ITS NRC Questions

Id	**1461**
NRC Question Number	**RPG-001**
Category	**Technical**
ITS Section	**3.9**
ITS Number	**3.9.1**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number(s)	
NRC Reviewer Supervisor	**Rob Elliott**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	**Marked-up changes to CTS pages for several LCOs in ITS section 3.9, "Refueling Operations," refer to same CTS LCO Condition instead of specifying the affected ITS LCO Condition. For example, a side note for CTS LCO Conditions 3.8.a.1a and b, (pl. refer to Attachment 1, Volume 14, Rev 0, Page 5 of 175), states, "see CTS 3.8.a.1 and 3.8.a.8." The side note should have specified the affected ITS LCO Condition to which the CTS LCO Conditions 3.8.a.1a&b are relocated/converted. This concern also applies to side notes on the same page (page 5) for CTS LCO Conditions 3.8.a.2, 3.8.a.3, and note 1 (bottom of CTS page 3.8-1). Please note that marked changes on page 5 are also repeated on pages 25, 26, 27, 48, 49, 94, 95, 111, 112, 119, 126, 132, 139, and 147.** **The staff believes that correct marked-up changes are necessary to perform a technical review of the subject ITS section.**
Attach File 1	
Attach File 2	
Issue Date	**1/8/2010**
Added By	**Ravinder Grover**
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 1 of 208

Modified By	
Date Added	**1/8/2010 2:24 PM**
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover**

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 2 of 208

Licensee Response/NRC Response/NRC Question Closure

Id	**1841**
NRC Question Number	**RPG-001**
Select Application	**Licensee Response**
Response Date/Time	**1/21/2010 12:45 PM**
Closure Statement	
Response Statement	**During the ITS conversion, information which is included in the current Technical Specifications (CTS) will not be captured in the site specific Improved Technical Specifications (ITS). When this happens, a specific section in the submittal is provided for the information not being relocated. When the entire Specification is not being relocated, this information is included in the Volume of the submittal that closely relates to the Specification. It will be contained in an area called "Relocated/Deleted Current Technical Specification." This Specification in this section is identified by the CTS Specification number. Each Relocated/Deleted Specification includes a CTS Markup, Discussion of Change, and a Specific No Significant Hazard Consideration. The information that you are looking for is contained in Attachment 1, Volume 14, starting on page 108 of 175.**
Question Closure Date	
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Ravinder Grover** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**1/21/2010 12:46 PM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 3 of 208

Licensee Response/NRC Response/NRC Question Closure

Id	**2391**
NRC Question Number	**RPG-001**
Select Application	**NRC Question Closure**
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Response Statement	
Question Closure Date	**3/2/2010**
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Ravinder Grover**
Added By	**Ravinder Grover**
Date Added	**3/2/2010 12:12 PM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 4 of 208

ITS NRC Questions

Id	**1781**
NRC Question Number	**RPG-002**
Category	**Technical**
ITS Section	**3.9**
ITS Number	**3.9.1**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number(s)	**15 of 175**
NRC Reviewer Supervisor	**Carl Schulten**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	**Attachment 1, Volume 14, Rev. 0, Page 15 of 175 proposed ITS Bases Section B 3.9.1**

A statement in ITS Bases Section B 3.9.1 (3rd paragraph) states, "The Chemical and Volume Control System (CVCS) is the system capable of maintaining the reactor subcritical in cold conditions by maintaining the boron concentration."

KPS proposes to replace the statement with insert 1 on Page 16. However, the proposed insert does not specify a plant specific system for maintaining the boron concentration. KPS USAR section 1.3.5, "Reactivity Control (GDC 27 - GDC 32)," states, "In addition to the reactivity control achieved by the RCC assemblies (RCCA) as detailed in Chapter 7, reactivity control is provided by the Chemical and Volume Control System which regulates the concentration of boric acid solution neutron absorber in the Reactor Coolant System."

Please explain the reason for deletion of the CVCS function from the Bases section.

Attach File 1	
Attach File 2	

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 5 of 208

Issue Date	**2/24/2010**
Added By	**Ravinder Grover**
Date Modified	
Modified By	
Date Added	**2/24/2010 3:49 PM**
Notification	**NRC/LICENSEE Supervision** **Ravinder Grover**

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 6 of 208

Licensee Response/NRC Response/NRC Question Closure

Id	**2371**
NRC Question Number	**RPG-002**
Select Application	**Licensee Response**
Response Date/Time	**3/2/2010 10:50 AM**
Closure Statement	
Response Statement	**While the quoted information from USAR section 1.3.5 is correct, it is not the current and licensed requirement; it is the original FSAR requirement. Specifically, on the first page of Section 1.3, a Note at the front of the Section states:** **"NOTE: Section 1.3 provides original licensing and design basis information for the Kewaunee Plant as described in the facility license application Amendment No. 7 (the FSAR), dated January 27, 1971, and subsequent Amendments 8 through 20; and approved in the AEC Safety Evaluation issued July 24, 1972, and its supplements. This information was developed in support of plant licensing; therefore, *this section is considered historical and should not be revised*. Updated information can be found in the applicable section of the USAR."** **For KPS GDC 27, this is found in USAR Section 3.1.2.3, as shown in the Reference Section of the ITS 3.9.1 Bases (Page 19). USAR Section 3.1.2.3 states as the Criterion: "Two independent reactivity control systems, preferably of different principles, shall be provided (GDC 27)." These are the words KPS inserted in lieu of the ISTS wording for 10 CFR 50, Appendix A, GDC 26.** **KPS further noted that the ISTS wording stated that there were two independent reactivity control systems, but only one potential system, the Chemical and Volume Control System (CVCS), is identified in the paragraph. The main reactivity control system that is specified in the Technical Specifications, i.e., control rods, is not in the paragraph. KPS also reviewed the wording of 10 CFR 50, Appendix A, GDC 56 and noted that the ISTS wording does not match the GDC being referenced. The words in 10 CFR 50, Appendix A are:** **"*Criterion 26--Reactivity control system redundancy and capability*. Two independent reactivity control systems of different design principles shall be provided. One of the systems shall use control rods, preferably including a positive means for inserting the rods, and shall be capable of reliably controlling reactivity changes to assure that under conditions of normal operation, including anticipated operational occurrences, and with appropriate margin for malfunctions such as stuck rods, specified**

acceptable fuel design limits are not exceeded. The second reactivity control system shall be capable of reliably controlling the rate of reactivity changes resulting from planned, normal power changes (including xenon burnout) to assure acceptable fuel design limits are not exceeded. One of the systems shall be capable of holding the reactor core subcritical under cold conditions."

None of the words in 10 CFR 50, Appendix A use the CVCS by name. Furthermore, the CVCS was deleted from the Technical Specifications and allowed to be placed in a document under utility control when the ISTS was originally issued. Thus, adding the name of a non-Technical Specification System into the Applicable Safety Analyses Bases could imply that the System needs to be in the Technical Specification.

Therefore, KPS does not believe that the CVCS should be mentioned in the Bases paragraph, and that the proposed words in the KPS submittal are correct and should be maintained as is.

Question Closure Date	
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Ravinder Grover** **Robert Hanley** **Jerry Jones** **Bryan Kays**
Added By	**David Mielke**
Date Added	**3/2/2010 10:57 AM**
Modified By	
Date Modified	

Licensee Response/NRC Response/NRC Question Closure

Id	**2631**
NRC Question Number	**RPG-002**
Select Application	**NRC Question Closure**
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Response Statement	
Question Closure Date	**3/18/2010**
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Ravinder Grover**
Added By	**Ravinder Grover**
Date Added	**3/18/2010 9:05 AM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 9 of 208

ITS NRC Questions

Id	**1791**
NRC Question Number	**RPG-003**
Category	**Technical**
ITS Section	**3.9**
ITS Number	**3.9.5**
DOC Number	
JFD Number	**3**
JFD Bases Number	
Page Number(s)	**58, 59**
NRC Reviewer Supervisor	**Carl Schulten**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**

NRC Question

Attachment 1, Volume 14, Rev. 0, Page 58 of 175 proposed ITS LCO 3.9.3, "Residual Heat Removal (RHR) and Coolant Circulation - High Water Level"

Proposed change deletes logical connector OR between Required Actions A.6.1 and A.6.2. Justification For Deviations (JFD) note 3 on page 59 states,

"ISTS 3.9.5 Required Actions A.6.1 and A.6.2 are connected by an "OR" logical connector, such that either one can be performed to meet the requirements of the ACTION. However, the two Required Actions are applicable to all the penetrations; either Required Action A.6.1 or Required Action A.6.2 must be performed for all the penetrations. Thus, this will not allow one penetration to be isolated by use of a manual valve and another penetration to be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. This is not the intent of the requirement. The requirement is based on ISTS LCO 3.9.4, which requires each penetration to be either: a) closed by a manual or automatic isolation valve, blind flange, or equivalent; or b) capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. For consistency with the actual LCO requirement, ISTS 3.9.5 Required Actions A.6.1 and A.6.2 have been combined into a single Required Action in ITS 3.9.3 Required Action A.6."

Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete Conditions, Required Actions, 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. Required Actions A.6.1 and A.6.2 as specified in the TS, must be taken when the plant is in Condition A. These Actions as well as Completion Times for the Actions are not bracketed, and therefore plant specific changes are not acceptable. Revise the proposed ITS to incorporate the Required Actions and completion times of A.6.1 and A.6.2 per NUREG-1431, Revision 3. .

Please note, the above evaluation also applies to proposed changes in ITS LCO 3.9.4, "Residual Heat Removal (RHR) and Coolant Circulation - Low Water Level," Attachment 1, Volume 14, Rev. 0, Page 79 of 175.

Attach File 1	
Attach File 2	
Issue Date	**2/25/2010**
Added By	**Ravinder Grover**
Date Modified	
Modified By	
Date Added	**2/25/2010 9:16 AM**
Notification	**NRC/LICENSEE Supervision** **Ravinder Grover**

Licensee Response/NRC Response/NRC Question Closure

Id	**2481**
NRC Question Number	**RPG-003**
Select Application	**Licensee Response**
Response Date/Time	**3/8/2010 10:20 AM**
Closure Statement	
Response Statement	**The purpose of ISTS 3.9.5 Required Actions A.4, A.5, A.6.1 and A.6.2, as stated in the ISTS Bases, is to ensure that all containment penetrations are either closed or can be closed so that the dose limits are not exceeded when the RHR loop requirements are not met. These actions come directly from the requirements of ISTS 3.9.3. With respect to the penetrations providing direct access from the containment atmosphere to the outside atmosphere, ISTS LCO 3.9.3.c (shown on Page 164 of Volume 14) requires that for each penetration, either it must be capable of being closed by a manual or automatic isolation valve, blind flange, or equivalent, or it must be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. Thus, ISTS LCO 3.9.3 allows either option for each of the penetrations; a single option does not have to be used for all of the penetrations.** **ISTS 3.9.5 Required Actions A.6.1 and A.6.2 are written such that only one of these can be used for every single penetration. Either you have to meet Required Action A.6.1 for all the penetrations or you have to meet Required Action A.6.2 for all the penetrations. Obviously, a plant cannot meet Required Action A.6.2 for all the penetrations, since they all do not have automatic closure capability. The true intent of these two Required Actions is as stated in the ISTS Bases. The ISTS Bases for these two Required Actions (Page 64) are in the same paragraph and describes that each penetration must be closed by a manual or automatic isolation valve, blind flange, or equivalent, or verified to be capable of being closed by and OPERABLE Containment Purge and Exhaust Isolation System. Thus, for each penetration, you chose Required Action A.6.1 or A.6.2.** **KPS has made a change to reflect what the requirements are in both ISTS LCO 3.9.3 and ISTS 3.9.5 Required Actions A.6.1 and A.6.2 Bases. Adopting the ISTS 3.9.5 Required Actions A.6.1 and A.6.2 as written, without combining the two in a single Required Action, would force KPS to essentially use ISTS 3.9.5 Required Action A.6.1 at all times (since not all penetrations are capable of being closed by an automatic isolation system). This change has been previously reviewed and approved by the NRC during recent ITS conversions, like DC Cook Units 1 and 2 and Davis-Besse. Therefore, KPS believes that this change is only an editorial change to correct an inconsistency with the base requirement in ISTS**

3.9.3. Furthermore, as proposed in ITS 3.9.3 Required Action A.6 (i.e., combined into one Required Action), it is also consistent with the ISTS Bases for the Required Actions.

Question Closure Date	
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Ravinder Grover** **Robert Hanley** **Jerry Jones** **Bryan Kays**
Added By	**David Mielke**
Date Added	**3/8/2010 10:21 AM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 13 of 208

Licensee Response/NRC Response/NRC Question Closure

Id	**2671**
NRC Question Number	**RPG-003**
Select Application	**NRC Response**
Response Date/Time	**3/29/2010 6:00 PM**
Closure Statement	
Response Statement	**Attachment 1, Volume 14, Rev. 0, Page 58 of 175 proposed ITS LCO 3.9.3, "Residual Heat Removal (RHR) and Coolant Circulation - High Water Level"** **FOLLOW-UP on the Licensee's response to the NRC's question RPG-003** **NRC question RPG-003 concerned KPS's proposed ITS deletion of the logical connector OR between Required Actions A.6.1 and A.6.2. KPS's 3/8/2010, response to question RPG-003 does not provide adequate justification for the change. Please provide plant-specific information to explain why the the logical connector format, as stated in the STS and reiterated in the question, 'Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete Conditions, Required Actions, Completion Times, Surveillances, and Frequencies' is NOT applicable to the KPS ITS. Also, please provide the plant-specific justification for the proposed ITS deletion of 'OPERABLE' requirement from STS REQUIRED ACTION A.6.2 for the Containment Purge and Exhaust System.**
Question Closure Date	
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Ravinder Grover**
Added By	**Ravinder Grover**
Date Added	**3/29/2010 1:10 PM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 14 of 208

Licensee Response/NRC Response/NRC Question Closure

Id	**2861**
NRC Question Number	**RPG-003**
Select Application	**NRC Question Closure**
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Response Statement	
Question Closure Date	**4/29/2010**
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover**
Added By	**Ravinder Grover**
Date Added	**4/29/2010 3:02 PM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 15 of 208

ITS NRC Questions

Id	**1801**
NRC Question Number	**RPG-004**
Category	**Technical**
ITS Section	**3.9**
ITS Number	**3.9.3**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number (s)	**58**
NRC Reviewer Supervisor	**Carl Schulten**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**

NRC Question

Attachment 1, Volume 14, Rev. 0, Page 58 of 175, proposed ITS LCO 3.9.3, "Residual Heat Removal (RHR) and Coolant Circulation - High Water Level,"

Proposed change in SR 3.9.3.1 deletes the bracketed flow rate requirement for the RHR loop. This information is required to satisfy the surveillance criteria in 10CFR50.36(c)(3). The flow rate is specified in the KPS USAR.

Please note, the same concern also applies to proposed ITS LCO 3.9.4, "Residual Heat Removal (RHR) and Coolant Circulation - Low Water Level," Attachment 1, Volume 14, Rev. 0, Page 80 of 175.

Attach File 1	
Attach File 2	
Issue Date	**2/25/2010**
Added By	**Ravinder Grover**
Date Modified	
Modified By	
Date Added	**2/25/2010 9:20 AM**
Notification	**NRC/LICENSEE Supervision** **Ravinder Grover**

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 16 of 208

Licensee Response/NRC Response/NRC Question Closure

Id	**2501**
NRC Question Number	**RPG-004**
Select Application	**Licensee Response**
Response Date/Time	**3/10/2010 7:05 AM**
Closure Statement	
Response Statement	**The Kewaunee Power Station (KPS) CTS does not include any shutdown cooling minimum flow rate requirements while in MODE 6. KPS added SR 3.9.3.1 (and SR 3.9.4.1) as part of the ITS conversion. However, the minimum flow rate value was not included, as is stated in JFD 5. The JFD states that "The ISTS Bases states that the flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability. However, the decay heat is not always the same; it is a function of time after shutdown and the power history of the fuel." Thus, there is no single value of shutdown cooling flow that will ensure decay heat is removed under all conditions. The JFD further states "Furthermore, SRs in Section 3.4 (ITS SRs 3.4.6.1, 3.4.7.1, and 3.4.8.1) require a similar verification that the RHR loop is in operation, but do not specify a flow rate requirement." In addition, KPS does not have RHR flow indication that could quantify the flow through the RHR heat exchanger (which is the flow removing the decay heat). The RHR flow meter is downstream of the connection where the heat exchanger discharge flow and heat exchanger bypass flow is merged. When in the shutdown cooling mode, some of the flow is going through the heat exchanger and some of the flow is bypassing the heat exchanger. Flow through the bypass is throttled to obtain the flow necessary to maintain RCS temperature at the desired value. However, the actual flow through the heat exchanger is not known, only the total RHR flow is known. USAR Figure 9.3-1, on page 9.3-27, provides a drawing of the RHR System (FT 626 is the flow instrument)** **KPS believes that including a Surveillance to verify one RHR loop is in operation and circulating reactor coolant is sufficient to ensure the surveillance criteria of 10 CFR 50.36(c)(3) are met. Specifically, 10 CFR 50.36(c)(3) states that "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." SR 3.9.3.1 continues to ensure that this requirement is met, since there is no specific flow value in any safety limit. LCO 3.9.3 is required to ensure temperature is maintained to prevent boiling (as stated in the ASA section of the ISTS Bases), and this is met by having one RHR loop in operation and circulating coolant.**

Question Closure Date	
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Ravinder Grover** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**3/10/2010 7:05 AM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 18 of 208

Licensee Response/NRC Response/NRC Question Closure

Id	**2641**
NRC Question Number	**RPG-004**
Select Application	**NRC Response**
Response Date/Time	**3/19/2010 6:00 PM**
Closure Statement	
Response Statement	**KPS's March 10, 2010 response to the NRC question RPG-004 concerning KPS's justification for not specifying the RHR loop flowrate as required in the ITS, and KPS's proposed changes to the ITS Bases section B3.9.3 (Page 64 of 175), do not provide adequate information on how KPS's circulating coolant system would ensure that thermal and boron stratification is minimized without establishing the RHR loop flow rate. The ITS Bases state that RHR loop flowrate is necessary to provide sufficient decay heat removal capability and to prevent thermal and boron stratification in the core. Please provide additional justification for minimizing/preventing thermal and boron stratification in the core.**
Question Closure Date	
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Ravinder Grover**
Added By	**Ravinder Grover**
Date Added	**3/19/2010 8:26 AM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 19 of 208

Licensee Response/NRC Response/NRC Question Closure

Id	**2681**
NRC Question Number	**RPG-004**
Select Application	**Licensee Response**
Response Date/Time	**3/30/2010 6:45 AM**
Closure Statement	
Response Statement	**KPS does not include the RHR flowrate in the KPS ITS SRs similar to several similar vintage PWRs (Point Beach, Prairie Island, and R.E. Ginna) which all have ITS. KPS does not have a specific analysis for boron and thermal stratification.** **The Kewaunee Power Station reviewed boron and thermal stratification industry standards that were considered in the development of NUREG-1431.** **As an industry, the fact that by license, RHR flow is maintained to the Reactor Coolant System while shutdown precludes that possibility of stratification. The one hour exception in the ISTS LCO 3.9.5 Note (KPS ITS LCO 3.9.3 Note) allows for stable water conditions during movement of components such as reactor internals. This is an accepted industry practice and an allowance already approved by the NRC. The ISTS Bases description of the Note does not discuss thermal stratification issues. It only provides compensatory measures to preclude boron concentration reduction during this 1 hour period.** **Thermal and boron stratification do not occur with forced circulation as required by ITS. During MODE 6, temperatures are maintained well below boiling in the core with the water level above the core and temperature of the coolant at <140°F by procedure in the refueling cavity. Temperatures encountered in MODE 6 do not present a safety issue from thermal stratification since it is common industry practice to secure RHR for short periods of time. CTS requires RHR pumps to be OPERABLE, but does not specify a flow requirement.** **Boron stratification is not a concern due to the fact that boron is soluble well above refueling concentrations that could possibly cause blockage of flow channels. WCAP 1570 solubility curves in water show that at 0 ºC boron is soluble to ~4800 ppm and at 20ºC boron is soluble to ~8000 ppm. Also, when in MODE 6 with boron concentration within the limits of LCO 3.9.1, the possibility of a reactivity event is extremely remote. Diffusion of boron follows the rules of diffusion theory, thus there is low probability of varying concentrations of boron in the reactor coolant without flow. Stratification is more of a post accident situation with a loss of coolant**

accident at power.

Therefore KPs considers that industry PWR design precludes thermal and boron stratification in MODE 6.

Question Closure Date	
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**3/30/2010 6:48 AM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 21 of 208

Licensee Response/NRC Response/NRC Question Closure

Id	**2951**
NRC Question Number	**RPG-004**
Select Application	**NRC Question Closure**
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Response Statement	
Question Closure Date	**5/13/2010**
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision**
Added By	**Victor Cusumano**
Date Added	**5/13/2010 8:37 AM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 22 of 208

ITS NRC Questions

Id	**2151**
NRC Question Number	**RPG-010**
Category	**Technical**
ITS Section	**3.9**
ITS Number	**3.9.4**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number(s)	**89,127,164,166**
NRC Reviewer Supervisor	**Carl Schulten**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	**Attachment 1, Volume 14, Rev. 0, Pages 89,164,166 of 175 proposed ISTS Section 3.9.4, "Containment Penetrations"**

KPS Proposed changes:

(a) ISTS LCO 3.9.4, addresses specific requirements for the containment penetrations status during movement of [recently] irradiated fuel assemblies within containment. On page 166, KPS states that no credit is taken for the containment penetrations in the fuel handling accident analysis at KPS and since the Applicability of ISTS 3.9.4 is during movement of recently irradiated fuel assemblies within containment, the subject LCO is not included in KPS ITS.

(b) On page 127, KPS states, "CTS 3.8.a.3 requires the reactor to be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. The ITS does not include this requirement. This changes the CTS by moving the explicit decay time requirement from the Technical Specifications to

the Technical Requirements Manual (TRM). This change is designated as a less restrictive removal of detail change because a requirement is being removed from the Technical Specifications." Whereas, marked-up changes on page 102 of KPS ITS Bases B 3.9.7 (KPS B 3.9.5) show that KPS intends to keep the minimum decay time which is marked-up as 100 hours, in the Bases.

Discussion:

As stated in the ITS Bases, "fuel handling accidents, analyzed in Reference 3, include dropping a single irradiated fuel assembly and handling tool or a heavy object onto other irradiated fuel assemblies. The requirements of LCO 3.9.7, "Refueling Cavity Water Level," in conjunction with a minimum decay time of 100 hours prior to [irradiated fuel movement with containment closure capability or a minimum decay time of [x] days without containment closure capability], ensures that the release of fission product radioactivity, subsequent to a fuel handling accident, results in doses that are well within the guideline values specified in 10 CFR 100."

Based on the above, please retain ITS LCO 3.9.4 for KPS ITS and specify of minimum decay time requirement in KPS ITS Bases to ensure the staff can conclude KPS TS ensure adequate protection of the public health and safety.

Attach File 1	
Attach File 2	
Issue Date	**6/14/2010**
Added By	**Ravinder Grover**
Date Modified	
Modified By	
Date Added	**6/14/2010 12:51 PM**
Notification	**Kewaunee ITS Conversion Database Members** **NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover**

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 24 of 208

Licensee Response/NRC Response/NRC Question Closure

Id	**3601**
NRC Question Number	**RPG-010**
Select Application	**Licensee Response**
Response Date/Time	**6/21/2010 4:00 PM**
Closure Statement	
Response Statement	**KPS has re-reviewed the decision to request the relocation of the Containment Penetration Specification (CTS 3.8.a.1 and 8) and will withdraw the request. ISTS 3.9.4, as modified to meet the KPS design and analysis, will be included as ITS 3.9.6. Due to this change, other Specifications are also being modified. Specifically, ITS 3.3.6, Containment Purge and Vent Isolation Instrumentation (new Applicability and ACTIONS for moving fuel), ITS 3.6.1, Containment (ITS cross-reference change only) , ITS 3.6.2, Containment Air Locks (ITS cross-reference change only), ITS 3.9.3, RHR and Coolant Circulation - High Water Level (change related to adding the Specification back in), and ITS 3.9.4, RHR and Coolant Circulation - Low Water Level (change related to adding the Specification back in). Furthermore, the relocation justification for CTS 3.8.a.1 and 8 in Section 3.9, as well as other CTS Markup cross-references in Sections 3.7 and 3.9 have been included. A draft markup regarding this change is attached. This change will be reflected in the supplement to this section of the ITS conversion amendment.**
Question Closure Date	
Attachment 1	**RPG-010 Markup.pdf** (2MB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**6/21/2010 3:58 PM**
Modified By	
Date Modified	

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NEW ITS 3.9.6

ATTACHMENT 6

ITS 3.9.6, CONTAINMENT PENETRATIONS

Current Technical Specification (CTS) Markup
and Discussion of Changes (DOCs)

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

Applicability

a. During REFUELING OPERATIONS: — L06

1. Containment Closure

LCO 3.9.6.a and b

a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [(1)] in 30 minutes or less. — LA01
In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted. — L01

LCO 3.9.6.c.1 and 2

b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve. — L02, L03
, blind flange, or equivalent
Add proposed LCO Note

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously. — See ITS 3.3.6 and 3.3.8

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. — See CTS 3.8.a.3
Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service. — See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE. — See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily. — See ITS 3.9.1

---

(1) Administrative controls ensure that: — LA01
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

ITS

A01

ITS 3.9.6

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

on an actual or simulated actuation signal

L04

LCO 3.9.6.c.2

SR 3.9.6.2

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

L05

Add proposed SR 3.9.6.2 Note

L05

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

See CTS 3.8.a.9

b. Performance Requirements

1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal.

2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show ≥95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

3. Fans shall operate within ±10% of design flow when tested.

See ITS 5.5.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

ACTION A

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

A02

Add proposed SR 3.9.6.1

M01

DISCUSSION OF CHANGES
ITS 3.9.6, CONTAINMENT PENETRATIONS

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 3.0, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 When the containment penetrations are not in the required condition specified in CTS 3.8.a.1 or CTS 3.8.a.8, CTS 3.8.b requires refueling of the reactor to cease, initiation of action to restore the containment penetrations to the required conditions, and no operations be performed that could increase the reactivity of the core. Under similar conditions, ITS 3.9.6 ACTION A only requires movement of irradiated fuel assemblies within containment to be suspended. This changes the CTS by deleting the requirements to initiate action to restore the containment penetrations to the required conditions and that no operations be performed that could increase the reactivity of the core.

The purpose of CTS 3.8.a.8 is to ensure proper compensatory actions are taken to exit the Applicability of the LCO. CTS 3.8.a.1 and 3.8.a.8 are only applicable during REFUELING OPERATIONS, which is defined in CTS Section 1.0 as the movement of reactor vessel internals that could affect the reactivity of the core within the containment when the vessel head is unbolted or removed. Thus, after the first requirement of CTS 3.8.b is met (i.e., suspend refueling the reactor), the Applicability has been exited and thus, continuation of the requirements of CTS 3.8.b are not required. Therefore, this change is acceptable and is designated as administrative since the technical requirements have not been changed.

MORE RESTRICTIVE CHANGES

M01 CTS 3.8.a does not provide a Surveillance Requirement to verify each required containment penetration is in the required status. The ITS adds a Surveillance Requirement (SR 3.9.6.1) to verify each required containment penetration is in the required status once every 7 days. This changes the CTS by adding a new Surveillance Requirement for the containment penetrations.

This change is acceptable because the added Surveillance Requirement ensures that each required containment penetration is in the required status to support the containment penetration conditions assumed in the Fuel Handling Accident (FHA) analysis. In addition, this change is acceptable because the Surveillance Requirement continues to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. This change is designated as more restrictive because a new Surveillance Requirement has been added.

DISCUSSION OF CHANGES
ITS 3.9.6, CONTAINMENT PENETRATIONS

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements*) CTS 3.8.a.1.a requires at least one door in each personnel air lock to be capable of being closed "within 30 minutes." CTS 3.8.a.1.a is modified by a footnote (1) that states "Administrative controls ensure that appropriate personnel are aware that both personnel air lock doors are open; a specified individual(s) is designated and available to close the air lock following a required evacuation of containment; and, any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed." ITS 3.9.6 does not contain this footnote information or the 30 minute requirement. This changes the CTS by moving the information contained in the footnote and the 30 minute requirement to the Bases.

The removal of these details, which are related to procedural details for meeting Technical Specification requirements, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for at least one door in each personnel air lock to be capable of being closed. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to procedural details for meeting Technical Specification requirements is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.8.a.1.a, in part, requires at least one door in each personnel air lock to be closed when the reactor vessel head or upper internals are being lifted. ITS 3.9.6 does not include this requirement. This changes the CTS by not requiring one door in each personnel air lock to be closed when the reactor vessel head or upper internals are being lifted.

The purpose of CTS 3.8.a.1 is to ensure that if a fuel handling accident occurs, the release of any subsequent fission products results in doses that are well within the guideline values specified in Regulatory Guide 1.183. A fuel handling accident, as analyzed in USAR Section 14.2.1, is postulated to occur during handling of irradiated fuel assemblies; not handling the vessel head or upper internals. Thus, moving the vessel head or upper internals cannot result in a fuel handling accident. Any additional requirements, above those required to meet the assumptions of the fuel handling accident, are more appropriately controlled

by plant procedures. Therefore, this change is acceptable and is designated a less restrictive change since the requirement to maintain containment closure capability during movement of the vessel head or upper internals is being deleted from the CTS.

L02 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.8.a.1.b, in part, states that each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve. ITS LCO 3.9.6.c.1 states that each penetration providing direct access from the containment atmosphere to the outside atmosphere is closed by a manual or automatic isolation valve, blind flange, or equivalent. This changes the CTS by specifying the use of a blind flange or an equivalent means of isolating a containment penetration.

The purpose of CTS 3.8.a.1 is to ensure the containment penetrations are in the condition assumed in the Fuel Handling Accident (FHA) analysis. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The addition of the option to use a blind flange or some other equivalent means of isolating the containment penetration allows additional flexibility in the ITS that was not available in CTS. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L03 *(Category 1 – Relaxation of LCO Requirements)* ITS LCO 3.9.6 Note states "Penetration flow path(s), except the equipment hatch, providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls." CTS 3.8.a does not include such an allowance. This changes the CTS by allowing containment penetration flow paths to be unisolated under administrative controls during movement of irradiated fuel assemblies within containment.

The purpose of CTS 3.8.a.1 is to ensure the containment penetrations are in the condition assumed in the Fuel Handling Accident (FHA) analysis. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The Reviewer's Note in the ISTS LCO Bases associated with the LCO Note states that the allowance to have the personnel air lock doors open and the penetration flow paths unisolated under administrative control requires confirmatory dose calculations approved by the NRC staff and commitments from the licensee to implement acceptable administrative procedures to ensure that in the event of a refueling accident that the open penetration(s) can and will be promptly closed. The confirmatory dose calculations were made by the NRC as part of Amendment 166, dated 3/17/2003 (ADAMS Accession No. ML030210062) as modified by Amendment 190, dated 3/8/2007 (ADAMS Accession No. ML070430020). These Amendments revised the radiological consequence analyses for the KPS FHA to implement the Alternate Source Term. Kewaunee Power Station commits to implementing administrative procedures to ensure that in the event of a refueling accident, the open air locks and open penetration(s) can and will be promptly closed. This

change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L04 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 3.8.a.8 requires verification of the automatic actuation of the Containment Ventilation and Purge valves on a containment ventilation isolation signal. ITS SR 3.9.6.2 specifies that the signal may be from either an actual or simulated signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal to perform the Surveillance.

The purpose of CTS 3.8.a.8 is to ensure that the containment purge and vent valves operate correctly upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L05 *(Category 7 – Relaxation Of Surveillance Frequency)* CTS 3.8.a.8 includes a Surveillance Frequency of "immediately prior to and daily during REFUELING OPERATIONS" for performing a Surveillance of the Containment Ventilation and Purge System. The ITS SR 3.9.6.2 Frequency for the same requirement is 18 months. ITS SR 3.9.6.2 is also modified by a Note that states that SR 3.9.6.2 is not required to be met for containment purge and vent valve(s) in penetrations that are closed to comply with LCO 3.9.6.c.1. This changes the CTS by changing the Surveillance Frequency from immediately prior to and daily during REFUELING OPERATIONS to 18 months and adding the Note that the SR is not required to be met for containment purge and vent valve(s) in penetrations that are closed to comply with ITS LCO 3.9.6.c.1.

The purpose of CTS 3.8.a.8 is to verify the equipment required to meet the LCO is OPERABLE. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. Containment purge and vent valve testing is still required, but at a Frequency consistent with the testing Frequency for containment isolation valves required in MODES 1, 2, 3, and 4. This Frequency provides an appropriate degree of assurance that the valves are OPERABLE. When containment purge and vent valve(s) in penetrations are closed to comply with ITS LCO 3.9.6.c.1, the penetrations are in the expected condition (isolated) to mitigate the effects of a fuel handling accident inside containment. Therefore, there is no need for the actuation signal to reposition the valves to the closed position. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L06 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.8.a specifies that the CTS 3.8.a.1 containment closure requirements are applicable during

DISCUSSION OF CHANGES
ITS 3.9.6, CONTAINMENT PENETRATIONS

REFUELING OPERATIONS, which is defined in CTS Section 1.0 as the movement of reactor vessel internals that could affect the reactivity of the core within the containment when the vessel head is unbolted or removed. ITS 3.9.6 is applicable during movement of irradiated fuel assemblies within containment. This changes the CTS by not requiring the containment closure requirements to be met when moving or handling control rods during MODE 6 operation.

The purpose of CTS 3.8.a.1 is to ensure that if a fuel handling accident occurs, the release of any subsequent fission products results in doses that are well within the guideline values specified in Regulatory Guide 1.183. A fuel handling accident, as analyzed in USAR Section 14.2.1, can only occur during handling of irradiated fuel assemblies; not moving or handling control rods (which are the only other reactor vessel internals currently in use at KPS that could affect reactivity of the core). Thus, moving or handling the control rods cannot result in a fuel handling accident. Any additional requirements, above those required to meet the assumptions of the fuel handling accident, are more appropriately controlled by plant procedures. Therefore, this change is acceptable and is designated a less restrictive change since the requirement to maintain containment closure capability during movement or handling of control rods in MODE 6 is being deleted from the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.9 REFUELING OPERATIONS

3.9.4 Containment Penetrations

LCO 3.9.4 The containment penetrations shall be in the following status:

3.8.a.1.a

a. The equipment is hatch closed and held in place by [four] bolts;

b. One door in each air lock is [capable of being] closed; and

3.8.a.1.b

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere is either:

1. Closed by a manual or automatic isolation valve, blind flange, or equivalent; or

3.8.1.a.b, 3.8.a.8

2. Capable of being closed by an OPERABLE Containment Purge and ~~Exhaust~~ Vent Isolation System.

DOC L03

, except the equipment hatch,

---NOTE---

Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

3.8.a APPLICABILITY: During movement of [~~recently~~] irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.8.b A. One or more containment penetrations not in required status.	A.1 Suspend movement of [~~recently~~] irradiated fuel assemblies within containment.	Immediately

CTS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
DOC M01 SR 3.9.4.1	Verify each required containment penetration is in the required status.	7 days
3.8.a.8 SR 3.9.4.2	----------NOTE---------- Not required to be met for containment purge and vent exhaust valve(s) in penetrations closed to comply with LCO 3.9.4.c.1. ---------- Verify each required containment purge and vent exhaust valve actuates to the isolation position on an actual or simulated actuation signal.	[18] months

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.6, CONTAINMENT PENETRATIONS

1. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

2. A typographical error within the ISTS has been corrected. The word "is" has been placed after the word "hatch".

3. The punctuation corrections have been made consistent with Section 5.1.3 of the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01.

4. Changes are made (additions, deletions, and/or changes) to the ISTS which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

5. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. In ITS 3.9.6 Applicability and Required Action A.1, the brackets and the term "recently" have been deleted since the term "recently" does not apply to KPS when referring to irradiated fuel assemblies.

6. ISTS 3.9.4 has been renumbered to ITS 3.9.6 since it was added back into the ITS as the result of an NRC RAI and KPS chose not to renumber multiple Specifications due to this later addition.

7. The ISTS 3.9.4 LCO Note has been modified to not allow the Note to apply to the equipment hatch. As stated in the ISTS Bases, the LCO Note is allowed provided confirmatory dose calculations have been performed and approved by the NRC. Confirmatory dose calculations of the type required by the Note have not been performed and approved by the NRC for the equipment hatch.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

All changes are 1 unless otherwise noted

B 3.9 REFUELING OPERATIONS

B 3.9.4 Containment Penetrations 6 5

BASES

BACKGROUND

During movement of ~~[recently]~~ irradiated fuel assemblies within containment, a release of fission product radioactivity within containment will be restricted from escaping to the environment when the LCO requirements are met. In MODES 1, 2, 3, and 4, this is accomplished by maintaining containment OPERABLE as described in LCO 3.6.1, "Containment." In MODE 6, the potential for containment pressurization as a result of an accident is not likely; therefore, requirements to isolate the containment from the outside atmosphere can be less stringent. The LCO requirements are referred to as "containment closure" rather than "containment OPERABILITY." Containment closure means that all potential escape paths are closed or capable of being closed. Since there is no potential for containment pressurization, the Appendix J leakage criteria and tests are not required.

The containment serves to contain fission product radioactivity that may be released from the reactor core following an accident, such that offsite radiation exposures are maintained well within the ~~requirements~~ guidance of ~~10 CFR 100~~ Regulatory Guide 1.183 (Ref. 1). Additionally, the containment provides radiation shielding from the fission products that may be present in the containment atmosphere following accident conditions. 2

The containment equipment hatch, which is part of the containment pressure boundary, provides a means for moving large equipment and components into and out of containment. During movement of ~~[recently]~~ irradiated fuel assemblies within containment, the equipment hatch must be held in place by at least four bolts. Good engineering practice dictates that the bolts required by this LCO be approximately equally spaced.

The containment air locks, which are also part of the containment pressure boundary, provide a means for personnel access during MODES 1, 2, 3, and 4 unit operation in accordance with LCO 3.6.2, "Containment Air Locks." Each air lock has a door at both ends. The doors are normally interlocked to prevent simultaneous opening when containment OPERABILITY is required. During periods of unit shutdown when containment closure is not required, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. During movement of ~~[recently]~~ irradiated fuel assemblies within containment, containment closure is required; therefore, the door interlock mechanism may remain disabled, but one air lock door must always remain ~~[~~capable of being~~]~~ closed.

All changes are 1 unless otherwise noted

6 5

BASES

BACKGROUND (continued)

Two systems can be used to purge or ventilate the containment; the Containment Purge and Vent System and the Post LOCA Hydrogen Control System.

The requirements for containment penetration closure ensure that a release of fission product radioactivity within containment will be restricted to within regulatory limits.

Vent

The Post LOCA Hydrogen Control

The Containment Purge and ~~Exhaust~~ System ~~includes two subsystems. The normal subsystem~~ includes a ~~42~~ inch purge penetration and a ~~42~~ inch ~~exhaust~~ penetration. ~~The second subsystem, a minipurge~~ system includes an ~~8~~ inch purge penetration and an ~~8~~ inch ~~exhaust~~ penetration. During MODES 1, 2, 3, and 4, the two valves in each of the normal purge and ~~exhaust~~ penetrations are secured in the closed position. The two valves in each of the two minipurge penetrations can be opened intermittently, but are closed automatically by the Engineered Safety Features Actuation System (ESFAS). Neither of the ~~subsystems~~ is subject to a Specification in MODE 5.

36 2 vent vent vent 2 2

INSERT 1 are

fresh, tempered air is provided

In MODE 6, ~~large air exchangers are necessary~~ to conduct refueling operations. The normal ~~42~~ inch purge system is used for this purpose, and all four valves are closed by the ESFAS in accordance with LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation."

36 2

[The minipurge system remains operational in MODE 6, and all four valves are also closed by the ESFAS.

[or]

The minipurge system is not used in MODE 6. All four 8 inch valves are secured in the closed position.]

or capable of being isolated

The other containment penetrations that provide direct access from containment atmosphere to outside atmosphere must be isolated on at least one side. Isolation may be achieved by an OPERABLE automatic isolation valve, or by a manual isolation valve, blind flange, or equivalent. Equivalent isolation methods must be approved and may include use of a material that can provide a temporary, atmospheric pressure, ventilation barrier for the other containment penetrations during [recently] irradiated fuel movements ~~(Ref. 1)~~.

6 2

2

INSERT 1

The Post LOCA Hydrogen Control subsystem contains two trains. The valves in Train A are normally closed. The valves in Train B are also normally closed but are periodically opened to control containment pressure within the required limits. The Train B valves receive a signal to close via the Engineered Safety Features Actuation System and the Containment Purge and Vent Isolation System.

All changes are unless otherwise noted (1)

BASES

APPLICABLE SAFETY ANALYSES

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the most severe radiological consequences result from a fuel handling accident [involving handling recently irradiated fuel]. The fuel handling accident is a postulated event that involves damage to irradiated fuel (Ref. 2). Fuel handling accidents, analyzed in Reference 3, include dropping a single irradiated fuel assembly and handling tool or a heavy object onto other irradiated fuel assemblies. The requirements of LCO 3.9.7, "Refueling Cavity Water Level," in conjunction with a minimum decay time of 100 hours prior to [irradiated fuel movement with containment closure capability or a minimum decay time of [x] days without containment closure capability], ensures that the release of fission product radioactivity, subsequent to a fuel handling accident, results in doses that are well within the guideline values specified in 10 CFR 100. Standard Review Plan, Section 15.7.4, Rev. 1 (Ref. 3), defines "well within" 10 CFR 100 to be 25% or less of the 10 CFR 100 values. The acceptance limits for offsite radiation exposure will be 25% of 10 CFR 100 values or the NRC staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits).

Containment penetrations satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

----------REVIEWER'S NOTE----------
The allowance to have containment personnel air lock doors open and penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated during fuel movement and CORE ALTERATIONS is based on (1) confirmatory dose calculations of a fuel handling accident as approved by the NRC staff which indicate acceptable radiological consequences and (2) commitments from the licensee to implement acceptable administrative procedures that ensure in the event of a refueling accident (even though the containment fission product control function is not required to meet acceptable dose consequences) that the open air lock can and will be promptly closed following containment evacuation and that the open penetration(s) can and will be promptly closed. The time to close such penetrations or combination of penetrations shall be included in the confirmatory dose calculations.

This LCO limits the consequences of a fuel handling accident [involving handling recently irradiated fuel] in containment by limiting the potential escape paths for fission product radioactivity released within containment. The LCO requires any penetration providing direct access from the containment atmosphere to the outside atmosphere to be closed except for the OPERABLE containment purge and exhaust penetrations [and the containment personnel air locks]. For the OPERABLE

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BASES

LCO (continued)

containment purge and exhaust penetrations, this LCO ensures that these penetrations are isolable by the Containment Purge and Exhaust Isolation System. The OPERABILITY requirements for this LCO ensure that the automatic purge and exhaust valve closure times specified in the FSAR can be achieved and, therefore, meet the assumptions used in the safety analysis to ensure that releases through the valves are terminated, such that radiological doses are within the acceptance limit.

The LCO is modified by a Note allowing penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated under administrative controls. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the penetration flow path during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, and 2) specified individuals are designated and readily available to isolate the flow path in the event of a fuel handling accident.

The containment personnel air lock doors may be open during movement of [recently] irradiated fuel in the containment provided that one door is capable of being closed in the event of a fuel handling accident. Should a fuel handling accident occur inside containment, one personnel air lock door will be closed following an evacuation of containment.

APPLICABILITY

The containment penetration requirements are applicable during movement of [recently] irradiated fuel assemblies within containment because this is when there is a potential for the limiting fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when movement of irradiated fuel assemblies within containment is not being conducted, the potential for a fuel handling accident does not exist. [Additionally, due to radioactive decay, a fuel handling accident involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [x] days) will result in doses that are well within the guideline values specified in 10 CFR 100 even without containment closure capability.] Therefore, under these conditions no requirements are placed on containment penetration status.

(2) **INSERT 2**

This Note does not apply to the equipment hatch because there are no confirmatory dose calculations that have been approved by the NRC staff for the fuel handling accident that shows acceptable radiological consequences if the equipment hatch is open.

(2) **INSERT 3**

When both personnel airlock doors are open during the movement of irradiated fuel in the containment, appropriate plant personnel shall be notified of this condition. A specified individual(s) is designated and available to close the airlock following a required evacuation of containment. Any obstruction(s) (e.g., cables and hoses) that can prevent closure of an open airlock shall be able to be removed in a timely manner (i.e., within the 30 minutes specified above).

BASES

APPLICABILITY (continued)

----------REVIEWER'S NOTE----------
The addition of the term "recently" associated with handling irradiated fuel in all of the containment function Technical Specification requirements is only applicable to those licensees who have demonstrated by analysis that after sufficient radioactive decay has occurred, off-site doses resulting from a fuel handling accident remain below the Standard Review Plan limits (well within 10 CFR 100).

Additionally, licensees adding the term "recently" must make the following commitment which is consistent with NUMARC 93-01, Revision 4, Section 11.3.6.5 "Safety Assessment for Removal of Equipment from Service During Shutdown Conditions," subheading "Containment - Primary (PWR)/Secondary (BWR)."

"The following guidelines are included in the assessment of systems removed from service during movement irradiated fuel:

- During fuel handling/core alterations, ventilation system and radiation monitor availability (as defined in NUMARC 91-06) should be assessed, with respect to filtration and monitoring of releases from the fuel. Following shutdown, radioactivity in the fuel decays away fairly rapidly. The basis of the Technical Specification OPERABILITY amendment is the reduction in doses due to such decay. The goal of maintaining ventilation system and radiation monitor availability is to reduce doses even further below that provided by the natural decay.

- A single normal or contingency method to promptly close primary or secondary containment penetrations should be developed. Such prompt methods need not completely block the penetration or be capable of resisting pressure.

The purpose of the "prompt methods" mentioned above are to enable ventilation systems to draw the release from a postulated fuel handling accident in the proper direction such that it can be treated and monitored."

BASES

ACTIONS

A.1

If the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere is not in the required status, including the Containment Purge and ~~Exhaust~~ Isolation System not capable of automatic actuation when the purge and ~~exhaust~~ valves are open, the unit must be placed in a condition where the isolation function is not needed. This is accomplished by immediately suspending movement of ~~[recently]~~ irradiated fuel assemblies within containment. Performance of these actions shall not preclude completion of movement of a component to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1

This Surveillance demonstrates that each ~~of the~~ containment penetrations required ~~to be in its closed position is in that position~~. The Surveillance on the open purge and ~~exhaust~~ valves will demonstrate that the valves are not blocked from closing. Also the Surveillance will demonstrate that each valve operator has motive power, which will ensure that each valve is capable of being closed by an OPERABLE automatic containment purge and ~~exhaust~~ isolation signal.

The Surveillance is performed every 7 days during movement of ~~[recently]~~ irradiated fuel assemblies within containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO. As such, this Surveillance ensures that a postulated fuel handling accident ~~[involving handling recently irradiated fuel]~~ that releases fission product radioactivity within the containment will not result in a release of significant fission product radioactivity to the environment in excess of those recommended by ~~Standard Review Plan Section 15.7.4~~ (Reference ~~3~~).

SR 3.9.4.2

This Surveillance demonstrates that each containment purge and ~~exhaust~~ valve actuates to its isolation position on ~~manual initiation or on~~ an actual or simulated high radiation signal. The 18 month Frequency maintains consistency with other similar ESFAS instrumentation and valve testing requirements. ~~In LCO 3.3.6, the Containment Purge and Exhaust~~

(2) **INSERT 4**

LCO 3.3.6, "Containment Purge and Vent Isolation Instrumentation," provides additional Surveillance Requirements for the containment purge and vent valve actuation circuitry.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Isolation instrumentation requires a CHANNEL CHECK every 12 hours and a COT every 92 days to ensure the channel OPERABILITY during refueling operations. Every 18 months a CHANNEL CALIBRATION is performed. The system actuation response time is demonstrated every 18 months, during refueling, on a STAGGERED TEST BASIS.
SR 3.6.3.5 demonstrates that the isolation time of each valve is in accordance with the Inservice Testing Program requirements. These Surveillances performed during MODE 6 will ensure that the valves are capable of closing after a postulated fuel handling accident [involving handling recently irradiated fuel] to limit a release of fission product radioactivity from the containment.

The SR is modified by a Note stating that this Surveillance is not required to be met for valves in isolated penetrations. The LCO provides the option to close penetrations in lieu of requiring automatic actuation capability.

REFERENCES

1. GPU Nuclear Safety Evaluation SE-0002000-001, Rev. 0, May 20, 1988.
2. FSAR, Section [15.4.5].
3. NUREG-0800, Section 15.7.4, Rev. 1, July 1981.

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.6 BASES, CONTAINMENT PENETRATIONS

1. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal.

4. Typographical error corrected.

5. ISTS 3.9.4 has been renumbered to ITS 3.9.6 since it was added back into the ITS as the result of an NRC RAI and KPS chose not to renumber multiple Specifications due to this later addition.

6. Changes made to be consistent with the actual Specification.

7. The correct ITS number has been provided.

8. Changes have been made to be consistent with changes to the Specification.

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.9.6, CONTAINMENT PENETRATIONS

There are no specific NSHC discussions for this Specification.

Split Report changes

SUMMARY DISPOSITION MATRIX FOR KEWAUNEE POWER STATION

CURRENT TS (CTS) NUMBER	CURRENT TITLE	NEW TS (ITS) NUMBER	RETAINED/ CRITERION FOR INCLUSION	NOTES(a)
3.7.b.5	Condition for Inoperability	3.8.1	YES-3	
3.7.b.6	Condition for Inoperability	3.8.9	YES-3	
3.7.b.7	Condition for Inoperability	3.8.1	YES-3	
3.7.c	Condition for Inoperability	3.8.1	YES-3	
3.8	**Refueling Operations**	3.9.6, 3.3.6	YES-3	
3.8.a.1	Containment Closure	~~Relocated~~	~~NO~~	~~See Appendix A, Page 6.~~
3.8.a.2	Radiation Levels Monitoring	Relocated	NO	See Appendix A, Page 7.
3.8.a.3	Neutron Monitoring	3.9.2, Relocated	YES-3	See technical change discussion in the Discussion of Changes for CTS 3.8.a.3.
3.8.a.4	Residual Heat Removal Pump Operability	3.9.4	YES-4	
3.8.a.5	Boron Concentration	3.9.1	YES-2	
3.8.a.6	Direct Communications	Relocated	NO	See Appendix A, Page 8.
3.8.a.7	Deleted	3.9.6	YES-3	
3.8.a.8	Containment Ventilation and Purge System	~~Relocated~~	~~NO~~	~~See Appendix A, Page 6.~~
3.8.a.9	Spent Fuel Pool Sweep System	Relocated	NO	See Appendix A, Page 9.
3.8.a.10	Minimum Water Level Above the Flange	3.9.6	YES-2	
3.8.a.11	Dead Load Test	Relocated	NO	See Appendix A, Page 10.

(a) The Applicable Safety Analyses section of the Bases for the individual Technical Specifications describes the reason specific Technical Specification selection criteria are met.

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~~3.8.a.1: Containment Closure~~
~~3.8.a.8: Containment Closure~~

Page Blank

~~DISCUSSION:~~

~~CTS 3.8.a.1 and 3.8.a.8 provide requirements for Containment Closure during refueling operations. The purpose of the Containment Closure during Refueling requirements is to restrict the release of fission product radioactivity within containment from escaping to the environment following a fuel handling accident within the containment.~~

~~COMPARISON TO SCREENING CRITERIA:~~

~~1. Containment closure is not installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.~~

~~2. Containment closure is not a process variable, design feature, or operating restriction that is in an initial condition of a DBA or Transient Analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.~~

~~3. Containment closure is not a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.~~

~~4. Containment closure was found to be non-significant risk contributor to core damage frequency and offsite releases.~~

~~CONCLUSION:~~

~~Since the screening criteria have not been satisfied, the Containment Closure Specifications may be relocated to other plant controlled documents outside Technical Specifications.~~

ITS 3.3.6 changes

ITS

A01

ITS 3.3.6

3.5 INSTRUMENTATION SYSTEM

APPLICABILITY

Applies to reactor protection and engineered safety features instrumentation systems.

OBJECTIVE

To provide for automatic initiation of the engineered safety features in the event that principal process variable limits are exceeded, and to delineate the conditions of the reactor protection instrumentation and engineered safety features circuits necessary to ensure reactor safety.

SPECIFICATIONS

a. Setting limits for instrumentation which initiate operation of the engineered safety features shall be as stated in Table TS 3.5-1.

LA02

b. For on-line testing or in the event of failure of a subsystem instrumentation channel, plant operation shall be permitted to continue at RATED POWER in accordance with Tables TS 3.5-2 through TS 3.5-5.

LCO 3.3.6, DOC A02

c. If for Tables TS 3.5-2 through TS 3.5-5, the number of channels of a particular subsystem in service falls below the limits given in Column 3, or if the values in Column 4 cannot be achieved, operation shall be limited according to the requirement shown in Column 6, as soon as practicable.

ACTION B, DOC A02

d. In the event of subsystem instrumentation channel failure permitted by TS 3.5.b, Tables TS 3.5-2 through TS 3.5-5 need not be observed during the short period of time (approximately 4 hours) the operable subsystem channels are tested, where the failed channel must be blocked to prevent unnecessary reactor trip.

M04

e. The accident monitoring instrumentation in Table TS 3.5-6 shall be OPERABLE whenever the plant is above HOT SHUTDOWN. In the event the limits given in Columns 1 and 2 cannot be maintained, operator action will be in accordance with the respective notes. A change in operational MODES or conditions is acceptable with an inoperable accident monitoring instrumentation channel(s).

See ITS 3.3.3

New Page

ITS

A01

ITS 3.3.6

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

Applicability of Table 3.3.6-1 footnote (a)

a. During REFUELING OPERATIONS: L02

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [(1)] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted. — See ITS 3.9.6

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously. — See CTS 3.8.a.2

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. — See CTS 3.8.a.3

   Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service. — See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE. — See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily. — See ITS 3.9.1

[(1)] Administrative controls ensure that:
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

— See ITS 3.9.6

ITS

New Page

A01

ITS 3.3.6

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ITS 3.9.6

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

See CTS 3.8.a.9

b. Performance Requirements

1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal.

2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show ≥95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

3. Fans shall operate within ±10% of design flow when tested.

See ITS 5.5.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

ACTIONS A and C

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

L02

L03

Add proposed ACTION A (for one channel inoperable) and ACTION C (for two or more channels inoperable during movement of irradiated fuel)

KAB-072 change

NOTE: KAB-072 changes shown in green

A01

Table 3.3.6-1, Functions 2.a, ~~2.b~~, and 2.c and 2.b

TABLE TS 3.5-1

ENGINEERED SAFETY FEATURES INITIATION INSTRUMENT SETTING LIMITS

LA02

NO.	FUNCTIONAL UNIT	CHANNEL	SETTING LIMIT
8	Containment Purge and Vent System Radiation Particulate Detector Radioactive Gas Detector	Containment ventilation isolation	≤ value of radiation levels in exhaust duct as defined in footnote (3)
9	Safeguards Bus Undervoltage (4)	Loss of power	85.0% ± 2% nominal bus voltage ≤ 2.5 seconds time delay
10	Safeguards Bus Second Level Undervoltage (5)	Degraded grid voltage	93.6% ± 0.9% of nominal bus voltage ≤ 7.4 seconds time delay

See ITS 3.3.5

See ITS 3.3.5

(3) The setting limits for max radiation levels are derived from ODCM Specification 3.4.1 and Table 2.2, and USAR Section 6.5.

(4) This undervoltage protection channel ensures ESF equipment will perform as assumed in the USAR.

(5) This undervoltage protection channel protects ESF equipment from long-term low voltage operation.

LA02

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NOTE: KAB-031 changes shown in green

A01

TABLE TS 3.5-4

INSTRUMENT OPERATING CONDITIONS FOR ISOLATION FUNCTIONS

See ITS 3.3.2

		1	2	3	4	5	6
NO.	FUNCTIONAL UNIT	NO. OF CHANNELS	NO. OF CHANNELS TO TRIP	MINIMUM OPERABLE CHANNELS REQUIRED	MINIMUM DEGREE OF REDUNDANCY	PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION IF CONDITIONS OF COLUMN 3 OR 4 CANNOT BE MET
	Containment Isolation						
	a. Safety Injection	Refer to Item No. 1 of Table TS 3.5-3					HOT SHUTDOWN(1)
	b. Manual	2	1	1 2	-	~~ACTION B~~	HOT SHUTDOWN
	Steam Line Isolation						
	a. Hi-Hi Steam Flow with Safety Injection	2/loop	1	1(3)	-		HOT SHUTDOWN(1)
	b. Hi Steam Flow and 2 of 4 Lo-Lo T_{avg} with Safety Injection	2/loop	1	1(3)	-		HOT SHUTDOWN(1)
	c. Hi-Hi Containment Pressure	3	2	2(3)	-		HOT SHUTDOWN(1)
	d. Manual	1/loop	1/loop	1/loop(3)	-		HOT SHUTDOWN

LA03

LA03

M01

A05

A01

KAB-031 change

M05

Table 3.3.6-1 Function 3

See ITS 3.3.2

(1) If minimum conditions are not met within 24 hours, steps shall be taken to place the plant in a COLD SHUTDOWN condition.
(3) Steam Line Isolation channels are not required to be operable when both main steam isolation valves are closed and deactivated.

Add proposed Function 1, including ACTIONS B and C

M02

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A01

Table 3.3.6-1 Function 5

and 2.b

Table 3.3.6-1 Function 2.a, ~~2.b and 2.c~~

TABLE TS 3.5-4

INSTRUMENT OPERATING CONDITIONS FOR ISOLATION FUNCTIONS

NO.	FUNCTIONAL UNIT	1 NO. OF CHANNELS	2 NO. OF CHANNELS TO TRIP	3 MINIMUM OPERABLE CHANNELS	4 MINIMUM DEGREE OF REDUNDANCY	5 PERMISSIBLE BYPASS CONDITIONS	6 OPERATOR ACTION IF CONDITIONS OF COLUMN 3 OR 4 CANNOT BE MET
	Containment Ventilation Isolation			REQUIRED			
	a. High Containment Radiation	2	1	1	-	-	These channels are not required to activate containment ventilation isolation when the containment purge and ventilation system isolation valves are maintained closed.(2)
	b. Safety Injection	Refer to Item 1 of Table TS 3.5-3					
	c. Containment Spray	Refer to Item 3 of Table TS 3.5-3					
	Main Feedwater Isolation						
	a. Hi-Hi Steam Generator Level	3	2	2	1		HOT SHUTDOWN

LA03

A05

ACTION B

Table 3.3.6-1 Function 4

See ITS 3.3.2

(2) The detectors are required for Reactor Coolant System leak detection as referenced in TS 3.1.d.5.

A06

ITS A01 ITS 3.3.6

4.1 OPERATIONAL SAFETY REVIEW

APPLICABILITY

Applies to items directly related to safety limits and LIMITING CONDITIONS FOR OPERATION.

OBJECTIVE

To assure that instrumentation shall be checked, tested, and calibrated, and that equipment and sampling tests shall be conducted at sufficiently frequent intervals to ensure safe operation.

SPECIFICATION

SR 3.3.6.1, SR 3.3.6.3, SR 3.3.6.4

a. Calibration, testing, and checking of protective instrumentation channels and testing of logic channels shall be performed as specified in Table TS 4.1-1.

b. Equipment and sampling tests shall be conducted as specified in Table TS 4.1-2 and TS 4.1-3. — See other ITS

c. Deleted

d. Deleted

e. Deleted

A01

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

COT

A04

CHANNEL DESCRIPTION	CHECK SR 3.3.6.1	CALIBRATE SR 3.3.6.4	TEST SR 3.3.6.3	REMARKS
18. a. Containment Pressure (SIS signal)	Each shift	Each refueling cycle	Monthly(a)	(a) Isolation Valve Signal
b. Containment Pressure (Steamline Isolation)	Each shift(a)	Each refueling cycle(a)	Monthly(a)	(a) Narrow range containment pressure (-3.0, +3.0 psig excluded)
c. Containment Pressure (Containment Spray Act)	Each shift	Each refueling cycle	Monthly	
d. Annulus Pressure (Vacuum Breaker)	Not applicable	Each refueling cycle	Each refueling cycle	
19. Radiation Monitoring System	Daily (a) (b)	Each refueling cycle (a)	Quarterly (a)	(a) Includes only channels R11 thru R15, R19, R21, and R23 (b) Channel check required in all plant modes
20. Deleted				
21. Containment Sump Level	Not applicable	Not applicable	Each refueling cycle	
22. Accumulator Level and Pressure	Each shift	Deleted	Not applicable	
23. Steam Generator Pressure	Each shift	Each refueling cycle	Monthly	

A03

12 hours

See ITS 3.6.3

See ITS 3.6.6

LA01

Table 3.3.6-1, Functions 2.a, 2.b, and 2.c

and 2.b

A05

M03

See ITS 3.4.

See ITS 3.

See ITS 3.4.

Discussion of Change LA01 is for channel R11, R12, and 21. For other channels, see ITS 3.3.2, 3.3.7, 3.4.15, and CTS 3.8.a.9.

Add proposed SR 3.3.6.2

M02

DISCUSSION OF CHANGES
ITS 3.3.6, CONTAINMENT PURGE AND VENT ISOLATION INSTRUMENTATION

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included to provide adequate protection of public health and safety. The ITS still retains the requirement for the Containment Purge and Vent Isolation Instrumentation be OPERABLE and specifies the number of required channels. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in ITS Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 ~~*(Category 4 – Relaxation of Required Action)* When both Containment Isolation Manual channels are inoperable, CTS Table TS 3.5-4 Column 6 requires the unit to be placed in HOT SHUTDOWN (ITS MODE 3). Under similar conditions, ITS 3.3.6 Required Action B.1 requires immediately entering the applicable Conditions and Required Actions for the containment purge and vent isolation valves made inoperable by isolation instrumentation. This changes the CTS by allowing the actions for inoperable containment purge and vent valves to be taken when both Manual initiation channels are inoperable in lieu of shutting down the unit.~~

Not used.

~~The purpose of the CTS Table TS 3.5-4 Column 6 action is to provide compensatory actions when both Manual Initiation channels are inoperable. However, the CTS action is overly conservative in that it requires more restrictive actions than are allowed if the valves themselves were inoperable. The purpose of the instrumentation is to isolate the associated valves. Thus, this change is acceptable since the proposed ITS Required Action would accomplish this action (since ITS 3.6.3 would require isolation of the associated penetration flow path). This change is designated as less restrictive since the proposed Required Action will allow operation to continue with the associated flow path isolated in lieu of shutting down the unit.~~

INSERT L02 and L03

L02 *(Category 2 – Relaxation of Applicability)* CTS 3.8.a.1.b requires an OPERABLE automatic isolation valve under certain conditions. This is referring to the Containment Purge and Vent System valves, and thus includes the instruments that provide the isolation signal. The Specification is applicable during REFUELING OPERATIONS. This requirement can be met by an OPERABLE automatic isolation valve or a closed isolation valve. When this requirement is not being met, CTS 3.8.b provides actions to be taken if any of the specified limiting conditions in CTS 3.8 a are not met during REFUELING OPERATIONS. ITS 3.3.6 is applicable, in part, during movement of irradiated fuel assemblies within containment, as stated in footnote (a) to Table 3.3.6-1. This changes the CTS by requiring the containment purge and vent isolation instrumentation be OPERABLE during times of movement of irradiated fuel assemblies within containment, in lieu of during REFUELING OPERATIONS.

The purpose of CTS 3.8.a.1.b is to ensure each line that penetrates containment and provides a direct air path from containment atmosphere to the outside atmosphere have a closed isolation valve or an OPERABLE automatic isolation valve. Continuous monitoring of the radiation levels of the containment atmosphere (general or exhaust vent) is required to provide automatic action during an unsafe condition as a result of a fuel handling accident. CTS 3.8.a.1.b requires an OPERABLE automatic isolation valve during REFUELING OPERATIONS, and includes the isolation instrumentation. As defined in CTS Section 1.0, REFUELING OPERATIONS is movement of reactor vessel internal components that could affect the reactivity of the core within the containment when the vessel head is unbolted or removed. This would include both moving irradiated fuel assemblies and control rods. Since movement of irradiated fuel assemblies within containment can only occur when the vessel head is unbolted or removed, ITS 3.3.6 is applicable, with respect to moving fuel assemblies, under the same conditions as CTS 3.8.a.1.b. This change is acceptable because the requirements continue to ensure that the process variables are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. The fuel handling accident is based on damaging a single irradiated fuel assembly. Movement of control rods is not assumed to result in a fuel handling accident. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

L03 *(Category 4 – Relaxation of Required Action)* CTS 3.8.a.1.b requires an OPERABLE automatic isolation valve under certain conditions. This is referring to the Containment Purge and Vent System valves, and thus includes the instruments that provide the isolation signal. The Specification is applicable during REFUELING OPERATIONS. When this requirement is not being met, the isolation valve must be closed or CTS 3.8.b requires refueling of the reactor to cease, initiation of action to restore the monitoring capability, and no operations be performed that could increase the reactivity of the core. Under similar conditions, ITS 3.3.6 does not require the refueling of the reactor to cease or require all operations that could increase the reactivity of the core to cease. With one radiation monitoring channel inoperable, ITS 3.3.6 ACTION A requires restoration of the affected channel to OPERABLE status within 4 hours. ITS 3.3.6 ACTION C, which is

only applicable during the movement of irradiated fuel assemblies within containment, requires immediately placing and maintaining containment purge and vent valves in the closed position (Required Action C.1) or immediately entering the applicable Conditions and Required Actions of LCO 3.9.6 for containment purge and vent valves made inoperable by isolation instrumentation (Required Action C.2). Note that under this condition ITS LCO 3.9.6 would require suspension of movement of irradiated fuel assemblies in containment. This changes the CTS by deleting the requirements to cease refueling of the reactor and that no operations be performed that could increase the reactivity of the core and provides new ACTIONS to restore the radiation monitors to service and maintain the containment boundary.

The purpose of CTS 3.8.a.1.b is to ensure the Containment Purge and Vent System is OPERABLE to provide automatic actuation of the valves if an unsafe condition as a result of a fuel handling accident occurs or the valves are closed. CTS 3.8.b requires compensatory actions be taken to exit the Applicability of the LCO if continuous monitoring is not available and the isolation valves cannot be closed; however, the CTS Actions are overly restrictive. The proposed compensatory actions of ITS 3.3.6 ACTIONS A and C ensure that acceptable actions are taken when radiation channels are inoperable. The proposed ACTION A is acceptable since channels are still available to ensure the containment purge and vent valve receive an isolation signal. The proposed ACTION C is acceptable since when multiple channels are inoperable, the proposed action places the containment purge and vent valves in the isolated position, which performs the function of the radiation channels. This change is designated as less restrictive since less restrictive actions have been added for when the radiation channels are inoperable.

CTS

Vent

1

3.3 INSTRUMENTATION

Vent

3.3.6 Containment Purge and Exhaust Isolation Instrumentation 1

Vent

3.5.b LCO 3.3.6 The Containment Purge and Exhaust Isolation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE. 1

~~3.8.a~~, ~~3.8.a.2~~ APPLICABILITY: According to Table 3.3.6-1.

ACTIONS

----------NOTE----------

DOC A02 Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.8.b A. One radiation monitoring channel inoperable.	A.1 Restore the affected channel to OPERABLE status.	4 hours
3.5.c, Table TS 3.5-4 Functional Units 1.b and 3.a Column 6, DOC M02 B. ----------NOTE---------- Only applicable in MODE 1, 2, 3, or 4. ---------- One or more Functions with one or more manual or automatic actuation trains inoperable. OR Two or more radiation monitoring channels inoperable. OR Required Action and associated Completion Time of Condition A not met.	B.1 Enter applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Valves," for containment purge and exhaust isolation valves made inoperable by isolation instrumentation.	Immediately

Stet

vent

3 1 6

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CTS

Vent

1

ACTIONS (continued)

Stet with changes

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ----------NOTE---------- Only applicable during movement of ~~[recently]~~ irradiated fuel assemblies within containment. ---------- One or more Functions with one or more ~~manual or~~ automatic actuation trains inoperable. OR Two or more radiation monitoring channels inoperable. OR Required Action and associated Completion Time for Condition A not met.	C.1 Place and maintain containment purge and ~~exhaust~~ valves in closed position. OR C.2 Enter applicable Conditions and Required Actions of LCO 3.9.~~4~~, "Containment Penetrations," for containment purge and ~~exhaust~~ isolation valves made inoperable by isolation instrumentation.	Immediately Immediately

3.8.b, DOC M02, Table TS 3.5-4 Functional Unit 3.a Column 6

vent

6

vent

2 1 6 3 1

SURVEILLANCE REQUIREMENTS

----------NOTE----------

Refer to Table 3.3.6-1 to determine which SRs apply for each Containment Purge and Exhaust Isolation Function.

Vent

1

SURVEILLANCE		FREQUENCY
SR 3.3.6.1	Perform CHANNEL CHECK.	12 hours

4.1.a, Table TS 4.1-1 Channel Description 19

CTS

Vent

Table 3.3.6-1 (page 1 of 1)
Containment Purge and Exhaust Isolation Instrumentation

Vent

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Manual Initiation	1,2,3,4, (a)	2	SR 3.3.6.6	NA
2. Automatic Actuation Logic and Actuation Relays	1,2,3,4, (a)	2 trains	SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.5	NA
3. [Containment Radiation				
a. Gaseous	1,2,3,4, (a)	[1]	SR 3.3.6.1 ~~SR 3.3.6.4~~ SR 3.3.6.7	≤ [2 x background]
b. Particulate	1,2,3,4, (a)	[1]	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7	≤ [2 x background]
~~c. Iodine~~	~~1,2,3,4, (a)~~	~~[1]~~	~~SR 3.3.6.1~~ ~~SR 3.3.6.4~~ ~~SR 3.3.6.7~~	≤ [2 x background]
d. Area Radiation	1,2,3,4, (a)	[1]	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7	≤ [2 x background]]
4. Containment Isolation - Phase A	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3.a., for all initiation functions and requirements.			

Manual Initiation

DOC M02

Table TS 3.5-1 Functional Unit 8, Table TS 3.5-4 Functional Unit 3a, Table TS 4.1-1 Channel Description 19

Table TS 3.5-4 Functional Unit 1.b

Stet

Stet

Stet with changes

INSERT 1

(a) During movement of [~~recently~~] irradiated fuel assemblies within containment.

3.8.a

JUSTIFICATION FOR DEVIATIONS
ITS 3.3.6, CONTAINMENT PURGE AND VENT ISOLATION INSTRUMENTATION

1. Changes are made (additions, deletions, and/or changes) to the ISTS that reflect the plant specific nomenclature, number, reference, system description, analysis or licensing basis description.

2. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. ~~ISTS 3.3.6 Table 3.3.6-1 Functions 2 and 3 are applicable in MODES 1, 2, 3, and 4 and during movement of recently irradiated fuel assemblies in containment. ISTS 3.3.6 ACTION B provides the actions when two or more radiation monitoring channels are inoperable or when the Required Action and associated Completion Time of Condition A (i.e., one radiation monitor is inoperable) is not met in MODES 1, 2, 3, and 4. ISTS 3.3.6 ACTION C provides the actions when two or more radiation monitoring channels are inoperable or when the Required Action and associated Completion Time of Condition A is not met during movement of recently irradiated fuel assemblies within containment. ISTS 3.3.6 ACTION C requires immediately placing and maintaining containment purge and exhaust valves in the closed position or to immediately enter the applicable Conditions and Required Actions of LCO 3.9.4, "Containment Penetrations," for containment purge and exhaust isolation valves made inoperable by isolation instrumentation. Kewaunee Power Station (KPS) does not credit containment isolation in a fuel handling accident analysis in the USAR. Therefore, ITS 3.3.6 does not maintain the applicability of during movement of recently irradiated fuel assemblies within containment as part of the Applicability. Therefore, all requirements related to movement of irradiated fuel assemblies in the containment (Table 3.3.6-1 Footnote (a) and ACTION C) have been deleted. In addition, due to this deletion, the Note to Condition B has been deleted since it is not necessary (there are no Actions other than those for MODES 1, 2, 3, and 4).~~

ISTS 3.9.4 has been renumbered to ITS 3.9.6.

4. The ISTS contains a Surveillance Requirement (SR) for an ACTUATION LOGIC TEST (ISTSSR 3.3.6.2) for the Containment Purge and Vent Isolation Instrumentation that is performed every 31 days on a STAGGERED TEST BASIS. The ISTS also contains an ACTUATION LOGIC TEST (ISTS SR 3.3.6.4) for the Containment Purge and Vent Isolation Instrumentation that is performed every 92 days on a STAGGERED TEST BASIS. ISTS SR 3.3.6.4 was added to the ISTS as part of the incorporation of TSTF-411, which, in part, increases the surveillance test interval (STI) for the actuation logic and actuation relays. The basis for the increase in the STI is WCAP-15376-P, Revision 0, which is consistent with the Nuclear Regulatory Commission's (NRC) approach for using probabilistic risk assessment in risk-informed decisions on plant-specific changes to the current licensing basis as presented in Regulatory Guides 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Current Licensing Basis," and 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications." KPS has elected to adopt the specific ISTS changes authorized by the results of WCAP-15376-P Revision 0. Therefore, the bracketed ISTS SR 3.3.6.4 (ITS SR 3.3.6.2) has been adopted for testing of the actuation logic and actuation relays. Subsequent Surveillance Requirements have been renumbered as a result of not including ISTS SR 3.3.6.2 in the ITS.

All changes are 1 unless otherwise noted

Vent

BASES

APPLICABLE SAFETY ANALYSES (continued)

vent

rapid isolation is assumed. The containment purge and exhaust isolation radiation monitors act as backup to the SI signal to ensure closing of the purge and exhaust valves. They are also the primary means for automatically isolating containment in the event of a fuel handling accident during shutdown. Containment isolation in turn ensures meeting the containment leakage rate assumptions of the safety analyses and ensures that the calculated accidental offsite radiological doses are below 10 CFR 100 (Ref. 1) limits. [Due to radioactive decay, containment is only required to isolate during fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days).]

vent

Stet

contributes to both

ensuring

control room and

50.67

3

vent

The containment purge and exhaust isolation instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The LCO requirements ensure that the instrumentation necessary to initiate Containment Purge and Exhaust Isolation, listed in Table 3.3.6-1, is OPERABLE.

Vent

1. Manual Initiation

The LCO requires two channels OPERABLE. The operator can initiate Containment Purge Isolation at any time by using either of two switches in the control room. Either switch actuates both trains. This action will cause actuation of all components in the same manner as any of the automatic actuation signals.

4

The LCO for Manual Initiation ensures the proper amount of redundancy is maintained in the manual actuation circuitry to ensure the operator has manual initiation capability.

Each channel consists of one push button and the interconnecting wiring to the actuation logic cabinet.

1 2. Automatic Actuation Logic and Actuation Relays

4

The LCO requires two trains of Automatic Actuation Logic and Actuation Relays OPERABLE to ensure that no single random failure can prevent automatic actuation.

All changes are 1 unless otherwise noted

Vent

BASES

LCO (continued)

Automatic Actuation Logic and Actuation Relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b, SI, and ESFAS Function 3.a, Containment Phase A Isolation. The applicable MODES and specified conditions for the containment purge isolation portion of these Functions are different and less restrictive than those for their Phase A isolation and SI roles. If one or more of the SI or Phase A isolation Functions becomes inoperable in such a manner that only the Containment Purge Isolation Function is affected, the Conditions applicable to their SI and Phase A isolation Functions need not be entered. The less restrictive Actions specified for inoperability of the Containment Purge Isolation Functions specify sufficient compensatory measures for this case.

and vent

Containment

and Vent

Containment

and Vent

2 → 3. Containment Radiation

4

three

The LCO specifies four required channels of radiation monitors to ensure that the radiation monitoring instrumentation necessary to initiate Containment Purge Isolation remains OPERABLE.

and Vent

For sampling systems, channel OPERABILITY involves more than OPERABILITY of the channel electronics. OPERABILITY may also require correct valve lineups, sample pump operation, and filter motor operation, as well as detector OPERABILITY, if these supporting features are necessary for trip to occur under the conditions assumed by the safety analyses.

will

since

INSERT 3 →

INSERT 4 →

4. Containment Isolation - Phase A

Refer to LCO 3.3.2, Function 3.a., for all initiating Functions and requirements.

4

APPLICABILITY The Manual Initiation, Automatic Actuation Logic and Actuation Relays, Containment Isolation - Phase A, and Containment Radiation Functions are required OPERABLE in MODES 1, 2, 3, and 4, and during movement of [recently] irradiated fuel assemblies [(i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)] within containment. Under these conditions, the potential exists for an accident that could release significant fission product radioactivity into containment. Therefore, the containment purge and exhaust isolation instrumentation must be OPERABLE in these MODES.

Stet words boxed in red

Stet words boxed in red

4

3

vent

BASES

ACTIONS (continued)

B.1

Condition B applies to all Containment Purge and Exhaust Isolation Functions and addresses the train orientation of the Solid State Protection System (SSPS) and the master and slave relays for these Functions. It also addresses the failure of multiple radiation monitoring channels, or the inability to restore a single failed channel to OPERABLE status in the time allowed for Required Action A.1.

If a train is inoperable, multiple channels are inoperable, or the Required Action and associated Completion Time of Condition A are not met, operation may continue as long as the Required Action for the applicable Conditions of LCO 3.6.3 is met for each valve made inoperable by failure of isolation instrumentation.

A Note is added stating that Condition B is only applicable in MODE 1, 2, 3, or 4.

C.1 and C.2

Condition C applies to ~~all Containment Purge and Exhaust Isolation Functions~~ and addresses the train orientation of the ~~SSPS and the~~ master and slave relays for these Functions. It also addresses the failure of multiple radiation monitoring channels, or the inability to restore a single failed channel to OPERABLE status in the time allowed for Required Action A.1. If a train is inoperable, multiple channels are inoperable, or the Required Action and associated Completion Time of Condition A are not met, operation may continue as long as the Required Action to place and maintain containment purge and ~~exhaust~~ isolation valves in their closed position is met or the applicable Conditions of LCO 3.9.4, "Containment Penetrations," are met for each valve made inoperable by failure of isolation instrumentation. The Completion Time for these Required Actions is Immediately.

A Note states that Condition C is applicable during movement of ~~[recently]~~ irradiated fuel assemblies within containment.

SURVEILLANCE REQUIREMENTS

A Note has been added to the SR Table to clarify that Table 3.3.6-1 determines which SRs apply to which Containment Purge and Exhaust Isolation Functions.

Section 3.6 cross reference changes

1

BASES

LCO

Containment OPERABILITY is maintained by limiting leakage to ≤ 1.0 L_a, except prior to the first startup after performing a required Containment Leakage Rate Testing Program leakage test. At this time the applicable leakage limits must be met.

Compliance with this LCO will ensure a containment configuration, including equipment hatches, that is structurally sound and that will limit leakage to those leakage rates assumed in the safety analysis.

6

Note that while the Background section describes the Shield Building, the Shield Building requirements are not covered by this LCO; they are provided in LCO 3.6.8, "Shield Building."

Individual leakage rates specified for the containment air lock (LCO 3.6.2) [, purge valves with resilient seals, and secondary bypass leakage (LCO 3.6.3)] are not specifically part of the acceptance criteria of 10 CFR 50, Appendix J. Therefore, leakage rates exceeding these individual limits only result in the containment being inoperable when the leakage results in exceeding the overall acceptance criteria of 1.0 L_a.

combined

9

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material into containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, containment is not required to be OPERABLE in MODE 5 to prevent leakage of radioactive material from containment. The requirements for containment during MODE 6 are addressed in LCO 3.9.4, "Containment Penetrations."

11

ACTIONS

A.1

7 6

In the event containment is inoperable, containment must be restored to OPERABLE status within 1 hour. The 1 hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining containment OPERABLE during MODES 1, 2, 3, and 4. This time period also ensures that the probability of an accident (requiring containment OPERABILITY) occurring during periods when containment is inoperable is minimal.

B.1 and B.2

If containment cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

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BASES

APPLICABLE SAFETY ANALYSES (continued)

10 CFR 50, Appendix J, Option A (Ref. 1), as L_a = [0.1]% of containment air weight per day, the maximum allowable containment leakage rate at the calculated peak containment internal pressure P_a = [14.4] psig following a design basis LOCA. This allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air locks.

The containment air locks satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Each containment air lock forms part of the containment pressure boundary. 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.

Each air lock is required to be OPERABLE. For the air lock to be considered OPERABLE, the air lock interlock mechanism must be OPERABLE, the air lock must be in compliance with the Type B air lock leakage test, and both air lock doors must be OPERABLE. The interlock allows only one air lock door of an air lock to be opened at one time. This provision ensures that a gross breach of containment does not exist when containment is required to be OPERABLE. Closure of a single door in each air lock is sufficient to provide a leak tight barrier following postulated events. Nevertheless, both doors are kept closed when the air lock is not being used for normal entry into or exit from containment.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment air locks are not required in MODE 5 to prevent leakage of radioactive material from containment. The requirements for the containment air locks during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

The ACTIONS are modified by a Note that allows entry and exit to perform repairs on the affected air lock component. If the outer door is inoperable, then it may be easily accessed for most repairs. It is preferred that the air lock be accessed from inside primary containment by entering through the other OPERABLE air lock. However, if this is not practicable, or if repairs on either door must be performed from the barrel side of the door then it is permissible to enter the air lock through the OPERABLE door, which means there is a short time during which the containment boundary is not intact (during access through the

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.2 BASES, CONTAINMENT AIR LOCKS

1. The type of Containment (Dual) and the Specification designator "B" are deleted since they are unnecessary (only one Containment Specification is used in the Kewaunee Power Station (KPS) ITS). This information is provided in NUREG-1431, Rev. 3.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion, but serves no purpose in a plant specific implementation.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The Kewaunee Power Station design does not include a control room indicator for the status of the interlock mechanisms.

4. The brackets have been removed and the proper plant specific information/value has been provided.

5. Editorial change made for clarity.

6. Changes made to be consistent with the actual Specification. ISTS 3.6.2 ACTION C has three Required Actions; C.1, C.2, and C.3.

7. Changes made to be consistent with the actual Specification. ISTS 3.6.2 ACTION B does not require the interlock mechanism to be restored to OPERABLE status. Therefore, the words have been changed to be consistent with the actual words in ISTS 3.6.2 Condition D.

8. 10 CFR 50, Appendix J does not define the values for La and Pa. It only defines what La and Pa are. Therefore, the actual values have been deleted. The words as modified are consistent with similar words in the Applicable Safety Analyses Bases for ISTS 3.6.1.

9. Changes made to be consistent with changes made to SR 3.6.2.2.

10. Change made to be consistent with the actual Specification number.

ITS 3.9.3 and 3.9.4 changes

ITS

A01

ITS 3.9.3

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

Applicability

a. During REFUELING OPERATIONS:

A05

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [1] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

ITS 3.9.6

See CTS ~~3.8.a.1 and 3.8.a.8~~

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously.

See CTS 3.8.a.2

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service.

See CTS 3.8.a.3

See ITS 3.9.2

LCO 3.9.3

4. At least one residual heat removal pump shall be OPERABLE.

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily.

See ITS 3.9.1

ITS 3.9.6

[1] Administrative controls ensure that:
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

See CTS ~~3.8.a.1 and 3.8.a.8~~

ITS

A01

ITS 3.9.3

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

ITS 3.9.6

7. Deleted.

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

   b. Performance Requirements

      1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal.

      2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show ≥95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

      3. Fans shall operate within ±10% of design flow when tested.

See CTS 3.8.a.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

ACTION A

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

M02

Add proposed Required Actions A.1, A.4, A.5, and A.6

M02

Add proposed Required Action A.3

A04

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 82 of 208

DISCUSSION OF CHANGES
ITS 3.9.3, RHR AND COOLANT CIRCULATION – HIGH WATER LEVEL

verification that each penetration providing direct access from the containment atmosphere to the outside atmosphere is either closed with a manual or automatic isolation valve, blind flange, or equivalent, or is capable of being closed by ~~a~~ Containment ~~Ventilation and~~ Purge Isolation System in 4 hours (Required Action A.6). This changes the CTS by adding new Required Actions when the required RHR loop is inoperable.

an OPERABLE

and Vent

These added Required Actions are acceptable since they assist in minimizing the consequences of the required RHR loop being inoperable. Note that while CTS 3.8.b requires operations not be performed that could increase the reactivity of the core, this action is actually not required to be taken since once movement of fuel has been suspended, REFUELING OPERATIONS has ceased (thus, the LCO requirements of CTS 3.8.a are not required to be met). Thus, the addition of a similar Required Action (Required Action A.1), as well as the other above described Required Actions, is designated as more restrictive.

M03 CTS 3.1.a.1.A does not contain any ACTIONS to take should there be less than the required number of RHR pumps in operation. As a result, CTS 3.0.c would normally be entered. However, LCO 3.0.c states that it is not applicable in COLD SHUTDOWN or REFUELING. Since the RHR pump only has to be in operation when a reduction in boron concentration is being made, and for this Specification, the unit is already in MODE 6, the CTS does not provide any compensatory measures. Therefore, 10 CFR 50.36 (c)(2)(i) would apply, which states to shutdown the unit. However, no times are provided to complete the shutdown and no further actions (i.e., suspend boron concentration reductions) are required. Note that while no ACTIONS are required, KPS in all likelihood would suspend dilution if this occurred. ITS 3.9.3 ACTION A specifies the Required Actions for a required RHR loop not in operation, and requires immediate suspension of operations that would cause introduction of coolant into the RCS with a boron concentration less than required to meet the boron concentration of LCO 3.9.1 (Required Action A.1), immediate suspension of loading irradiated fuel assemblies into the core (Required Action A.2), immediate initiation of action to restore one RHR loop to operation (Required Action A.3), closing the equipment hatch and securing it with four bolts in 4 hours (Required Action A.4), closing one door in each air lock in 4 hours (Required Action A.5), and a verification that each penetration providing direct access from the containment atmosphere to the outside atmosphere is either closed with a manual or automatic isolation valve, blind flange, or equivalent, or is capable of being closed by ~~a~~ Containment ~~Ventilation~~ Isolation System in 4 hours (Required Action A.6). This changes the CTS by adding a new ACTION.

an OPERABLE

Purge and Vent

The purpose of the Actions should be to place the unit outside of the Applicability of the Specification. ITS 3.9.3 ACTION A effectively places the unit in an equivalent condition by requiring the plant to immediately suspend operations that would cause introduction of coolant into the RCS with a boron concentration less than required to meet the boron concentration of LCO 3.9.1 and to initiate action to restore one RHR loop to operation. The proposed Required Actions reflect the importance of maintaining operation for decay heat removal and boron mixing. This change is designated as more restrictive because a new proposed ACTION has been added.

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.1.a.2.B.2, 3.8.b, DOC M03	A.4 Close equipment hatch and secure with [four] bolts.	4 hours
	AND	
	A.5 Close one door in each air lock.	4 hours
	AND	
	A.6.1 Close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange, or equivalent;	4 hours
	OR	
	A.6.2 Verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.	4 hours

Verify

is either closed

; or

Stet

Ventilation

Purge and Vent

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
DOC M04 SR 3.9.5.1	Verify one RHR loop is in operation and circulating reactor coolant at a flow rate of ≥ [2800] gpm.	12 hours

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 84 of 208

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.3, RHR AND COOLANT CIRCULATION – HIGH WATER LEVEL

1. The title of the LCO has been provided since this is the first reference to the LCO.

2. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant requirements.

3. ISTS 3.9.5 Required Actions A.6.1 and A.6.2 are connected by an "OR" logical connector, such that either one can be performed to meet the requirements of the ACTION. However, the two Required Actions are applicable to all the penetrations; either Required Action A.6.1 or Required Action A.6.2 must be performed for all the penetrations. Thus, this will not allow one penetration to be isolated by use of a manual valve and another penetration to be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. This is not the intent of the requirement. The requirement is based on ISTS LCO 3.9.4, which requires each penetration to be either: a) closed by a manual or automatic isolation valve, blind flange, or equivalent; or b) capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. For consistency with the actual LCO requirement, ISTS 3.9.5 Required Actions A.6.1 and A.6.2 have been combined into a single Required Action in ITS 3.9.3 Required Action A.6. ~~In addition, since ISTS 3.9.4 has not been adopted, the term OPERABLE has been deleted.~~ Furthermore, the title of the system has been changed to be consistent with the Kewaunee Power Station System name (i.e., Containment ~~Ventilation~~ Isolation System).

Purge and Vent

has

4. ISTS 3.9.5 has been renumbered to ITS 3.9.3 since ISTS 3.9.2 ~~and ISTS 3.9.4~~ ~~have~~ not been included in the KPS ITS.

and ISTS 3.9.4 is being numbered as ITS 3.9.6.

5. The minimum required RHR flow rate requirement has not been included in KPS ITS SR 3.9.3.1. The Bases states that the flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability. However, the decay heat is not always the same; it is a function of time after shutdown and the power history of the fuel. Furthermore, SRs in Section 3.4 (ITS SRs 3.4.6.1, 3.4.7.1, and 3.4.8.1) require a similar verification that the RHR loop is in operation, but do not specify a flow rate requirement. This change is also consistent with the KPS current Technical Specifications, which does not specify a flow rate for the RHR loop.

BASES

ACTIONS (continued)

b. One door in each air lock must be closed; and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere must be either closed by a manual or automatic isolation valve, blind flange, or equivalent, or verified to be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.

With RHR loop requirements not met, the potential exists for the coolant to boil and release radioactive gas to the containment atmosphere. Performing the actions described above ensures that all containment penetrations are either closed or can be closed so that the dose limits are not exceeded.

The Completion Time of 4 hours allows fixing of most RHR problems and is reasonable, based on the low probability of the coolant boiling in that time.

SURVEILLANCE REQUIREMENTS

SR 3.9.5.1

This Surveillance demonstrates that the RHR loop is in operation and circulating reactor coolant. The flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability and to prevent thermal and boron stratification in the core. The Frequency of 12 hours is sufficient, considering the flow, temperature, pump control, and alarm indications available to the operator in the control room for monitoring the RHR System.

REFERENCES

1. FSAR, Section [5.5.7].
2. USAR, Section 9.3.1.2.

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.3 BASES, RHR AND COOLANT CIRCULATION – HIGH WATER LEVEL

1. Kewaunee Power Station (KPS) was designed and under construction prior to the promulgation of 10 CFR 50 Appendix A. KPS was designed and constructed to meet the intent of the proposed General Design Criteria, published in 1967. The KPS USAR Section 1.8 provides a description of each of the proposed General Design Criteria and how KPS meets the intent of each one. However, the proposed General Design Criteria did not have a criteria equivalent to 10 CFR 50 Appendix A, GDC 34. Therefore, reference to this GDC has been deleted.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases that reflect the plant specific nomenclature, number, reference, system description, analysis or licensing basis description.

3. Changes have been made to be consistent with the actual wording in the Specification. ISTS 3.9.5 (ITS 3.9.3) requires an RHR "loop" to be "OPERABLE and in operation."

4. The correct title for the LCO has been provided, since this LCO is what meets Criterion 4, not the entire RHR System.

5. The punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

6. Changes have been made to be consistent with the actual wording in the Specification. ISTS 3.9.5 (ITS 3.9.3) does not require reactor coolant temperature indication to be OPERABLE; it requires an RHR loop to be OPERABLE and in operation.

7. The title of the LCO has been provided since this is the first reference to the LCO.

8. The wording has been modified since Section 3.5 does not provide requirements for the RHR decay heat removal function.

9. Changes made to be consistent with changes made to the Specification.

10. The ISTS Bases contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

11. ISTS 3.9.5 has been renumbered to ITS 3.9.3 since ISTS 3.9.2 ~~and ISTS 3.9.4 have~~ not been included in the KPS ITS.

has

and ISTS 3.9.4 is being numbered as ITS 3.9.6

12. Typographical error corrected.

DISCUSSION OF CHANGES
ITS 3.9.4, RHR AND COOLANT CIRCULATION – LOW WATER LEVEL

OPERABLE status or to immediately initiate action to establish ≥ 23 ft of water above the top of the reactor vessel flange. This changes the CTS by adding a new ACTION when both required RHR loops are inoperable.

The change is acceptable because the Completion Times are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Times. The immediate initiation of action to restore the required loops to OPERABLE status or to establish ≥ 23 ft of water above the top of the reactor vessel flange reflects the importance of maintaining operation for decay heat removal. This change is designated as more restrictive because a new ACTION is being added to the ITS that was not required by the CTS.

M03 CTS 3.1.a.1.A does not contain any ACTIONS to take should there be less than the required number of RHR pumps in operation. As a result, CTS 3.0.c would normally be entered. However, LCO 3.0.c states that it is not applicable in COLD SHUTDOWN or REFUELING. Since the RHR pump only has to be in operation when a reduction in boron concentration is being made, and for this specification, the unit is already in MODE 6, the CTS does not provide any compensatory measures. Therefore, 10 CFR 50.36 (c)(2)(i) would apply, which states to shut down the unit. However, no times are provided to complete the shutdown and no further actions (i.e., suspend boron concentration reductions) are required. Note that while no ACTIONS are required, KPS in all likelihood would suspend dilution if this occurred. ITS 3.9.4 ACTION B specifies the Required Actions for a required RHR loop not in operation, and requires immediate suspension of operations that would cause introduction of coolant into the RCS with a boron concentration less than required to meet the boron concentration of LCO 3.9.1 (Required Action B.1), immediate initiation of action to restore one RHR loop to operation (Required Action B.2), closing the equipment hatch and securing it with four bolts in 4 hours (Required Action B.3), closing one door in each air lock in 4 hours (Required Action B.4), and a verification that each penetration providing direct access from the containment atmosphere to the outside atmosphere is either closed with a manual or automatic isolation valve, blind flange, or equivalent, or is capable of being closed by ~~a~~ an OPERABLE Containment ~~Ventilation~~ Purge and Vent Isolation System in 4 hours (Required Action B.5). This changes the CTS by adding a new ACTION.

The purpose of the Actions should be to place the unit outside of the Applicability of the Specification. ITS 3.9.4 ACTION B effectively places the unit in an equivalent condition by requiring the plant to immediately suspend operations that would cause introduction of coolant into the RCS with a boron concentration less than required to meet the boron concentration of LCO 3.9.1 and to initiate action to restore one RHR loop to operation. The proposed Required Actions reflect the importance of maintaining operation for decay heat removal and boron mixing. This change is designated as more restrictive because a new proposed ACTION has been added.

M04 CTS 3.1.a.1.A requires one RHR pump to be in operation under certain conditions, but does not provide a Surveillance Requirement to periodically verify the required pump is in operation. ITS SR 3.9.4.1 requires verification that each

CTS

Move to Required Action B.5 on previous page

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC M03	B.5.2 Verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. (Stet)	4 hours (Ventilation → Purge and Vent)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
DOC M04	SR 3.9.6.1 Verify one RHR loop is in operation and circulating reactor coolant at a flow rate of ≥ [2800] gpm.	12 hours
DOC M04	SR 3.9.6.2 Verify correct breaker alignment and indicated power available to the required RHR pump that is not in operation.	7 days

----------NOTE----------
Not required to be performed until 24 hours after a required pump is not in operation.

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.4, RHR AND COOLANT CIRCULATION – LOW WATER LEVEL

1. The term "train" in ISTS 3.9.6 LCO Note 1 has been changed to "loop" to be consistent with the actual LCO statement, which requires loops to be OPERABLE and in operation, not trains. In addition, the term "degrees" has been replaced with the unit designator "º" consistent with its use throughout the ISTS (see ISTS LCO 3.4.6, 3.4.7, and 3.4.8 Note 1).

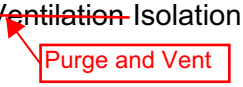
2. The punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

3. The title of the LCO has been provided since this is the first reference to the LCO.

4. Typographical error corrected.

5. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant requirements.

6. ISTS 3.9.6 Required Actions B.5.1 and B.5.2 are connected by an "OR" logical connector, such that either one can be performed to meet the requirements of the ACTION. However, the two Required Actions are applicable to all the penetrations; either Required Action B.5.1 or Required Action B.5.2 must be performed for all the penetrations. Thus, this will not allow one penetration to be isolated by use of a manual valve and another penetration to be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. This is not the intent of the requirement. The requirement is based on ISTS LCO 3.9.4, which requires each penetration to be either: a) closed by a manual or automatic isolation valve, blind flange, or equivalent; or b) capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. For consistency with the actual LCO requirement, ISTS 3.9.6 Required Actions B.5.1 and B.5.2 have been combined into a single Required Action in ITS 3.9.4 Required Action B.5. ~~In addition, since ISTS 3.9.4 has not been adopted, the term OPERABLE has been deleted.~~ Furthermore, the title of the system has been changed to be consistent with the Kewaunee Power Station System name (i.e., Containment ~~Ventilation~~ Isolation System).



7. TSTF-265 was previously approved and incorporated in NUREG-1431, Rev. 2, in similar SRs (e.g., ISTS SRs 3.4.5.3, 3.4.6.3, 3.4.7.3, and 3.4.8.2). Consistent with TSTF-265, a Note is added to ITS SR 3.9.4.2 that permits the performance of the SR to verify correct breaker alignment and power availability to be delayed until 24 hours after a required RHR pump is not in operation. This provision is required because when RHR pumps are swapped under the current requirements, the Surveillance is immediately not met on the RHR pump taken out of operation. This change avoids entering an Action for a routine operational occurrence. The change is acceptable because adequate assurance exists that the RHR pump is aligned to the correct breaker with power available because, prior to being removed from operation, the applicable pump had been in operation. Allowing 24 hours to perform the breaker alignment verification is acceptable because the RHR pump was in operation, which demonstrated OPERABILITY, and because 24 hours is allowed in the ISTS by

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.4, RHR AND COOLANT CIRCULATION – LOW WATER LEVEL

invoking SR 3.0.3. This is also a new Surveillance Requirement not required in CTS 3.1.a.2.B.

8. ISTS 3.9.6 has been renumbered to ITS 3.9.4 since ISTS 3.9.2 ~~and ISTS 3.9.4 have~~ has not been included in the KPS ITS and ISTS 3.9.4 is being numbered as ITS 3.9.6.

9. The minimum required RHR flow rate requirement has not been included in KPS ITS SR 3.9.4.1. The Bases states that the flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability. However, the decay heat is not always the same; it is a function of time after shutdown and the power history of the fuel. Furthermore, SRs in Section 3.4 (ITS SRs 3.4.6.1, 3.4.7.1, and 3.4.8.1) require a similar verification that the RHR loop is in operation, but do not specify a flow rate requirement. This change is also consistent with the KPS current Technical Specifications, which does not specify a flow rate for the RHR loop.

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BASES

ACTIONS (continued)

Purge and Vent

~~Ventilation~~

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere must be either closed by a manual or automatic isolation valve, blind flange, or equivalent, or verified to be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.

stet

14 2

With RHR loop requirements not met, the potential exists for the coolant to boil and release radioactive gas to the containment atmosphere. Performing the actions stated above ensures that all containment penetrations are either closed or can be closed so that the dose limits are not exceeded.

The Completion Time of 4 hours allows fixing of most RHR problems and is reasonable, based on the low probability of the coolant boiling in that time.

SURVEILLANCE REQUIREMENTS

SR 3.9.6.1

14

4

Circulating coolant ensures thermal and boron stratification are minimized.

This Surveillance demonstrates that one RHR loop is in operation and circulating reactor coolant. The flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability and to prevent thermal and boron stratification in the core. In addition, during operation of the RHR loop with the water level in the vicinity of the reactor vessel nozzles, the RHR pump suction requirements must be met. The Frequency of 12 hours is sufficient, considering the flow, temperature, pump control, and alarm indications available to the operator for monitoring the RHR System in the control room.

12

SR 3.9.4.2

9 14

Verification that the required pump is OPERABLE ensures that an additional RCS or RHR pump can be placed in operation, if needed, to maintain decay heat removal and reactor coolant circulation. Verification is performed by verifying proper breaker alignment and power available to the required pump. The Frequency of 7 days is considered reasonable in view of other administrative controls available and has been shown to be acceptable by operating experience.

13

REFERENCES

1. FSAR, Section [5.5.7].

U

2 7

14.1.4.2

2. USAR, Section 9.3.1.2.

2

This SR is modified by a Note that states the SR is not required to be performed until 24 hours after a required pump is not in operation.

12

JUSTIFICATION FOR DEVIATIONS

ITS 3.9.4 BASES, RHR AND COOLANT CIRCULATION – LOW WATER LEVEL

has

14. ISTS 3.9.6 has been renumbered to ITS 3.9.4 since ISTS 3.9.2 ~~and ISTS 3.9.4 have~~ not been included in the KPS ITS.

and ISTS 3.9.4 is being numbered as ITS 3.9.6

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CTS 3.8.a.1 and 3.8.a.8 relocation deletion

~~CTS 3.8.a.1 and 3.8.a.8, CONTAINMENT PENETRATIONS~~

~~Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)~~

CTS 3.8.a.1 and 3.8.a.8

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

See ITS 3.9.1, 3.9.2, 3.9.3, and 3.9.5

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

a. During REFUELING OPERATIONS:

1. Containment Closure

a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [1] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

R01

b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously.

See CTS 3.8.a.2

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service.

See CTS 3.8.a.3

See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE.

See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily.

See ITS 3.9.1

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[1] Administrative controls ensure that:

- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

R01

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See CTS 3.8.a.1 and 3.8.a.8

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

R01

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

See CTS 3.8.a.9

b. Performance Requirements

1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq$99% DOP removal and $\geq$99% halogenated hydrocarbon removal.

2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show $\geq$95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

3. Fans shall operate within $\pm$10% of design flow when tested.

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

See ITS 3.9.1, 3.9.2, 3.9.3, and 3.9.5

DISCUSSION OF CHANGES
CTS 3.8.a.1 and 3.8.a.8, CONTAINMENT PENETRATIONS

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

R01 CTS 3.8.a.1 and 3.8.a.8 provide requirements for Containment Closure during refueling operations. The purpose of the Containment Closure during Refueling requirements is to restrict the release of fission product radioactivity within containment from escaping to the environment following a fuel handling accident within the containment. The containment closure is not taken credit for in any accident analyses in the USAR. This is also documented in the NRC Safety Evaluation for License Amendment 190, dated March 8, 2007 (ADAMS Accession No. ML070430020). Therefore, the ITS does not include these Specifications. This changes the CTS by relocating the Containment Closure Specifications to the Technical Requirements Manual (TRM).

This change is acceptable because CTS 3.8.a.1 and 3.8.a.8 do not meet the 10 CFR 50.36(c)(2)(ii) criteria for inclusion into the ITS.

10 CFR 50.36(c)(2)(ii) Criteria Evaluation:

1. Containment closure is not installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary. The Containment Closure Specifications do not satisfy criterion 1.

2. Containment closure is not a process variable, design feature, or operating restriction that is in an initial condition of a DBA or Transient Analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The Containment Closure Specifications do not satisfy criterion 2.

3. Containment closure is not a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The Containment Closure Specifications do not satisfy criterion 3.

4. Containment closure was found to be non-significant risk contributor to core damage frequency and offsite releases. Dominion Energy Kewaunee (DEK) has performed a plant specific evaluation to ensure that the Containment Closure requirements do not contain constraints of prime importance in limiting the likelihood or severity of the accident

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 99 of 208

DISCUSSION OF CHANGES
CTS 3.8.a.1 and 3.8.a.8, CONTAINMENT PENETRATIONS

sequences that are commonly found to be important to public health and safety.

Since the 10 CFR 50.36(c)(2)(ii) criteria have not been met, the Containment Closure Specifications (CTS 3.8.a.1 and 3.8.a.8) may be relocated out of the Technical Specifications. The containment closure specification will be relocated to the TRM. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59. This change is designated as relocation because the specifications did not meet the criteria in 10 CFR 50.36(c)(2)(ii) and has been relocated to the TRM.

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

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~~Specific No Significant Hazards Considerations (NSHCs)~~

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3.8.a.1 and 3.8.a.8, CONTAINMENT PENETRATIONS

There are no specific NSHC discussions for this Specification.

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 102 of 208

Section 3.7 CTS Markup cross reference change

CTS 3.8.a.9

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

ITS 3.9.6

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

   b. Performance Requirements

      1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq$99% DOP removal and $\geq$99% halogenated hydrocarbon removal.

      2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show $\geq$95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

      3. Fans shall operate within $\pm$10% of design flow when tested.

R01

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

See ITS 3.9.1, 3.9.2, 3.9.3, ~~and~~ 3.9.5

, and 3.9.6

Section 3.9 CTS Markup cross reference change

ITS A01 ITS 3.9.1

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

Applicability — a. During REFUELING OPERATIONS: — M01 — Add proposed Applicability Note — M02

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [(1)] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

   See ~~CTS 3.8.a.1 and 3.8.a.8~~ → ITS 3.9.6

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously. — See CTS 3.8.a.2

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service. — See CTS 3.8.a.3 — See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE. — See ITS 3.9.3

Applicability — 5. When there is fuel in the reactor, a minimum boron concentration as specified in the — M01 — M02

LCO 3.9.1 — COLR shall be maintained in the Reactor Coolant System during reactor vessel

Applicability — head removal or while loading and unloading fuel from the reactor. The required — M01

SR 3.9.1.1 — boron concentration shall be verified by chemical analysis daily. — every 72 hours — L01 — LA01

[(1)] Administrative controls ensure that:

- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

See ~~CTS 3.8.a.1 and 3.8.a.8~~ → ITS 3.9.6

ITS

A01

ITS 3.9.1

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

ITS 3.9.6

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

See CTS 3.8.a.9

b. Performance Requirements

1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal.

2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show ≥95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

3. Fans shall operate within ±10% of design flow when tested.

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

ACTION A

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

ITS

A01

ITS 3.9.2

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

Applicability — a. During REFUELING OPERATIONS: — M01

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [1] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

ITS 3.9.6

See ~~CTS 3.8.a.1 and 3.8.a.8~~

See CTS 3.8.a.2

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously.

A02

OPERABLE

See CTS 3.8.a.3

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service.

LCO 3.9.2 — Applicability — LCO 3.9.2

LA01

M01

A02

OPERABLE

4. At least one residual heat removal pump shall be OPERABLE.

See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily.

See ITS 3.9.1

---

[1] Administrative controls ensure that:

- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

ITS 3.9.6

ITS

A01

ITS 3.9.2

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. ~~Deleted.~~

ITS 3.9.6

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

   b. Performance Requirements

      1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq$99% DOP removal and $\geq$99% halogenated hydrocarbon removal.

      2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show $\geq$95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

      3. Fans shall operate within $\pm$10% of design flow when tested.

See CTS 3.8.a.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

ACTION A

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

A03

Add proposed Required Action A.2

Add proposed ACTIONS B and C

M02

ITS

A01

ITS 3.9.5

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

Applicability — a. During REFUELING OPERATIONS: (L01)

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [1] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

   ITS 3.9.6 → See ~~CTS 3.8.a.1 and 3.8.a.8~~

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously. — See CTS 3.8.a.2

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service.

   See CTS 3.8.a.3; See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE. — See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily. — See ITS 3.9.1

---

[1] Administrative controls ensure that:
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

ITS 3.9.6 → See ~~CTS 3.8.a.1 and 3.8.a.8~~

ITS

A01

ITS 3.9.5

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

ITS 3.9.6

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See CTS ~~3.8.a.1 and 3.8.a.8~~

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

See CTS 3.8.a.9

b. Performance Requirements

1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal.

2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show ≥95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

3. Fans shall operate within ±10% of design flow when tested.

LCO 3.9.5

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

ACTION A

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

L02

Add proposed SR 3.9.5.1

M01

CTS 3.8.a.2

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

See ITS 3.9.1, 3.9.2, 3.9.3, ~~and~~ 3.9.5, and 3.9.6

SPECIFICATION

a. During REFUELING OPERATIONS:

See ITS 3.9.1, 3.9.2, 3.9.3, 3.9.5, and 3.9.6, and CTS 3.8.a.3

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [1] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

See ~~CTS 3.8.a.1 and 3.8.a.8~~ ITS 3.9.6

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously.

R01

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service.

See CTS 3.8.a.3

See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE.

See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily.

See ITS 3.9.1

ITS 3.9.6

[1] Administrative controls ensure that:
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

See ~~CTS 3.8.a.1 and 3.8.a.8~~ ITS 3.9.6

CTS 3.8.a.3

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

See ITS 3.9.1, 3.9.2, 3.9.3, ~~and~~ 3.9.5, and 3.9.6

SPECIFICATION

a. During REFUELING OPERATIONS: LA01

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [1] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

ITS 3.9.6

See CTS ~~3.8.a.1 and 3.8.a.8~~

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously.

See CTS 3.8.a.2

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service.

LA01

See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE.

See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily.

See ITS 3.9.1

ITS 3.9.6

[1] Administrative controls ensure that:
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

See CTS ~~3.8.a.1 and 3.8.a.8~~

CTS 3.8.a.6

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

R01

7. Deleted.

ITS 3.9.6

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

   b. Performance Requirements

      1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq$99% DOP removal and $\geq$99% halogenated hydrocarbon removal.

      2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show $\geq$95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

      3. Fans shall operate within $\pm$10% of design flow when tested.

See CTS 3.8.a.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

See ITS 3.9.1, 3.9.2, 3.9.3, ~~and~~ 3.9.5

, and 3.9.6

CTS 3.8.a.11

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

ITS 3.9.6

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

   b. Performance Requirements

      1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq$99% DOP removal and $\geq$99% halogenated hydrocarbon removal.

      2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show $\geq$95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

      3. Fans shall operate within $\pm$10% of design flow when tested.

See CTS 3.8.a.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

R01

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

See ITS 3.9.1, 3.9.2, 3.9.3, ~~and~~ 3.9.5

, and 3.9.6

CTS 3.8.a.12

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

ITS 3.9.6

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See CTS ~~3.8.a.1 and 3.8.a.8~~

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

   b. Performance Requirements

      1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal.

      2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show ≥95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

      3. Fans shall operate within ±10% of design flow when tested.

See CTS 3.8.a.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

A01

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

See ITS 3.9.1, 3.9.2, 3.9.3, ~~and~~ 3.9.5

, and 3.9.6

Licensee Response/NRC Response/NRC Question Closure

Id	**3811**
NRC Question Number	**RPG-010**
Select Application	**Licensee Response**
Response Date/Time	**7/16/2010 8:30 AM**
Closure Statement	
Response Statement	**Based upon a recent discussion with the NRC reviewers, DEK is submitting the attached markup that supersedes the markup posted on 6/10/2010. This revised markup removes the note in 3.9.6 regarding the allowance for unisolating penetrations under administrative controls. In addition, DOC L03 was deleted with subsequent DOCs renumbered, the CTS insert was removed, the LCO Bases for the note deleted, and the ISTS JFD was modified. This change will be reflected in the supplement to this section of the ITS conversion amendment.**
Question Closure Date	
Attachment 1	**RPG-010 Markup Rev. 1.pdf** (2MB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**7/16/2010 8:36 AM**
Modified By	
Date Modified	

NEW ITS 3.9.6

ATTACHMENT 6

ITS 3.9.6, CONTAINMENT PENETRATIONS

Current Technical Specification (CTS) Markup
and Discussion of Changes (DOCs)

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

Applicability

a. During REFUELING OPERATIONS: L05

1. Containment Closure

LCO 3.9.6.a and b

a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed[(1)] in 30 minutes or less. LA01 In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted. L01

LCO 3.9.6.c.1 and 2

b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve, blind flange, or equivalent L02

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously. See ITS 3.3.6 and 3.3.8

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. See CTS 3.8.a.3 Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. See ITS 3.9.2 When core geometry is not being changed at least one neutron flux monitor shall be in service.

4. At least one residual heat removal pump shall be OPERABLE. See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. See ITS 3.9.1 The required boron concentration shall be verified by chemical analysis daily.

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(1) Administrative controls ensure that: LA01
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

ITS

A01

ITS 3.9.6

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

on an actual or simulated actuation signal

L03

LCO 3.9.6.c.2

SR 3.9.6.2

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

L04

Add proposed SR 3.9.6.2 Note

L04

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

See CTS 3.8.a.9

b. Performance Requirements

1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal.

2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show ≥95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

3. Fans shall operate within ±10% of design flow when tested.

See ITS 5.5.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

ACTION A

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

A02

Add proposed SR 3.9.6.1

M01

DISCUSSION OF CHANGES
ITS 3.9.6, CONTAINMENT PENETRATIONS

ADMINISTRATIVE CHANGES

A01 In the conversion of the Kewaunee Power Station (KPS) Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 3.0, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A02 When the containment penetrations are not in the required condition specified in CTS 3.8.a.1 or CTS 3.8.a.8, CTS 3.8.b requires refueling of the reactor to cease, initiation of action to restore the containment penetrations to the required conditions, and no operations be performed that could increase the reactivity of the core. Under similar conditions, ITS 3.9.6 ACTION A only requires movement of irradiated fuel assemblies within containment to be suspended. This changes the CTS by deleting the requirements to initiate action to restore the containment penetrations to the required conditions and that no operations be performed that could increase the reactivity of the core.

The purpose of CTS 3.8.a.8 is to ensure proper compensatory actions are taken to exit the Applicability of the LCO. CTS 3.8.a.1 and 3.8.a.8 are only applicable during REFUELING OPERATIONS, which is defined in CTS Section 1.0 as the movement of reactor vessel internals that could affect the reactivity of the core within the containment when the vessel head is unbolted or removed. Thus, after the first requirement of CTS 3.8.b is met (i.e., suspend refueling the reactor), the Applicability has been exited and thus, continuation of the requirements of CTS 3.8.b are not required. Therefore, this change is acceptable and is designated as administrative since the technical requirements have not been changed.

MORE RESTRICTIVE CHANGES

M01 CTS 3.8.a does not provide a Surveillance Requirement to verify each required containment penetration is in the required status. The ITS adds a Surveillance Requirement (SR 3.9.6.1) to verify each required containment penetration is in the required status once every 7 days. This changes the CTS by adding a new Surveillance Requirement for the containment penetrations.

This change is acceptable because the added Surveillance Requirement ensures that each required containment penetration is in the required status to support the containment penetration conditions assumed in the Fuel Handling Accident (FHA) analysis. In addition, this change is acceptable because the Surveillance Requirement continues to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. This change is designated as more restrictive because a new Surveillance Requirement has been added.

DISCUSSION OF CHANGES
ITS 3.9.6, CONTAINMENT PENETRATIONS

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 3 – Removing Procedural Details for Meeting TS Requirements or Reporting Requirements*) CTS 3.8.a.1.a requires at least one door in each personnel air lock to be capable of being closed "within 30 minutes." CTS 3.8.a.1.a is modified by a footnote (1) that states "Administrative controls ensure that appropriate personnel are aware that both personnel air lock doors are open; a specified individual(s) is designated and available to close the air lock following a required evacuation of containment; and, any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed." ITS 3.9.6 does not contain this footnote information or the 30 minute requirement. This changes the CTS by moving the information contained in the footnote and the 30 minute requirement to the Bases.

The removal of these details, which are related to procedural details for meeting Technical Specification requirements, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the requirement for at least one door in each personnel air lock to be capable of being closed. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to procedural details for meeting Technical Specification requirements is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.8.a.1.a, in part, requires at least one door in each personnel air lock to be closed when the reactor vessel head or upper internals are being lifted. ITS 3.9.6 does not include this requirement. This changes the CTS by not requiring one door in each personnel air lock to be closed when the reactor vessel head or upper internals are being lifted.

The purpose of CTS 3.8.a.1 is to ensure that if a fuel handling accident occurs, the release of any subsequent fission products results in doses that are well within the guideline values specified in Regulatory Guide 1.183. A fuel handling accident, as analyzed in USAR Section 14.2.1, is postulated to occur during handling of irradiated fuel assemblies; not handling the vessel head or upper internals. Thus, moving the vessel head or upper internals cannot result in a fuel handling accident. Any additional requirements, above those required to meet the assumptions of the fuel handling accident, are more appropriately controlled

by plant procedures. Therefore, this change is acceptable and is designated a less restrictive change since the requirement to maintain containment closure capability during movement of the vessel head or upper internals is being deleted from the CTS.

L02 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.8.a.1.b, in part, states that each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve. ITS LCO 3.9.6.c.1 states that each penetration providing direct access from the containment atmosphere to the outside atmosphere is closed by a manual or automatic isolation valve, blind flange, or equivalent. This changes the CTS by specifying the use of a blind flange or an equivalent means of isolating a containment penetration.

The purpose of CTS 3.8.a.1 is to ensure the containment penetrations are in the condition assumed in the Fuel Handling Accident (FHA) analysis. This change is acceptable because the LCO requirements continue to ensure that the structures, systems, and components are maintained consistent with the safety analyses and licensing basis. The addition of the option to use a blind flange or some other equivalent means of isolating the containment penetration allows additional flexibility in the ITS that was not available in CTS. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L03 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 3.8.a.8 requires verification of the automatic actuation of the Containment Ventilation and Purge valves on a containment ventilation isolation signal. ITS SR 3.9.6.2 specifies that the signal may be from either an actual or simulated signal. This changes the CTS by explicitly allowing the use of either an actual or simulated signal to perform the Surveillance.

The purpose of CTS 3.8.a.8 is to ensure that the containment purge and vent valves operate correctly upon receipt of an actuation signal. This change is acceptable because it has been determined that the relaxed Surveillance Requirement acceptance criteria are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Equipment cannot discriminate between an "actual," "simulated," or "test" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change allows taking credit for unplanned actuation if sufficient information is collected to satisfy the Surveillance test requirements. The change also allows a simulated signal to be used, if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L04 *(Category 7 – Relaxation Of Surveillance Frequency)* CTS 3.8.a.8 includes a Surveillance Frequency of "immediately prior to and daily during REFUELING OPERATIONS" for performing a Surveillance of the Containment Ventilation and Purge System. The ITS SR 3.9.6.2 Frequency for the same requirement is 18 months. ITS SR 3.9.6.2 is also modified by a Note that states that SR 3.9.6.2 is not required to be met for containment purge and vent valve(s) in penetrations that are closed to comply with LCO 3.9.6.c.1. This changes the CTS by

changing the Surveillance Frequency from immediately prior to and daily during REFUELING OPERATIONS to 18 months and adding the Note that the SR is not required to be met for containment purge and vent valve(s) in penetrations that are closed to comply with ITS LCO 3.9.6.c.1.

The purpose of CTS 3.8.a.8 is to verify the equipment required to meet the LCO is OPERABLE. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. Containment purge and vent valve testing is still required, but at a Frequency consistent with the testing Frequency for containment isolation valves required in MODES 1, 2, 3, and 4. This Frequency provides an appropriate degree of assurance that the valves are OPERABLE. When containment purge and vent valve(s) in penetrations are closed to comply with ITS LCO 3.9.6.c.1, the penetrations are in the expected condition (isolated) to mitigate the effects of a fuel handling accident inside containment. Therefore, there is no need for the actuation signal to reposition the valves to the closed position. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L05 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.8.a specifies that the CTS 3.8.a.1 containment closure requirements are applicable during REFUELING OPERATIONS, which is defined in CTS Section 1.0 as the movement of reactor vessel internals that could affect the reactivity of the core within the containment when the vessel head is unbolted or removed. ITS 3.9.6 is applicable during movement of irradiated fuel assemblies within containment. This changes the CTS by not requiring the containment closure requirements to be met when moving or handling control rods during MODE 6 operation.

The purpose of CTS 3.8.a.1 is to ensure that if a fuel handling accident occurs, the release of any subsequent fission products results in doses that are well within the guideline values specified in Regulatory Guide 1.183. A fuel handling accident, as analyzed in USAR Section 14.2.1, can only occur during handling of irradiated fuel assemblies; not moving or handling control rods (which are the only other reactor vessel internals currently in use at KPS that could affect reactivity of the core). Thus, moving or handling the control rods cannot result in a fuel handling accident. Any additional requirements, above those required to meet the assumptions of the fuel handling accident, are more appropriately controlled by plant procedures. Therefore, this change is acceptable and is designated a less restrictive change since the requirement to maintain containment closure capability during movement or handling of control rods in MODE 6 is being deleted from the CTS.

Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

3.9 REFUELING OPERATIONS

3.9.4 Containment Penetrations

LCO 3.9.4 The containment penetrations shall be in the following status:

3.8.a.1.a

a. The equipment is hatch closed and held in place by [four] bolts;

b. One door in each air lock is [capable of being] closed; and

3.8.a.1.b

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere is either:

1. Closed by a manual or automatic isolation valve, blind flange, or equivalent; or

3.8.1.a.b, 3.8.a.8

2. Capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.

Vent

---NOTE---

Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

3.8.a APPLICABILITY: During movement of [recently] irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.8.b A. One or more containment penetrations not in required status.	A.1 Suspend movement of [recently] irradiated fuel assemblies within containment.	Immediately

CTS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1	Verify each required containment penetration is in the required status.	7 days
SR 3.9.4.2	----------NOTE---------- Not required to be met for containment purge and exhaust valve(s) in penetrations closed to comply with LCO 3.9.4.c.1. ---------- Verify each required containment purge and exhaust valve actuates to the isolation position on an actual or simulated actuation signal.	[18] months

DOC M01

3.8.a.8

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.6, CONTAINMENT PENETRATIONS

1. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

2. A typographical error within the ISTS has been corrected. The word "is" has been placed after the word "hatch".

3. The punctuation corrections have been made consistent with Section 5.1.3 of the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01.

4. Changes are made (additions, deletions, and/or changes) to the ISTS which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

5. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. In ITS 3.9.6 Applicability and Required Action A.1, the brackets and the term "recently" have been deleted since the term "recently" does not apply to KPS when referring to irradiated fuel assemblies.

6. ISTS 3.9.4 has been renumbered to ITS 3.9.6 since it was added back into the ITS as the result of an NRC RAI and KPS chose not to renumber multiple Specifications due to this later addition.

7. The ISTS 3.9.4 LCO Note allowance has not been adopted.

Improved Standard Technical Specifications (ISTS) Bases Markup and Bases Justification for Deviations (JFDs)

All changes are 1 unless otherwise noted

B 3.9 REFUELING OPERATIONS

B 3.9.4 Containment Penetrations 6 5

BASES

BACKGROUND

During movement of ~~[recently]~~ irradiated fuel assemblies within containment, a release of fission product radioactivity within containment will be restricted from escaping to the environment when the LCO requirements are met. In MODES 1, 2, 3, and 4, this is accomplished by maintaining containment OPERABLE as described in LCO 3.6.1, "Containment." In MODE 6, the potential for containment pressurization as a result of an accident is not likely; therefore, requirements to isolate the containment from the outside atmosphere can be less stringent. The LCO requirements are referred to as "containment closure" rather than "containment OPERABILITY." Containment closure means that all potential escape paths are closed or capable of being closed. Since there is no potential for containment pressurization, the Appendix J leakage criteria and tests are not required.

The containment serves to contain fission product radioactivity that may be released from the reactor core following an accident, such that offsite radiation exposures are maintained well within the ~~requirements~~ guidance of ~~10 CFR 100~~ Regulatory Guide 1.183 (Ref. 1). Additionally, the containment provides radiation shielding from the fission products that may be present in the containment atmosphere following accident conditions. 2

The containment equipment hatch, which is part of the containment pressure boundary, provides a means for moving large equipment and components into and out of containment. During movement of ~~[recently]~~ irradiated fuel assemblies within containment, the equipment hatch must be held in place by at least four bolts. Good engineering practice dictates that the bolts required by this LCO be approximately equally spaced.

The containment air locks, which are also part of the containment pressure boundary, provide a means for personnel access during MODES 1, 2, 3, and 4 unit operation in accordance with LCO 3.6.2, "Containment Air Locks." Each air lock has a door at both ends. The doors are normally interlocked to prevent simultaneous opening when containment OPERABILITY is required. During periods of unit shutdown when containment closure is not required, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. During movement of ~~[recently]~~ irradiated fuel assemblies within containment, containment closure is required; therefore, the door interlock mechanism may remain disabled, but one air lock door must always remain ~~[~~capable of being~~]~~ closed.

All changes are 1 unless otherwise noted

6 5

BASES

BACKGROUND (continued)

Two systems can be used to purge or ventilate the containment; the Containment Purge and Vent System and the Post LOCA Hydrogen Control System.

The requirements for containment penetration closure ensure that a release of fission product radioactivity within containment will be restricted to within regulatory limits.

Vent

The Post LOCA Hydrogen Control

The Containment Purge and ~~Exhaust~~ System ~~includes two subsystems. The normal subsystem~~ includes a ~~42~~ inch purge penetration and a ~~42~~ inch ~~exhaust~~ penetration. ~~The second subsystem, a minipurge~~ system includes an ~~8~~ inch purge penetration and an ~~8~~ inch ~~exhaust~~ penetration. During MODES 1, 2, 3, and 4, the two valves in each of the normal purge and ~~exhaust~~ penetrations are secured in the closed position. The two valves in each of the two minipurge penetrations can be opened intermittently, but are closed automatically by the Engineered Safety Features Actuation System (ESFAS). Neither of the ~~subsystems~~ is subject to a Specification in MODE 5.

36 vent 2 vent 2 vent 2 INSERT 1 are 2

fresh, tempered air is provided

In MODE 6, ~~large air exchangers are necessary~~ to conduct refueling operations. The normal ~~42~~ inch purge system is used for this purpose, and all four valves are closed by the ESFAS in accordance with LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation."

36 2

[The minipurge system remains operational in MODE 6, and all four valves are also closed by the ESFAS.

[or]

The minipurge system is not used in MODE 6. All four 8 inch valves are secured in the closed position.]

or capable of being isolated

The other containment penetrations that provide direct access from containment atmosphere to outside atmosphere must be isolated on at least one side. Isolation may be achieved by an OPERABLE automatic isolation valve, or by a manual isolation valve, blind flange, or equivalent. Equivalent isolation methods must be approved and may include use of a material that can provide a temporary, atmospheric pressure, ventilation barrier for the other containment penetrations during [recently] irradiated fuel movements ~~(Ref. 1)~~.

6 2

2

INSERT 1

The Post LOCA Hydrogen Control subsystem contains two trains. The valves in Train A are normally closed. The valves in Train B are also normally closed but are periodically opened to control containment pressure within the required limits. The Train B valves receive a signal to close via the Engineered Safety Features Actuation System and the Containment Purge and Vent Isolation System.

All changes are unless otherwise noted (1)

BASES

APPLICABLE SAFETY ANALYSES

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the most severe radiological consequences result from a fuel handling accident [involving handling recently irradiated fuel]. The fuel handling accident is a postulated event that involves damage to irradiated fuel (Ref. 2). Fuel handling accidents, analyzed in Reference 3, include dropping a single irradiated fuel assembly and handling tool or a heavy object onto other irradiated fuel assemblies. The requirements of LCO 3.9.7, "Refueling Cavity Water Level," in conjunction with a minimum decay time of 100 hours prior to [irradiated fuel movement with containment closure capability or a minimum decay time of [x] days without containment closure capability], ensures that the release of fission product radioactivity, subsequent to a fuel handling accident, results in doses that are well within the guideline values specified in 10 CFR 100. Standard Review Plan, Section 15.7.4, Rev. 1 (Ref. 3), defines "well within" 10 CFR 100 to be 25% or less of the 10 CFR 100 values. The acceptance limits for offsite radiation exposure will be 25% of 10 CFR 100 values or the NRC staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits).

Containment penetrations satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

----------REVIEWER'S NOTE----------
The allowance to have containment personnel air lock doors open and penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated during fuel movement and CORE ALTERATIONS is based on (1) confirmatory dose calculations of a fuel handling accident as approved by the NRC staff which indicate acceptable radiological consequences and (2) commitments from the licensee to implement acceptable administrative procedures that ensure in the event of a refueling accident (even though the containment fission product control function is not required to meet acceptable dose consequences) that the open air lock can and will be promptly closed following containment evacuation and that the open penetration(s) can and will be promptly closed. The time to close such penetrations or combination of penetrations shall be included in the confirmatory dose calculations.

This LCO limits the consequences of a fuel handling accident [involving handling recently irradiated fuel] in containment by limiting the potential escape paths for fission product radioactivity released within containment. The LCO requires any penetration providing direct access from the containment atmosphere to the outside atmosphere to be closed except for the OPERABLE containment purge and exhaust penetrations [and the containment personnel air locks]. For the OPERABLE

BASES

LCO (continued)

containment purge and exhaust penetrations, this LCO ensures that these penetrations are isolable by the Containment Purge and Exhaust Isolation System. The OPERABILITY requirements for this LCO ensure that the automatic purge and exhaust valve closure times specified in the FSAR can be achieved and, therefore, meet the assumptions used in the safety analysis to ensure that releases through the valves are terminated, such that radiological doses are within the acceptance limit.

The LCO is modified by a Note allowing penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated under administrative controls. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the penetration flow path during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, and 2) specified individuals are designated and readily available to isolate the flow path in the event of a fuel handling accident.

The containment personnel air lock doors many be open during movement of [recently] irradiated fuel in the containment provided that one door is capable of being closed in the event of a fuel handling accident. Should a fuel handling accident occur inside containment, one personnel air lock door will be closed following an evacuation of containment.

APPLICABILITY

The containment penetration requirements are applicable during movement of [recently] irradiated fuel assemblies within containment because this is when there is a potential for the limiting fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when movement of irradiated fuel assemblies within containment is not being conducted, the potential for a fuel handling accident does not exist. [Additionally, due to radioactive decay, a fuel handling accident involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [x] days) will result in doses that are well within the guideline values specified in 10 CFR 100 even without containment closure capability.] Therefore, under these conditions no requirements are placed on containment penetration status.

(2) **INSERT 2**

When both personnel airlock doors are open during the movement of irradiated fuel in the containment, appropriate plant personnel shall be notified of this condition. A specified individual(s) is designated and available to close the airlock following a required evacuation of containment. Any obstruction(s) (e.g., cables and hoses) that can prevent closure of an open airlock shall be able to be removed in a timely manner (i.e., within the 30 minutes specified above).

BASES

APPLICABILITY (continued)

----------REVIEWER'S NOTE----------
The addition of the term "recently" associated with handling irradiated fuel in all of the containment function Technical Specification requirements is only applicable to those licensees who have demonstrated by analysis that after sufficient radioactive decay has occurred, off-site doses resulting from a fuel handling accident remain below the Standard Review Plan limits (well within 10 CFR 100).

Additionally, licensees adding the term "recently" must make the following commitment which is consistent with NUMARC 93-01, Revision 4, Section 11.3.6.5 "Safety Assessment for Removal of Equipment from Service During Shutdown Conditions," subheading "Containment - Primary (PWR)/Secondary (BWR)."

"The following guidelines are included in the assessment of systems removed from service during movement irradiated fuel:

- During fuel handling/core alterations, ventilation system and radiation monitor availability (as defined in NUMARC 91-06) should be assessed, with respect to filtration and monitoring of releases from the fuel. Following shutdown, radioactivity in the fuel decays away fairly rapidly. The basis of the Technical Specification OPERABILITY amendment is the reduction in doses due to such decay. The goal of maintaining ventilation system and radiation monitor availability is to reduce doses even further below that provided by the natural decay.

- A single normal or contingency method to promptly close primary or secondary containment penetrations should be developed. Such prompt methods need not completely block the penetration or be capable of resisting pressure.

The purpose of the "prompt methods" mentioned above are to enable ventilation systems to draw the release from a postulated fuel handling accident in the proper direction such that it can be treated and monitored."

BASES

ACTIONS

A.1

If the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere is not in the required status, including the Containment Purge and ~~Exhaust~~ Isolation System not capable of automatic actuation when the purge and ~~exhaust~~ valves are open, the unit must be placed in a condition where the isolation function is not needed. This is accomplished by immediately suspending movement of ~~[recently]~~ irradiated fuel assemblies within containment. Performance of these actions shall not preclude completion of movement of a component to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1

This Surveillance demonstrates that each ~~of the~~ containment penetrations required ~~to be in its closed position~~ is in that position. The Surveillance on the open purge and ~~exhaust~~ valves will demonstrate that the valves are not blocked from closing. Also the Surveillance will demonstrate that each valve operator has motive power, which will ensure that each valve is capable of being closed by an OPERABLE automatic containment purge and ~~exhaust~~ isolation signal.

The Surveillance is performed every 7 days during movement of ~~[recently]~~ irradiated fuel assemblies within containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO. As such, this Surveillance ensures that a postulated fuel handling accident ~~[involving handling recently irradiated fuel]~~ that releases fission product radioactivity within the containment will not result in a release of significant fission product radioactivity to the environment in excess of those recommended by ~~Standard Review Plan Section 15.7.4~~ (Reference ~~3~~).

SR 3.9.4.2

This Surveillance demonstrates that each containment purge and ~~exhaust~~ valve actuates to its isolation position on ~~manual initiation or on~~ an actual or simulated high radiation signal. The 18 month Frequency maintains consistency with other similar ESFAS instrumentation and valve testing requirements. ~~In LCO 3.3.6, the Containment Purge and Exhaust~~

(2) **INSERT 3**

LCO 3.3.6, "Containment Purge and Vent Isolation Instrumentation," provides additional Surveillance Requirements for the containment purge and vent valve actuation circuitry.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Isolation instrumentation requires a CHANNEL CHECK every 12 hours and a COT every 92 days to ensure the channel OPERABILITY during refueling operations. Every 18 months a CHANNEL CALIBRATION is performed. The system actuation response time is demonstrated every 18 months, during refueling, on a STAGGERED TEST BASIS. SR 3.6.3.5 demonstrates that the isolation time of each valve is in accordance with the Inservice Testing Program requirements. These Surveillances performed during MODE 6 will ensure that the valves are capable of closing after a postulated fuel handling accident [involving handling recently irradiated fuel] to limit a release of fission product radioactivity from the containment.

The SR is modified by a Note stating that this Surveillance is not required to be met for valves in isolated penetrations. The LCO provides the option to close penetrations in lieu of requiring automatic actuation capability.

REFERENCES

1. GPU Nuclear Safety Evaluation SE-0002000-001, Rev. 0, May 20, 1988.
2. FSAR, Section [15.4.5].
3. NUREG-0800, Section 15.7.4, Rev. 1, July 1981.

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.6 BASES, CONTAINMENT PENETRATIONS

1. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The Reviewer's Note has been deleted. This information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal.

4. Typographical error corrected.

5. ISTS 3.9.4 has been renumbered to ITS 3.9.6 since it was added back into the ITS as the result of an NRC RAI and KPS chose not to renumber multiple Specifications due to this later addition.

6. Changes made to be consistent with the actual Specification.

7. The correct ITS number has been provided.

8. Changes have been made to be consistent with changes to the Specification.

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 142 of 208

Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 3.9.6, CONTAINMENT PENETRATIONS

There are no specific NSHC discussions for this Specification.

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 144 of 208

Split Report changes

SUMMARY DISPOSITION MATRIX FOR KEWAUNEE POWER STATION

CURRENT TS (CTS) NUMBER	CURRENT TITLE	NEW TS (ITS) NUMBER	RETAINED/ CRITERION FOR INCLUSION	NOTES(a)
3.7.b.5	Condition for Inoperability	3.8.1	YES-3	
3.7.b.6	Condition for Inoperability	3.8.9	YES-3	
3.7.b.7	Condition for Inoperability	3.8.1	YES-3	
3.7.c	Condition for Inoperability	3.8.1	YES-3	
3.8	**Refueling Operations**	3.9.6, 3.3.6	YES-3	
3.8.a.1	Containment Closure	~~Relocated~~	~~NO~~	~~See Appendix A, Page 6.~~
3.8.a.2	Radiation Levels Monitoring	Relocated	NO	See Appendix A, Page 7.
3.8.a.3	Neutron Monitoring	3.9.2, Relocated	YES-3	See technical change discussion in the Discussion of Changes for CTS 3.8.a.3.
3.8.a.4	Residual Heat Removal Pump Operability	3.9.4	YES-4	
3.8.a.5	Boron Concentration	3.9.1	YES-2	
3.8.a.6	Direct Communications	Relocated	NO	See Appendix A, Page 8.
3.8.a.7	Deleted	3.9.6	YES-3	
3.8.a.8	Containment Ventilation and Purge System	~~Relocated~~	~~NO~~	~~See Appendix A, Page 6.~~
3.8.a.9	Spent Fuel Pool Sweep System	Relocated	NO	See Appendix A, Page 9.
3.8.a.10	Minimum Water Level Above the Flange	3.9.6	YES-2	
3.8.a.11	Dead Load Test	Relocated	NO	See Appendix A, Page 10.

(a) The Applicable Safety Analyses section of the Bases for the individual Technical Specifications describes the reason specific Technical Specification selection criteria are met.

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 146 of 208

~~3.8.a.1: Containment Closure~~
~~3.8.a.8: Containment Closure~~

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~~DISCUSSION:~~

~~CTS 3.8.a.1 and 3.8.a.8 provide requirements for Containment Closure during refueling operations. The purpose of the Containment Closure during Refueling requirements is to restrict the release of fission product radioactivity within containment from escaping to the environment following a fuel handling accident within the containment.~~

~~COMPARISON TO SCREENING CRITERIA:~~

~~1. Containment closure is not installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.~~

~~2. Containment closure is not a process variable, design feature, or operating restriction that is in an initial condition of a DBA or Transient Analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.~~

~~3. Containment closure is not a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.~~

~~4. Containment closure was found to be non-significant risk contributor to core damage frequency and offsite releases.~~

~~CONCLUSION:~~

~~Since the screening criteria have not been satisfied, the Containment Closure Specifications may be relocated to other plant controlled documents outside Technical Specifications.~~

ITS 3.3.6 changes

ITS

A01

ITS 3.3.6

3.5 INSTRUMENTATION SYSTEM

APPLICABILITY

Applies to reactor protection and engineered safety features instrumentation systems.

OBJECTIVE

To provide for automatic initiation of the engineered safety features in the event that principal process variable limits are exceeded, and to delineate the conditions of the reactor protection instrumentation and engineered safety features circuits necessary to ensure reactor safety.

SPECIFICATIONS

a. Setting limits for instrumentation which initiate operation of the engineered safety features shall be as stated in Table TS 3.5-1.

LA02

b. For on-line testing or in the event of failure of a subsystem instrumentation channel, plant operation shall be permitted to continue at RATED POWER in accordance with Tables TS 3.5-2 through TS 3.5-5.

LCO 3.3.6, DOC A02

c. If for Tables TS 3.5-2 through TS 3.5-5, the number of channels of a particular subsystem in service falls below the limits given in Column 3, or if the values in Column 4 cannot be achieved, operation shall be limited according to the requirement shown in Column 6, as soon as practicable.

ACTION B, DOC A02

d. In the event of subsystem instrumentation channel failure permitted by TS 3.5.b, Tables TS 3.5-2 through TS 3.5-5 need not be observed during the short period of time (approximately 4 hours) the operable subsystem channels are tested, where the failed channel must be blocked to prevent unnecessary reactor trip.

M04

e. The accident monitoring instrumentation in Table TS 3.5-6 shall be OPERABLE whenever the plant is above HOT SHUTDOWN. In the event the limits given in Columns 1 and 2 cannot be maintained, operator action will be in accordance with the respective notes. A change in operational MODES or conditions is acceptable with an inoperable accident monitoring instrumentation channel(s).

See ITS 3.3.3

ITS

New Page

A01

ITS 3.3.6

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

Applicability of Table 3.3.6-1 footnote (a)

a. During REFUELING OPERATIONS: L02

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [(1)] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted. — See ITS 3.9.6

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously. — See CTS 3.8.a.2

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. — See CTS 3.8.a.3

   Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service. — See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE. — See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily. — See ITS 3.9.1

[(1)] Administrative controls ensure that:
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

— See ITS 3.9.6

New Page

ITS

A01

ITS 3.3.6

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ITS 3.9.6

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

See CTS 3.8.a.9

b. Performance Requirements

1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal.

2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show ≥95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

3. Fans shall operate within ±10% of design flow when tested.

See ITS 5.5.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

ACTIONS A and C

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

L02

L03

Add proposed ACTION A (for one channel inoperable) and ACTION C (for two or more channels inoperable during movement of irradiated fuel)

KAB-072 change

NOTE: KAB-072 changes shown in green

A01

Table 3.3.6-1, Functions 2.a, 2.b, and 2.c

and 2.b

TABLE TS 3.5-1

ENGINEERED SAFETY FEATURES INITIATION INSTRUMENT SETTING LIMITS

LA02

NO.	FUNCTIONAL UNIT	CHANNEL	SETTING LIMIT
8	Containment Purge and Vent System Radiation Particulate Detector Radioactive Gas Detector	Containment ventilation isolation	≤ value of radiation levels in exhaust duct as defined in footnote (3)
9	Safeguards Bus Undervoltage (4)	Loss of power	85.0% ± 2% nominal bus voltage ≤ 2.5 seconds time delay
10	Safeguards Bus Second Level Undervoltage (5)	Degraded grid voltage	93.6% ± 0.9% of nominal bus voltage ≤ 7.4 seconds time delay

See ITS 3.3.5

See ITS 3.3.5

(3) The setting limits for max radiation levels are derived from ODCM Specification 3.4.1 and Table 2.2, and USAR Section 6.5.

(4) This undervoltage protection channel ensures ESF equipment will perform as assumed in the USAR.

(5) This undervoltage protection channel protects ESF equipment from long-term low voltage operation.

LA02

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NOTE: KAB-031 changes shown in green

A01

TABLE TS 3.5-4

INSTRUMENT OPERATING CONDITIONS FOR ISOLATION FUNCTIONS

See ITS 3.3.2

NO.	FUNCTIONAL UNIT	1 NO. OF CHANNELS	2 NO. OF CHANNELS TO TRIP	3 MINIMUM OPERABLE CHANNELS REQUIRED	4 MINIMUM DEGREE OF REDUNDANCY	5 PERMISSIBLE BYPASS CONDITIONS	6 OPERATOR ACTION IF CONDITIONS OF COLUMN 3 OR 4 CANNOT BE MET
	Containment Isolation						
	a. Safety Injection	Refer to Item No. 1 of Table TS 3.5-3					HOT SHUTDOWN(1)
	b. Manual	2	1	1	-	ACTION B	HOT SHUTDOWN
	Steam Line Isolation						
	a. Hi-Hi Steam Flow with Safety Injection	2/loop	1	1(3)	-		HOT SHUTDOWN(1)
	b. Hi Steam Flow and 2 of 4 Lo-Lo T_{avg} with Safety Injection	2/loop	1	1(3)	-		HOT SHUTDOWN(1)
	c. Hi-Hi Containment Pressure	3	2	2(3)	-		HOT SHUTDOWN(1)
	d. Manual	1/loop	1/loop	1/loop(3)	-		HOT SHUTDOWN

LA03 — NO. OF CHANNELS / NO. OF CHANNELS TO TRIP

A05

LA03

M01

L01

KAB-031 change

M05

Table 3.3.6-1 Function 3

See ITS 3.3.2

(1) If minimum conditions are not met within 24 hours, steps shall be taken to place the plant in a COLD SHUTDOWN condition.
(2) Steam Line Isolation channels are not required to be operable when both main steam isolation valves are closed and deactivated.

Add proposed Function 1, including ACTIONS B and C

M02

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Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 153 of 208

A01

Table 3.3.6-1 Function 5

and 2.b

Table 3.3.6-1 Function 2.a, ~~2.b and 2.c~~

TABLE TS 3.5-4

INSTRUMENT OPERATING CONDITIONS FOR ISOLATION FUNCTIONS

NO.	FUNCTIONAL UNIT	1 NO. OF CHANNELS	2 NO. OF CHANNELS TO TRIP	3 MINIMUM OPERABLE CHANNELS	4 MINIMUM DEGREE OF REDUNDANCY	5 PERMISSIBLE BYPASS CONDITIONS	6 OPERATOR ACTION IF CONDITIONS OF COLUMN 3 OR 4 CANNOT BE MET
	Containment Ventilation Isolation		LA03	REQUIRED A05			
	a. High Containment Radiation	2	1 LA03	1	-	- ACTION B	These channels are not required to activate containment ventilation isolation when the containment purge and ventilation system isolation valves are maintained closed. (2)
	b. Safety Injection	Refer to Item 1 of Table TS 3.5-3					
	c. Containment Spray	Refer to Item 3 of Table TS 3.5-3					
	Main Feedwater Isolation						
	a. Hi-Hi Steam Generator Level	3	2	2	1		HOT SHUTDOWN

Table 3.3.6-1 Function 4

See ITS 3.3.2

(2) The detectors are required for Reactor Coolant System leak detection as referenced in TS 3.1.d.5.

A06

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ITS A01 ITS 3.3.6

4.1 OPERATIONAL SAFETY REVIEW

APPLICABILITY

Applies to items directly related to safety limits and LIMITING CONDITIONS FOR OPERATION.

OBJECTIVE

To assure that instrumentation shall be checked, tested, and calibrated, and that equipment and sampling tests shall be conducted at sufficiently frequent intervals to ensure safe operation.

SPECIFICATION

SR 3.3.6.1, SR 3.3.6.3, SR 3.3.6.4

a. Calibration, testing, and checking of protective instrumentation channels and testing of logic channels shall be performed as specified in Table TS 4.1-1.

b. Equipment and sampling tests shall be conducted as specified in Table TS 4.1-2 and TS 4.1-3. — See other ITS

c. Deleted

d. Deleted

e. Deleted

A01

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

COT — A04

CHANNEL DESCRIPTION	CHECK SR 3.3.6.1	CALIBRATE SR 3.3.6.4	TEST SR 3.3.6.3	REMARKS
18. a. Containment Pressure (SIS signal)	Each shift	Each refueling cycle	Monthly(a)	(a) Isolation Valve Signal
b. Containment Pressure (Steamline Isolation)	Each shift(a)	Each refueling cycle(a)	Monthly(a)	(a) Narrow range containment pressure (-3.0, +3.0 psig excluded)
c. Containment Pressure (Containment Spray Act)	Each shift	Each refueling cycle	Monthly	
d. Annulus Pressure (Vacuum Breaker)	Not applicable	Each refueling cycle	Each refueling cycle	
19. Radiation Monitoring System	Daily (a) (b) — A03 — 12 hours	Each refueling cycle (a)	Quarterly (a)	(a) Includes only channels R11 thru R15, R19, R21, and R23 (b) Channel check required in all plant modes
20. Deleted				
21. Containment Sump Level	Not applicable	Not applicable	Each refueling cycle	
22. Accumulator Level and Pressure	Each shift	Deleted	Not applicable	
23. Steam Generator Pressure	Each shift	Each refueling cycle	Monthly	

Table 3.3.6-1, Functions 2.a, 2.b, and 2.c — and 2.b

See ITS 3.3.2

See ITS 3.3.7

LA01

A03

M03

See ITS 3.4.15

See ITS 3.4.16

See ITS 3.3.8

Discussion of Change LA01 is for channel R11, R12, and 21. For other channels, see ITS 3.3.2, 3.3.7, 3.4.15, and CTS 3.8.a.9.

Add proposed SR 3.3.6.2 — M02

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The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included to provide adequate protection of public health and safety. The ITS still retains the requirement for the Containment Purge and Vent Isolation Instrumentation be OPERABLE and specifies the number of required channels. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in ITS Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

L01 ~~*(Category 4 – Relaxation of Required Action)* When both Containment Isolation Manual channels are inoperable, CTS Table TS 3.5-4 Column 6 requires the unit to be placed in HOT SHUTDOWN (ITS MODE 3). Under similar conditions, ITS 3.3.6 Required Action B.1 requires immediately entering the applicable Conditions and Required Actions for the containment purge and vent isolation valves made inoperable by isolation instrumentation. This changes the CTS by allowing the actions for inoperable containment purge and vent valves to be taken when both Manual initiation channels are inoperable in lieu of shutting down the unit.~~

Not used.

~~The purpose of the CTS Table TS 3.5-4 Column 6 action is to provide compensatory actions when both Manual Initiation channels are inoperable. However, the CTS action is overly conservative in that it requires more restrictive actions than are allowed if the valves themselves were inoperable. The purpose of the instrumentation is to isolate the associated valves. Thus, this change is acceptable since the proposed ITS Required Action would accomplish this action (since ITS 3.6.3 would require isolation of the associated penetration flow path). This change is designated as less restrictive since the proposed Required Action will allow operation to continue with the associated flow path isolated in lieu of shutting down the unit.~~

INSERT L02 and L03

L02 *(Category 2 – Relaxation of Applicability)* CTS 3.8.a.1.b requires an OPERABLE automatic isolation valve under certain conditions. This is referring to the Containment Purge and Vent System valves, and thus includes the instruments that provide the isolation signal. The Specification is applicable during REFUELING OPERATIONS. This requirement can be met by an OPERABLE automatic isolation valve or a closed isolation valve. When this requirement is not being met, CTS 3.8.b provides actions to be taken if any of the specified limiting conditions in CTS 3.8 a are not met during REFUELING OPERATIONS. ITS 3.3.6 is applicable, in part, during movement of irradiated fuel assemblies within containment, as stated in footnote (a) to Table 3.3.6-1. This changes the CTS by requiring the containment purge and vent isolation instrumentation be OPERABLE during times of movement of irradiated fuel assemblies within containment, in lieu of during REFUELING OPERATIONS.

The purpose of CTS 3.8.a.1.b is to ensure each line that penetrates containment and provides a direct air path from containment atmosphere to the outside atmosphere have a closed isolation valve or an OPERABLE automatic isolation valve. Continuous monitoring of the radiation levels of the containment atmosphere (general or exhaust vent) is required to provide automatic action during an unsafe condition as a result of a fuel handling accident. CTS 3.8.a.1.b requires an OPERABLE automatic isolation valve during REFUELING OPERATIONS, and includes the isolation instrumentation. As defined in CTS Section 1.0, REFUELING OPERATIONS is movement of reactor vessel internal components that could affect the reactivity of the core within the containment when the vessel head is unbolted or removed. This would include both moving irradiated fuel assemblies and control rods. Since movement of irradiated fuel assemblies within containment can only occur when the vessel head is unbolted or removed, ITS 3.3.6 is applicable, with respect to moving fuel assemblies, under the same conditions as CTS 3.8.a.1.b. This change is acceptable because the requirements continue to ensure that the process variables are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. The fuel handling accident is based on damaging a single irradiated fuel assembly. Movement of control rods is not assumed to result in a fuel handling accident. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

L03 *(Category 4 – Relaxation of Required Action)* CTS 3.8.a.1.b requires an OPERABLE automatic isolation valve under certain conditions. This is referring to the Containment Purge and Vent System valves, and thus includes the instruments that provide the isolation signal. The Specification is applicable during REFUELING OPERATIONS. When this requirement is not being met, the isolation valve must be closed or CTS 3.8.b requires refueling of the reactor to cease, initiation of action to restore the monitoring capability, and no operations be performed that could increase the reactivity of the core. Under similar conditions, ITS 3.3.6 does not require the refueling of the reactor to cease or require all operations that could increase the reactivity of the core to cease. With one radiation monitoring channel inoperable, ITS 3.3.6 ACTION A requires restoration of the affected channel to OPERABLE status within 4 hours. ITS 3.3.6 ACTION C, which is

only applicable during the movement of irradiated fuel assemblies within containment, requires immediately placing and maintaining containment purge and vent valves in the closed position (Required Action C.1) or immediately entering the applicable Conditions and Required Actions of LCO 3.9.6 for containment purge and vent valves made inoperable by isolation instrumentation (Required Action C.2). Note that under this condition ITS LCO 3.9.6 would require suspension of movement of irradiated fuel assemblies in containment. This changes the CTS by deleting the requirements to cease refueling of the reactor and that no operations be performed that could increase the reactivity of the core and provides new ACTIONS to restore the radiation monitors to service and maintain the containment boundary.

The purpose of CTS 3.8.a.1.b is to ensure the Containment Purge and Vent System is OPERABLE to provide automatic actuation of the valves if an unsafe condition as a result of a fuel handling accident occurs or the valves are closed. CTS 3.8.b requires compensatory actions be taken to exit the Applicability of the LCO if continuous monitoring is not available and the isolation valves cannot be closed; however, the CTS Actions are overly restrictive. The proposed compensatory actions of ITS 3.3.6 ACTIONS A and C ensure that acceptable actions are taken when radiation channels are inoperable. The proposed ACTION A is acceptable since channels are still available to ensure the containment purge and vent valve receive an isolation signal. The proposed ACTION C is acceptable since when multiple channels are inoperable, the proposed action places the containment purge and vent valves in the isolated position, which performs the function of the radiation channels. This change is designated as less restrictive since less restrictive actions have been added for when the radiation channels are inoperable.

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3.3 INSTRUCTION

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3.3.6 Containment Purge and Exhaust Isolation Instrumentation 1

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3.5.b LCO 3.3.6 The Containment Purge and Exhaust Isolation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE. 1

~~3.8.a~~, ~~3.8.a.2~~ APPLICABILITY: According to Table 3.3.6-1.

ACTIONS

----------NOTE----------

DOC A02 Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.8.b A. One radiation monitoring channel inoperable.	A.1 Restore the affected channel to OPERABLE status.	4 hours
3.5.c, Table TS 3.5-4 Functional Units 1.b and 3.a Column 6, DOC M02 B. ----------NOTE---------- Only applicable in MODE 1, 2, 3, or 4. ---------- One or more Functions with one or more manual or automatic actuation trains inoperable. OR Two or more radiation monitoring channels inoperable. OR Required Action and associated Completion Time of Condition A not met.	B.1 Enter applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Valves," for containment purge and exhaust isolation valves made inoperable by isolation instrumentation.	Immediately

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ACTIONS (continued)

Stet with changes

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ----------NOTE---------- Only applicable during movement of ~~[recently]~~ irradiated fuel assemblies within containment. ---------- One or more Functions with one or more ~~manual or~~ automatic actuation trains inoperable. OR Two or more radiation monitoring channels inoperable. OR Required Action and associated Completion Time for Condition A not met.	C.1 Place and maintain containment purge and ~~exhaust~~ valves in closed position. OR C.2 Enter applicable Conditions and Required Actions of LCO 3.9.~~4~~, "Containment Penetrations," for containment purge and ~~exhaust~~ isolation valves made inoperable by isolation instrumentation.	Immediately Immediately

3.8.b, DOC M02, Table TS 3.5-4 Functional Unit 3.a Column 6

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SURVEILLANCE REQUIREMENTS

----------NOTE----------

Refer to Table 3.3.6-1 to determine which SRs apply for each Containment Purge and Exhaust Isolation Function.

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SURVEILLANCE		FREQUENCY
SR 3.3.6.1	Perform CHANNEL CHECK.	12 hours

4.1.a, Table TS 4.1-1 Channel Description 19

Table 3.3.6-1 (page 1 of 1)
Containment Purge and Exhaust Isolation Instrumentation

Vent

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Manual Initiation	1,2,3,4, (a)	2	SR 3.3.6.6	NA
2. Automatic Actuation Logic and Actuation Relays	1,2,3,4, (a)	2 trains	SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.5	NA
3. [Containment Radiation				
a. Gaseous	1,2,3,4, (a)	[1]	SR 3.3.6.1 ~~SR 3.3.6.4~~ 3 SR 3.3.6.7 4	≤ [2 x background]
b. Particulate	1,2,3,4, (a)	[1]	SR 3.3.6.1 SR 3.3.6.4 3 SR 3.3.6.7 4	≤ [2 x background]
~~c. Iodine~~	~~1,2,3,4, (a)~~	~~[1]~~	~~SR 3.3.6.1~~ ~~SR 3.3.6.4~~ 3 ~~SR 3.3.6.7~~ 4	≤ [2 x background]
d. Area Radiation	1,2,3,4, (a)	[1]	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7	≤ [2 x background]]
4. Containment Isolation - Phase A	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3.a., for all initiation functions and requirements.			

Manual Initiation

INSERT 1

(a) During movement of [~~recently~~] irradiated fuel assemblies within containment.

DOC M02

Table TS 3.5-1 Functional Unit 8, Table TS 3.5-4 Functional Unit 3a, Table TS 4.1-1 Channel Description 19

Table TS 3.5-4 Functional Unit 1.b

3.8.a

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JUSTIFICATION FOR DEVIATIONS
ITS 3.3.6, CONTAINMENT PURGE AND VENT ISOLATION INSTRUMENTATION

1. Changes are made (additions, deletions, and/or changes) to the ISTS that reflect the plant specific nomenclature, number, reference, system description, analysis or licensing basis description.

2. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

3. ~~ISTS 3.3.6 Table 3.3.6-1 Functions 2 and 3 are applicable in MODES 1, 2, 3, and 4 and during movement of recently irradiated fuel assemblies in containment. ISTS 3.3.6 ACTION B provides the actions when two or more radiation monitoring channels are inoperable or when the Required Action and associated Completion Time of Condition A (i.e., one radiation monitor is inoperable) is not met in MODES 1, 2, 3, and 4. ISTS 3.3.6 ACTION C provides the actions when two or more radiation monitoring channels are inoperable or when the Required Action and associated Completion Time of Condition A is not met during movement of recently irradiated fuel assemblies within containment. ISTS 3.3.6 ACTION C requires immediately placing and maintaining containment purge and exhaust valves in the closed position or to immediately enter the applicable Conditions and Required Actions of LCO 3.9.4, "Containment Penetrations," for containment purge and exhaust isolation valves made inoperable by isolation instrumentation. Kewaunee Power Station (KPS) does not credit containment isolation in a fuel handling accident analysis in the USAR. Therefore, ITS 3.3.6 does not maintain the applicability of during movement of recently irradiated fuel assemblies within containment as part of the Applicability. Therefore, all requirements related to movement of irradiated fuel assemblies in the containment (Table 3.3.6-1 Footnote (a) and ACTION C) have been deleted. In addition, due to this deletion, the Note to Condition B has been deleted since it is not necessary (there are no Actions other than those for MODES 1, 2, 3, and 4).~~

ISTS 3.9.4 has been renumbered to ITS 3.9.6.

4. The ISTS contains a Surveillance Requirement (SR) for an ACTUATION LOGIC TEST (ISTSSR 3.3.6.2) for the Containment Purge and Vent Isolation Instrumentation that is performed every 31 days on a STAGGERED TEST BASIS. The ISTS also contains an ACTUATION LOGIC TEST (ISTS SR 3.3.6.4) for the Containment Purge and Vent Isolation Instrumentation that is performed every 92 days on a STAGGERED TEST BASIS. ISTS SR 3.3.6.4 was added to the ISTS as part of the incorporation of TSTF-411, which, in part, increases the surveillance test interval (STI) for the actuation logic and actuation relays. The basis for the increase in the STI is WCAP-15376-P, Revision 0, which is consistent with the Nuclear Regulatory Commission's (NRC) approach for using probabilistic risk assessment in risk-informed decisions on plant-specific changes to the current licensing basis as presented in Regulatory Guides 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Current Licensing Basis," and 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications." KPS has elected to adopt the specific ISTS changes authorized by the results of WCAP-15376-P Revision 0. Therefore, the bracketed ISTS SR 3.3.6.4 (ITS SR 3.3.6.2) has been adopted for testing of the actuation logic and actuation relays. Subsequent Surveillance Requirements have been renumbered as a result of not including ISTS SR 3.3.6.2 in the ITS.

All changes are 1 unless otherwise noted

Vent

BASES

APPLICABLE SAFETY ANALYSES (continued)

vent

rapid isolation is assumed. The containment purge and exhaust isolation radiation monitors act as backup to the SI signal to ensure closing of the purge and exhaust valves. They are also the primary means for automatically isolating containment in the event of a fuel handling accident during shutdown. Containment isolation in turn ensures meeting the containment leakage rate assumptions of the safety analyses and ensures that the calculated accidental offsite radiological doses are below 10 CFR 100 (Ref. 1) limits. [Due to radioactive decay, containment is only required to isolate during fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days).]

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contributes to both

ensuring

control room and

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The containment purge and exhaust isolation instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The LCO requirements ensure that the instrumentation necessary to initiate Containment Purge and Exhaust Isolation, listed in Table 3.3.6-1, is OPERABLE.

Vent

1. Manual Initiation

The LCO requires two channels OPERABLE. The operator can initiate Containment Purge Isolation at any time by using either of two switches in the control room. Either switch actuates both trains. This action will cause actuation of all components in the same manner as any of the automatic actuation signals.

4

The LCO for Manual Initiation ensures the proper amount of redundancy is maintained in the manual actuation circuitry to ensure the operator has manual initiation capability.

Each channel consists of one push button and the interconnecting wiring to the actuation logic cabinet.

1 2. Automatic Actuation Logic and Actuation Relays

4

The LCO requires two trains of Automatic Actuation Logic and Actuation Relays OPERABLE to ensure that no single random failure can prevent automatic actuation.

All changes are 1 unless otherwise noted

Vent

BASES

LCO (continued)

Automatic Actuation Logic and Actuation Relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b, SI, and ESFAS Function 3.a, Containment Phase A Isolation. The applicable MODES and specified conditions for the containment purge isolation portion of these Functions are different and less restrictive than those for their Phase A isolation and SI roles. If one or more of the SI or Phase A isolation Functions becomes inoperable in such a manner that only the Containment Purge Isolation Function is affected, the Conditions applicable to their SI and Phase A isolation Functions need not be entered. The less restrictive Actions specified for inoperability of the Containment Purge Isolation Functions specify sufficient compensatory measures for this case.

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2 → 3. Containment Radiation

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three

The LCO specifies four required channels of radiation monitors to ensure that the radiation monitoring instrumentation necessary to initiate Containment Purge Isolation remains OPERABLE.

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For sampling systems, channel OPERABILITY involves more than OPERABILITY of the channel electronics. OPERABILITY may also require correct valve lineups, sample pump operation, and filter motor operation, as well as detector OPERABILITY, if these supporting features are necessary for trip to occur under the conditions assumed by the safety analyses.

will; since

INSERT 3 →

INSERT 4 →

4. Containment Isolation - Phase A

Refer to LCO 3.3.2, Function 3.a., for all initiating Functions and requirements.

4

APPLICABILITY The Manual Initiation, Automatic Actuation Logic and Actuation Relays, Containment Isolation - Phase A, and Containment Radiation Functions are required OPERABLE in MODES 1, 2, 3, and 4, and during movement of [recently] irradiated fuel assemblies [(i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)] within containment. Under these conditions, the potential exists for an accident that could release significant fission product radioactivity into containment. Therefore, the containment purge and exhaust isolation instrumentation must be OPERABLE in these MODES.

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BASES

ACTIONS (continued)

B.1

one or more Automatic Actuation Logic and Actuation Relays trains

Condition B applies to all Containment Purge and Exhaust Isolation Functions and addresses the train orientation of the Solid State Protection System (SSPS) and the master and slave relays for these Functions. It also addresses the failure of multiple radiation monitoring channels, or the inability to restore a single failed channel to OPERABLE status in the time allowed for Required Action A.1.

4

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If a train is inoperable, multiple channels are inoperable, or the Required Action and associated Completion Time of Condition A are not met, operation may continue as long as the Required Action for the applicable Conditions of LCO 3.6.3 is met for each valve made inoperable by failure of isolation instrumentation.

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A Note is added stating that Condition B is only applicable in MODE 1, 2, 3, or 4.

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Stet with changes

C.1 and C.2

one or more Automatic Actuation Logic and Actuation relays trains

4

Condition C applies to ~~all Containment Purge and Exhaust Isolation Functions~~ and addresses the train orientation of the ~~SSPS and the~~ master and slave relays for these Functions. It also addresses the failure of multiple radiation monitoring channels, or the inability to restore a single failed channel to OPERABLE status in the time allowed for Required Action A.1. If a train is inoperable, multiple channels are inoperable, or the Required Action and associated Completion Time of Condition A are not met, operation may continue as long as the Required Action to place and maintain containment purge and ~~exhaust~~ isolation valves in their closed position is met or the applicable Conditions of LCO 3.9.4, "Containment Penetrations," are met for each valve made inoperable by failure of isolation instrumentation. The Completion Time for these Required Actions is Immediately.

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6

4

A Note states that Condition C is applicable during movement of ~~[recently]~~ irradiated fuel assemblies within containment.

3

SURVEILLANCE REQUIREMENTS

A Note has been added to the SR Table to clarify that Table 3.3.6-1 determines which SRs apply to which Containment Purge and Exhaust Isolation Functions.

1

Vent

Section 3.6 cross reference changes

BASES

LCO

Containment OPERABILITY is maintained by limiting leakage to ≤ 1.0 L_a, except prior to the first startup after performing a required Containment Leakage Rate Testing Program leakage test. At this time the applicable leakage limits must be met.

Compliance with this LCO will ensure a containment configuration, including equipment hatches, that is structurally sound and that will limit leakage to those leakage rates assumed in the safety analysis.

Note that while the Background section describes the Shield Building, the Shield Building requirements are not covered by this LCO; they are provided in LCO 3.6.8, "Shield Building."

Individual leakage rates specified for the containment air lock (LCO 3.6.2) [, purge valves with resilient seals, and secondary bypass leakage (LCO 3.6.3)] are not specifically part of the acceptance criteria of 10 CFR 50, Appendix J. Therefore, leakage rates exceeding these individual limits only result in the containment being inoperable when the leakage results in exceeding the overall acceptance criteria of 1.0 L_a.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material into containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, containment is not required to be OPERABLE in MODE 5 to prevent leakage of radioactive material from containment. The requirements for containment during MODE 6 are addressed in LCO 3.9.4, "Containment Penetrations."

ACTIONS

A.1

In the event containment is inoperable, containment must be restored to OPERABLE status within 1 hour. The 1 hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining containment OPERABLE during MODES 1, 2, 3, and 4. This time period also ensures that the probability of an accident (requiring containment OPERABILITY) occurring during periods when containment is inoperable is minimal.

B.1 and B.2

If containment cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

BASES

APPLICABLE SAFETY ANALYSES (continued)

10 CFR 50, Appendix J, Option A (Ref. 1), as L_a = [0.1]% of containment air weight per day, the maximum allowable containment leakage rate at the calculated peak containment internal pressure P_a = [14.4] psig following a design basis LOCA. This allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air locks.

The containment air locks satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Each containment air lock forms part of the containment pressure boundary. 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.

Each air lock is required to be OPERABLE. For the air lock to be considered OPERABLE, the air lock interlock mechanism must be OPERABLE, the air lock must be in compliance with the Type B air lock leakage test, and both air lock doors must be OPERABLE. The interlock allows only one air lock door of an air lock to be opened at one time. This provision ensures that a gross breach of containment does not exist when containment is required to be OPERABLE. Closure of a single door in each air lock is sufficient to provide a leak tight barrier following postulated events. Nevertheless, both doors are kept closed when the air lock is not being used for normal entry into or exit from containment.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment air locks are not required in MODE 5 to prevent leakage of radioactive material from containment. The requirements for the containment air locks during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

ACTIONS

The ACTIONS are modified by a Note that allows entry and exit to perform repairs on the affected air lock component. If the outer door is inoperable, then it may be easily accessed for most repairs. It is preferred that the air lock be accessed from inside primary containment by entering through the other OPERABLE air lock. However, if this is not practicable, or if repairs on either door must be performed from the barrel side of the door then it is permissible to enter the air lock through the OPERABLE door, which means there is a short time during which the containment boundary is not intact (during access through the

JUSTIFICATION FOR DEVIATIONS
ITS 3.6.2 BASES, CONTAINMENT AIR LOCKS

1. The type of Containment (Dual) and the Specification designator "B" are deleted since they are unnecessary (only one Containment Specification is used in the Kewaunee Power Station (KPS) ITS). This information is provided in NUREG-1431, Rev. 3.0, to assist in identifying the appropriate Specification to be used as a model for the plant specific ITS conversion, but serves no purpose in a plant specific implementation.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

3. The Kewaunee Power Station design does not include a control room indicator for the status of the interlock mechanisms.

4. The brackets have been removed and the proper plant specific information/value has been provided.

5. Editorial change made for clarity.

6. Changes made to be consistent with the actual Specification. ISTS 3.6.2 ACTION C has three Required Actions; C.1, C.2, and C.3.

7. Changes made to be consistent with the actual Specification. ISTS 3.6.2 ACTION B does not require the interlock mechanism to be restored to OPERABLE status. Therefore, the words have been changed to be consistent with the actual words in ISTS 3.6.2 Condition D.

8. 10 CFR 50, Appendix J does not define the values for La and Pa. It only defines what La and Pa are. Therefore, the actual values have been deleted. The words as modified are consistent with similar words in the Applicable Safety Analyses Bases for ISTS 3.6.1.

9. Changes made to be consistent with changes made to SR 3.6.2.2.

10. Change made to be consistent with the actual Specification number.

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 170 of 208

ITS 3.9.3 and 3.9.4 changes

ITS

A01

ITS 3.9.3

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

Applicability

a. During REFUELING OPERATIONS:

A05

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [1] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

ITS 3.9.6

See CTS ~~3.8.a.1 and 3.8.a.8~~

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously.

See CTS 3.8.a.2

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service.

See CTS 3.8.a.3

See ITS 3.9.2

LCO 3.9.3

4. At least one residual heat removal pump shall be OPERABLE.

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily.

See ITS 3.9.1

ITS 3.9.6

[1] Administrative controls ensure that:
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

See CTS ~~3.8.a.1 and 3.8.a.8~~

ITS

A01

ITS 3.9.3

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

ITS 3.9.6

7. Deleted.

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

   b. Performance Requirements

      1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal.

      2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show ≥95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

      3. Fans shall operate within ±10% of design flow when tested.

See CTS 3.8.a.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

ACTION A

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

M02

Add proposed Required Actions A.1, A.4, A.5, and A.6

M02

Add proposed Required Action A.3

A04

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 173 of 208

DISCUSSION OF CHANGES
ITS 3.9.3, RHR AND COOLANT CIRCULATION – HIGH WATER LEVEL

verification that each penetration providing direct access from the containment atmosphere to the outside atmosphere is either closed with a manual or automatic isolation valve, blind flange, or equivalent, or is capable of being closed by ~~a~~ Containment ~~Ventilation and~~ Purge Isolation System in 4 hours (Required Action A.6). This changes the CTS by adding new Required Actions when the required RHR loop is inoperable.

an OPERABLE

and Vent

These added Required Actions are acceptable since they assist in minimizing the consequences of the required RHR loop being inoperable. Note that while CTS 3.8.b requires operations not be performed that could increase the reactivity of the core, this action is actually not required to be taken since once movement of fuel has been suspended, REFUELING OPERATIONS has ceased (thus, the LCO requirements of CTS 3.8.a are not required to be met). Thus, the addition of a similar Required Action (Required Action A.1), as well as the other above described Required Actions, is designated as more restrictive.

M03 CTS 3.1.a.1.A does not contain any ACTIONS to take should there be less than the required number of RHR pumps in operation. As a result, CTS 3.0.c would normally be entered. However, LCO 3.0.c states that it is not applicable in COLD SHUTDOWN or REFUELING. Since the RHR pump only has to be in operation when a reduction in boron concentration is being made, and for this Specification, the unit is already in MODE 6, the CTS does not provide any compensatory measures. Therefore, 10 CFR 50.36 (c)(2)(i) would apply, which states to shutdown the unit. However, no times are provided to complete the shutdown and no further actions (i.e., suspend boron concentration reductions) are required. Note that while no ACTIONS are required, KPS in all likelihood would suspend dilution if this occurred. ITS 3.9.3 ACTION A specifies the Required Actions for a required RHR loop not in operation, and requires immediate suspension of operations that would cause introduction of coolant into the RCS with a boron concentration less than required to meet the boron concentration of LCO 3.9.1 (Required Action A.1), immediate suspension of loading irradiated fuel assemblies into the core (Required Action A.2), immediate initiation of action to restore one RHR loop to operation (Required Action A.3), closing the equipment hatch and securing it with four bolts in 4 hours (Required Action A.4), closing one door in each air lock in 4 hours (Required Action A.5), and a verification that each penetration providing direct access from the containment atmosphere to the outside atmosphere is either closed with a manual or automatic isolation valve, blind flange, or equivalent, or is capable of being closed by ~~a~~ Containment ~~Ventilation~~ Isolation System in 4 hours (Required Action A.6). This changes the CTS by adding a new ACTION.

an OPERABLE

Purge and Vent

The purpose of the Actions should be to place the unit outside of the Applicability of the Specification. ITS 3.9.3 ACTION A effectively places the unit in an equivalent condition by requiring the plant to immediately suspend operations that would cause introduction of coolant into the RCS with a boron concentration less than required to meet the boron concentration of LCO 3.9.1 and to initiate action to restore one RHR loop to operation. The proposed Required Actions reflect the importance of maintaining operation for decay heat removal and boron mixing. This change is designated as more restrictive because a new proposed ACTION has been added.

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.1.a.2.B.2, 3.8.b, DOC M03	A.4 Close equipment hatch and secure with [four] bolts.	4 hours
	AND	
	A.5 Close one door in each air lock.	4 hours
	AND	
	A.6.1 Close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange, or equivalent;	4 hours
	OR	
	A.6.2 Verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.	4 hours

Verify
is either closed
; or
Stet
Ventilation
Purge and Vent

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
DOC M04 SR 3.9.5.1	Verify one RHR loop is in operation and circulating reactor coolant at a flow rate of ≥ [2800] gpm.	12 hours

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.3, RHR AND COOLANT CIRCULATION – HIGH WATER LEVEL

1. The title of the LCO has been provided since this is the first reference to the LCO.

2. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant requirements.

3. ISTS 3.9.5 Required Actions A.6.1 and A.6.2 are connected by an "OR" logical connector, such that either one can be performed to meet the requirements of the ACTION. However, the two Required Actions are applicable to all the penetrations; either Required Action A.6.1 or Required Action A.6.2 must be performed for all the penetrations. Thus, this will not allow one penetration to be isolated by use of a manual valve and another penetration to be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. This is not the intent of the requirement. The requirement is based on ISTS LCO 3.9.4, which requires each penetration to be either: a) closed by a manual or automatic isolation valve, blind flange, or equivalent; or b) capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. For consistency with the actual LCO requirement, ISTS 3.9.5 Required Actions A.6.1 and A.6.2 have been combined into a single Required Action in ITS 3.9.3 Required Action A.6. ~~In addition, since ISTS 3.9.4 has not been adopted, the term OPERABLE has been deleted.~~ Furthermore, the title of the system has been changed to be consistent with the Kewaunee Power Station System name (i.e., Containment ~~Ventilation~~ Isolation System).

Purge and Vent

has

4. ISTS 3.9.5 has been renumbered to ITS 3.9.3 since ISTS 3.9.2 ~~and ISTS 3.9.4~~ ~~have~~ not been included in the KPS ITS.

and ISTS 3.9.4 is being numbered as ITS 3.9.6.

5. The minimum required RHR flow rate requirement has not been included in KPS ITS SR 3.9.3.1. The Bases states that the flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability. However, the decay heat is not always the same; it is a function of time after shutdown and the power history of the fuel. Furthermore, SRs in Section 3.4 (ITS SRs 3.4.6.1, 3.4.7.1, and 3.4.8.1) require a similar verification that the RHR loop is in operation, but do not specify a flow rate requirement. This change is also consistent with the KPS current Technical Specifications, which does not specify a flow rate for the RHR loop.

BASES

ACTIONS (continued)

b. One door in each air lock must be closed; and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere must be either closed by a manual or automatic isolation valve, blind flange, or equivalent, or verified to be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.

With RHR loop requirements not met, the potential exists for the coolant to boil and release radioactive gas to the containment atmosphere. Performing the actions described above ensures that all containment penetrations are either closed or can be closed so that the dose limits are not exceeded.

The Completion Time of 4 hours allows fixing of most RHR problems and is reasonable, based on the low probability of the coolant boiling in that time.

SURVEILLANCE REQUIREMENTS

SR 3.9.5.1

This Surveillance demonstrates that the RHR loop is in operation and circulating reactor coolant. The flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability and to prevent thermal and boron stratification in the core. The Frequency of 12 hours is sufficient, considering the flow, temperature, pump control, and alarm indications available to the operator in the control room for monitoring the RHR System.

REFERENCES

1. FSAR, Section [5.5.7].

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.3 BASES, RHR AND COOLANT CIRCULATION – HIGH WATER LEVEL

1. Kewaunee Power Station (KPS) was designed and under construction prior to the promulgation of 10 CFR 50 Appendix A. KPS was designed and constructed to meet the intent of the proposed General Design Criteria, published in 1967. The KPS USAR Section 1.8 provides a description of each of the proposed General Design Criteria and how KPS meets the intent of each one. However, the proposed General Design Criteria did not have a criteria equivalent to 10 CFR 50 Appendix A, GDC 34. Therefore, reference to this GDC has been deleted.

2. Changes are made (additions, deletions, and/or changes) to the ISTS Bases that reflect the plant specific nomenclature, number, reference, system description, analysis or licensing basis description.

3. Changes have been made to be consistent with the actual wording in the Specification. ISTS 3.9.5 (ITS 3.9.3) requires an RHR "loop" to be "OPERABLE and in operation."

4. The correct title for the LCO has been provided, since this LCO is what meets Criterion 4, not the entire RHR System.

5. The punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

6. Changes have been made to be consistent with the actual wording in the Specification. ISTS 3.9.5 (ITS 3.9.3) does not require reactor coolant temperature indication to be OPERABLE; it requires an RHR loop to be OPERABLE and in operation.

7. The title of the LCO has been provided since this is the first reference to the LCO.

8. The wording has been modified since Section 3.5 does not provide requirements for the RHR decay heat removal function.

9. Changes made to be consistent with changes made to the Specification.

10. The ISTS Bases contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

11. ISTS 3.9.5 has been renumbered to ITS 3.9.3 since ISTS 3.9.2 ~~and ISTS 3.9.4 have~~ not been included in the KPS ITS.

has

and ISTS 3.9.4 is being numbered as ITS 3.9.6

12. Typographical error corrected.

DISCUSSION OF CHANGES
ITS 3.9.4, RHR AND COOLANT CIRCULATION – LOW WATER LEVEL

OPERABLE status or to immediately initiate action to establish ≥ 23 ft of water above the top of the reactor vessel flange. This changes the CTS by adding a new ACTION when both required RHR loops are inoperable.

The change is acceptable because the Completion Times are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Times. The immediate initiation of action to restore the required loops to OPERABLE status or to establish ≥ 23 ft of water above the top of the reactor vessel flange reflects the importance of maintaining operation for decay heat removal. This change is designated as more restrictive because a new ACTION is being added to the ITS that was not required by the CTS.

M03 CTS 3.1.a.1.A does not contain any ACTIONS to take should there be less than the required number of RHR pumps in operation. As a result, CTS 3.0.c would normally be entered. However, LCO 3.0.c states that it is not applicable in COLD SHUTDOWN or REFUELING. Since the RHR pump only has to be in operation when a reduction in boron concentration is being made, and for this specification, the unit is already in MODE 6, the CTS does not provide any compensatory measures. Therefore, 10 CFR 50.36 (c)(2)(i) would apply, which states to shut down the unit. However, no times are provided to complete the shutdown and no further actions (i.e., suspend boron concentration reductions) are required. Note that while no ACTIONS are required, KPS in all likelihood would suspend dilution if this occurred. ITS 3.9.4 ACTION B specifies the Required Actions for a required RHR loop not in operation, and requires immediate suspension of operations that would cause introduction of coolant into the RCS with a boron concentration less than required to meet the boron concentration of LCO 3.9.1 (Required Action B.1), immediate initiation of action to restore one RHR loop to operation (Required Action B.2), closing the equipment hatch and securing it with four bolts in 4 hours (Required Action B.3), closing one door in each air lock in 4 hours (Required Action B.4), and a verification that each penetration providing direct access from the containment atmosphere to the outside atmosphere is either closed with a manual or automatic isolation valve, blind flange, or equivalent, or is capable of being closed by ~~a~~ an OPERABLE Containment ~~Ventilation~~ Purge and Vent Isolation System in 4 hours (Required Action B.5). This changes the CTS by adding a new ACTION.

The purpose of the Actions should be to place the unit outside of the Applicability of the Specification. ITS 3.9.4 ACTION B effectively places the unit in an equivalent condition by requiring the plant to immediately suspend operations that would cause introduction of coolant into the RCS with a boron concentration less than required to meet the boron concentration of LCO 3.9.1 and to initiate action to restore one RHR loop to operation. The proposed Required Actions reflect the importance of maintaining operation for decay heat removal and boron mixing. This change is designated as more restrictive because a new proposed ACTION has been added.

M04 CTS 3.1.a.1.A requires one RHR pump to be in operation under certain conditions, but does not provide a Surveillance Requirement to periodically verify the required pump is in operation. ITS SR 3.9.4.1 requires verification that each

CTS

3.9.6 (8) (4)

(6)

Move to Required Action B.5 on previous page

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
DOC M03	B.5.2 ~~Verify each penetration~~ is capable of being closed by an ~~OPERABLE~~ Stet Containment ~~Purge and Exhaust~~ Isolation System.	~~4 hours~~ ~~Ventilation~~ Purge and Vent (6)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
DOC M04	SR 3.9.6.1 (4)	Verify one RHR loop is in operation and circulating reactor coolant ~~at a flow rate of ≥ [2800] gpm~~.	12 hours	(8) (9)
DOC M04	SR 3.9.6.2 (4)	Verify correct breaker alignment and indicated power available to the required RHR pump that is not in operation.	7 days	(8)

----------NOTE----------
Not required to be performed until 24 hours after a required pump is not in operation.
---------- (7)

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.4, RHR AND COOLANT CIRCULATION – LOW WATER LEVEL

1. The term "train" in ISTS 3.9.6 LCO Note 1 has been changed to "loop" to be consistent with the actual LCO statement, which requires loops to be OPERABLE and in operation, not trains. In addition, the term "degrees" has been replaced with the unit designator "º" consistent with its use throughout the ISTS (see ISTS LCO 3.4.6, 3.4.7, and 3.4.8 Note 1).

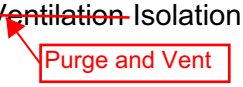
2. The punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

3. The title of the LCO has been provided since this is the first reference to the LCO.

4. Typographical error corrected.

5. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant requirements.

6. ISTS 3.9.6 Required Actions B.5.1 and B.5.2 are connected by an "OR" logical connector, such that either one can be performed to meet the requirements of the ACTION. However, the two Required Actions are applicable to all the penetrations; either Required Action B.5.1 or Required Action B.5.2 must be performed for all the penetrations. Thus, this will not allow one penetration to be isolated by use of a manual valve and another penetration to be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. This is not the intent of the requirement. The requirement is based on ISTS LCO 3.9.4, which requires each penetration to be either: a) closed by a manual or automatic isolation valve, blind flange, or equivalent; or b) capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. For consistency with the actual LCO requirement, ISTS 3.9.6 Required Actions B.5.1 and B.5.2 have been combined into a single Required Action in ITS 3.9.4 Required Action B.5. ~~In addition, since ISTS 3.9.4 has not been adopted, the term OPERABLE has been deleted.~~ Furthermore, the title of the system has been changed to be consistent with the Kewaunee Power Station System name (i.e., Containment ~~Ventilation~~ Isolation System).



7. TSTF-265 was previously approved and incorporated in NUREG-1431, Rev. 2, in similar SRs (e.g., ISTS SRs 3.4.5.3, 3.4.6.3, 3.4.7.3, and 3.4.8.2). Consistent with TSTF-265, a Note is added to ITS SR 3.9.4.2 that permits the performance of the SR to verify correct breaker alignment and power availability to be delayed until 24 hours after a required RHR pump is not in operation. This provision is required because when RHR pumps are swapped under the current requirements, the Surveillance is immediately not met on the RHR pump taken out of operation. This change avoids entering an Action for a routine operational occurrence. The change is acceptable because adequate assurance exists that the RHR pump is aligned to the correct breaker with power available because, prior to being removed from operation, the applicable pump had been in operation. Allowing 24 hours to perform the breaker alignment verification is acceptable because the RHR pump was in operation, which demonstrated OPERABILITY, and because 24 hours is allowed in the ISTS by

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.4, RHR AND COOLANT CIRCULATION – LOW WATER LEVEL

invoking SR 3.0.3. This is also a new Surveillance Requirement not required in CTS 3.1.a.2.B.

8. ISTS 3.9.6 has been renumbered to ITS 3.9.4 since ISTS 3.9.2 ~~and ISTS 3.9.4 have~~ has not been included in the KPS ITS. and ISTS 3.9.4 is being numbered as ITS 3.9.6

9. The minimum required RHR flow rate requirement has not been included in KPS ITS SR 3.9.4.1. The Bases states that the flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability. However, the decay heat is not always the same; it is a function of time after shutdown and the power history of the fuel. Furthermore, SRs in Section 3.4 (ITS SRs 3.4.6.1, 3.4.7.1, and 3.4.8.1) require a similar verification that the RHR loop is in operation, but do not specify a flow rate requirement. This change is also consistent with the KPS current Technical Specifications, which does not specify a flow rate for the RHR loop.

BASES

ACTIONS (continued)

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere must be either closed by a manual or automatic isolation valve, blind flange, or equivalent, or verified to be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.

With RHR loop requirements not met, the potential exists for the coolant to boil and release radioactive gas to the containment atmosphere. Performing the actions stated above ensures that all containment penetrations are either closed or can be closed so that the dose limits are not exceeded.

The Completion Time of 4 hours allows fixing of most RHR problems and is reasonable, based on the low probability of the coolant boiling in that time.

SURVEILLANCE REQUIREMENTS

SR 3.9.6.1

This Surveillance demonstrates that one RHR loop is in operation and circulating reactor coolant. The flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability and to prevent thermal and boron stratification in the core. In addition, during operation of the RHR loop with the water level in the vicinity of the reactor vessel nozzles, the RHR pump suction requirements must be met. The Frequency of 12 hours is sufficient, considering the flow, temperature, pump control, and alarm indications available to the operator for monitoring the RHR System in the control room.

SR 3.9.4.2

Verification that the required pump is OPERABLE ensures that an additional RCS or RHR pump can be placed in operation, if needed, to maintain decay heat removal and reactor coolant circulation. Verification is performed by verifying proper breaker alignment and power available to the required pump. The Frequency of 7 days is considered reasonable in view of other administrative controls available and has been shown to be acceptable by operating experience.

REFERENCES

1. FSAR, Section [5.5.7].
2. USAR, Section 9.3.1.2.

Purge and Vent

~~Ventilation~~

stet

14.1.4.2

Circulating coolant ensures thermal and boron stratification are minimized.

This SR is modified by a Note that states the SR is not required to be performed until 24 hours after a required pump is not in operation.

JUSTIFICATION FOR DEVIATIONS
ITS 3.9.4 BASES, RHR AND COOLANT CIRCULATION – LOW WATER LEVEL

has

14. ISTS 3.9.6 has been renumbered to ITS 3.9.4 since ISTS 3.9.2 ~~and ISTS 3.9.4 have~~ not been included in the KPS ITS.

and ISTS 3.9.4 is being numbered as ITS 3.9.6

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CTS 3.8.a.1 and 3.8.a.8 relocation deletion

~~CTS 3.8.a.1 and 3.8.a.8, CONTAINMENT PENETRATIONS~~

~~Current Technical Specification (CTS) Markup~~
~~and Discussion of Changes (DOCs)~~

CTS 3.8.a.1 and 3.8.a.8

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

See ITS 3.9.1, 3.9.2, 3.9.3, and 3.9.5

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

a. During REFUELING OPERATIONS:

1. Containment Closure

a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [(1)] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

R01

b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously.

See CTS 3.8.a.2

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service.

See CTS 3.8.a.3

See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE.

See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily.

See ITS 3.9.1

[(1)] Administrative controls ensure that:

- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

R01

See CTS 3.8.a.1 and 3.8.a.8

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

R01

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

See CTS 3.8.a.9

b. Performance Requirements

1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq$99% DOP removal and $\geq$99% halogenated hydrocarbon removal.

2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show $\geq$95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

3. Fans shall operate within $\pm$10% of design flow when tested.

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

See ITS 3.9.1, 3.9.2, 3.9.3, and 3.9.5

DISCUSSION OF CHANGES
CTS 3.8.a.1 and 3.8.a.8, CONTAINMENT PENETRATIONS

ADMINISTRATIVE CHANGES

None

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

R01 CTS 3.8.a.1 and 3.8.a.8 provide requirements for Containment Closure during refueling operations. The purpose of the Containment Closure during Refueling requirements is to restrict the release of fission product radioactivity within containment from escaping to the environment following a fuel handling accident within the containment. The containment closure is not taken credit for in any accident analyses in the USAR. This is also documented in the NRC Safety Evaluation for License Amendment 190, dated March 8, 2007 (ADAMS Accession No. ML070430020). Therefore, the ITS does not include these Specifications. This changes the CTS by relocating the Containment Closure Specifications to the Technical Requirements Manual (TRM).

This change is acceptable because CTS 3.8.a.1 and 3.8.a.8 do not meet the 10 CFR 50.36(c)(2)(ii) criteria for inclusion into the ITS.

10 CFR 50.36(c)(2)(ii) Criteria Evaluation:

1. Containment closure is not installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary. The Containment Closure Specifications do not satisfy criterion 1.

2. Containment closure is not a process variable, design feature, or operating restriction that is in an initial condition of a DBA or Transient Analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The Containment Closure Specifications do not satisfy criterion 2.

3. Containment closure is not a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The Containment Closure Specifications do not satisfy criterion 3.

4. Containment closure was found to be non-significant risk contributor to core damage frequency and offsite releases. Dominion Energy Kewaunee (DEK) has performed a plant specific evaluation to ensure that the Containment Closure requirements do not contain constraints of prime importance in limiting the likelihood or severity of the accident

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DISCUSSION OF CHANGES
CTS 3.8.a.1 and 3.8.a.8, CONTAINMENT PENETRATIONS

sequences that are commonly found to be important to public health and safety.

Since the 10 CFR 50.36(c)(2)(ii) criteria have not been met, the Containment Closure Specifications (CTS 3.8.a.1 and 3.8.a.8) may be relocated out of the Technical Specifications. The containment closure specification will be relocated to the TRM. Changes to the TRM will be controlled by the provisions of 10 CFR 50.59. This change is designated as relocation because the specifications did not meet the criteria in 10 CFR 50.36(c)(2)(ii) and has been relocated to the TRM.

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

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~~Specific No Significant Hazards Considerations (NSHCs)~~

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
CTS 3.8.a.1 and 3.8.a.8, CONTAINMENT PENETRATIONS

There are no specific NSHC discussions for this Specification.

Enclosure, Q&A to Attachment 1, Volume 14 (Section 3.9) Page 193 of 208

Section 3.7 CTS Markup cross reference change

CTS 3.8.a.9

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

ITS 3.9.6

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

   b. Performance Requirements

      1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq$99% DOP removal and $\geq$99% halogenated hydrocarbon removal.

      2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show $\geq$95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

      3. Fans shall operate within $\pm$10% of design flow when tested.

R01

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

See ITS 3.9.1, 3.9.2, 3.9.3, ~~and~~ 3.9.5

, and 3.9.6

Section 3.9 CTS Markup cross reference change

ITS A01 ITS 3.9.1

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

Applicability — a. During REFUELING OPERATIONS: — M01, M02

Add proposed Applicability Note

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [1] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

   — See ~~CTS 3.8.a.1 and 3.8.a.8~~ — ITS 3.9.6

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously. — See CTS 3.8.a.2

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service. — See CTS 3.8.a.3 — See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE. — See ITS 3.9.3

Applicability — 5. When there is fuel in the reactor, a minimum boron concentration as specified in the — M01, M02

LCO 3.9.1 — COLR shall be maintained in the Reactor Coolant System during reactor vessel

Applicability — head removal or while loading and unloading fuel from the reactor. The required — M01

SR 3.9.1.1 — boron concentration shall be verified by chemical analysis daily. — every 72 hours — L01, LA01

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[1] Administrative controls ensure that:
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

— See ~~CTS 3.8.a.1 and 3.8.a.8~~ — ITS 3.9.6

ITS

A01

ITS 3.9.1

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. Deleted.

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

ITS 3.9.6

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

See CTS 3.8.a.9

b. Performance Requirements

1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal.

2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show ≥95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

3. Fans shall operate within ±10% of design flow when tested.

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

ACTION A

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

ITS

A01

ITS 3.9.2

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

Applicability — a. During REFUELING OPERATIONS: — M01

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [1] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

ITS 3.9.6 — See CTS ~~3.8.a.1 and 3.8.a.8~~

See CTS 3.8.a.2

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously.

A02 — OPERABLE

See CTS 3.8.a.3

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service.

LCO 3.9.2 — LA01

Applicability — M01

LCO 3.9.2 — A02 — OPERABLE

4. At least one residual heat removal pump shall be OPERABLE.

See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily.

See ITS 3.9.1

---

[1] Administrative controls ensure that:
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

See CTS ~~3.8.a.1 and 3.8.a.8~~

ITS 3.9.6

ITS

A01

ITS 3.9.2

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. ~~Deleted.~~

ITS 3.9.6

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

   b. Performance Requirements

      1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq$99% DOP removal and $\geq$99% halogenated hydrocarbon removal.

      2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show $\geq$95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

      3. Fans shall operate within $\pm$10% of design flow when tested.

See CTS 3.8.a.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

ACTION A

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

A03

Add proposed Required Action A.2

Add proposed ACTIONS B and C

M02

ITS

A01

ITS 3.9.5

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

Applicability

a. During REFUELING OPERATIONS:

L01

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [1] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

ITS 3.9.6

See ~~CTS 3.8.a.1 and 3.8.a.8~~

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously.

See CTS 3.8.a.2

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service.

See CTS 3.8.a.3

See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE.

See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily.

See ITS 3.9.1

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[1] Administrative controls ensure that:
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

ITS 3.9.6

See ~~CTS 3.8.a.1 and 3.8.a.8~~

ITS

A01

ITS 3.9.5

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

7. ~~Deleted.~~

ITS 3.9.6

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

See CTS 3.8.a.9

b. Performance Requirements

1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq$99% DOP removal and $\geq$99% halogenated hydrocarbon removal.

2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show $\geq$95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

3. Fans shall operate within $\pm$10% of design flow when tested.

LCO 3.9.5

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

ACTION A

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

L02

Add proposed SR 3.9.5.1

M01

CTS 3.8.a.2

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

See ITS 3.9.1, 3.9.2, 3.9.3, ~~and~~ 3.9.5, and 3.9.6

SPECIFICATION

a. During REFUELING OPERATIONS:

See ITS 3.9.1, 3.9.2, 3.9.3, 3.9.5, and 3.9.6, and CTS 3.8.a.3

1. Containment Closure

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [1] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

See ~~CTS 3.8.a.1 and 3.8.a.8~~ ITS 3.9.6

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously.

R01

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service.

See CTS 3.8.a.3

See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE.

See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily.

See ITS 3.9.1

ITS 3.9.6

[1] Administrative controls ensure that:
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

CTS 3.8.a.3

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

See ITS 3.9.1, 3.9.2, 3.9.3, ~~and~~ 3.9.5, and 3.9.6

SPECIFICATION

a. During REFUELING OPERATIONS: — LA01

1. Containment Closure — ITS 3.9.6

   a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed [(1)] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted. — See CTS ~~3.8.a.1 and 3.8.a.8~~

   b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously. — See CTS 3.8.a.2

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least one neutron flux monitor shall be in service. — LA01; See ITS 3.9.2

4. At least one residual heat removal pump shall be OPERABLE. — See ITS 3.9.3

5. When there is fuel in the reactor, a minimum boron concentration as specified in the COLR shall be maintained in the Reactor Coolant System during reactor vessel head removal or while loading and unloading fuel from the reactor. The required boron concentration shall be verified by chemical analysis daily. — See ITS 3.9.1

ITS 3.9.6

[(1)] Administrative controls ensure that:
- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

See CTS ~~3.8.a.1 and 3.8.a.8~~

CTS 3.8.a.6

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

R01

7. Deleted.

ITS 3.9.6

8. The containment ventilation and purge system, including the capability to initiate automatic containment ventilation isolation, shall be tested and verified to be operable immediately prior to and daily during REFUELING OPERATIONS.

See ~~CTS 3.8.a.1 and 3.8.a.8~~

9. a. The spent fuel pool sweep system, including the charcoal adsorbers, shall be operating during fuel handling and when any load is carried over the pool if irradiated fuel in the pool has decayed less than 30 days. If the spent fuel pool sweep system, including the charcoal adsorber, is not operating when required, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

   b. Performance Requirements

      1. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq$99% DOP removal and $\geq$99% halogenated hydrocarbon removal.

      2. The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show $\geq$95% radioactive methyl iodide removal when tested in accordance with ASTM D3803-89 at conditions of 30°C and 95% RH.

      3. Fans shall operate within $\pm$10% of design flow when tested.

See CTS 3.8.a.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

See CTS 3.8.a.12

b. If any of the specified limiting conditions for REFUELING OPERATIONS are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

See ITS 3.9.1, 3.9.2, 3.9.3, ~~and~~ 3.9.5 , and 3.9.6

CTS 3.8.a.11

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

See CTS 3.8.a.6

ITS 3.9.6

7. Deleted.

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R01

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      3. Fans shall operate within ±10% of design flow when tested.

See CTS 3.8.a.9

10. The minimum water level above the vessel flange shall be maintained at 23 feet.

See ITS 3.9.5

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the REFUELING OPERATIONS. A thorough visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

See CTS 3.8.a.11

12. A licensed senior reactor operator will be on-site and designated in charge of the REFUELING OPERATIONS.

A01

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See ITS 3.9.1, 3.9.2, 3.9.3, ~~and~~ 3.9.5 , and 3.9.6

Licensee Response/NRC Response/NRC Question Closure

Id	**3971**
NRC Question Number	**RPG-010**
Select Application	**NRC Question Closure**
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Response Statement	
Question Closure Date	**7/23/2010**
Attachment 1	
Attachment 2	
Notification	**Kewaunee ITS Conversion Database Members** **NRC/LICENSEE Supervision** **Victor Cusumano** **Robert Elliott** **Robert Hanley**
Added By	**Ravinder Grover**
Date Added	**7/23/2010 7:51 AM**
Modified By	
Date Modified	