Finding 2.B.(5)	
Current (5) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.	Proposed (5) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials ~~as may be~~ ***that were*** produced by the operation of the facility.
Basis	
This license finding is proposed for revision to allow possession of byproduct and special nuclear materials that were produced during operation of the reactor, but not allow the separation of material. After certifications required by 10 CFR 50.82(a)(1) are submitted for Byron, the 10 CFR 50 license will no longer authorize operation of the facility pursuant to 10 CFR 50.82(a)(2). Therefore, the changes are consistent with the requirements associated with a permanently shutdown and defueled condition.	

License Condition 2.C.(1)	
Current (1) Maximum Power Level The licensee is authorized to operate the facility at reactor core power levels not in excess of 3645 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.	Proposed (1) ***Deleted.***~~Maximum Power Level~~ ~~The licensee is authorized to operate the facility at reactor core power levels not in excess of 3645 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.~~
Basis	
This license condition is proposed for deletion in its entirety. Once the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel are submitted to the NRC pursuant to 10 CFR 50.82(a)(1), NRC regulations stipulated in 10 CFR 50.82(a)(2) will no longer authorize operation of the reactor or emplacement of fuel into the reactor vessel under the 10 CFR 50 license. With the submittal of the certifications in accordance with 10 CFR 50.82(a)(1), Exelon will no longer be authorized to operate the facility; therefore, this license condition is not needed.	

License Condition 2.C.(2)	
Current (2) Technical Specifications The Technical Specifications contained in Appendix A (NUREG-1113), as revised through Amendment No. 222, and the Environmental Protection Plan contained in Appendix B, both of which were attached to Renewed License No. NPF-37, dated November 19, 2015, are hereby incorporated	Proposed (2) Technical Specifications The ***Permanently Defueled*** Technical Specifications contained in Appendix A (NUREG-1113), as revised through Amendment No. ~~222~~***###***, and the Environmental Protection Plan contained in Appendix B, both of which are attached to Renewed License No. NPF-37, dated

into this renewed license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.	November 19, 2015, are hereby incorporated into this renewed license. The licensee shall ~~operate~~ ***maintain*** the facility in accordance with the ***Permanently Defueled*** Technical Specifications and the Environmental Protection Plan.

Basis

This license condition is revised to reflect the permanently shutdown and defueled condition of the facility. Also changed is the designation from the licensee operating to maintaining the facility. Once the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessels are submitted to the NRC pursuant to 10 CFR 50.82(a)(1) for Byron, NRC regulations stipulated in 10 CFR 50.82(a)(2) will no longer authorize operation of the reactor or emplacement of fuel into the reactor vessel under the 10 CFR 50 license.

License Condition 2.C.(6)

Current	Proposed
(6) Additional Conditions The Additional Conditions contained in Appendix C, as revised through Amendment No. 198, are hereby incorporated into this renewed license. The licensee shall operate the facility in accordance with the Additional Conditions.	(6) ***Deleted.*** ~~Additional Conditions~~ ~~The Additional Conditions contained in Appendix C, as revised through Amendment No. 198, are hereby incorporated into this renewed license. The licensee shall operate the facility in accordance with the Additional Conditions.~~

Basis

This license condition is proposed for deletion in its entirety as the additional conditions in Appendix C to which it refers are also proposed for deletion; therefore, retention of this license condition is unnecessary.

License Condition 2.C.(12)

Current	Proposed
(12) License Renewal License Conditions (a) The information in the UFSAR supplement, submitted pursuant to 10 CFR 54.21(d), as revised during the license renewal application review process, and as supplemented by the Commitments applicable to Byron Unit 2 in Appendix A of the "Safety Evaluation Report Related to the License Renewal of Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2" (SER) dated July 2015, is collectively the "License Renewal UFSAR Supplement." This Supplement is henceforth part of the	(12) ***Deleted.*** ~~License Renewal License Conditions~~ ~~(a) The information in the UFSAR supplement, submitted pursuant to 10 CFR 54.21(d), as revised during the license renewal application review process, and as supplemented by the Commitments applicable to Byron Unit 2 in Appendix A of the "Safety Evaluation Report Related to the License Renewal of Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2" (SER) dated July 2015, is collectively the "License Renewal UFSAR Supplement." This Supplement is henceforth part of the~~

UFSAR which will be updated in accordance with 10 CFR 50.71(e). As such, the licensee may make changes to the programs and activities applicable to Byron Unit 2 described in this Supplement provided the licensee evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.	~~UFSAR which will be updated in accordance with 10 CFR 50.71(e). As such, the licensee may make changes to the programs and activities applicable to Byron Unit 2 described in this Supplement provided the licensee evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.~~
(b) This License Renewal UFSAR Supplement, as revised per License Condition 12(a) above, describes certain programs to be implemented and activities to be completed prior to the period of extended operation.	~~(b) This License Renewal UFSAR Supplement, as revised per License Condition 12(a) above, describes certain programs to be implemented and activities to be completed prior to the period of extended operation.~~
1. The licensee shall implement those new programs and enhancements to existing programs no later than May 6, 2026…	~~1. The licensee shall implement those new programs and enhancements to existing programs no later than May 6, 2026…~~

Basis

This license condition imposed program requirements necessary for the Byron, Unit 2, to continue operation beyond May 6, 2026. After the certifications required by 10 CFR 50.82(a)(1) have been submitted for Byron, Unit 2, the 10 CFR 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel pursuant to 10 CFR 50.82(a)(2). Thus, the program requirements to support extended operation are not necessary.

Proposed License Condition 2.C.(14)

Current	Proposed
[None]	***Handling of irradiated fuel in the spent fuel pool will not be permitted following implementation of the PDTS until a minimum of 70 days following the permanent shutdown.***

Basis

Exelon is proposing a new license condition such that initial system abandonment activities may be started expeditiously after the permanent removal of fuel from the reactor vessel. By applying this new license condition, Exelon will be able to remove the TS requirements associated with those systems that perform mitigative actions assumed in the FHA analyses by precluding the possibility of a FHA until after the assumed 70-day decay period assumed in the post shutdown FHA has elapsed.

Once the reactor has been permanently shutdown and defueled with all irradiated fuel placed in the SFP, and the certifications are submitted in accordance with 10 CFR 50.82, power operation or emplacement of fuel in the reactor will not be allowed. Therefore, all DBAs associated with power operations or fuel handling in the reactor will no longer be applicable, which provides the basis for removal of the Safety Limits and most of the Limiting Conditions for Operation.

In order to implement the PDTS prior to the 70-day decay time assumed in the post shutdown FHA analysis, Exelon proposes to prohibit movement of irradiated fuel after the submittal of the certification of permanent removal of fuel from the reactor vessel until 70 days after permanent shutdown through the imposition of the proposed license condition. This effectively prevents an FHA from occurring until after the 70-day decay period has elapsed.

License Condition 2.E	
Current	Proposed
E. The licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the licensee's Fire Protection Report and the licensee's letters dated September 23, 1986, October 23, 1986, November 3, 1986, December 12 and 15, 1986, and January 21, 1987, and as approved in the SER dated February 1982 through Supplement No. 8, subject to the following provision: The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.	E. ***Deleted.*** ~~The licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the licensee's Fire Protection Report and the licensee's letters dated September 23, 1986, October 23, 1986, November 3, 1986, December 12 and 15, 1986, and January 21, 1987, and as approved in the SER dated February 1982 through Supplement No. 8, subject to the following provision:~~ ~~The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.~~

Basis

This license condition is proposed for deletion in its entirety consistent with the restriction of 10 CFR 50.82(a)(2) that Byron is no longer authorized to operate or place fuel in the reactors. This license finding for making changes to the Fire Protection Program is no longer required to assure fire safety by maintaining the ability to achieve and maintain safe shutdown in the event of a fire.

License Condition 2.E, which is based on maintaining an operational fire protection program, in accordance with 10 CFR 50.48, with the ability to achieve and maintain safe shutdown of the reactors in the event of a fire, is no longer applicable for Byron. However, many of the elements that are applicable for the operating plant fire protection program continue to be applicable during plant decommissioning. During the decommissioning process, a fire protection program is required by 10 CFR 50.48(f) to address the potential for fires that could result in a radiological hazard. However, the regulation is applicable regardless of whether a requirement for a fire protection program is included in the facility license. Therefore, a license finding requiring such a program for a permanently shutdown and defueled facility is not required.

License Condition I	
Current This renewed license is effective as of the date of issuance and shall expire at midnight on November 6, 2046.	Proposed This renewed license is effective as of the date of issuance and ~~shall expire at midnight on November 6, 2046.~~ ***is effective until the Commission notifies the licensee in writing that the license is terminated.***
Basis	
This license condition is revised to reflect the permanently defueled condition of the facility. Once Byron has permanently ceased operation and Exelon has certified that fuel has been permanently removed from the reactor, 10 CFR 50.82(a)(2) prohibits operation of the Byron reactor. This license condition is being revised to conform with 10 CFR 50.51, "Continuation of license," in that the license authorizes ownership and possession by Exelon until the Commission notifies the licensee in writing that the license is terminated.	

UNIT 2 APPENDIX C – ADDITIONAL CONDITIONS	
Current The safety limit equation specified in TS 2.1.1.3 regarding fuel centerline melt temperature (i.e., less than 5080 °F, decreasing by 58 °F per 10,000 MWD/MTU burnup as described in WCAP-12610-P-A, "VANTAGE+ Fuel Assembly Reference Core Report," April 1995) is valid for uranium oxide fuel without the presence of poisons mixed homogeneously into the fuel pellets. If fuel pellets incorporating homogeneous poisons are used, the topical report documenting the fuel centerline melt temperature basis must be reviewed and approved by the NRC and referenced in this license finding. TS 2.1.1.3 must be modified to also include the fuel centerline melt temperature limit for the fuel with homogenous poison.	Proposed ***[Deleted]***
Basis	
The additional condition in Appendix C is proposed for deletion in its entirety. As discussed later in this application, TS Section 2.0 is being proposed for deletion in its entirety since the safety limits do not apply to reactors that are in a permanently shutdown and defueled condition. Once Exelon submits the certifications required by 10 CFR 50.82(a)(1) for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors, or emplacement or retention of fuel in the reactor vessels pursuant to 10 CFR 50.82(a)(2). TS Section 2.0 and this license condition related to TS Section 2.0 do not apply to the safe storage and handling of irradiated fuel in the SFP.	

Attachment 2 provides the existing RFOL pages for Byron, Unit 1 and Unit 2, marked up to show the proposed changes.

Detailed Description of the Proposed Changes to the Byron TS

The following tables provides a summary describing which Byron TS are being deleted in their entirety and which TS are being retained into the PDTS. The details and justification for the proposed changes are provided, arranged by TS section.

TECHNICAL SPECIFICATIONS	
TS Section 1.0 – Use and Application	
TS Being Deleted	**TS Being Retained**
	1.1 – Definitions
	1.2 – Logical Connectors
	1.3 – Completion Times
	1.4 – Frequency

TS Section 1.1 – Definitions	
TS 1.1, "Definitions," provides defined terms that are applicable throughout the TS and TS Bases. A number of definitions are proposed to be deleted because they have no relevance, and no longer apply, to the permanently defueled facility status.	
Definition	Basis for Change
ACTUATION LOGIC TEST	This definition is proposed for deletion because the term is not used in any PDTS specification. There is no instrumentation credited in the analysis of the accidents that remain credible in the permanently defueled condition.
AXIAL FLUX DIFFERENCE (AFD)	This definition is proposed for deletion because the term is not used in any PDTS specification. This term is no longer applicable since fuel will be permanently removed from the reactor core.
CERTIFIED FUEL HANDLER	A new definition for Certified Fuel Handler was proposed for addition to the PDTS in the LAR proposing changes to TS Sections 1.1 and 5.0 (Reference 2) which is currently under NRC review.
CHANNEL CALIBRATION	This definition is proposed for deletion because the term is not used in any PDTS specification. There is no instrumentation credited in the analysis of the accidents that remain credible in the permanently defueled condition.
CHANNEL CHECK	This definition is proposed for deletion because the term is not used in any PDTS specification. There is no instrumentation in the analysis of the accidents that remain credible in the permanently defueled condition.
CHANNEL OPERATIONAL TEST (COT)	This definition is proposed for deletion because the term is not used in any PDTS specification. There is no instrumentation credited in the analysis of the accidents that remain credible in the permanently defueled condition.

TS Section 1.1 – Definitions	
CORE ALTERATION	This definition is proposed for deletion because the term is not used in any PDTS specification. This term is no longer applicable since fuel will be permanently removed from the reactor core.
CORE OPERATING LIMITS REPORT (COLR)	This definition is proposed for deletion because the term is not used in any PDTS specification. TS 5.6.5 that requires the COLR is also proposed for elimination.
DOSE EQUIVALENT I-131	This definition is proposed for deletion because the term is not used in any PDTS specification. This term is used in current TS 3.4.16 and TS 3.7.3 to express the specific activity limit from a mixture of iodine isotopes contained in reactor coolant and secondary coolant. TS 3.4.16 and TS 3.7.3 are proposed for deletion in the PDTS. The specific activity limit is used as the basis in accident analysis involving coolant releases. Since accident conditions associated with the RCS and secondary coolant system will no longer apply to the permanently shutdown and defueled facility, the definition is no longer meaningful.
DOSE EQUIVALENT XE-133	This definition is proposed for deletion because the term is not used in any PDTS specification. This term is used in current TS 3.4.16 to express the specific activity limit from a mixture of xenon isotopes contained in reactor coolant. TS 3.4.16 is proposed for deletion in the PDTS. The specific activity limit is used as the basis in accident analysis involving coolant releases. Since accident conditions associated with the RCS and secondary coolant system will no longer apply to the permanently shutdown and defueled facility, the definition is no longer meaningful.
ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME	In the permanently defueled condition, there are no ESF systems that are credited in the analysis of the FHA in the Fuel Handling Building or other remaining credible accidents, and the term is not used in any PDTS. Therefore, this definition is proposed for deletion.
INSERVICE TESTING PROGRAM	This definition is proposed for deletion because the term is not used in any PDTS specification. Inservice testing in accordance with 10 CFR 50.55a will no longer be required once the reactors are permanently shutdown and defueled.
LEAKAGE	This definition is proposed for deletion in the PDTS because the term is not used in any PDTS specification. Refer to the discussions for the proposed deletion of TS 3.4.13 and TS 5.5.9.

TS Section 1.1 – Definitions	
MASTER RELAY TEST	This definition is proposed for deletion because the term is not used in any PDTS specification. There is no instrumentation credited in the analysis of the accidents that remain credible in the permanently defueled condition.
MODE	This definition, including Table 1.1-1, is proposed for deletion, because operational MODES are not used in any PDTS specification. MODES as defined in Table 1.1-1 are defined for operating or refueling conditions. This term does not apply to a facility in the permanently defueled condition.
NON-CERTIFIED OPERATOR	A new definition for Certified Fuel Handler was proposed for addition to the PDTS in the LAR proposing changes to TS Sections 1.1 and 5.0 (Reference 2) which is currently under NRC review.
OPERABLE - OPERABILITY	This definition is not proposed for inclusion in the PDTS because the term is not used in any PDTS specification.
PHYSICS TESTS	This definition is proposed for deletion because the term is not used in any PDTS specification. This term does not apply to a facility in the permanently defueled condition.
PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)	This report does not apply to a facility in the permanently defueled condition and is not used in any PDTS. TS 5.6.6 is also proposed for deletion from the PDTS. Therefore, this definition is proposed for deletion.
QUADRANT POWER TILT RATIO (QPTR)	This term is only applicable to a reactor authorized to contain fuel and operate at power. It does not apply to a facility in the permanently defueled condition and is not used in any PDTS. Therefore, this definition is proposed for deletion.
RATED THERMAL POWER (RTP)	This definition is proposed for deletion because the term is not used in any PDTS specification. This term is meaningful only to a reactor authorized to contain fuel and operate at power. It does not apply to a facility in the permanently defueled condition.
REACTOR TRIP SYSTEM (RTS) RESPONSE TIME	The RTS is only applicable to a reactor authorized to operate at power. It does not apply to a facility in the permanently defueled condition and is not used in any PDTS. Therefore, this definition is proposed for deletion.
RECENTLY IRRADIATED FUEL	This definition is proposed for deletion because the term is not used in any PDTS specification (i.e., in current TS 3.3.8, TS 3.7.13, and TS 3.9.4). PDTS will be implemented greater than 48 hours after being subcritical. This term is meaningful only to a reactor authorized to contain fuel and operate at power. It does not apply to a facility in the permanently defueled condition.

TS Section 1.1 – Definitions	
SHUTDOWN MARGIN (SDM)	This definition is proposed for deletion because the term is not used in any PDTS specification. This term is meaningful only to a reactor authorized to contain fuel and operate at power. It does not apply to a facility in the permanently defueled condition.
SLAVE RELAY TEST	The slave relay test is not applicable in the permanently defueled condition and the term is not used in any PDTS. Therefore, the definition is proposed for deletion.
STAGGERED TEST BASIS	This definition is proposed for deletion because the term is not used in any PDTS specification. This definition applies to the performance of surveillance tests on systems with multiple subsystems or channels. There are no surveillance requirements in the PDTS for operating systems.
THERMAL POWER	This definition is proposed for deletion because the term is not used in any PDTS specification. This term is meaningful only to a reactor authorized to contain fuel and operate at power. It does not apply to a facility in the permanently defueled condition.
TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT)	This definition is proposed for deletion because the term is not used in any PDTS specification. There is no instrumentation credited in the analysis of the accidents that remain credible in the permanently defueled condition.
Table 1.1-1, MODES	Table 1.1-1 is proposed for deletion because the modes defined in Table 1.1-1 are defined for operating or refueling conditions. The modes do not apply to a facility in a permanently defueled condition, and the term is not used in any PDTS.
Basis	
With the exception of the two new definitions, all of the definitions in the above table are proposed for deletion since they are relevant to an operating reactor and are not used in the PDTS. Once the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessels are submitted to the NRC pursuant to 10 CFR 50.82(a)(1), NRC regulations stipulated in 10 CFR 50.82(a)(2) will no longer authorize operation of the reactors or emplacement of fuel into the reactor vessels under the 10 CFR 50 licenses. With the submittal of the certifications in accordance with 10 CFR 50.82(a)(1), Exelon will no longer be authorized to operate the facility; therefore, the referenced definitions will no longer be relevant.	

TS Section 1.2 – Logical Connectors	
TS 1.2, "Logical Connectors," explain the meaning of logical connectors. It is modified to reflect the logical connectors that continue to exist in the TS.	
<u>Current Purpose</u> Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete Conditions, Required Actions,	<u>Proposed Purpose</u> Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete ~~Conditions,~~ Required Actions~~,~~

TS Section 1.2 – Logical Connectors	
Completion Times, Surveillances, and Frequencies. The only logical connectors that appear in TS are AND and OR. The physical arrangement of these connectors constitutes logical conventions with specific meanings.	~~Completion Times, Surveillances, and Frequencies~~. The only logical connector~~s~~ that appear***s*** in TS ~~are~~***is*** AND ~~and OR~~. The physical arrangement of these connectors constitutes logical conventions with specific meanings.
Current Background Several levels of logic may be used to state Required Actions. These levels are identified by the placement (or nesting) of the logical connectors and by the number assigned to each Required Action. The first level of logic is identified by the first digit of the number assigned to a Required Action and the placement of the logical connector in the first level of nesting (i.e., left justified with the number of the Required Action). The successive levels of logic are identified by additional digits of the Required Action number and by successive indentations of the logical connectors. When logical connectors are used to state a Condition, Completion Time, Surveillance, or Frequency, only the first level of logic is used, and the logical connector is left justified with the statement of the Condition, Completion Time, Surveillance, or Frequency.	Proposed Background ~~Several l~~***L***evels of logic may be used to state Required Actions. These levels are identified by the placement (or nesting) of the logical connectors and by the number assigned to each Required Action. The first level of logic is identified by the first digit of the number assigned to a Required Action and the placement of the logical connector in the first level of nesting (i.e., left justified with the number of the Required Action). The successive levels of logic are identified by additional digits of the Required Action number and by successive indentations of the logical connectors. ~~When logical connectors are used to state a Condition, Completion Time, Surveillance, or Frequency, only the first level of logic is used, and the logical connector is left justified with the statement of the Condition, Completion Time, Surveillance, or Frequency.~~
Current Examples EXAMPLES The following examples illustrate the use of logical connectors. Example 1.2-1… Example 1.2-2…	Proposed Example EXAMPLE~~S~~ The following example~~s~~ illustrate***s*** the use of logical connectors. Example 1.2-1 is being retained into the PDTS. Example 1.2-2 is proposed for deletion.
Basis	
TS 1.2 is modified to reflect the logical connector utilized in TS 3.7.15 (i.e., AND). This is the only TS that will utilize logical connectors in the PDTS. These changes are administrative changes. In addition, because 10 CFR 50.82(a)(2) prohibits operation of the plant or placing fuel in the reactor vessel, certain terms currently provided in the TS no longer apply. TS 1.2 is being revised to be consistent with the permanently defueled condition and the use of logical connectors within the PDTS.	

TS Section 1.3 – Completion Times
TS 1.3, "Completion Times," establishes the Completion Time convention and provides guidance for its use. It is modified to reflect the permanently shutdown and defueled condition and the Completion Times that continue to exist in the PDTS.

TS Section 1.3 – Completion Times	
Current Background Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe operation of the unit. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Actions(s) and Completion Time(s).	Proposed Background Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe ~~operation of the unit~~***storage and handling of irradiated fuel***. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Actions(s) and Completion Time(s).
Current Description The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO. Unless otherwise specified, the Completion Time begins when a senior licensed operator on the operating shift crew with responsibility for plant operations makes the determination that an LCO is not met and an ACTIONS Condition is entered. The "otherwise specified" exceptions are varied, such as a Required Action Note or Surveillance Requirement Note that provides an alternative time to perform specific tasks, such as testing, without starting the Completion Time. While utilizing the Note, should a Condition be applicable for any reason not addressed by the Note, the Completion Time begins. Should the time allowance in the Note be exceeded, the Completion Time begins at that point. The exceptions may also be incorporated into the Completion Time. For example, LCO 3.8.1, "AC Sources - Operating," Required Action B.3, requires declaring required features(s) supported by an inoperable diesel generator, inoperable when the redundant required feature(s) are inoperable. The Completion Time states, "4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)." In this case the Completion Time does not begin until the conditions in the Completion Time are satisfied. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability. If situations are discovered that require entry…	Proposed Description The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the discovery of a situation (e.g., ~~inoperable equipment or~~ variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the ~~unit~~***facility*** is in a ~~MODE or~~ specified condition stated in the Applicability of the LCO. ~~Unless otherwise specified, the Completion Time begins when a senior licensed operator on the operating shift crew with responsibility for plant operations makes the determination that an LCO is not met and an ACTIONS Condition is entered. The "otherwise specified" exceptions are varied, such as a Required Action Note or Surveillance Requirement Note that provides an alternative time to perform specific tasks, such as testing, without starting the Completion Time. While utilizing the Note, should a Condition be applicable for any reason not addressed by the Note, the Completion Time begins. Should the time allowance in the Note be exceeded, the Completion Time begins at that point. The exceptions may also be incorporated into the Completion Time. For example, LCO 3.8.1, "AC Sources - Operating," Required Action B.3, requires declaring required features(s) supported by an inoperable diesel generator, inoperable when the redundant required feature(s) are inoperable. The Completion Time states, "4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)." In this case the Completion Time does not begin until the conditions in the Completion Time are satisfied.~~ Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the ~~unit~~***facility*** is not within the LCO Applicability. ~~If situations are discovered that require entry…~~

TS Section 1.3 – Completion Times	
Current Examples	Proposed Example
EXAMPLES	EXAMPLE~~S~~
The following examples illustrate the use of Completion Times with different types of Conditions and changing Conditions.	The following example~~s~~ illustrate***s*** the use of Completion Times with different ~~types of Conditions and changing Conditions~~***Required Actions***.
Example 1.3-1…	Example 1.3-1 is modified to address Completion Times as utilized by TS 3.7.14, TS 3.7.15, and TS 3.7.16.
Example 1.3-2…	Example 1.3-2 is proposed for deletion.
Example 1.3-3…	Example 1.3-3 is proposed for deletion.
Example 1.3-4…	Example 1.3-4 is proposed for deletion.
Example 1.3-5…	Example 1.3-5 is proposed for deletion.
Example 1.3-6…	Example 1.3-6 is proposed for deletion.
Example 1.3-7…	Example 1.3-7 is proposed for deletion.
Example 1.3-8…	Example 1.3-8 is proposed for deletion.

Basis

The Background section of TS 1.3 is modified to reflect the change in status regarding Byron, which reflects the use of Completion Times that are utilized in TS 3.7.14, TS 3.7.15, and TS 3.7.16. After the certifications required by 10 CFR 50.82(a)(1) are submitted for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactor vessels pursuant to 10 CFR 50.82(a)(2). As a result, the primary mission will change from the safe operation of the units to the safe storage and handling of irradiated fuel.

The Description section of TS 1.3 is modified to reflect the change in status regarding Byron. After the certifications required by 10 CFR 50.82(a)(1) are submitted for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactor vessels pursuant to 10 CFR 50.82(a)(2). As a result, the PDTS will contain no operability requirements for any equipment. In addition, the term facility better represents Byron in the permanently shutdown and defueled condition.

The Examples section of TS 1.3 is modified to reflect the use of Completion Times utilized in TS 3.7.14, TS 3.7.15, and TS 3.7.16. The Completion Times for all Required Actions in TS 3.7.14, TS 3.7.15, and TS 3.7.16 are "Immediately." These are the only TS that have Completion Times in the PDTS. The changes to the Examples section of TS 1.3 are administrative changes.

TS Section 1.4 – Frequency	
TS 1.4, "Frequency," defines the proper use and application of Frequency requirements. It is modified to reflect the permanently shutdown and defueled condition and the Frequencies that continue to exist in the PDTS.	
Current Description	Proposed Description
Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated Limiting Condition for	Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated Limiting Condition for

TS Section 1.4 – Frequency	
Operation (LCO). An understanding of the correct application of the specified Frequency is necessary for compliance for the SR.	Operation (LCO). An understanding of the correct application of the specified Frequency is necessary for compliance for the SR.
The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, Surveillance Requirement (SR) Applicability. The "specified Frequency" consists of the requirements of the Frequency column of each SR as well as certain Notes in the Surveillance column that modify performance requirements.	The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, Surveillance Requirement (SR) Applicability. The "specified Frequency" consists of the requirements of the Frequency column of each SR~~ as well as certain Notes in the Surveillance column that modify performance requirements~~.
Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.	~~Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.~~
Sometimes special situations dictate when the requirements of a Surveillance are to be met. They are "otherwise stated" conditions allowed by SR 3.0.1. They may be stated as clarifying Notes in the Surveillance, as part of the Surveillance, or both. Example 1.4-5 discusses these special situations.	~~Sometimes special situations dictate when the requirements of a Surveillance are to be met. They are "otherwise stated" conditions allowed by SR 3.0.1. They may be stated as clarifying Notes in the Surveillance, as part of the Surveillance, or both. Example 1.4-5 discusses these special situations.~~
The use of "met" or "performed" in these instances conveys special meaning. A surveillance is "met" only when the acceptance criteria are satisfied. Known failure of the requirement of a Surveillance, even without a Surveillance specifically being "performed," constitutes a Surveillance not "met." "Performance" refers only to the requirement to specifically determine the ability to meet the acceptance criteria. SR 3.0.4 restrictions would not apply if both the following conditions are satisfied: a. The Surveillance is not required to be performed; and b. The Surveillance is not required to be met or, even if required to be met, is not known to be failed.	The use of "met" or "performed" ~~in these instances~~ conveys special meaning. A surveillance is "met" only when the acceptance criteria are satisfied. Known failure of the requirement of a Surveillance, even without a Surveillance specifically being "performed," constitutes a Surveillance not "met." "Performance" refers only to the requirement to specifically determine the ability to meet the acceptance criteria. ~~SR 3.0.4 restrictions would not apply if both the following conditions are satisfied:~~ ~~a. The Surveillance is not required to be performed; and~~ ~~b. The Surveillance is not required to be met or, even if required to be met, is not known to be failed.~~
<u>Current Examples</u> EXAMPLES The following examples illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the LCO (LCO not shown) is	<u>Proposed Example</u> EXAMPLE~~S~~ The following example~~s illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the LCO (LCO not shown) is MODES 1, 2, and 3. The examples do not reflect the potential application of LCO 3.0.4.b.~~***illustrates the***

TS Section 1.4 – Frequency	
MODES 1, 2, and 3. The examples do not reflect the potential application of LCO 3.0.4.b. Example 1.4-1… Example 1.4-2… Example 1.4-3… Example 1.4-4… Example 1.4-5…	***type of Frequency statements that appears in the Technical Specifications (TS).*** Example 1.4-1 is modified to address an example of Frequencies that are utilized by TS 3.7.14, TS 3.7.15, and TS 3.7.16. Example 1.4-2 is proposed for deletion. Example 1.4-3 is proposed for deletion. Example 1.4-4 is proposed for deletion. Example 1.4-5 is proposed for deletion.
Basis	
TS 1.4 is modified to reflect the change in status regarding Byron. This includes modifications to the description section and to the examples. These proposed changes are editorial changes that reflect the changes to the other TS and the remaining requirements. After the certifications required by 10 CFR 50.82(a)(1) are submitted for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactor vessels pursuant to 10 CFR 50.82(a)(2). As a result, the number and types of Surveillance Requirements (SRs) that remain in the TS are limited to those in TS 3.7.14, TS 3.7.15, and TS 3.7.16. TS 1.4 is modified to provide the rules of usage and an example that continues to be applicable for those TS. Example 1.4-1 is modified to address an example of Frequencies that are utilized by TS 3.7.14, TS 3.7.15, and TS 3.7.16. This includes the elimination of the references to the term "operational," inoperable equipment, Modes, Example 1.4-3, and LCO 3.0.4, and replacing the term "unit" with "facility." Examples 1.4-2, 1.4-3, 1.4-4, and 1.4-5 are proposed for deletion.	

TS Section 2.0 – Safety Limits (SLs)	
TS Being Deleted	**TS Being Retained**
2.1 Safety Limits (SLs)	
2.2 SL Violations	
Basis	
TS Section 2.0, Safety Limits (SLs), contains limits upon important process variables to assure the integrity of the fuel cladding and the RCS in all modes of operation. Pursuant to 10 CFR 50.36(c)(1), safety limits are limiting parameters necessary to protect the physical barriers that guard against uncontrolled release of radioactivity from a nuclear reactor. The safety limits and safety limit violations TS apply to the reactor core and the RCS; they have no function in the permanently defueled condition. These specifications do not apply to the safe storage and handling of irradiated fuel in the SFP. <u>Summary</u> TS 2.0 is being proposed for deletion in its entirety since the safety limits do not apply to reactors that are in a permanently defueled condition. Once Exelon submits the certifications required by 10 CFR 50.82(a)(1) for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors, or emplacement or retention of fuel in the reactor vessels pursuant to 10 CFR 50.82(a)(2). These specifications do not apply to the safe	

TS Section 2.0 – Safety Limits (SLs)
storage and handling of irradiated fuel in the SFP. With TS Section 2.0 deleted in its entirety, the applicable Bases will also be deleted to reflect this change.

TS Section 3.0 – Limiting Condition for Operation (LCO) Applicability	
TS Being Deleted	**TS Being Retained**
	3.0 Limiting Condition for Operation (LCO) Applicability
	3.0 Surveillance Requirement (SR) Applicability
TS Section 3.0, "Limiting Condition for Operation (LCO) Applicability," establishes the general requirements for all Specifications and applies at all times, unless otherwise stated. After the certifications required by 10 CFR 50.82(a)(1) are submitted for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactor vessels pursuant to 10 CFR 50.82(a)(2). Consequently, some LCOs are no longer applicable and some must be revised to reflect the permanently defueled condition. TS Section 3.0, "Surveillance Requirement (SR) Applicability," establishes the general requirements for all Specifications in Sections 3.1 through 3.09 and applies at all times, unless otherwise stated. SR 3.0.2 and SR 3.0.3 apply in Chapter 5 only when invoked by a Chapter 5 Specification. After the certifications required by 10 CFR 50.82(a)(1) are submitted for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactor vessels pursuant to 10 CFR 50.82(a)(2). Consequently, some SRs must be revised to reflect the permanently defueled condition.	
<u>Current LCO 3.0.1</u> LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2, LCO 3.0.7, and LCO 3.0.9.	<u>Proposed LCO 3.0.1</u> LCOs shall be met during the ~~MODES or other~~ specified conditions in the Applicability, except as provided in LCO 3.0.2~~, LCO 3.0.7, and LCO 3.0.9~~.
<u>Current LCO 3.0.2</u> Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6. If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required unless otherwise stated.	<u>Proposed LCO 3.0.2</u> Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met~~, except as provided in LCO 3.0.5 and LCO 3.0.6~~. ~~If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required unless otherwise stated.~~
<u>Additional Current LCOs in LCO 3.0</u> LCO 3.0.3… LCO 3.0.4… LCO 3.0.5… LCO 3.0.6… LCO 3.0.7… LCO 3.0.8…	<u>Additional Proposed LCOs in LCO 3.0</u> LCO 3.0.3 is proposed for deletion. LCO 3.0.4 is proposed for deletion. LCO 3.0.5 is proposed for deletion. LCO 3.0.6 is proposed for deletion. LCO 3.0.7 is proposed for deletion. LCO 3.0.8 is proposed for deletion.

TS Section 3.0 – Limiting Condition for Operation (LCO) Applicability	
LCO 3.0.9…	LCO 3.0.9 is proposed for deletion.
Basis	
LCO 3.0.1 is modified by eliminating the references to MODES because this term does not apply to a facility in the permanently defueled condition. MODES as defined in Table 1.1-1 are defined for operating or refueling conditions. Table 1.1-1 was proposed for deletion in TS Section 1.0. In addition, the references to LCOs 3.0.7 and 3.0.9 are deleted to reflect the proposed deletion of those LCOs discussed below. LCO 3.0.2 is modified by eliminating the references to LCOs 3.0.5 and 3.0.6. This change reflects the proposed deletion of those LCOs as discussed below. Additionally, the second paragraph of this LCO that references the possibility of an LCO being met or no longer applicable prior to the expiration of the Completion Time(s) is deleted as only three Required Actions are proposed for inclusion into the PDTS. The remaining Required Actions have a Completion Time of "Immediately;" therefore, this paragraph is not needed. LCO 3.0.3 provides the actions that must be implemented when an LCO is not met. It is only applicable in MODES 1 through 4. Pursuant to 10 CFR 50.82(a)(2), the facility license for Byron will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactors. Therefore, reference to operation MODES is no longer relevant, and LCO 3.0.3 is no longer applicable in the permanently defueled condition. LCO 3.0.4 provides limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. LCO 3.0.4 is not proposed for inclusion in the PDTS since all actions in the remaining TS (i.e., TS 3.7.14, 3.7.15, and 3.7.16) have a Completion Time of "Immediately." This makes LCO 3.0.4 unnecessary. Thus, LCO 3.0.4 is no longer applicable in the permanently defueled condition. LCO 3.0.5 provides the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The allowance of LCO 3.0.5 to not comply with the requirements of LCO 3.0.2 (i.e., to not comply with the Required Actions) to allow the performance of SRs on equipment declared inoperable or removed from service is no longer required. The remaining permanently defueled TS ACTIONS do not include requirements to declare equipment inoperable or to remove it from service. LCO 3.0.6 addresses the actions required for a supported system when the support system LCO is not met. It is proposed for deletion since there are no LCOs for equipment to be operable or in operation in the PDTS. LCO 3.0.7 pertains to certain special tests and operations required to be performed at various times over the life of the unit. It is proposed for deletion since special tests and operations are not applicable to a permanently defueled facility. LCO 3.0.8 address the application of TS ACTIONS to the individual units and systems or components shared by both units. It is proposed for deletion since unit specific TS ACTIONS will not be applicable to the permanently defueled facility. LCO 3.0.9 addresses the actions required when one or more required snubbers are unable to perform their associated support function(s). It is proposed for deletion because there are no LCOs for equipment to be operable or in operation in the PDTS. Snubbers are not required to perform any PDTS function.	

TS Section 3.0 – Surveillance Requirement (SR) Applicability	
<u>Current SR 3.0.1</u> SRs shall be met during the MODES or other specified condition in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is	<u>Proposed SR 3.0.1</u> SRs shall be met during the ~~MODES or other~~ specified condition in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is

TS Section 3.0 – Surveillance Requirement (SR) Applicability	
experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.	experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on ~~inoperable equipment or~~ variables outside specified limits.
Current SR 3.0.2 The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met. For Frequencies specified as "once," the above interval extension does not apply. If a Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance. Exceptions to this Specification are stated in the individual Specifications.	Proposed SR 3.0.2 The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance~~ or as measured from the time a specified condition of the Frequency is met~~. ~~For Frequencies specified as "once," the above interval extension does not apply.~~ ~~If a Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance.~~ ~~Exceptions to this Specification are stated in the individual Specifications.~~
Current SR 3.0.4 Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4. This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.	Proposed SR 3.0.4 Entry into a ~~MODE or other~~ specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. ~~When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4.~~ ~~This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.~~
Current SR 3.0.5 SRs shall apply to each unit individually, unless otherwise indicated.	Proposed SR 3.0.5 ~~SRs shall apply to each unit individually, unless otherwise indicated.~~
Basis	
SR 3.0.1 is modified by deleting the references to MODES. Pursuant to 10 CFR 50.82(a)(2), the facility licenses for Byron will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactors. MODES, defined in Table 1.1-1 for operation or refueling conditions, are not used in any PDTS	

TS Section 3.0 – Surveillance Requirement (SR) Applicability
specification. In addition, SR 3.0.1 is modified by eliminating the discussion regarding inoperable equipment. The remaining LCOs do not include any equipment operability requirements. SR 3.0.2 provides an allowance for extending the frequency for performance of a SR to 1.25 times the interval specified in the frequency to facility scheduling or unforeseen problems that may prevent performance during normal intervals. It is proposed for revision to remove conditions for frequencies that do not exist in PDTS. SR 3.0.4 is modified by deleting the references to MODES. Pursuant to 10 CFR 50.82(a)(2), the facility licenses for Byron will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactors. MODES, defined in Table 1.1-1 for operation or refueling conditions, are not used in any PDTS specification. SR 3.0.4 is modified by eliminating the provision that states that it shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit. The only remaining TS with Required Actions are TS 3.7.14, TS 3.7.15, and TS 3.7.16, and they do not contain any Required Actions that would require an entry into another specified condition defined in the Applicability of a TS. In addition, pursuant to 10 CFR 50.82(a)(2), the facility licenses for Byron will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactors. Thus, there will be no ACTIONS that require the shutdown of a unit. SR 3.0.5 address the application of SRs to the individual units, unless otherwise indicated. It is proposed for deletion since unit-specific TS SRs will not be applicable to the permanently defueled facility. <u>Summary</u> TS Section 3.0 of the PDTS, including LCO 3.0.1, LCO 3.0.2, SR 3.0.1, SR 3.0.2, SR 3.0.3, and SR 3.0.4, will continue to remain applicable with the reactor permanently defueled. As such, they are being retained and revised, as necessary, to reflect a permanently defueled condition. Therefore, retaining TS Section 3.0, as revised, provides appropriate control over use and application of the Byron TS. Proposed changes to the TS Bases addressing the proposed changes to the relevant TS are provided for information in Attachment 4.

TS Section 3.1 – Reactivity Control Systems	
TS Being Deleted	**TS Being Retained**
3.1.1 – Shutdown Margin (SDM)	
3.1.2 – Core Reactivity	
3.1.3 – Moderator Temperature Coefficient	
3.1.4 – Rod Group Alignment Limits	
3.1.5 – Shutdown Bank Insertion Limits	
3.1.6 – Control Bank Insertion Limits	
3.1.7 – Rod Position Indication	
3.1.8 – PHYSICS TESTS Exceptions-MODE 2	
Basis	
TS Section 3.1, "Reactivity Control Systems," provides for appropriate control of process variables, design features, or operating restrictions that are required to protect the integrity of a fission product barrier. TS 3.1.1, "SHUTDOWN MARGIN (SDM)," specifies requirements to provide sufficient reactivity margin to ensure that acceptable fuel design limits will not be exceeded for normal shutdown and anticipated operational occurrences (AOOs). TS 3.1.1 is applicable in Mode 2 with $k_{eff} < 1.0$ and in Modes 3, 4, and 5. TS 3.1.2, "Core Reactivity," requires the measured core reactivity to be within +/- 1% Δk/k of predicted values. The reactivity balance is used as a measure of the predicted versus measured core reactivity during power	

TS Section 3.1 – Reactivity Control Systems
operation. The periodic confirmation of core reactivity is necessary to ensure that DBA and transient safety analyses remain valid. TS 3.1.2 is applicable in Modes 1 and 2. TS 3.1.3, "Moderator Temperature Coefficient (MTC)," requires the MTC to be maintained within the limits specified in the COLR and the maximum upper limit to be that specified in Figure 3.1.3-1. The MTC relates a change in core reactivity to a change in reactor coolant temperature. The reactor is designed to operate with a negative MTC over the largest possible range of fuel cycle operation. Therefore, a coolant temperature increase will cause a reactivity decrease, so that the coolant temperature tends to return toward its initial value. Reactivity increases that cause a coolant temperature increase will thus be self-limiting, and stable power operation will result. TS 3.1.3 is applicable in MODE 1 and MODE 2 with $k_{eff} \geq 1.0$ for the upper MTC limit and applicable in MODES 1, 2, and 3 for the lower MTC limit. TS 3.1.4, "Rod Group Alignment Limits," requires all shutdown and control rods to be operable and individual indicated rod positions to be within 12 steps of their group step counter demand position. TS 3.1.4 is applicable during MODES 1 and 2. Mechanical or electrical failures may cause a control or shutdown rod to become inoperable or to become misaligned from its group. Rod inoperability or misalignment may cause increased power peaking due to the asymmetric reactivity distribution, and a reduction in the total available rod worth for reactor shutdown. Therefore, rod alignment and operability are related to core operation in design power peaking limits and the core design requirement of a minimum SDM. TS 3.1.5, "Shutdown Bank Insertion Limits," requires each shutdown bank to be within the insertion limits specified in the COLR. TS 3.1.5 is applicable in MODES 1 and 2. The shutdown banks affect core power and burnup distribution and add negative reactivity to shutdown the reactor upon receipt of a reactor trip signal. The insertion limits are established to ensure that a sufficient amount of negative reactivity is available to shutdown the reactor and maintain the required SDM following a reactor trip from full power. TS 3.1.6, "Control Bank Insertion Limits," requires that each control bank be within the insertion, sequence, and overlap limits specified in the COLR and is not applicable to control banks inserted while performing SR 3.1.4.2. TS 3.1.6 is applicable in MODE 1 and in MODE 2 with $k_{eff} \geq 1.0$. The control banks are used for precise reactivity control of the reactor. The positions of the control banks are normally controlled automatically by the Rod Control System but can also be manually controlled. They are capable of adding reactivity very quickly (compared to borating or diluting). These limits prevent fuel cladding failures that would breach the primary fission product barrier and release fission products to the reactor coolant in the event of a loss of coolant accident (LOCA), loss of flow, ejected rod, or other accident requiring termination by an RTS trip function. TS 3.1.7, "Rod Position Indication," requires that the Digital Rod Position Indication (DRPI) System and the Demand Position Indication System be operable. TS 3.1.6 is applicable in MODES 1 and 2. Control and shutdown rod position accuracy is essential during power operation. Power peaking, ejected rod worth, or SDM limits may be violated in the event of a DBA, with control or shutdown rods operating outside their limits undetected. The axial position of shutdown rods and control rods is indicated by two separate and independent systems, the Bank Demand Position Indication System (commonly called group step counters) and the DRPI System. Operability of the rod position indicators is required to determine rod positions and thereby ensure compliance with the rod alignment and insertion limits. TS 3.1.8, "PHYSICS TESTS Exceptions-Mode 2," allows for suspension of other LCOs during MODE 2 physics tests provided that RCS lowest loop average temperature is ≥ 530°F, SDM is within the limits specified in the COLR, and THERMAL POWER is ≤ 5% RTP. TS 3.1.8 is applicable in MODE 2 during physics tests. The primary purpose of the MODE 2 physics tests exceptions is to permit relaxations of existing LCOs to allow certain physics tests to be performed. The physics tests requirements for reload fuel cycles ensure that the operating characteristics of the core are consistent with the design predictions and that the core can be operated as designed.

TS Section 3.1 – Reactivity Control Systems
Summary The content of TS Section 3.1 is being proposed for deletion in its entirety. After the certifications required by 10 CFR 50.82(a)(1) are submitted for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactor vessels in accordance with 10 CFR 50.82(a)(2). As a result, TS Section 3.1 will not apply with the reactor defueled. With TS Section 3.1 deleted in its entirety, the applicable Bases and surveillance section will also be deleted to reflect this change.

TS Section 3.2 – Power Distribution Limits	
TS Being Deleted	**TS Being Retained**
3.2.1 – Heat Flux Hot Channel Factor	
3.2.2 – Nuclear Enthalpy Rise Hot Channel Factor	
3.2.3 – AXIAL FLUX DIFFERENCE (AFD)	
3.2.4 – QUADRANT POWER TILT RATIO (QPTR)	
3.2.5 – Departure from Nucleate Boiling Ratio (DNBR)	

Basis

The existing TS Section 3.2 contains power distribution limits that provide assurance that fuel design criteria are not exceeded, and the accident analysis assumptions remain valid.

TS 3.2.1, "Heat Flux Hot Channel Factor ($F_Q(Z)$)," requires the Heat Flux Hot Channel Factor to be within the limits specified in the COLR. The Heat Flux Hot Channel Factor is defined as the maximum local fuel rod linear power density (i.e., Peak Linear Heat Rate (PLHR)) divided by the average fuel rod linear power density, assuming nominal fuel pellet and fuel rod dimensions. Therefore, it is a measure of the peak fuel pellet power within the reactor core. The purpose of the limits on the values of the Heat Flux Hot Channel Factor is to limit the local (i.e., pellet) peak power density. TS 3.2.1 is applicable in MODE 1.

TS 3.2.2, "Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)," requires the Nuclear Enthalpy Rise Hot Channel Factor to be within the limits specified in the COLR. The design limits on local (pellet) and integrated fuel rod peak power density are expressed in terms of hot channel factors. Control of the core power distribution with respect to these factors ensures that local conditions in the fuel rods and coolant channels do not challenge core integrity at any location in the core during either normal operation or a postulated accident analyzed in the safety analyses. TS 3.2.2 is applicable in MODE 1.

TS 3.2.3, "AXIAL FLUX DIFFERENCE (AFD)," requires the AFD to be maintained within the limits specified in the COLR. The purpose of this specification is to establish limits on the values of the AFD in order to limit the amount of axial power distribution skewing to either the top or bottom of the core. By limiting the amount of power distribution skewing, core peaking factors are consistent with the assumptions used in the safety analyses. Limiting power distribution skewing over time also minimizes the xenon distribution skewing, which is a significant factor in axial power distribution control. TS 3.2.3 is applicable in MODE 1 with THERMAL POWER ≥ 50% RTP.

TS 3.2.4, "QUADRANT POWER TILT RATIO (QPTR)," requires the QPTR to be ≤ 1.02. The QPTR limit ensures that the gross radial power distribution remains consistent with the design values used in the safety analyses. TS 3.2.4 is applicable in MODE 1 with THERMAL POWER > 50% RTP when Power Distribution Monitoring System (PDMS) is inoperable.

TS 3.2.5, "Departure from Nucleate Boiling Ratio (DNBR)," requires the DNBR to be maintained with the limit of the relationship specified in the COLR. DNBR is defined as the ratio of the heat flux required to cause Departure from Nucleate Boiling (DNB) to the actual channel heat flux for given conditions. The purpose of the limits on the value of DNBR determined by PDMS is to provide assurance of fuel integrity during Condition I

TS Section 3.2 – Power Distribution Limits
(Normal Operation and Operational Transients) and Condition II (Faults of Moderate Frequency) events by providing the reactor operator with the information required to avoid exceeding the minimum Axial Power Shape Limiting DNBR in the core during normal operation and in short-term transients. TS 3.2.5 is applicable in MODE 1 with THERMAL POWER ≥ 50% RTP when PDMS is operable. <u>Summary</u> The content of TS Section 3.2 is being proposed for deletion in its entirety. After the certifications required by 10 CFR 50.82(a)(1) are submitted for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactor vessels in accordance with 10 CFR 50.82(a)(2). As a result, TS Section 3.2 will not apply with the reactor defueled. With TS Section 3.2 deleted in its entirety, the applicable Bases and surveillance section will also be deleted to reflect this change.

TS Section 3.3 – Instrumentation	
TS Being Deleted	**TS Being Retained**
3.3.1 – Reactor Trip System (RTS) Instrumentation	
3.3.2 – Engineered Safety Feature Actuation System (ESFAS) Instrumentation	
3.3.3 – Post Accident Monitoring (PAM) Instrumentation	
3.3.4 – Remote Shutdown System	
3.3.5 – Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation	
3.3.6 – Containment Ventilation Isolation Instrumentation	
3.3.7 – Control Room Ventilation (VC) Filtration System Actuation Instrumentation	
3.3.8 – Fuel Handling Building Exhaust Filter Plenum (FHB) Ventilation System Actuation Instrumentation	
3.3.9 – Boron Dilution Protection System (BDPS)	
Basis	
The existing TS Section 3.3 contains operability requirements for sensing and control instrumentation required for safe operation of the facility. TS 3.3.1, "Reactor Trip System (RTS) Instrumentation," requires RTS instrumentation for certain functions to be operable and is applicable in MODES 1, 2, 3, 4, and 5, according to specific applicability requirements for each RTS function listed in TS Table 3.3.1-1. The RTS initiates a unit shutdown, based on the values of selected unit parameters, to protect against violating the core fuel design limits and RCS pressure boundary during AOOs and to assist the ESF systems in mitigating accidents. The protection and monitoring systems have been designed to assure safe operation of the reactor. This is achieved by specifying limiting safety system settings (LSSS) in terms of parameters directly monitored by the RTS, as well as specifying LCOs on other reactor system parameters and equipment performance. TS 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," requires ESFAS instrumentation for certain functions to be operable and is applicable in MODES 1, 2, 3, and 4, according to specific applicability requirements for each ESFAS function listed in TS Table 3.3.2-1. The ESFAS initiates necessary safety systems, based on the values of selected unit parameters, to protect against violating core design limits and the RCS pressure boundary, and to mitigate accidents.	

TS Section 3.3 – Instrumentation
TS 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," requires the PAM instrumentation for certain functions to be operable and is applicable in MODES 1, 2, and 3, according to the specific applicability requirements for each PAM function listed in TS Table 3.3.3-1. The primary purpose of the PAM instrumentation is to display unit variables that provide information required by the control room operators during accident situations. This information provides the necessary support for the operator to take the manual actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for DBAs. TS 3.3.4, "Remote Shutdown System," requires certain Remote Shutdown System functions to be operable. The Remote Shutdown System provides the control room operator with sufficient instrumentation that supports placing and maintaining the unit in a safe shutdown condition from a location other than the control room. This capability is necessary to protect against the possibility that the control room becomes inaccessible. TS 3.3.4 is applicable in MODES 1, 2, and 3. TS 3.3.5, "Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation," requires that two channels (i.e., two relays) per bus of the loss of voltage, degraded voltage and low degraded voltage Functions shall be operable in MODES 1, 2, 3, and 4 when the associated DG is required to be operable by LCO 3.8.2, "AC Sources-Shutdown." The DGs provide a source of emergency power when offsite power is either unavailable or is insufficiently stable to allow safe unit operation. Undervoltage protection will generate an LOP start if a loss of voltage, degraded voltage or low degraded voltage condition occurs. There are two LOP start signals, one for each 4.16 kV ESF bus. TS 3.3.6, "Containment Ventilation Isolation Instrumentation," requires Containment Ventilation Isolation instrumentation for certain functions to be operable in MODES 1, 2, 3, 4, according to specific applicability requirements for each function listed in TS Table 3.3.6-1. Containment ventilation isolation instrumentation closes the containment isolation valves in the Minipurge System and the Normal Purge System. This action isolates the containment atmosphere from the environment to minimize release of radioactivity in the event of an accident. TS 3.3.7, "Control Room Ventilation (VC) Filtration System Actuation Instrumentation," requires VC Filtration System actuation instrumentation for specific functions to be operable in MODES 1, 2, 3, 4, 5, 6, and during movement of irradiated fuel assemblies, according to specific applicability requirements for each VC function listed in TS Table 3.3.7-1. The VC Filtration System provides an enclosed control room environment from which the unit can be operated following an uncontrolled release of radioactivity. During normal operation, the VC Filtration System provides control room ventilation. Upon receipt of an actuation signal, the VC Filtration System initiates filtered ventilation and pressurization of the control room. TS 3.3.8, "Fuel Handling Building Exhaust Filter Plenum (FHB) Ventilation System Actuation Instrumentation," requires the Fuel Handling Building ventilation system actuation instrumentation associated with specific functions to be operable during movement of recently irradiated fuel assemblies in the Fuel Handling Building, according to specific applicability requirements for each VC function listed in TS Table 3.3.8-1. The FHB ventilation system ensures that radioactive materials in the FHB atmosphere following an FHA involving recently irradiated fuel are filtered and adsorbed prior to exhausting to the environment. Two radiation monitoring channels provide input to the FHB Ventilation System isolation. High radiation detection by any monitor initiates fuel handling building isolation and starts the FHB Ventilation System. These actions function to prevent exfiltration of contaminated air by initiating filtered ventilation, which imposes a negative pressure on the FHB. TS 3.3.9, "Boron Dilution Protection System (BDPS)," provides the requirements for operability of the BDPS that mitigate the consequences of a boron dilution event. The primary purpose of the BDPS is to mitigate the consequences of the inadvertent addition of Unborated primary grade water into the RCS when the reactor is in a shutdown condition (i.e., MODES 3, 4, and 5). The BDPS must be operable in MODES 3, 4, and 5 because the safety analysis identifies these requirements as necessary to enable the operator to mitigate an inadvertent

TS Section 3.3 – Instrumentation
boron dilution of the RCS. In MODE 6, a dilution event is precluded by locked valves that isolate the RCS from the potential source of unborated water. Summary The content of TS Section 3.3 is being proposed for deletion in its entirety. After the certifications required by 10 CFR 50.82(a)(1) are submitted for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactor vessels in accordance with 10 CFR 50.82(a)(2). As a result, TS Section 3.3 will not apply with the reactor defueled. With TS Section 3.3 deleted in its entirety, the applicable Bases and surveillance section will also be deleted to reflect this change. Proposed License Conditions 2.C.(25) and 2.C.(14) for Byron, Unit 1 and Unit 2, respectively, will prohibit movement of irradiated fuel in the SFP after the submittal of the certifications of permanent removal of fuel from the reactor vessels until 70 days after permanent shutdown.

TS Section 3.4 – Reactor Coolant System	
TS Being Deleted	**TS Being Retained**
3.4.1 – RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits	
3.4.2 – RCS Minimum Temperature for Criticality	
3.4.3 – RCS Pressure and Temperature (P/T) Limits	
3.4.4 – RCS Loops-MODES 1 and 2	
3.4.5 – RCS Loops-MODE 3	
3.4.6 – RCS Loops-MODE 4	
3.4.7 – RCS Loops-MODE 5, Loops Filled	
3.4.8 – RCS Loops-MODE 5, Loops Not Filled	
3.4.9 – Pressurizer	
3.4.10 – Pressurizer Safety Valves	
3.4.11 – Pressurizer Power Operated Relief Valves (PORVs)	
3.4.12 – Low Temperature Overpressure Protection (LTOP) System	
3.4.13 – RCS Operational LEAKAGE	
3.4.14 – RCS Pressure Isolation Valve (PIV) Leakage	
3.4.15 – RCS Leakage Detection Instrumentation	
3.4.16 – RCS Specific Activity	
3.4.17 – RCS Loop Isolation Valves	
3.4.18 – RCS Loops-Isolated	
3.4.19 – Steam Generator (SG) Tube Integrity	
Basis	
TS Section 3.4, "Reactor Coolant System", contains requirements that provide for appropriate control of process variables, design features, or operating restrictions needed for appropriate functional capability of RCS equipment required for safe operation of the facility. TS 3.4.1, "RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits," provides limits placed on RCS pressure, temperature, and flow rate to ensure that the departure from nucleate boiling (DNB) will be met for each of the transients analyzed. Operation for significant periods of time outside these DNB limits increases the likelihood of a fuel cladding failure in a DNB limited event. TS 3.4.1 is applicable in MODE 1.	

TS Section 3.4 – Reactor Coolant System
TS 3.4.2, "RCS Minimum Temperature for Criticality," requires that each RCS loop average temperature (T_{avg}) shall be ≥ 522°F. TS 3.4.2 is applicable in MODE 1 and MODE 2 with k_{eff} ≥ 1.0. TS 3.4.2 ensures that the reactor will not be made or maintained critical (keff ≥ 1.0) at a temperature less than a small band below the hot zero power (HZP) temperature, which is assumed in the safety analysis. Failure to meet the requirements of this LCO may produce initial conditions inconsistent with the initial conditions assumed in the safety analysis.
TS 3.4.3, "RCS Pressure and Temperature (P/T) Limits," requires that the RCS pressure, RCS temperature, and RCS heatup and cooldown rates be maintained within the limits specified in the PTLR. All components of the RCS are designed to withstand effects of cyclic loads due to system pressure and temperature changes. These loads are introduced by startup (heatup) and shutdown (cooldown) operations, power transients, and reactor trips. This LCO limits the pressure and temperature changes during RCS heatup and cooldown, within the design assumptions and the stress limits for cyclic operation. TS 3.4.3 is applicable at all times.
TS 3.4.4, "RCS Loops-MODES 1 and 2", requires four RCS loops be operable and in operation. TS 3.4.4 is applicable in MODES 1 and 2. The purpose of this LCO is to require an adequate forced flow rate for core heat removal. Flow is represented by the number of RCPs in operation for removal of heat by the SGs. An operable RCS loop consists of an operable RCP in operation providing forced flow for heat transport and an operable SG.
TS 3.4.5, "RCS Loops-MODE 3", specifies requirements to ensure heat removal capability of the RCS loops with the reactor in MODE 3. The purpose of this LCO is to require that at least two RCS loops be operable. In MODE 3 with the Rod Control System capable of rod withdrawal, two RCS loops are required to be in operation due to the postulation of a power excursion because of an inadvertent control rod withdrawal. The required number of RCS loops in operation ensures that the Safety Limit criteria will be met for all of the postulated accidents.
TS 3.4.6, "RCS Loops-MODE 4", specifies requirements to ensure heat removal capability of the RCS loops with the reactor in MODE 4. The purpose of this LCO is to require that at least two loops be operable in MODE 4 and that one of these loops be in operation. The LCO allows the two loops that are required to be operable to consist of any combination of RCS loops and RHR loops. Any one loop in operation provides enough flow to remove the decay heat from the core with forced circulation. An additional loop is required to be operable to provide redundancy for heat removal.
TS 3.4.7, "RCS Loops-MODE 5, Loops Filled," specifies requirements to ensure heat removal capability of the RCS loops with the reactor in MODE 5 with the RCS loops filled. The purpose of this LCO is to require that at least one of the RHR loops be operable and in operation with an additional RHR loop operable or two SGs with secondary side water level ≥ 18%. One RHR loop provides sufficient forced circulation to perform the safety functions of the reactor coolant under these conditions. An additional RHR loop is required to be operable to meet single failure considerations. However, if the standby RHR loop is not operable, an acceptable alternate method is two SGs with their secondary side water levels ≥ 18%. Should the operating RHR loop fail, the SGs via natural circulation could be used to remove the decay heat.
TS 3.4.8, "RCS Loops-MODE 5, Loops Not Filled," specifies requirements to ensure heat removal capability of the RCS loops with the reactor in MODE 5 with the RCS loops not filled. The purpose of this LCO is to require that at least two RHR loops be operable and one of these loops be in operation. An operable loop is one that has the capability of transferring heat from the reactor coolant at a controlled rate. Heat cannot be removed via the RHR System unless forced flow is used. A minimum of one running RHR pump meets the LCO requirement for one loop in operation. An additional RHR loop is required to be operable to meet single failure considerations.
TS 3.4.9, "Pressurizer," specifies operability requirements for the RCS pressurizer. TS 3.4.9 is applicable in MODES 1, 2, and 3. The pressurizer provides a point in the RCS where liquid and vapor are maintained in equilibrium under saturated conditions for pressure control purposes to prevent bulk boiling in the remainder of the RCS. Key functions include maintaining required primary system pressure during steady state operation

TS Section 3.4 – Reactor Coolant System
and limiting the pressure changes caused by reactor coolant thermal expansion and contraction during normal load transients. TS 3.4.10, "Pressurizer Safety Valves," specifies operability and lift setpoint parameters for the pressurizer safety valves. TS 3.4.10 is applicable in MODES 1, 2, and 3. The pressurizer safety valves provide, in conjunction with the Reactor Protection System, overpressure protection for the RCS. The pressurizer safety valves are totally enclosed pop type, spring loaded, self-actuated valves with backpressure compensation. The safety valves are designed to prevent the system pressure from exceeding the system safety limit, 2735 psig, which is 110% of the design pressure. TS 3.4.11, "Pressurizer Power Operated Relief Valves (PORVs)," requires that each PORV and associated block valve be operable. TS 3.4.11 is applicable in MODES 1, 2, and 3. The pressurizer is equipped with two types of devices for pressure relief: pressurizer safety valves and PORVs. The PORVs are air operated valves that are controlled to open at a specific set pressure when the pressurizer pressure increases and close when the pressurizer pressure decreases. The PORVs may also be manually operated from the control room. In MODES 1, 2, and 3, the PORV and its block valve are required to be operable to limit the potential for a small break LOCA through the flow path. The PORVs are also required to be operable in MODES 1, 2, and 3 for manual actuation to mitigate a steam generator tube rupture event. TS 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," specifies requirements for controlling RCS pressure at low temperatures so the integrity of the reactor coolant pressure boundary (RCPB) is not compromised by violating the pressure and temperature (P/T) limits of 10 CFR 50, Appendix G. This specification provides RCS overpressure protection by having a minimum coolant input capability and having adequate pressure relief capacity. TS 3.4.12 is applicable in MODES 4 and 5, and in MODE 6 when the reactor vessel head is on. TS 3.4.13, "RCS Operational LEAKAGE," provides the limits on RCS operational leakage and is applicable during MODES 1, 2, 3, and 4. The purpose of the RCS Operational LEAKAGE LCO is to limit system operation in the presence of LEAKAGE from these sources to amounts that do not compromise safety. TS 3.4.13 specifies the types and amounts of LEAKAGE. TS 3.4.14, "RCS Pressure Isolation Valve (PIV) Leakage," requires leakage from each RCS PIV be within limits. TS 3.4.14 is applicable in MODES 1, 2, 3, and 4. RCS PIVs are defined as any two normally closed valves in series within the RCPB, which separates the high pressure RCS from an attached low pressure system. Although this specification provides a limit on allowable PIV leakage rate, its main purpose is to prevent overpressure failure of the low pressure portions of connecting systems. The leakage limit is an indication that the PIVs between the RCS and the connecting systems are degraded or degrading. PIV leakage could lead to overpressurization of the low pressure piping or components. TS 3.4.15, "RCS Leakage Detection Instrumentation," specifies operability requirements for RCS leakage detection instrumentation. TS 3.4.15 is applicable in MODES 1, 2, 3, and 4. The leakage detection systems must have the capability to detect significant RCPB degradation as soon after occurrence as practical to minimize the potential for propagation to a gross failure. Thus, an early indication or warning signal is necessary to permit proper evaluation of all unidentified leakage. TS 3.4.16, "RCS Specific Activity," requires that RCS dose equivalent I-131 and dose equivalent XE-133 specific activity be within limits. TS 3.4.16 is applicable in MODES 1, 2, 3, and 4. The RCS specific activity LCO limits the allowable concentration level of radionuclides in the reactor coolant. The LCO limits are established to minimize the dose consequences in the event of a main steam line break (MSLB) or steam generator tube rupture (SGTR) accident. TS 3.4.17, "RCS Loop Isolation Valves," requires that each RCS hot and cold leg loop isolation valve be open with power removed from each isolation valve operator. TS 3.4.17 is applicable in MODES 1, 2, 3, and 4. This LCO ensures that a loop isolation valve that becomes closed in MODES 1 through 4 is fully isolated and the plant placed in MODE 5. Loop isolation valves are used for performing maintenance when the plant is in MODE 5 or 6, and startup of an isolated loop is covered by LCO 3.4.18. This LCO also ensures that loop

TS Section 3.4 – Reactor Coolant System
isolation valves remain open in MODES 1, 2, 3, and 4. Closure of the loop isolation valves during these MODES results in the potential for an inadvertent startup of an isolated loop which could result in the SDM being less than assumed in the safety analyses. TS 3.4.18, "RCS Loops-Isolated," specifies requirements for RCS loops operated with loops isolated in MODES 5 and 6 in order to be perform maintenance. While operating with a loop isolated, there is potential for inadvertently opening the isolation valves in the isolated loop. TS 3.4.18 ensures that the loop isolation valves remain closed until the differentials of temperature and boron concentration between the unisolated portion of the RCS and the isolated loops are within acceptable limits. TS 3.4.19, "Steam Generator (SG) Tube Integrity," specifies that a program be established and implemented to ensure that SG tube integrity is maintained and that all SG tubes that satisfy the plugging criteria be plugged in accordance with the Steam Generator Program. TS 3.4.19 is applicable in MODES 1 through 4. Maintaining SG tube integrity means that the tubes are capable of performing their intended RCPB safety function consistent with the licensing basis, including applicable regulatory requirements. The steam generator tube rupture (SGTR) accident is the limiting design basis event for SG tubes and avoiding an SGTR is the basis for this Specification. <u>Summary</u> The content of TS Section 3.4 is being proposed for deletion in its entirety. After the certifications required by 10 CFR 50.82(a)(1) are submitted for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactor vessels in accordance with 10 CFR 50.82(a)(2). As a result, TS Section 3.4 will not apply with the reactor defueled. With TS Section 3.4 deleted in its entirety, the applicable Bases and surveillance section will also be deleted to reflect this change.

TS Section 3.5 – Emergency Core Cooling Systems (ECCS)	
TS Being Deleted	**TS Being Retained**
3.5.1 – Accumulators	
3.5.2 – ECCS-Operating	
3.5.3 – ECCS-Shutdown	
3.5.4 – Refueling Water Storage Tank (RWST)	
3.5.5 – Seal Injection Flow	

Basis

The existing TS Section 3.5, "Emergency Core Cooling Systems (ECCS)," contains LCOs that provide for appropriate functional capability of ECCS equipment required for mitigation of design basis accidents or transients so as to protect the integrity of a fission product barrier.

TS 3.5.1, "Accumulators," requires four ECCS accumulators to be operable. This TS establishes the minimum conditions required to ensure that the accumulators are available to accomplish their core cooling safety function following a LOCA. TS 3.5.1 is applicable in MODES 1 and 2 and MODE 3 with RCS pressure > 1000 psig.

TS 3.5.2, "ECCS-Operating," requires two ECCS trains to be operable. This TS specifies the requirements for the ECCS trains so as to provide core cooling and negative reactivity to ensure that the reactor core is protected after a LOCA; rod ejection accident; loss of secondary coolant accident (including uncontrolled steam release) or loss of feedwater; and SGTR. TS 3.5.2 is applicable in MODES 1, 2 and 3.

TS 3.5.3, "ECCS-Shutdown," requires one ECCS train to be operable. TS 3.5.3 is applicable in MODE 4, and one of the two independent (and redundant) ECCS trains is required to be operable to ensure that sufficient ECCS flow is available to the core following a DBA. In MODE 4 with the RCS temperature < 350°F, one

TS Section 3.5 – Emergency Core Cooling Systems (ECCS)

operable ECCS train is acceptable without single failure consideration on the basis of the stable reactivity of the reactor and the limited core cooling requirements.

TS 3.5.4, "Refueling Water Storage Tank (RWST)," specifies requirements for the RWST operability. During accident conditions, the RWST provides a source of borated water to the ECCS and Containment Spray System pumps. As such, it provides containment cooling and depressurization, core cooling, and replacement inventory and is a source of negative reactivity for reactor shutdown. TS 3.5.4 is applicable in MODES 1, 2, 3, and 4. In those MODES, RWST operability requirements are dictated by ECCS and Containment Spray System operability requirements. Since both the ECCS and the Containment Spray System must be operable in MODES 1, 2, 3, and 4, the RWST must also be operable to support their operation.

TS 3.5.5, "Seal Injection Flow," specifies requirements for the seal injection flow operability. This TS ensures that seal injection flow will be sufficient for RCP seal integrity but limited so that the ECCS trains will be capable of delivering sufficient water to match boiloff rates soon enough to minimize uncovering of the core following a large LOCA. The intent of the LCO limit on seal injection flow is to make sure that flow through the RCP seal water injection line is low enough to ensure that sufficient centrifugal charging pump injection flow is directed to the RCS via the injection points. TS 3.5.5 is applicable in MODES 1, 2, and 3.

Summary

The content of TS Section 3.5 is being proposed for deletion in its entirety. After the certifications required by 10 CFR 50.82(a)(1) are submitted for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactor vessels in accordance with 10 CFR 50.82(a)(2). As a result, TS Section 3.5 will not apply with the reactor defueled. With TS Section 3.5 deleted in its entirety, the applicable Bases and surveillance section will also be deleted to reflect this change.

TS Section 3.6 – Containment Systems

TS Being Deleted	TS Being Retained
3.6.1 – Containment	
3.6.2 – Containment Air Locks	
3.6.3 – Containment Isolation Valves	
3.6.4 – Containment Pressure	
3.6.5 – Containment Air Temperature	
3.6.6 – Containment Spray and Cooling Systems	
3.6.7 – Spray Additive System	
3.6.8 – Deleted	

Basis

The existing TS Section 3.6, "Containment Systems," contains LCOs that provide for appropriate control of process variables, design features, or operating restrictions required to protect the integrity of a fission product barrier, and appropriate functional capability of engineered safety features (ESF) equipment required for mitigation of design basis accidents or transients so as to protect the integrity of a fission product barrier. All TS in Section 3.6 are being proposed for deletion, as identified in the table above.

TS 3.6.1, "Containment," specifies requirements for the containment to ensure it is capable of withstanding the pressures and temperatures of the limiting DBA without exceeding the design leakage rate. The containment is a reinforced concrete structure with a cylindrical wall, a flat foundation mat, and a shallow dome roof. The inside surface of the containment is lined with a carbon steel liner to ensure a high degree of leak tightness during operating and accident conditions. The cylinder wall is prestressed with a post tensioning system in the vertical and horizontal directions, and the dome roof is prestressed utilizing a three-way post tensioning system. The concrete containment building is required for structural integrity of the containment under DBA

TS Section 3.6 – Containment Systems

conditions. The steel liner and its penetrations establish the leakage limiting boundary of the containment. Maintaining the containment operable limits the leakage of fission product radioactivity from the containment to the environment. TS 3.6.1 is applicable in MODES 1, 2, 3, and 4.

TS 3.6.2, "Containment Air Locks," specifies requirements for the structural integrity and leak tightness of the containment air locks. As part of the containment pressure boundary, the air lock safety function is related to control of the containment leakage rate resulting from a DBA. Thus, each air lock's structural integrity and leak tightness are essential to the successful mitigation of such an event. TS 3.6.2 is applicable in MODES 1, 2, 3, and 4.

TS 3.6.3, "Containment Isolation Valves," specifies requirements for the isolation capability of the containment via the containment isolation valves. Containment isolation valves establish the containment boundary during major events. As part of the containment boundary, containment isolation valve operability supports leak tightness of the containment. TS 3.6.3 is applicable in MODES 1, 2, 3, and 4.

TS 3.6.4, "Containment Pressure," specifies limitations on internal containment pressure. Maintaining containment pressure at less than or equal to the LCO upper pressure limit ensures that, in the event of a DBA, the resultant peak containment accident pressure will remain below the containment design pressure. Maintaining containment pressure at greater than or equal to the LCO lower pressure limit provides reasonable assurance that the containment will not exceed the design negative differential pressure following the inadvertent actuation of the Containment Spray System. TS 3.6.4 is applicable in MODES 1, 2, 3, and 4.

TS 3.6.5, "Containment Air Temperature," specifies limitations on containment air temperature. Containment average air temperature is an initial condition used in the DBA analyses and is an important consideration in establishing the containment environmental qualification operating envelope for both pressure and temperature. During a DBA, with an initial containment average air temperature less than or equal to the LCO temperature limit, the resultant peak accident temperature is maintained below the evaluated containment temperatures. As a result, the ability of containment to perform its design function is ensured. TS 3.6.5 is applicable in MODES 1, 2, 3, and 4.

TS 3.6.6, "Containment Spray and Cooling Systems," specifies operability requirements for containment atmosphere cooling to limit post accident pressure and temperature in containment to less the design values. Reduction of containment pressure and the iodine and aerosol removal capability of the spray reduces the release of fission product radioactivity from containment to the environment, in the event of a DBA, to within limits. During a DBA, a minimum of one containment cooling train and one containment spray train are required to maintain the containment peak pressure and temperature below the design limits. Additionally, one containment spray train is also required to remove iodine from the containment atmosphere and maintain concentrations below those assumed in the safety analysis. To ensure that these requirements are met, TS 3.6.6 requires two containment spray trains and two containment cooling trains to be operable. TS 3.6.6 is applicable in MODES 1, 2, 3, and 4.

TS 3.6.7, "Spray Additive System," requires the spray additive system to be operable in MODES 1, 2, 3, and 4. The Spray Additive System is a subsystem of the Containment Spray System that assists in reducing the iodine fission product inventory in the containment environment resulting from a design basis LOCA. TS 3.6.7 is applicable in MODES 1, 2, 3, and 4.

TS 3.6.8 is already deleted.

<u>Summary</u>

The content of TS Section 3.6 is being proposed for deletion in its entirety. After the certifications required by 10 CFR 50.82(a)(1) are submitted for Byron, the 10 CFR 50 licenses will no longer authorize operation of the reactors or emplacement or retention of fuel in the reactor vessels in accordance with 10 CFR 50.82(a)(2). As a result, TS Section 3.6 will not apply with the reactor defueled. With TS Section 3.6 deleted in its entirety, the applicable Bases and surveillance section will also be deleted to reflect this change.

TS Section 3.7 – Plant Systems (Current Title) TS Section 3.7 – Facility Systems (Proposed Title)	
TS Being Deleted	**TS Being Retained**
3.7.1 – Main Steam Safety Valves (MSSVs)	
3.7.2 – Main Steam Isolation Valves (MSIVs)	
3.7.3 – Secondary Specific Activity	
3.7.4 – Steam Generator (SG) Power Operated Relief Valves (PORVs)	
3.7.5 – Auxiliary Feedwater (AF) System	
3.7.6 – Condensate Storage Tank (CST)	
3.7.7 – Component Cooling Water (CC) System	
3.7.8 – Essential Service Water (SX) System	
3.7.9 – Ultimate Heat Sink (UHS)	
3.7.10 – Control Room Ventilation (VC) Filtration System	
3.7.11 – Control Room Ventilation (VC) Temperature Control System	
3.7.12 – Nonaccessible Area Exhaust Filter Plenum Ventilation System	
3.7.13 – Fuel Handling Building Exhaust Filter Plenum (FHB) Ventilation System	
	3.7.14 – Spent Fuel Pool Water Level
	3.7.15 – Spent Fuel Pool Boron Concentration
	3.7.16 – Spent Fuel Assembly Storage

Basis

TS Section 3.7, Plant Systems, contains LCOs that provide for appropriate functional capability of plant equipment required for safe operation of the facility, including the plant being in a defueled condition.

TS 3.7.1, "Main Steam Safety Valves (MSSVs)," requires five MSSVs per steam generator to be operable. TS 3.7.1 is applicable in MODES 1, 2, and 3. The accident analysis requires five MSSVs per steam generator be operable to provide overpressure protection for design basis transients. This provides assurance that the MSSVs will perform their designed safety functions to mitigate the consequences of accidents that could result in a challenge to the RCPB or Main Steam System integrity.

TS 3.7.2, "Main Steam Isolation Valves (MSIVs)," requires four MSIVs and their associated actuator trains to be operable. TS 3.7.2 is applicable in MODE 1 and in MODES 2 and 3 except when all MSIVs are closed. The MSIVs isolate steam flow from the secondary side of the steam generators following a High Energy Line Break (HELB). MSIV closure terminates flow from the unaffected (intact) steam generators. This specification provides assurance that the MSIVs will perform their design safety function to mitigate the consequences of accidents that could result in exposures comparable to the applicable limits.

TS 3.7.3, "Secondary Specific Activity," requires that the specific activity of the secondary coolant shall be ≤ 0.1 μCi/gm dose equivalent I-131. TS 3.7.3 is applicable in MODES 1, 2, 3, and 4. Activity in the secondary coolant results from steam generator tube outleakage from the RCS. A limit on secondary coolant specific activity during power operation minimizes releases to the environment because of normal operation, anticipated operational occurrences, and accidents.

TS 3.7.4, "Steam Generator (SG) Power Operated Relief Valves (PORVs)," requires four SG PORV lines to be operable. TS 3.7.4 is applicable in MODES 1, 2, and 3. One SG PORV line for each of the four steam generators is provided. Each SG PORV line consists of one SG PORV and an associated block valve. The SG PORVs provide a method for cooling the unit to Residual Heat Removal (RHR) entry conditions should the preferred heat sink via the Steam Dump System to the condenser not be available. This is done in conjunction with the Auxiliary Feedwater System providing cooling water from the condensate storage tank (CST). The SG

TS Section 3.7 – Plant Systems (Current Title) TS Section 3.7 – Facility Systems (Proposed Title)
PORVs may also be required to meet the design cooldown rate during a normal cooldown when steam pressure drops too low for maintenance of a vacuum in the condenser to permit use of the Steam Dump System. The SG PORVs also serve as Containment Isolation Valves (CIVs). TS 3.7.5, "Auxiliary Feedwater (AF) System," requires two AF trains to be operable. TS 3.7.5 is applicable in MODES 1, 2, and 3. This specification provides assurance that the AF System will perform its design safety function to mitigate the consequences of accidents that could result in overpressurization of the RCPB. TS 3.7.6, "Condensate Storage Tank (CST)," requires the CST level to be ≥ 60%. TS 3.7.6 is applicable in MODES 1, 2, and 3. The CST provides a nonsafety grade source of water to the steam generators for removing decay and sensible heat from the RCS. TS 3.7.7, "Component Cooling Water (CC) System," requires that the CC system be operable. TS 3.7.7 is applicable in MODES 1, 2, 3, and 4. The CC System is a shared system which provides a heat sink for the removal of process and operating heat from safety related components during a DBA or transient. In the event of a DBA, one CC pump, CC heat exchanger and flow path are required to provide the minimum heat removal capability assumed in the safety analysis for the systems to which it supplies cooling water on the affected unit. TS 3.7.8, "Essential Service Water (SX) System," specifies the requirements for unit-specific and opposite-unit SX trains to be operable. TS 3.7.8 is applicable in MODES 1, 2, 3, and 4. The SX System provides a heat sink for the removal of process and operating heat from safety related components during a Design Basis Accident (DBA) or transient. During normal operation, and a normal shutdown, the SX System also provides this function for various safety related and nonsafety related components. TS 3.7.9, "Ultimate Heat Sink (UHS)," requires that the UHS be operable and the required SX cooling tower (SXCT) fans be operable and operating as specified in TS Table 3.7.9-1 or TS Table 3.7.9-2. TS 3.7.9 is applicable in MODES 1, 2, 3, and 4. The UHS provides a heat sink for processing and operating heat from safety related components during a transient or accident, as well as during normal operation. This is done by utilizing the SX System and the CC System. This specification ensures the UHS has available a sufficient volume of water at or below the maximum temperature that would allow the SX system to operate for at least 30 days following the design basis event without the loss of net positive suction head (NPSH), and without exceeding the maximum design temperature of the equipment served by the SX system. TS 3.7.10, "Control Room Ventilation (VC) Filtration System," requires two VC filtration system trains to be operable. TS 3.7.10 is applicable during MODES 1, 2, 3, 4, 5, and 6 and during movement of irradiated fuel assemblies. The operability of the CRE boundary must be maintained to ensure that the inleakage of unfiltered air into the control room envelope will not exceed the inleakage assumed in the licensing basis analysis of DBA consequences to control room envelope occupants. The control room envelope and its boundary are defined in the Control Room Envelope Habitability Program. During movement of irradiated fuel assemblies, the VC Filtration System must be operable to cope with the release from an FHA involving handling irradiated fuel. In addition, the revised FHA calculation does not credit operability of the VC trains. The results of the analysis demonstrate that the dose consequences for the main control room remain below the acceptance criteria, without relying on active components remaining functional for accident mitigation during and following the event. Proposed License Conditions 2.C.(25) and 2.C.(14) for Byron, Unit 1 and Unit 2, respectively, will prohibit movement of irradiated fuel in the SFP after the submittal of the certifications of permanent removal of fuel from the reactor vessels until 70 days after permanent shutdown. TS 3.7.11, "Control Room Ventilation (VC) Temperature Control System," requires two VC Temperature Control System trains to be operable. TS 3.7.11 is applicable in MODES 1, 2, 3, 4, 5, and 6, and during movement of irradiated fuel assemblies. The design basis of the VC Temperature Control System is to maintain the control room temperature for 30 days of continuous occupancy. The VC Temperature Control System is capable of removing sensible and latent heat loads from the control room, which include consideration of equipment heat loads and personnel occupancy requirements, to ensure equipment operability. The temperature control system portion of the VC System (VC Temperature Control System) provides temperature control for the control room normally and following isolation of the control room.