.2 Table 3.3.5.1-1 of the RBS TS currently contains requirements for Function 1.c, LPCS Pump Start-Time Delay Relay and for Function 2.d, LPCI Pump C Start-Time Delay Relay that are not included in the ISTS. In accordance with the justification included in TSTF-542, applicability to modes 4 and 5 are deleted because the instrumentation requirements during shutdown are being consolidated into the new TS 3.3.5.2.

2.2.2.3 Function 2.e, Reactor Vessel Pressure – Low (Injection Permissive), is listed as applicable in modes 4 and 5 while the corresponding ISTS Function, 2.d, Reactor Steam Dome Pressure – Low (Injection Permissive) is not. In accordance with the justification included in TSTF-542, applicability to modes 4 and 5 are deleted because the instrumentation requirements during shutdown are being consolidated into the new TS 3.3.5.2.

2.2.2.4 RBS TS 3.3.6.1 is updated to remove Note C from Table 3.3.6.1-1 in accordance with the TSTF-542 markup. All other changes made to the ISTS TS 3.3.6.1 by TSTF-542 are not applicable to the RBS TS because the RBS TS did not contain any other OPDRV related requirements or notes.

2.2.2.5 No changes were required to RBS TS 3.3.6.2, Secondary Containment and Fuel Building Isolation Instrumentation, because there are no existing OPDRV related requirements. This deviation is necessary since none of the items changed in the ISTS TS 3.3.6.2 exist in the current RBS TS 3.3.6.2. Secondary Containment Isolation Instrumentation is not required during OPDRV activities at RBS because [Secondary Containment] as described in the ISTS refers to the RBS Primary Containment (Refer to note 1 on page 6 of TSTF-542 revision 1). RBS TS 3.6.1.10 required that Primary Containment be operable during OPDRVs rather than Secondary Containment.

2.2.2.6 Table 3.3.7-1 Function 1, Reactor Vessel Water Level – Low Low, Level 2, is not affected by the proposed RBS TS change while the note to the Applicable Modes of the corresponding function in the ISTS is changed in the ISTS TSTF-542 markup. The note stating that Function 1 was applicable during OPDRVs did not exist in the RBS TS and did not require update. All other changes to Table 3.3.7-1 are consistent with the TSTF-542 markup.

2.2.2.7 Required Actions C.3 and D.4 listed in the ISTS LCO 3.5.2 are not applicable to RBS because the Standby Gas Treatment Subsystem is external to the primary containment and not required for the operability of primary containment. Therefore, Required Action C.3 will not be incorporated into the RBS TS.

2.2.2.8 Required Action D.3 listed in the current RBS TS LCO 3.5.2 will be removed because the ISTS action D.2 to establish primary containment will require that the primary containment air locks be closed for completion. This action is no longer necessary.

2.2.2.9 RBS TS LCO 3.6.1.2 Primary Containment Air Locks, is currently applicable during OPDRV activities, this Applicability statement is removed along with Condition E Required Action 2 to suspend OPDRVs. The new drain time requirements of TS LCO 3.5.2 will preclude RPV Water Inventory Control activities with Drain Time <36 hours when at least one door in each Primary Containment Air Lock cannot be closed to restore Primary Containment. No additional Primary Containment Air Lock requirements are required.

2.2.2.10 RBS TS 3.6.4.1, Secondary Containment-Operating, is not affected by this TS change because there are no current OPDRV requirements for secondary containment. [Secondary Containment] in the ISTS refers to the RBS Primary Containment. RBS TS 3.6.1.10 Primary Containment-Shutdown is revised to remove OPDRV LCO Applicability requirement similar to the ISTS markup of TS 3.6.4.1.

2.2.2.11 RBS TS 3.6.4.2, Secondary Containment Isolation Dampers (SCIDs) and Fuel Building Isolation Dampers (FBIDs), like TS 3.6.4.1 above is not affected by this TS change because there are no current OPDRV requirements. The current RBS Secondary Containment Isolation TS do not contain OPDRV requirements because [Secondary Containment] as described in the ISTS refers to the RBS Primary Containment. The OPDRV requirements similar to those listed in the current ISTS for TS 3.6.4.2 are correlated with the current RBS TS requirements in TS 3.6.1.3, Primary Containment Isolation Valves (PCIVs). RBS TS 3.6.1.3 is revised to remove Required Action F.1 from Condition F and updates Required Action F.2 to be listed as F.1.

2.2.2.12 RBS TS 3.6.4.3, Standby Gas Treatment (SGT) System, is not affected by this TS change because there are no current OPDRV requirements related to the SGT system. The SGT System is not required during RPV Water Inventory Control activities because the Standby

Gas Treatment Subsystem is external to the Primary Containment and is not required for Primary Containment Operability.

### 3.0 Regulatory Analysis

#### 3.1 No Significant Hazards Consideration Analysis

EOI requests adoption of TSTF-542 "Reactor Pressure Vessel Water Inventory Control," which is an approved change to the ISTS, into the RBS TS. The proposed amendment replaces the existing requirements in the TS related to "operations with a potential for draining the reactor vessel" (OPDRVs) with new requirements on Reactor Pressure Vessel Water Inventory Control (RPV WIC) to protect Safety Limit 2.1.1.3. Safety Limit 2.1.1.3 requires reactor vessel water level to be greater than the top of active irradiated fuel.

EOI has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed change replaces existing TS requirements related to OPDRVs with new requirements on RPV WIC that will protect Safety Limit 2.1.1.3. Draining of RPV water inventory in Mode 4 (i.e., cold shutdown) and Mode 5 (i.e., refueling) is not an accident previously evaluated and, therefore, replacing the existing TS controls to prevent or mitigate such an event with a new set of controls has no effect on any accident previously evaluated. RPV water inventory control in Mode 4 or Mode 5 is not an initiator of any accident previously evaluated. The existing OPDRV controls or the proposed RPV WIC controls are not mitigating actions assumed in any accident previously evaluated.

The proposed change reduces the probability of an unexpected draining event (which is not a previously evaluated accident) by imposing new requirements on the limiting time in which an unexpected draining event could result in the reactor vessel water level dropping to the top of the active fuel (TAF). These controls require cognizance of the plant configuration and control of configurations with unacceptably short drain times. These requirements reduce the probability of an unexpected draining event. The current TS requirements are only mitigating actions and impose no requirements that reduce the probability of an unexpected draining event.

The proposed change reduces the consequences of an unexpected draining event (which is not a previously evaluated accident) by requiring an Emergency Core Cooling System (ECCS) subsystem to be operable at all times in Modes 4 and 5. The current TS requirements do not require any water injection systems, ECCS or otherwise, to be operable in certain conditions in Mode 5. The change in requirement from two ECCS subsystems to one ECCS subsystem in Modes 4 and 5 does not significantly affect the consequences of an unexpected draining event

because the proposed Actions ensure equipment is available within the limiting drain time that is as capable of mitigating the event as the current requirements. The proposed controls provide escalating compensatory measures to be established as calculated drain times decrease, such as verification of a second method of water injection and additional confirmations that containment and/or filtration would be available if needed.

The proposed change reduces or eliminates some requirements that were determined to be unnecessary to manage the consequences of an unexpected draining event, such as automatic initiation of an ECCS subsystem and control room ventilation. These changes do not affect the consequences of any accident previously evaluated since a draining event in Modes 4 and 5 is not a previously evaluated accident and the requirements are not needed to adequately respond to a draining event.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any previously evaluated?

Response: No

The proposed change replaces existing TS requirements related to OPDRVs with new requirements on RPV WIC that will protect Safety Limit 2.1.1.3. The proposed change will not alter the design function of the equipment involved. Under the proposed change, some systems that are currently required to be operable during OPDRVs would be required to be available within the limiting drain time or to be in service depending on the limiting drain time. Should those systems be unable to be placed into service, the consequences are no different than if those systems were unable to perform their function under the current TS requirements.

The event of concern under the current requirements and the proposed change is an unexpected draining event. The proposed change does not create new failure mechanisms, malfunctions, or accident initiators that would cause a draining event or a new or different kind of accident not previously evaluated or included in the design and licensing bases.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No

The proposed change replaces existing TS requirements related to OPDRVs with new requirements on RPV WIC. The current requirements do not have a stated safety basis and no margin of safety is established in the licensing basis. The safety basis for the new requirements is to protect Safety Limit 2.1.1.3. New requirements are added to determine the limiting time in which the RPV water

inventory could drain to the top of the fuel in the reactor vessel should an unexpected draining event occur. Plant configurations that could result in lowering the RPV water level to the TAF within one hour are now prohibited. New escalating compensatory measures based on the limiting drain time replace the current controls. The proposed TS establish a safety margin by providing defense-in-depth to ensure that the Safety Limit is protected and to protect the public health and safety. While some less restrictive requirements are proposed for plant configurations with long calculated drain times, the overall effect of the change is to improve plant safety and to add safety margin.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, EOI concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

## 1.0 ENVIRONMENTAL EVALUATION

The proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.