ITS NRC Questions

Id	**1881**
NRC Question Number	**RPG-005**
Category	**Technical**
ITS Section	**3.0**
ITS Number	**3.4.16**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number(s)	**Att 1, Vol 9, Page 380, 381**
NRC Reviewer Supervisor	**Rob Elliott**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	

The NRC staff is reviewing Dominion Energy Kewaunee's application to convert the current Kewaunee custom Tech Spec into the Improved Standard Tech Spec (ITS) format. As part of its review, the NRC staff has determined that additional information, set forth below, is needed to complete its review of the issue regarding the proposed adoption of TSTF-490-A.

[PLEASE NOTE, LICENSEE MAY RESPOND TO THE ISSUES STATED BELOW VIA THE WEB PAGE, HOWEVER, A FORMAL RESPONSE IS REQUIRED FROM THE LICENSEE WHEN THE STAFF ISSUE THE REQUEST FOR ADDITIONAL INFORMATION (RAI) LETTER TO THE LICENSEE.]

_1. In the subject license amendment application, the licensee proposed to adopt industry standard technical specifications which include proposed Limiting Condition for Operation (LCO) 3.4.16, "RCS Specific Activity," APPLICABILITY requirements to specify that the LCO is applicable in MODES 1, 2, 3, and 4. In accordance with this proposal, the licensee also proposed to add the NOTE that states, "Only required to be performed in MODE 1" to the surveillance requirements of the TS, thus removing the applicability of the surveillance requirements to other MODES.

The NRC staff has a concern about the proposed addition of the aforementioned NOTE. The proposed change revises the conditions for sampling, and may exclude sampling during the plant conditions where LCO 3.4.16 may be exceeded. After transient conditions (i.e. reactor trip, plant depressurization, shutdown or startup) that end in MODES 2, 3, or 4, the SR is not required to be performed. Isotopic spiking and fuel failures are more likely during transient conditions than during steady-state plant operations.

Because LCO 3.4.16 could potentially be exceeded after plant transient or power changes, please justify why sampling is no longer needed in the plant MODES that are proposed to be eliminated and justify how the LCO 3.4.16 remains consistent with the design bases analysis from which the LCO limits are derived (i.e. main steamline break, steam generator tube rupture, etc.). Furthermore, please justify why there is an apparent disparity between the modes of applicability (MODES 1, 2, 3, and 4) and the limited mode (MODE 1) under which the surveillance is required. In addition, please provide marked up TS pages identifying your proposed changes.

2. The licensee stated:

The Dose Conversion Factors used in the determination of DOSE EQUIVALENT I-131 AND Xe-133 are consistent with the Dose Conversion factors used in the applicable dose consequence analysis.

Consistent with the model safety evaluation for TSTF-490, please confirm that the site-specific limits for both DEI and DEX, and the dose conversion factors (DCFs) used for the determination of DEI and DEX surveillances, are consistent with the Kewaunee current design-basis radiological dose consequence analyses (i.e. steam generator tube rupture and main steamline break). Also, for both DEI and DEX, please provide the information necessary (dose conversion factors and reactor coolant system radioisotopic concentrations) for the NRC staff to verify the proposed value in the LCO. In addition, please provide marked up TS pages identifying your proposed changes.

Attach File 1

Attach File 2

Issue Date	**3/11/2010**
Added By	**Ravinder Grover**
Date Modified	
Modified By	
Date Added	**3/11/2010 12:53 PM**
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover**

Licensee Response/NRC Response/NRC Question Closure

Id	**2961**
NRC Question Number	**RPG-005**
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	

ITS NRC Questions

Id	**1951**
NRC Question Number	**RPG-007**
Category	**Technical**
ITS Section	**3.4**
ITS Number	**3.4.5**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number(s)	**90 of 479**
NRC Reviewer Supervisor	**Gerald Waig**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	**Attachment 1, Volume 9, Rev. 0, Page 90 of 479 proposed ITS Section 3.4.5 "RCS Loops - MODE 3"** **With loss of both RCS loops (LCO 3.4.5, CONDITION D), ISTS REQUIRED ACTION D.1 specifies placing the Rod Control System 'Immediately' in a condition incapable of rod withdrawal. SAFETY ANALYSES in ISTS BASES state, "Whenever the reactor trip breakers (RTBs) are in the closed position and the control rod drive mechanisms (CRDMs) are energized, an inadvertent rod withdrawal from subcritical, resulting in a power excursion, is possible. Such a transient could be caused by a malfunction of the rod control system. In addition, the possibility of a power excursion due to the ejection of an inserted control rod is possible with the breakers closed or open. Such a transient could be caused by the mechanical failure of a CRDM of rod withdrawal."** **Issue: KPS proposed change deletes the REQUIRED ACTION. Please explain, how an inadvertent rod withdrawal from subcritical condition event, with two RCS loops inoperable, would be within the analyzed conditions addressed in Chapter 14.1.1 of the USAR.**
Attach File 1	
Attach File 2	
Issue Date	**4/29/2010**

Enclosure - Q&A to Attachment 1 Volume 09 (Section 3.4) 6 of 40

Added By	**Ravinder Grover**
Date Modified	
Modified By	
Date Added	**4/29/2010 11:59 AM**
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover**

Licensee Response/NRC Response/NRC Question Closure

Id	**2871**
NRC Question Number	**RPG-007**
Select Application	**Licensee Response**
Response Date/Time	**5/3/2010 10:25 AM**
Closure Statement	
Response Statement	**Kewaunee Power Station (KPS) deleted this Required Action since it was assumed that it was in the ISTS because of the LCO requirements, which specify how many RCS loops must be in operation based on whether or not the Rod Control System is in a condition capable of rod withdrawal. Since KPS CTS only required one RCS loop to be in operation irrespective of the condition of the Rod Control System, this Required Action was not included. However, based on a further review, KPS has determined that this Required Action should be maintained in the ITS. 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-007 Markup.pdf** (892KB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**5/3/2010 10:32 AM**
Modified By	
Date Modified	

operation when a reduction in boron concentration is being made, the CTS 3.0.c requirement does not provide any relevant compensatory measures (i.e., it does not require boron concentration reductions to be suspended). ITS 3.4.5 ACTION C specifies the Required Actions for a required RCS loop not in operation as immediate suspension of operations that would cause introduction of coolant into the RCS with a boron concentration less than required to meet the SDM of LCO 3.1.1 and initiation of action to restore one RCS loop to operation. This changes the CTS by adding a new ACTION.

place the Rod Control System in a condition incapable of rod withdrawal,

The purpose of CTS LCO 3.0.c is to place the unit outside of the Applicability of the Specification. ITS 3.4.5 ACTION C effectively places the unit outside of the Applicability for a loop not in operation 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 SDM of LCO 3.1.1 and to initiate action to restore one RCS loop to operation. These proposed Required Actions reflect the importance of maintaining operation for 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 RCP to be in operation under certain conditions, but does not provide a Surveillance Requirement to periodically verify the RCP is in operation. This changes the CTS by adding a new Surveillance Requirement.

The purpose of ITS SR 3.4.5.1 is to ensure that the RCS loops are in operation providing forced flow of the reactor coolant for heat removal. The 12 hour Frequency for the proposed Surveillance is selected based on operating experience and the need for operator awareness. This will ensure the LCO requirement is periodically verified to be met. This change is designated as more restrictive because a new Surveillance Requirement has been added.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

None

LESS RESTRICTIVE CHANGES

None

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. [One required RCS loop not in operation with Rod Control System capable of rod withdrawal.	C.1 Restore required RCS loop to operation. OR C.2 Place the Rod Control System in a condition incapable of rod withdrawal.	1 hour 1 hour]
DOC M01, DOC M03 D. [Two] [required] RCS loops inoperable. C OR Required RCS loop(s) not in operation.	D.1 Place the Rod Control System in a condition incapable of rod withdrawal. C.1 AND D.2 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet SDM of LCO 3.1.1. C.1 C.2 AND D.3 Initiate action to restore one RCS loop to OPERABLE status and operation. C.2 C.3	Immediately Immediately Immediately

Stet

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
DOC M04 SR 3.4.5.1	Verify required RCS loops are in operation. one is	12 hours

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

C.1. C.2, and C.3

~~C.1 and C.2~~

~~D.1, D.2, and D.3~~

Stet

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the

If [two] [required] RCS loops are inoperable or a required RCS loop is not in operation, except as during conditions permitted by the Note in the LCO section, the Rod Control System must be placed in a condition incapable of rod withdrawal (e.g., all CRDMs must be de-energized by opening the RTBs or de-energizing the MG sets). All operations involving introduction of coolant into the RCS with boron concentration less than required to meet the minimum SDM of LCO 3.1.1 must be suspended, and action to restore one of the RCS loops to OPERABLE status and operation must be initiated. Boron dilution requires forced circulation for proper mixing, and opening the RTBs or de-energizing the MG sets removes the possibility of an inadvertent rod withdrawal. Suspending the introduction of coolant into the RCS of coolant with boron concentration less than required to meet the minimum SDM of LCO 3.1.1 is required to assure continued safe operation. With coolant added without forced circulation, unmixed coolant could be introduced to the core, however coolant added with boron concentration meeting the minimum SDM maintains acceptable margin to subcritical operations. The immediate Completion Time reflects the importance of maintaining operation for heat removal. The action to restore must be continued until one loop is restored to OPERABLE status and operation.

4

4

SURVEILLANCE REQUIREMENTS

SR 3.4.5.1

one

is

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or

This SR requires verification every 12 hours that the required loops are in operation. Verification includes flow rate, temperature, and pump status monitoring, which help ensure that forced flow is providing heat removal. The Frequency of 12 hours is sufficient considering other indications and alarms available to the operator in the control room to monitor RCS loop performance.

SR 3.4.5.2

SR 3.4.5.2 requires verification of SG OPERABILITY. SG OPERABILITY is verified by ensuring that the secondary side narrow range water level is ≥ [17]% for required RCS loops. If the SG secondary side narrow range water level is < [17]%, the tubes may become uncovered and the associated loop may not be capable of providing the heat sink for removal of the decay heat. The 12 hour Frequency is considered adequate in view of other indications available in the control room to alert the operator to a loss of SG level.

the

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Licensee Response/NRC Response/NRC Question Closure

Id	**2971**
NRC Question Number	**RPG-007**
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 8:46 AM**
Modified By	
Date Modified	

ITS NRC Questions

Id	**1981**
NRC Question Number	**RPG-008**
Category	**Technical**
ITS Section	**3.4**
ITS Number	
DOC Number	
JFD Number	
JFD Bases Number	
Page Number(s)	
NRC Reviewer Supervisor	**Gerald Waig**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	**Attachment 1, Volume 9, Rev. 0, Page 352 of 479 proposed ITS Section 3.4.15 "RCS Leakage Detection Instrumentation"**

1) One of the RCS leakage detection instrumentation specified in ISTS LCO 3.4.15c is [One containment air cooler condensate flow rate monitor]. KPS JFD #2 states that KPS has no containment air cooler condensate flow rate monitor, therefore KPS proposed change replaces the ISTS specified containment air cooler condensate flow rate monitor with KPS's humidity detector. The ISTS BASES state, "The containment sump used to collect unidentified LEAKAGE [is] [(or) and air cooler condensate flow rate monitor] [are] instrumented to alarm for increases of 0.5 to 1.0 gpm in the normal flow rates. This sensitivity is acceptable for detecting increases in unidentified LEAKAGE."

Requested Information: Explain how the alarm capability function of KPS's TS humidity detector for increases of 0.5 to 1.0 gpm in the normal flow rates, compares with ISTS specified containment air cooler condensate flow rate monitor, and how it satisfies Criterion 1 of 10 CFR 50.36(c)(2)(ii).

2) ISTS LCO 3.4.15 CONDITION B is entered when required containment atmosphere radioactivity monitor becomes inoperable. The CONDITION requires performance of 4 specific REQUIRED ACTIONS connected with logical connectors "AND," "OR." KPS proposed change deletes two of the REQUIRED ACTIONS B.2.1 and B.2.2. KPS JFD #3 states, "ISTS Required Actions B.2.1 and B.2.2 are bracketed Required Actions that require certain actions within 30 days. However, these required Actions are only necessary if the LCO 3.4.15.c option is not included in the ITS. Since KPS is including this option, these bracketed Required Actions are not included."

ISTS BASES state (page 362) "With a sample obtained and analyzed or water inventory balance performed every 24 hours, the reactor may be operated for up to 30 days to allow restoration of the required containment atmosphere radioactivity monitors. Alternatively, continued operation is allowed if the air cooler condensate flow rate monitoring system (for KPS, Humidity Detector (issue#1)) is OPERABLE, provided grab samples are taken or water inventory balances performed every 24 hours."

<u>Requested Information:</u> Since the LCO CONDITION B concerns inoperability of the radioactivity monitor, REQUIRED ACTIONS B.2.1 and B.2.2 need to be performed. The ISTS Bases do not discuss the LCO 3.4.15c option stated in KPS JFD#3. Please provide additional justification for not performing the LCO Condition B REQUIRED ACTIONS.

3) ISTS LCO 3.4.15 CONDITION C concerns inoperability of containment air cooler condensate flow rate monitor. REQUIRED ACTION C.1 for the CONDITION requires performance of CHANNEL CHECK of the required containment atmosphere radioactivity monitor per SR 3.4.15.1. KPS proposal changes the REQUIRED ACTION from "Perform SR 3.4.15.1" to "Analyze grab samples of the containment atmosphere," when in CONDITION C.

LCO 3.4.15 CONDITION C BASES state, "With the required containment air cooler condensate flow rate monitor inoperable, alternative action is again required. <u>Either SR 3.4.15.1 must be</u>

performed or water inventory balances, in accordance with SR 3.4.13.1, must be performed to provide alternate periodic information."

Requested Information: **Please explain how KPS proposed change, i.e., analyzing grab samples of the containment atmosphere is equivalent to the performance of channel check per ISTS specified SR 3.4.15.1 for REQUIRED ACTION C1.**

4) KPS JFD #5 further states,

> **"The Completion Time of this Required Action is "Once per 24 hours." SR 3.4.15.1 is the performance of a CHANNEL CHECK of the required containment atmosphere radioactivity monitors. The Surveillance Frequency of SR 3.4.15.1 is every 12 hours. ISTS 3.4.15 Required Action does not add any additional requirements since, as written, while ISTS 3.4.15 Required Action C.1 Completion Time is "Once per 8 hours," ISTS 3.4.15 Required Action C.2 provides an optional requirement (it is connected to ISTS 3.4.15 Required Action C.1 with an "OR") and is required "Once per 24 hours." Thus, this essentially means ISTS 3.4.15 Required Action C.1 can be performed every 24 hours. This change to ITS 3.4.15 Required Action C.1 is consistent with the Required Actions (B.1.1 and B.1.2) necessary when the required containment atmosphere radioactivity monitor is inoperable. These changes are necessary since when ITS 3.4.15 Condition C is entered either Required Action C.1 or Required Action C.2 is required to be met."**

Requested Information: **REQUIRED ACTION C1 is to perform SR 3.4.15.1 (Channel Check) with a COMPLETION TIME of 8 hours. REQUIRED ACTION C2 concerns performance of SR 3.4.13.1 (RCS water inventory balance) with a COMPLETION TIME of 24 hours. Both REQUIRED ACTIONS concern different SRs. Please provide justification for the proposed longer COMPLETION TIME of 'Once per 24 hours' versus that of shorter ISTS COMPLETION TIME of 'Once per 8 hours' for REQUIRED ACTION C1.**

Attach File 1	
Attach File 2	
Issue Date	**5/11/2010**
Added By	**Ravinder Grover**
Date Modified	
Modified By	
Date Added	**5/11/2010 3:18 PM**
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover**

Licensee Response/NRC Response/NRC Question Closure

Id	**3051**
NRC Question Number	**RPG-008**
Select Application	**Licensee Response**
Response Date/Time	**5/18/2010 9:05 AM**
Closure Statement	
Response Statement	**The NRC reviewer asked four questions related to the Kewaunee Power Station (KPS) humidity monitor being added to ITS 3.4.15. The first question was related to its monitoring capability. This monitor was being added to the ITS to replace a bracketed air cooler condensate flow rate monitor requirement. However, the humidity monitor is not currently in the KPS CTS, and it cannot perform in the manner described in the ISTS Bases for the air cooler condensate flow rate monitor. Therefore, after informal discussions with the NRC reviewer, KPS has decided to withdraw the added humidity monitor requirement. Based on this removal, the remaining three questions were related to the manner in which the ISTS wording was adopted based on the humidity monitor addition. Since the monitor is being removed, the three other questions are now moot as the ACTIONS discussed in the questions have all been deleted or modified accordingly. 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-008 Markup.pdf** (1MB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Ravinder Grover** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**5/18/2010 9:06 AM**
Modified By	
Date Modified	

ITS

A01

ITS 3.4.15

d. RCS Operational LEAKAGE

1. When the average RCS temperature is > 200°F, RCS operational leakage shall be limited to:

   A. No pressure boundary LEAKAGE,

   B. 1 gpm unidentified LEAKAGE,

   C. 10 gpm identified LEAKAGE, and

   D. 150 gallons per day primary to secondary LEAKAGE through any one steam generator (SG).

See ITS 3.4.13

2. If the limits contained in TS 3.1.d.1 are exceeded for reasons other than pressure boundary LEAKAGE or primary-to-secondary LEAKAGE, then reduce the LEAKAGE to within their limits within 4 hours.

3. If the limits contained in TS 3.1.d.1 for pressure boundary or primary to secondary LEAKAGE are exceeded, or the time limit contained in TS 3.1.d.2 is exceeded, then initiate action to:

   - Achieve HOT SHUTDOWN within 6 hours, and

   - Achieve COLD SHUTDOWN within an additional 30 hours.

Stet

Applicability

LCO 3.4.15

ACTION A,
ACTION B,
~~ACTION D~~

4. When the reactor is critical and above 2% power, ~~two~~ Three reactor coolant leak detection systems of different operating principles shall be in operation with one of the ~~two~~ systems sensitive to radioactivity. Either system may be out of operation for up to 12 hours provided at least one system is OPERABLE.

M01

~~M02~~

L01

L02

~~Add proposed ACTION C~~ ~~M02~~

Add proposed ACTION ~~E~~ C M03

Add proposed ACTION ~~F~~ D A02

A01

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	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	

SR 3.4.15.1, SR 3.4.15.2, SR 3.4.15.4,

SR 3.4.15.3

See ITS 3.3.2

See ITS 3.6.9

LA01

A03

M04

See ITS 3.5.1

See ITS 3.5.2

Discussion of Change LA01 is for channels R11, R12, and R21. For the other channels, see ITS 3.3.2, 3.3.6, 3.3.7, and CTS 3.8.a.9.

~~Add proposed SR 3.4.15.5~~

M02

DISCUSSION OF CHANGES
ITS 3.4.15, RCS LEAKAGE DETECTION INSTRUMENTATION

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 CTS 3.1.d.4 does not contain a specific ACTION for all required monitors inoperable. With all required monitors inoperable, CTS 3.0.c would be entered. ITS 3.4.15 ACTION F directs entry into LCO 3.0.3 when all monitors are inoperable. This changes the CTS by specifically stating to enter LCO 3.0.3, which is the equivalent requirement in the ITS, in this System Specification. Changes to CTS 3.0.c are discussed in Section 3.0.

D

This change is acceptable because the actions taken when all monitors are inoperable are unchanged. Adding this ACTION is consistent with the ITS conversion of directing entry into LCO 3.0.3 when multiple ACTIONS are presented in the ITS, and entry into these multiple ACTIONS could result in a loss of safety function. This change is designated as administrative because it does not result in any technical changes to the CTS.

A03 Note (b) to CTS Table TS 4.1-1, Item 19 in the Remarks Section states that the Channel Check is required in all plant modes. ITS SR 3.4.15.1, the equivalent CHANNEL CHECK requirement, is only applicable in MODES 1, 2, 3, and 4, consistent with the Applicability of the LCO. This changes the CTS by deleting this specific Note.

While the purpose of the Note appears to require the Channel Check requirement to be performed in all plant modes, CTS 4.0.a, which provides the general requirements of all Surveillance Requirements, specifically states that Surveillances are only required to be met during the operational MODES or other specified conditions in the LCO. While it does state that this can be modified as stated in an individual Surveillance, it further states that if the Surveillance is not met, then the actions of the LCO are to be taken. However, as shown in CTS 3.1.d.4, since the equipment is only required when critical above 2% RTP, when declared inoperable, the plant only has to get out of this specific Applicability, as stated in CTS 3.0.c. Thus, while this Note appears to require the Channel Check in all plant modes, in actuality, it only is required when the LCO has to be met; i.e., when critical above 2% RTP. Therefore, the deletion of this is acceptable and considered administrative, since the technical requirements have not been changed.

A04 CTS 4.1.b requires the equipment tests to be performed as specified in Table TS 4.1-3. CTS Table TS 4.1-3 Equipment Test 8 requires a weekly OPERABILITY test on the RCS Leakage Detection. The test is modified by Note 1, which states that following maintenance on equipment that could affect the operation of the equipment, tests should be performed to verify OPERABILITY.

DISCUSSION OF CHANGES
ITS 3.4.15, RCS LEAKAGE DETECTION INSTRUMENTATION

The Weekly Frequency is modified by a Note (Note 4) that states the Frequency is applicable when the reactor is at power or in the HOT SHUTDOWN condition. The ITS does not include this requirement. This changes the CTS by deleting this weekly OPERABILITY check of the RCS Leak Detection Instrumentation.

CTS 3.1.d.4 requires two RCS leak detection systems to be OPERABLE. Thus, this CTS Table 4.1-3 Equipment Test 8 is met by verifying that there are two RCS leak detection instruments OPERABLE. This is the manner in which Kewaunee Power Station is meeting this requirement. Since ITS LCO 3.4.15 continues to require RCS leak detection systems to be OPERABLE, and ACTIONS are provided when the required systems are inoperable, there is no purpose to having a requirement to verify weekly that the required systems are OPERABLE. Operations staff is constantly aware of equipment that has been declared inoperable. Thus, this requirement serves no purpose and is redundant to both the LCO and the applicable ACTIONS. Furthermore, LCO 3.0.2 requires entry into the ACTIONS when the LCO is no longer met. To meet this requirement, Operations staff would have to know at all times whether an LCO is being met, not just on a weekly basis. Therefore, deletion of this redundant check is acceptable. Furthermore, if a component is inoperable, prior to calling the component OPERABLE, KPS would have to determine if any tests are required to be performed as part of returning the component to OPERABLE status. ITS LCO 3.0.1 and SR 3.0.1 would ensure any required tests are performed or are current. Furthermore, Note (4) is unnecessary since it is duplicative of the Applicability statement for the RCS leak detection systems in CTS 3.1.d.4. This change is designated as administrative since it does not result in any technical changes.

MORE RESTRICTIVE CHANGES

M01 The CTS Applicability of the RCS leak detection system is when the reactor is critical and above 2% power (equivalent to ITS MODE 1 and part of MODE 2). ITS 3.4.15 requires the RCS leakage detection instrumentation to be OPERABLE in MODES 1, 2, 3, and 4. This changes the CTS by requiring the RCS leak detection instrumentation to be OPERABLE in more MODES in ITS than in CTS.

Leakage detection systems must have the capability to detect significant reactor coolant pressure boundary degradation as soon after occurrence as practical to minimize the potential for propagation to a gross failure. Due to the elevated RCS temperature and pressure conditions in MODES 1, 2, 3, and 4, the RCS leakage detection instrumentation is required to be OPERABLE. Since the RCS pressure and temperatures are much lower outside of MODES 1, 2, 3, and 4, the likelihood of leakage and crack propagation is much smaller. The addition of MODES 2, 3, and 4 is acceptable since the RCS pressure and temperature during these MODES increases the potential for reactor coolant pressure boundary leakage. This change is more restrictive because a new Applicability containing MODES 1, 2, 3, and 4 has been added.

M02 ~~CTS 3.1.d.4 does not include the humidity monitor instrumentation as one of the RCS leakage detection functions. ITS LCO 3.4.15.c adds one humidity monitor as an OPERABLE RCS leakage detection instrumentation function. In addition,~~

Not used.

DISCUSSION OF CHANGES

ITS 3.4.15, RCS LEAKAGE DETECTION INSTRUMENTATION

ITS adds an ACTION when the humidity monitor is inoperable (ITS 3.4.15 ACTION C) and a Surveillance Requirement (SR 3.4.15.5) to perform a CHANNEL CALIBRATION of the required humidity monitor every 18 months. This changes the CTS by adding a new RCS leakage detection function and an associated ACTION and Surveillance Requirement to the Technical Specifications.

This change is acceptable because the added function provides an additional required diverse means of leakage detection. An increase in the humidity of the containment atmosphere would indicate release of water vapor to the containment. Although not as sensitive as the particulate monitor, the humidity detection instrumentation has the characteristics of being sensitive to vapor originating from all sources within the containment. Adding the appropriate ACTION provides compensatory measures when the humidity monitor is inoperable and the Surveillance Requirement provides additional assurance that the RCS leakage detection humidity instrumentation is capable of providing a reliable and accurate indication of containment humidity conditions that may be indicative of RCS leakage. This change is designated as more restrictive because a new LCO requirement and associated ACTION and Surveillance Requirement are added.

and not restored within the allowed Completion Time.

one of the

M03 CTS 3.1.d.4 does not contain any ACTIONS to take if ~~both~~ required RCS leakage detection instruments are inoperable. As a result, CTS 3.0.c would be entered, which requires action to be initiated within 1 hour and to be in HOT STANDBY (equivalent to ITS MODE 2) within the next 6 hours. ITS 3.4.15 ACTION ~~E~~ C states that if the Required Action and associated Completion time of ACTIONS A, B, ~~C, or D~~ or are not met, then the unit must be in MODE 3 in 6 hours and in MODE 5 in 36 hours. This changes the CTS by adding a specific shutdown action.

The purpose of CTS LCO 3.0.c is to place the unit outside of the Applicability of the Specification. With the ITS Applicability being MODES 1, 2, 3, and 4, ITS 3.4.15 ACTION ~~E~~ C effectively places the unit outside of the Applicability by requiring the unit to be in MODE 5 in 36 hours. Furthermore, the unit is required to be in MODE 3 in 6 hours, which is less than the current time to be in HOT STANDBY in CTS 3.0.c. 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. This change is designated as more restrictive because a new proposed ACTION has been added.

M04 Item 19 of CTS Table TS 4.1-1 requires a Daily instrument check of the radiation monitoring system. ITS SR 3.4.15.1 requires the performance of a CHANNEL CHECK of the required containment radioactivity monitor every 12 hours. This changes the CTS by requiring a check of the required containment radioactivity monitor more often in ITS than in CTS.

The purpose of the instrument check is to demonstrate that the required containment radioactivity monitor is OPERABLE and capable of providing an early indication of any abnormal leakage conditions in the containment. ITS SR 3.4.15.1 provides reasonable confidence that the channel is operating properly.

DISCUSSION OF CHANGES

ITS 3.4.15, RCS LEAKAGE DETECTION INSTRUMENTATION

The purpose of CTS 3.1.4.d is to ensure an approved method of monitoring RCS leakage is always available. The change is acceptable because ITS 3.4.15 ACTION A continues to provide assurance that an alternate and reliable means of detecting RCS leakage is available (since if both methods are inoperable the unit would also be in ITS 3.4.15 ACTION ~~F~~, which requires a unit shutdown). In addition, the increase in the allowable time in which the required containment sump monitor is inoperable is acceptable since SR 3.4.13.1, which is normally performed every 72 hours, is now performed every 24 hours to provide periodic information that is adequate to detect leakage. The performance of the SR ensures that RCS Leakage is verified to be within limit, on a more frequent basis, thus performing the function of the instrumentation. This change is designated as less restrictive because a less restrictive Completion Time is being applied in the ITS than was applied in the CTS.

D

L02 *(Category 4 – Relaxation of Required Action)* CTS 3.1.d.4 states that either reactor coolant leak detection system may be out of operation for up to 12 hours provided at least one system is OPERABLE. When the required containment atmosphere radioactivity monitor is inoperable, ITS 3.4.15 ACTION B requires an analysis of containment atmosphere grab samples be performed once per 24 hours (Required Action B.1.1) OR an RCS water inventory balance (i.e., SR 3.4.13.1) be performed once per 24 hours (Required Action B.1.2). In addition, ~~if both the required containment atmosphere radioactivity monitor AND the required humidity monitor are inoperable, ITS 3.4.15~~ ACTION ~~D~~ B requires restoration of the required containment atmosphere radioactivity monitor to OPERABLE status within 30 days (Required Action ~~D.1~~ B.2). During the 30 days allowed for restoration, Required Actions B.1.1 and B.1.2 will continue to be performed. This changes the CTS by allowing a longer period of time to restore the required containment atmosphere radioactivity monitor to OPERABLE in the ITS than was allowed in the CTS.

The purpose of CTS 3.1.4.d is to ensure an approved method of monitoring RCS leakage is always available. The change is acceptable because ITS 3.4.15 ACTION B continues to provide assurance that an alternate and reliable means of detecting RCS leakage is available (since if both methods are inoperable the unit would also be in ITS 3.4.15 ACTION ~~F~~, which requires a unit shutdown). Required Actions B.1.1 and B.1.2 are used to establish remedial measures taken in response to degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The analysis of the grab samples of the containment atmosphere or the check of the RCS water inventory balance (i.e., SR 3.4.13.1) once every 24 hours provides periodic information that is adequate to detect any change in containment conditions that may be attributed to RCS leakage. ~~Furthermore, while only in ACTION B, the humidity monitor is OPERABLE and can provide information on the containment atmosphere~~. Thus, it is acceptable to allow continued operation for ~~an unlimited period of time~~ 30 days with the containment radioactivity monitor inoperable under these conditions. ~~If the humidity monitor is not OPERABLE, continued operation is only allowed for 30 days.~~ The increase in the allowable time in which the required containment atmosphere radioactivity monitor is inoperable (from 12 hours to 30 days) is acceptable since SR 3.4.13.1, which is normally performed every 72 hours, is now performed every 24 hours (per Required Action B.1.2) to provide periodic information that is adequate to detect

D

Info only - no changes

leakage, or an analysis of a containment atmosphere grab sample is performed every 24 hours (per required Action B.1.1). The analysis of the containment atmosphere grab samples or performance of the SR ensures that RCS Leakage is verified to be within limit, on a more frequent basis, thus performing the function of the instrumentation during the proposed 30 day restoration time. This change is designated as less restrictive because a less restrictive Completion Time is being applied in the ITS than was applied in the CTS.

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3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.15 RCS Leakage Detection Instrumentation

3.1.d.4 LCO 3.4.15 The following RCS leakage detection instrumentation shall be OPERABLE:

hi or hi-hi

and

a. One containment sump (level or discharge flow) monitor [; 4 1

b. One containment atmosphere radioactivity monitor (gaseous or particulate) [and . humidity

[c. One containment air cooler condensate flow rate monitor.] 2

3.1.d.4 APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.1.d.4 A. Required containment sump monitor inoperable.	A.1 ----------NOTE---------- Not required until 12 hours after establishment of steady state operation. ---------- Perform SR 3.4.13.1.	Once per 24 hours
	AND	
	A.2 Restore required containment sump monitor to OPERABLE status.	30 days

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
3.1.d.4 B. Required containment atmosphere radioactivity monitor inoperable.	B.1 Analyze grab samples of the containment atmosphere.	Once per 24 hours
	OR	
	B.2 ----------NOTE---------- Not required until 12 hours after establishment of steady state operation. ---------- Perform SR 3.4.13.1.	Once per 24 hours
	[AND	
	B.2.1 Restore required containment atmosphere radioactivity monitor to OPERABLE status.	30 days
	OR	
	B.2.2 Verify containment air cooler condensate flow rate monitor is OPERABLE.	30 days]
DOC M02 C. [Required containment air cooler condensate flow rate monitor inoperable. humidity	C.1 Perform SR 3.4.15.1. Analyze grab samples of the containment atmosphere.	Once per 8 hours 24
	OR	
	C.2 ----------NOTE---------- Not required until 12 hours after establishment of steady state operation. ---------- Perform SR 3.4.13.1.	Once per 24 hours]

stet
stet, with change

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME	
3.1.d.4	D. [/] Required containment atmosphere radioactivity monitor inoperable. AND humidity Required containment air cooler condensate flow rate monitor inoperable.	D.1 Restore required containment atmosphere radioactivity monitor to OPERABLE status. OR humidity D.2 Restore required containment air cooler condensate flow rate monitor to OPERABLE status.	30 days 30 days [/]	1 2 2 2 1
DOC M04 3	~~E.~~ Required Action and associated Completion Time not met. C of Condition ~~A, B, C or D~~ B	~~E.1~~ Be in MODE 3. C AND ~~E.2~~ Be in MODE 5.	6 hours 36 hours	2 6 2
DOC A02	~~F.~~ All required monitors inoperable. D	~~F.1~~ Enter LCO 3.0.3. D	Immediately	2

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY	
4.1.a, Table TS 4.1-1, Item 19	SR 3.4.15.1	Perform CHANNEL CHECK of the required containment atmosphere radioactivity monitor.	12 hours	
4.1.a, Table TS 4.1-1, Item 19	SR 3.4.15.2	Perform COT of the required containment atmosphere radioactivity monitor.	92 days	
4.1.a, Table TS 4.1-1, Item 21	SR 3.4.15.3	Perform CHANNEL CALIBRATION of the required containment sump monitor.	[18] months	4

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
4.1.a, Table TS 4.1-1, Item 19	SR 3.4.15.4	[Perform CHANNEL CALIBRATION of the required containment atmosphere radioactivity monitor.	[18] months]	4
DOC M02	SR 3.4.15.5	[Perform CHANNEL CALIBRATION of the required containment air cooler condensate flow rate monitor. humidity	[18] months]	4 2 2

JUSTIFICATION FOR DEVIATIONS

ITS 3.4.15, RCS LEAKAGE DETECTION INSTRUMENTATION

is a bracketed requirement and

1. These 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.

2. ISTS LCO 3.4.15.c states that one containment air cooler condensate flow rate monitor is required to be OPERABLE. Kewaunee Power Station (KPS) has no containment air cooler condensate flow rate monitor. ~~According to Section 6.5 of the Updated Safety Analysis Report (USAR), KPS uses the following five methods of detecting Reactor Coolant System leakage to containment: containment system air particulate monitor, containment radiogas monitor (2 monitors), humidity detector, containment sump leakage measuring system, and liquid inventory. Therefore, where applicable, the word "humidity" has replaced "containment air cooler condensate flow rate" in the ITS Specification.~~

Not used.

3. ~~ISTS Required Actions B.2.1 and B.2.2 are bracketed Required Actions that require certain actions within 30 days. However, these required Actions are only necessary if the LCO 3.4.15.c option is not included in the ITS. Since KPS is including this option, these bracketed Required Actions are not included. Also, due to their deletion, the previous Required Actions have been renumbered.~~

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

Not used.

5. ~~ISTS 3.4.15 Required Action C.1 has been changed from "Perform SR 3.4.15.1" to "Analyze grab samples of the containment atmosphere." The Completion Time of this Required Action is "Once per 24 hours." SR 3.4.15.1 is the performance of a CHANNEL CHECK of the required containment atmosphere radioactivity monitors. The Surveillance Frequency of SR 3.4.15.1 is every 12 hours. ISTS 3.4.15 Required Action does not add any additional requirements since, as written, while ISTS 3.4.15 Required Action C.1 Completion Time is "Once per 8 hours," ISTS 3.4.15 Required Action C.2 provides an optional requirement (it is connected to ISTS 3.4.15 Required Action C.1 with an "OR") and is required "Once per 24 hours." Thus, this essentially means ISTS 3.4.15 Required Action C.1 can be performed every 24 hours. This change to ITS 3.4.15 Required Action C.1 is consistent with the Required Actions (B.1.1 and B.1.2) necessary when the required containment atmosphere radioactivity monitor is inoperable. These changes are necessary since when ITS 3.4.15 Condition C is entered either Required Action C.1 or Required Action C.2 is required to be met.~~

ISTS 3.4.15 , ITS 3.4.15 ACTION D

6. The specific Conditions the ACTION applies to have been added, since there is one ACTION it does not apply to (ACTION F). This is consistent with the Writers Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 4.1.6.i.5.ii. This is also consistent with the words in the ISTS Bases for this ACTION.

The KPS CTS 3.1.d.4 only requires two types of leakage detection instrumentation; sump monitoring and containment atmospheric monitor. Therefore, the bracketed ISTS 3.4.15.c requirement has not been included in the KPS ITS. Due to this deletion, ISTS ACTIONS C and D and optional Required Action B.2.2 have been deleted, since they apply to the air cooler condensate flow rate monitor. Subsequent ACTIONS have been renumbered due to these deletions. Furthermore, ISTS SR 3.4.15.5 has been deleted since it applies only to the air cooler condensate flow rate monitor.

Info only, no changes

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.15 RCS Leakage Detection Instrumentation

Updated Safety Analysis Report (USAR) General Design Criteria (GDC) 16 (Ref. 1) requires that means shall be provided to detect significant uncontrolled leakage from the reactor coolant pressure boundary.

2

BASES

BACKGROUND

USAR, Section 6.5, Leakage Detection and Provisions for the Primary and Auxiliary Coolant Loops

GDC 30 of Appendix A to 10 CFR 50 (Ref. 1) requires means for detecting and, to the extent practical, identifying the location of the source of RCS LEAKAGE. Regulatory Guide 1.45 (Ref. 2) describes acceptable methods for selecting leakage detection systems.

1

Leakage detection systems must have the capability to detect significant reactor coolant pressure boundary (RCPB) degradation as soon after occurrence as practical to minimize the potential for propagation to a gross failure. Thus, an early indication or warning signal is necessary to permit proper evaluation of all unidentified LEAKAGE.

Industry practice has shown that water flow changes of 0.5 to 1.0 gpm can be readily detected in contained volumes by monitoring changes in water level, in flow rate, or in the operating frequency of a pump. The containment sump used to collect unidentified LEAKAGE [is] [(or) and air cooler condensate flow rate monitor] [are] instrumented to alarm for increases of 0.5 to 1.0 gpm in the normal flow rates. This sensitivity is acceptable for detecting increases in unidentified LEAKAGE.

A is

.

INSERT 1

1

3

The reactor coolant contains radioactivity that, when released to the containment, can be detected by radiation monitoring instrumentation. Reactor coolant radioactivity levels will be low during initial reactor startup and for a few weeks thereafter, until activated corrosion products have been formed and fission products appear from fuel element cladding contamination or cladding defects. Instrument sensitivities of 10^{-9} µCi/cc radioactivity for particulate monitoring and of 10^{-6} µCi/cc radioactivity for gaseous monitoring are practical for these leakage detection systems. Radioactivity detection systems are included for monitoring both particulate and gaseous activities because of their sensitivities and rapid responses to RCS LEAKAGE.

An increase in humidity of the containment atmosphere would indicate release of water vapor to the containment. Dew point temperature measurements can thus be used to monitor humidity levels of the containment atmosphere as an indicator of potential RCS LEAKAGE. A 1°F increase in dew point is well within the sensitivity range of available instruments.

4

Although not as sensitive as the air particulate monitor, the humidity detection instrumentation has the characteristics of being sensitive to vapor originating from all sources within the containment and plots of air dew point variations should be sensitive to an incremental leakage equivalent to 2 to 10 gpm.

BASES

BACKGROUND (continued)

Since the humidity level is influenced by several factors, a quantitative evaluation of an indicated leakage rate by this means may be questionable and should be compared to observed increases in liquid flow into or from the containment sump [and condensate flow from air coolers]. Humidity level monitoring is considered most useful as an indirect alarm or indication to alert the operator to a potential problem. Humidity monitors are not required by this LCO. 1 5 6

stet

Air temperature and pressure monitoring methods may also be used to infer unidentified LEAKAGE to the containment. Containment temperature and pressure fluctuate slightly during plant operation, but a rise above the normally indicated range of values may indicate RCS leakage into the containment. The relevance of temperature and pressure measurements are affected by containment free volume and, for temperature, detector location. Alarm signals from these instruments can be valuable in recognizing rapid and sizable leakage to the containment. Temperature and pressure monitors are not required by this LCO.

APPLICABLE SAFETY ANALYSES

The need to evaluate the severity of an alarm or an indication is important to the operators, and the ability to compare and verify with indications from other systems is necessary. The system response times and sensitivities are described in the FSAR (Ref. 3). Multiple instrument locations are utilized, if needed, to ensure that the transport delay time of the leakage from its source to an instrument location yields an acceptable overall response time. U 1

The safety significance of RCS LEAKAGE varies widely depending on its source, rate, and duration. Therefore, detecting and monitoring RCS LEAKAGE into the containment area is necessary. Quickly separating the identified LEAKAGE from the unidentified LEAKAGE provides quantitative information to the operators, allowing them to take corrective action should a leakage occur detrimental to the safety of the unit and the public.

RCS leakage detection instrumentation satisfies Criterion 1 of 10 CFR 50.36(c)(2)(ii).

LCO

One method of protecting against large RCS leakage derives from the ability of instruments to rapidly detect extremely small leaks. This LCO requires instruments of diverse monitoring principles to be OPERABLE to provide a high degree of confidence that extremely small leaks are detected in time to allow actions to place the plant in a safe condition, when RCS LEAKAGE indicates possible RCPB degradation.

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All changes are 1 unless otherwise noted

BASES

LCO (continued)

(the hi or hi-hi alarm)

(Channel R12 or Channel R21 when aligned to the containment)

(Channel R11)

humidity

The LCO is satisfied when monitors of diverse measurement means are available. Thus, the containment sump monitor, in combination with a gaseous or particulate radioactivity monitor [~~and a containment air cooler condensate flow rate monitor~~], provides an acceptable minimum. 7 6

APPLICABILITY

Because of elevated RCS temperature and pressure in MODES 1, 2, 3, and 4, RCS leakage detection instrumentation is required to be OPERABLE.

In MODE 5 or 6, the temperature is to be ≤ 200°F and pressure is maintained low or at atmospheric pressure. Since the temperatures and pressures are far lower than those for MODES 1, 2, 3, and 4, the likelihood of leakage and crack propagation are much smaller. Therefore, the requirements of this LCO are not applicable in MODES 5 and 6.

ACTIONS

A.1 and A.2

With the required containment sump monitor inoperable, no other form of sampling can provide the equivalent information; however, the containment atmosphere radioactivity monitor will provide indications of changes in leakage. Together with the atmosphere monitor, the periodic surveillance for RCS water inventory balance, SR 3.4.13.1, must be performed at an increased frequency of 24 hours to provide information that is adequate to detect leakage. A Note is added allowing that SR 3.4.13.1 is not required to be performed until 12 hours after establishing steady state operation (stable temperature, power level, pressurizer and makeup tank levels, makeup and letdown, [and RCP seal injection and return flows]). The 12 hour allowance provides sufficient time to collect and process all necessary data after stable plant conditions are established.

Restoration of the required sump monitor to OPERABLE status within a Completion Time of 30 days is required to regain the function after the monitor's failure. This time is acceptable, considering the Frequency and adequacy of the RCS water inventory balance required by Required Action A.1.

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

stet, with changes

and

B.1.1, B.1.2, B.2.1, ~~and B.2.2~~

With both gaseous and particulate containment atmosphere radioactivity monitoring instrumentation channels inoperable, alternative action is required. Either grab samples of the containment atmosphere must be taken and analyzed for radioactivity or water inventory balances, in accordance with SR 3.4.13.1, must be performed to provide alternate periodic information.

stet

With a sample obtained and analyzed or water inventory balance performed every 24 hours, the reactor may be operated for up to 30 days to allow restoration of the required containment atmosphere radioactivity monitors. Alternatively, continued operation is allowed if the air cooler condensate flow rate monitoring system is OPERABLE, provided grab samples are taken or water inventory balances performed every 24 hours.

The 24 hour interval provides periodic information that is adequate to detect leakage. A Note is added allowing that SR 3.4.13.1 is not required to be performed until 12 hours after establishing steady state operation (stable temperature, power level, pressurizer and makeup tank levels, makeup and letdown, [and RCP seal injection and return flows]). The 12 hour allowance provides sufficient time to collect and process all necessary data after stable plant conditions are established. The 30 day Completion Time recognizes at least one other form of leakage detection is available.

stet

[C.1 and C.2

grab samples of the containment atmosphere

humidity

taken and analyzed for radioactivity

grab sample analysis

humidity

With the required containment air cooler condensate flow rate monitor inoperable, alternative action is again required. Either SR 3.4.15.1 must be performed or water inventory balances, in accordance with SR 3.4.13.1, must be performed to provide alternate periodic information. Provided a CHANNEL CHECK is performed every 8 hours or a water inventory balance is performed every 24 hours, reactor operation may continue while awaiting restoration of the containment air cooler condensate flow rate monitor to OPERABLE status.

The 24 hour interval provides periodic information that is adequate to detect RCS LEAKAGE. A Note is added allowing that SR 3.4.13.1 is not required to be performed until 12 hours after establishing steady state operation (stable temperature, power level, pressurizer and makeup tank levels, makeup and letdown, [and RCP seal injection and return flows]). The 12 hour allowance provides sufficient time to collect and process all necessary data after stable plant conditions are established.]

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

[D.1 and D.2

humidity

With the required containment atmosphere radioactivity monitor and the required containment air cooler condensate flow rate monitor inoperable, the only means of detecting leakage is the containment sump monitor. This Condition does not provide the required diverse means of leakage detection. The Required Action is to restore either of the inoperable required monitors to OPERABLE status within 30 days to regain the intended leakage detection diversity. The 30 day Completion Time ensures that the plant will not be operated in a reduced configuration for a lengthy time period.] 6

C

E.1 and E.2 6

or

If a Required Action of Condition A, B, [C], or [D] cannot be met, the plant must be brought to a MODE in which the requirement 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.

D

F.1 6

With all required monitors inoperable, no automatic means of monitoring leakage are available, and immediate plant shutdown in accordance with LCO 3.0.3 is required.

SURVEILLANCE REQUIREMENTS

SR 3.4.15.1

SR 3.4.15.1 requires the performance of a CHANNEL CHECK of the required containment atmosphere radioactivity monitor. The check gives reasonable confidence that the channel is operating properly. The Frequency of 12 hours is based on instrument reliability and is reasonable for detecting off normal conditions.

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All changes are 1 unless otherwise noted

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.4.15.2

SR 3.4.15.2 requires the performance of a COT on the required containment atmosphere radioactivity monitor. The test ensures that the monitor can perform its function in the desired manner. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable COT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. The test verifies the alarm setpoint and relative accuracy of the instrument string. The Frequency of 92 days considers instrument reliability, and operating experience has shown that it is proper for detecting degradation.

and

SR 3.4.15.3 ~~[SR 3.4.15.4, and SR 3.4.15.5]~~ 6

These SRs require the performance of a CHANNEL CALIBRATION for each of the RCS leakage detection instrumentation channels. The calibration verifies the accuracy of the instrument string, including the instruments located inside containment. The Frequency of [18] months is a typical refueling cycle and considers channel reliability. Again, operating experience has proven that this Frequency is acceptable.

REFERENCES

1. 10 CFR 50, Appendix A, Section IV, GDC 30. — USAR, Section 4.1.3.2, GDC 16, "Monitoring Reactor Coolant Leakage." 2
2. Regulatory Guide 1.45. — USAR, Section 6.5, Leakage Detection and Provisions for the Primary and Auxiliary Coolant Loops
3. U FSAR, Section [ ]. 6.5

JUSTIFICATION FOR DEVIATIONS
ITS 3.4.15 BASES, RCS LEAKAGE DETECTION INSTRUMENTATION

1. 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.

2. The ISTS lists GDC 30 of Appendix A to 10 CFR 50 as the reference document for the requirement that a means shall be provided for detecting, and to the extent practical, identifying the location of the source of reactor coolant leakage. Per the information contained in USAR Section 1.8, KPS was designed, constructed, and is being operated to comply with the Atomic Energy Commission (AEC) General Design Criteria (GDC) for Nuclear Power Plant Construction Permits, as proposed on July 10, 1967. Since the plant was approximately 50% complete prior to the February 20, 1971 issuance of 10 CFR 50 Appendix A General Design Criteria, KPS was not required to be reanalyzed and the Final Safety Analysis Report (FSAR) was not required to be revised to reflect these later criteria. However, the AEC Safety Evaluation Report (SER), issued July 24, 1972, acknowledged that the AEC staff assessed the plant, as described in the FSAR (Amendment No. 7), against the Appendix A design criteria and determined that the plant design generally conforms to the intent of the Appendix A criteria. As a result, KPS utilizes AEC GDC 16, Monitoring Reactor Coolant Pressure Boundary, as the licensing reference document for the requirement that a means shall be provided for detecting, and to the extent practical, identifying the location of the source of reactor coolant leakage.

3. Additional descriptive information has been added to the ITS Bases Background relative to the containment sump leakage measuring system.

4. The ISTS states that a 1°F increase in dew point is well within the sensitivity range of available instruments. The information in USAR Section 6.5.1.2.4 reflects that the humidity detection instrumentation should be sensitive to an incremental leakage equivalent of 2 to 10 gallons per minute (gpm).

5. The ISTS refers to the humidity level monitoring as an indirect alarm of indication to alert the operator to a potential problem. The humidity detection instrumentation at KPS is an indication only loop and provides no alarm function. Hence the deletion of the words "alarm or" in the sentence.

6. The ISTS states, in part, that the containment sump monitor in combination with a gaseous or particulate radioactivity monitor and a containment air cooler condensate flow rate monitor provide an acceptable minimum for meeting the LCO requirement of monitoring using diverse measurement means. At KPS, there is no air cooler condensate flow rate monitor. ~~According to Section 6.5 of the Updated Safety Analysis Report (USAR), KPS uses the following five methods of detecting RCS leakage to containment: containment system air particulate monitor, containment radiogas monitor, humidity detector, containment sump leakage measuring system, and liquid inventory. Therefore, where applicable, the word "humidity" has replaced "air cooler condensate flow rate monitor" in the ISTS Bases and the humidity instrumentation is added to the Technical Specifications as a result of the conversion to ITS.~~

Therefore, all references to the air cooler condensate flow rate monitor, including ACTIONS and Surveillances, have been deleted. These changes are also consistent with changes made to the actual Specification.

JUSTIFICATION FOR DEVIATIONS
ITS 3.4.15 BASES, RCS LEAKAGE DETECTION INSTRUMENTATION

7. The containment atmosphere radioactivity monitor channel designations for the gaseous monitor (Channel R12 or R21) and the particulate monitor (Channel R11) have been relocated from Item 19 Remarks column of CTS Table TS 4.1-1 to the ITS Bases LCO as a result of DOC LA01.

~~8. Change made to be consistent with change made to the Specification.~~

Licensee Response/NRC Response/NRC Question Closure

Id	**3271**
NRC Question Number	**RPG-008**
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	**5/26/2010**
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover**
Added By	**Ravinder Grover**
Date Added	**5/26/2010 2:39 PM**
Modified By	
Date Modified	

ITS NRC Questions

Id	**2051**
NRC Question Number	**RPG-009**
Category	**Technical**
ITS Section	**3.4**
ITS Number	**3.4.16**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number(s)	**380**
NRC Reviewer Supervisor	**Carl Schulten**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	**In reviewing the consequential dose related RAI response provided by the licensee in ADAMS document ML101060517, the NRC needs further clarification and/or verification regarding the licensees response to RAI #2. The NRC staffs technical concern is related to the verification of the site specific TS value of 595 µCi/gm for DEX, as indicated in Attachment 1, Page 4, of the licensees response. Specifically, the staff is NOT able to verify the values provided in Colum 2, "AST Primary Coolant Noble Gas Concentrations." The values for the indicated radionuclides are not specifically indicated in the licensees AST submittal dated March 19, 2002 (ML0208705653), nor any supplements to this submittal. Therefore, please indicate what docketed document do the above referenced values list in Column 2 come from for verification by the staff, or specifically explain how these values were calculated using docketed information from the licensees current dose analyses of record.**
Attach File 1	
Attach File 2	
Issue Date	**5/21/2010**
Added By	**Ravinder Grover**
Date Modified	
Modified By	
Date Added	**5/21/2010 8:14 AM**
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover**

Licensee Response/NRC Response/NRC Question Closure

Id	**3211**
NRC Question Number	**RPG-009**
Select Application	**Licensee Response**
Response Date/Time	**5/25/2010 10:20 AM**
Closure Statement	
Response Statement	**These values used in Column 2, "AST Primary Coolant Noble Gas Concentrations," are from the "Stretch Power Uprate" submittal (License Amendment Request (LAR) 195) which revised the alternate source term radiological analysis for Kewaunee. The submittal is located in ADAMS under package ML031540080. The specific information is located in Table 6.7-5 of the document identified by ADAMS Accession Number ML031530424, refer to page 40/141. This request was approved as License Amendment 172 on February 27, 2004 (ML040430633). DEK revised the Kewaunee radiological accident analysis another time under license amendment 190 (ML070430020) [LAR 211 (ML060540217)], which referenced the stretch uprate concentrations.**
Question Closure Date	
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**5/25/2010 10:19 AM**
Modified By	
Date Modified	

Licensee Response/NRC Response/NRC Question Closure

Id	**3281**
NRC Question Number	**RPG-009**
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	**5/26/2010**
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Ravinder Grover**
Added By	**Ravinder Grover**
Date Added	**5/26/2010 2:40 PM**
Modified By	
Date Modified	