ITS NRC Questions

Id	**1641**
NRC Question Number	**MEH-002**
Category	**Technical**
ITS Section	**3.5**
ITS Number	**3.5.2**
DOC Number	
JFD Number	**6**
JFD Bases Number	
Page Number(s)	**50,51**
NRC Reviewer Supervisor	**Rob Elliott**
Technical Branch POC	**Warren Lyon**
Conf Call Requested	**N**
NRC Question	**JFD 6 on pages 50 and 51 of Attachment 1, Volume10 discusses the addition of ITS SR 3.5.2.3. The proposed adoption of the SR would change the Frequency from 31 days to 92. The justification for this is an October 14, 2008 response to GL-2008-01. That letter contains no specific mention of 92 days. The technical staff will review the other responses to GL-2008-01 dated October 16, 2009, and November 20, 2009 in assessing the proposed 92 day SR Frequency. The JFD for adoption of SR 3.5.2.3 should be updated to reflect the complete technical basis for the 92 day SR Frequency.**
Attach File 1	
Attach File 2	
Issue Date	**1/27/2010**
Added By	**Matthew Hamm**
Date Modified	
Modified By	
Date Added	**1/27/2010 1:43 PM**
Notification	**NRC/LICENSEE Supervision** **Matthew Hamm**

Licensee Response/NRC Response/NRC Question Closure

Id	**2061**
NRC Question Number	**MEH-002**
Select Application	**Licensee Response**
Response Date/Time	**2/8/2010 3:00 PM**
Closure Statement	
Response Statement	**ITS 3.5.2 Justification for Deviation (JFD) 6 states that the 92 day Frequency is justified in the October 14, 2008 letter. This is shown on pages 44 and 45 of 51 of the document, Section III, Corrective Action Schedule, subpart B.1. Specifically, the subpart states "DEK will develop and implement a TRM and TRM Bases section similar to NUREG-1431 SR 3.5.2.3 and LCO 3.6.6. This TRM section will require that the applicable portions of the subject systems are maintained sufficiently full of water to reliably perform their intended safety function and accessible portions of the subsystems susceptible to gas intrusion are verified sufficiently full of water on a quarterly basis." The term "quarterly" basis is equivalent to the Frequency of 92 days as used in the ITS.** **Furthermore, KPS responded on October 16, 2009 (ADAMS Accession No. ML092920029) to NRC RAIs concerning the October 14, 2008 letter. NRC question 6.b requested the following: "The procedures for periodic monitoring for gas accumulation at Kewaunee. Discuss future modifications to allow monitoring in the locations which are currently inaccessible and other compensatory measures as part of monitoring program. Justify that quarterly monitoring would be adequate to assure operability of the subject systems. (Page 36) " In the KPS response to NRC Question 6.b, Page 32 of 40, first paragraph, KPS stated that "Experience has shown that current quarterly UT monitoring and….. The modifications and valve repairs described above will further increase confidence that quarterly monitoring is adequate."** **Therefore, KPS believes that the original letter identified in JFD 6 does discuss and justify the proposed 92 day Frequency for SR 3.5.2.3.** **KPS is attaching the appropriate pages from the October 14, 2008 letter and the October 16, 2009 letter.**
Question Closure Date	
Attachment 1	**MEH-002 10-14-2008 letter info.pdf** (127KB)
Attachment 2	**MEH-002 10-16-2009 letter info.pdf** (139KB)

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 2 of 40

Notification	**NRC/LICENSEE Supervision** **Matthew Hamm** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**2/8/2010 3:04 PM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 3 of 40

III. CORRECTIVE ACTION SCHEDULE

A. Summarize the corrective actions that have been completed as a result of the evaluations discussed above.

1. A calculation was developed to identify the maximum potential void volumes at local high point locations and in valve bonnets in the SI, RHR and ICS systems. This calculation used measured piping slopes, existing vent valve locations, and valve design information to determine maximum potential void volumes after static venting.
2. During review of the drawings a preliminary determination was made of piping that might be subject to gas accumulation during operation. A representative sample of high points without vents was selected for Ultrasonic Testing (UT) examination at the start of the KPS spring 2008 refueling outage (KR 29) to check for the presence of gas voids. The UT examinations resulted in the discovery of a void at one location. This location was in the RHR suction piping from the Reactor Coolant loop, between the first and second isolation valves (RHR-1A and RHR-2A). This location was filled and vented prior to placing the RHR system in operation for KR 29. Monitoring is being performed at this location.
3. During the drawing review, it was recognized that leakage of both check valves in each HHSI injection line could result in gas accumulation in the HHSI piping. A test procedure was developed and performed to measure leakage of both check valves in series in each injection line.
4. Two new vent valves were installed on the RHR suction line from the RCS during KR 29. These vent valves were installed to facilitate filling the piping following RHR pump maintenance.
5. To confirm that the discharge piping of the RHR system was sufficiently full, test procedures were developed and performed. Discharge pressure was monitored during the start of the RHR pumps for each LHSI train. It was confirmed that the maximum pressure peak above the steady state discharge pressure of the pump was not excessive.

B. Summarize the corrective actions to be completed including the scope, schedule, and a basis for that schedule.

1. DEK will develop and implement a TRM and TRM Bases section similar to NUREG-1431 SR 3.5.2.3 and LCO 3.6.6. This TRM section will require that the applicable portions of the subject systems are maintained sufficiently full of water to reliably perform their intended safety function and accessible portions of the

subsystems susceptible to gas intrusion are verified sufficiently full of water on a quarterly basis.

Schedule: This action will be complete by January 30, 2009.

Basis: Technical evaluations and field verification activities performed in support of the GL 2008-01 response have demonstrated system operability and monitoring actions are in place where required. The timeframe for completion of these additional licensing basis requirements are consistent with the proposed surveillance frequency.

This TRM section will be deleted if KPS Technical Specifications are amended in the future to address this requirement.

2. The KPS USAR will be revised to reflect that the applicable portions of the subject systems must be verified sufficiently full of water following the opening of the systems for maintenance or testing, and by periodic monitoring of the accessible portions of the subject systems susceptible to gas intrusion, consistent with the guidance of GL 2008-01 and the supporting analysis.

   Schedule: This action will be complete within 6 months of the next KPS refueling outage KR 30 (Fall of 2009).

   Basis: The recent evaluations and actions performed in support of the GL 2008-01 response have demonstrated system operability. Changes to the USAR clarify licensing basis requirements and should be accomplished in an orderly manner consistent with the applicable USAR update cycle.

3. The USAR will be revised following completion of the evaluation to change the design or operating practices to maintain the containment sump suction piping between valves SI-350A/B and SI-351A/B sufficiently full of water, consistent with the guidance of GL 2008-01 and the supporting analysis, if applicable design bases are changed.

   Schedule: This action will be complete within 6 months of the next KPS refueling outage KR 30 (Fall of 2009).

   Basis: Incorporation of design changes into the USAR is a programmatic requirement contained within the design change program. Anticipated design changes will require KPS to be in a shutdown condition. Associated changes to the USAR should be accomplished in an orderly manner consistent with the applicable USAR update cycle.

NRC Question 6

Please summarize the following procedures briefly:

a. Fill and vent procedures with acceptance criteria to assure that piping is sufficiently full after system fill and vent activity. Also provide the details of confirmatory testing followed by fill procedures. (Pages 23-24)

b. The procedures for periodic monitoring for gas accumulation at Kewaunee. Discuss future modifications to allow monitoring in the locations which are currently inaccessible and other compensatory measures as part of monitoring program. Justify that quarterly monitoring would be adequate to assure operability of the subject systems. (Page 36)

c. Revised In-service testing procedures to provide dynamic sweeping as part of the filling of the systems where needed to assure systems are sufficiently full. (Page 43)

d. Discuss various surveillance procedures applicable to subject systems.

Response

Fill and Vent Procedures

KPS uses Maintenance Operating Procedures (MOP) and Normal Operating Procedures (NOP) to perform static filling and venting of systems after draining for maintenance. As noted in the initial 9-month response to GL 2008-01, these procedures for the subject systems were reviewed and were considered to provide adequate fill of the piping, with some exceptions. Revisions have been completed to ensure that a complete static vent is obtained, including utilization of all existing or newly installed vent valves. During the review process, system isometric drawings were utilized to identify any high point locations that may not be completely vented. Dynamic venting would then be used to completely fill the system.

In addition to the procedures listed in the original response to GL 2008-01, the following procedures have been developed or revised for filling and venting the subject systems. Reviews of all procedures to be used before or during the fall 2009 refueling outage have been performed.

- OP-KW-MOP-RHR-001A, "RHR Pump A Maintenance at Power"
- OP-KW-MOP-RHR-001B, "RHR Pump B Maintenance at Power"
- OP-KW-MOP-RHR-002A, "RHR Pump A Maintenance Shutdown (FEG 34.A1)"
- OP-KW-MOP-RHR-002B, "RHR Pump B Maintenance Shutdown (FEG 34.B1)"
- OP-KW-MOP-RHR-003A, "RHR to SFP Line Maintenance (FEG 34.A.2)"

No additional modifications are currently planned to provide expanded monitoring in inaccessible areas. Experience has shown that current quarterly UT monitoring at accessible locations and quarterly pressure pulse testing are adequate to ensure gas accumulations are controlled within operability limits. The effectiveness of quarterly UT monitoring is improved when combined with daily monitoring of SI accumulator level, increased monitoring (when gas accumulations are identified), and trending of RWST inleakage (which would identify increasing leakage past HHSI or LHSI injection check valves). The modifications and valve repairs described above will further increase confidence that quarterly monitoring is adequate.

Inservice Testing Procedures

As described in the response to 6.a, above, dynamic sweeping is being performed by various procedures, including IST procedures and normal operating procedures. Where new procedures would need to be developed, use of normal operating procedures is preferred. IST procedures may be used where existing procedures provide the desired dynamic sweeping without major changes. As discussed in 6.b above, leakage into the LHSI system can result in gas accumulating in the mini-flow recirculation line. When the RHR pumps are run each quarter per Procedure SP-34-099A and B, this gas is swept out of the mini-flow lines and into other portions of the RHR, ICS, and SI systems. Therefore, UT monitoring is performed before this quarterly test to determine if gas is present. If gas is found, additional monitoring is performed after pump run to ensure that the gas has not transferred to other locations where it may affect system operability. These procedures are also used after online maintenance to sweep gas that cannot be removed by static venting.

Surveillance Procedures

The following surveillance procedures have been established to perform UT for periodic monitoring for gas accumulation:

- ER-KW-NSP-RHR-001, "Monitoring RHR Cooldown Piping for Gas Accumulation
- ER-KW-NSP-SI-001A, "Monitoring SI Containment Penetrations and SI Pump A Discharge Piping for Gas Accumulation"
- ER-KW-NSP-SI-001B, "Monitoring SI Pump B Discharge Piping for Gas Accumulation"
- ER-KW-NSP-SI-002, "Monitoring SI Common Train Piping for Gas Accumulation"
- SP-34-099A, "Train A RHR Pump and Valve Test – IST"
- SP-34-099B, "Train B RHR Pump and Valve Test – IST"

These procedures use UT to quantify the size of any voids found and provide acceptance criteria. An 'action level' is established at 0.01 ft^3 at any location where gas has not been previously found. Exceeding this action level requires initiation of an operability determination. When gas is found and evaluated at a location, the action

Licensee Response/NRC Response/NRC Question Closure

Id	**2761**
NRC Question Number	**MEH-002**
Select Application	**Licensee Response**
Response Date/Time	**4/12/2010 1:15 PM**
Closure Statement	
Response Statement	**This response is a follow-up and supplements our first response to this RAI. As stated in our first response, the Dominion Energy Kewaunee (DEK) response to Generic Letter 2008-01, dated October 14, 2008 (ADAMS Accession No. ML082880707), KPS committed to implement, in the Technical Requirements manual (TRM), a Surveillance similar to ISTS SR 3.5.2.3 to verify the ECCS subsystems are sufficiently full of water on a quarterly basis (i.e., 92 days). This is shown on pages 44 and 45 of 51 of the document, Section III, Corrective Action Schedule, subpart B.1. This commitment has been met, and the associated TRM pages are attached. In addition, DEK committed to monitor the status of the industry/NRC Technical Specifications Task Force (TSTF) Traveler to be developed as a follow-up to GL 2008-01. Following NRC approval of this TSTF, DEK will evaluate adopting it. The NRC has recently accepted DEKs response to GL 2008-01 which included this position (i.e., a 92 day Frequency for the verification) in the closeout to Generic Letter 2008-01 for KPS, dated April 1, 2010 (ADAMS Accession No. ML100880212). In addition, the commitment stated that the TRM requirement would be deleted if the KPS Technical Specifications were amended to include this requirement. The ITS submittal includes this requirement for the residual heat removal (RHR) and safety injection (SI) trains in SR 3.5.2.3, thus DEK intends to delete the RHR and SI requirements from the TRM once the ITS submittal (with SR 3.5.2.3 at a 92 day Frequency) is approved. For completeness, JFD 6, which provides the justification for not adopting the bracketed 31 day Frequency in the ISTS and including a 92 Frequency for the SR in the KPS ITS, will be modified to reference the NRC acceptance of the DEK response to Generic Letter 2008-01. A draft markup regarding this change is attached. This change will be reflected in the supplement to this section of the ITS conversion amendment.** **Another commitment DEK made in response to GL 2008-01 was to revise the KPS USAR to reflect verification activities that confirm the applicable portions of the subject systems are sufficiently full of water periodically. This verification would occur following the opening of the systems for maintenance or testing, and by periodic monitoring of the accessible portions of the subject systems susceptible to gas intrusion, consistent with the guidance of GL 2008-01 and the supporting analysis.**

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 8 of 40

Thus, DEK proposes to maintain the surveillance maximum frequency of 92 days for SR 3.5.2.3 with other conditional and more frequent monitoring placed in the USAR.

Question Closure Date	
Attachment 1	**MEH-002 TRM information.pdf** (30KB)
Attachment 2	**MEH-002 Markup second response.pdf** (749KB)
Notification	**NRC/LICENSEE Supervision** **Matthew Hamm** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**4/12/2010 1:22 PM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 9 of 40

3.5.6 Emergency Core Cooling System and Containment Spray System Surveillance

ALCO 3.5.6 Two Safety Injection (SI), Residual Heat Removal (RHR) and Containment Spray (CS) trains shall be sufficiently full of water to be OPERABLE.

APPLICABILITY: The reactor shall not be made critical unless two SI, RHR and CS trains are OPERABLE, except when performing LOW POWER PHYSICS TESTS.

----------NOTE----------
One train may be inoperable for up to 72 hours for recovery from an inadvertent trip per TS 3.3.b.2 for the SI and RHR systems and TS 3.3.c.1.A.3 for the CS system.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each SI/RHR train and each CS train.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One train of any system inoperable.	A.1 Apply TS 3.3.b.2 for SI system OR A.2 Apply TS 3.3.b.2 for RHR system. OR A.3 Apply TS 3.3.c.1.A.3(ii) for CS system.	Immediately
B. Two trains of any system inoperable.	B.1 Apply TS 3.0.c ----------NOTE---------- For two inoperable trains of RHR, TS 3.1.a.2 also applies. ----------	Immediately

C.	Required Action and associated Completion Time of Condition A not met.	C.1 OR C.2 OR C.3	Apply TS 3.3.b.2.A. for SI system. Apply TS 3.3.b.2.B for RHR system. Apply TS 3.3.c.1.A.3 for CS system.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
ASR 3.5.6.1	Verify SI, RHR and CS piping is sufficiently full of water.	92 days

BASES

BACKGROUND

ECCS systems (Safety Injection and Residual Heat Removal) and Containment Spray System

The ECCS and CS System pumps are normally in a standby non-operating mode. As such, some flow path piping has the potential to develop pockets of entrained gases. Plant operating experience and analysis has shown that after proper system filling (following maintenance or refueling outages), some entrained non-condensable gases remain. These gases will form small voids, which remain stable in the system in both normal and transient operation. Mechanisms postulated to increase the void size are gradual in nature, and the system is operated in accordance with procedures to preclude growth in these voids. In addition, other mechanisms, such as valve seat leakage into the stagnant systems from other gas-laden sources, system fluid velocities and physical geometries can cause a gradual increase in the size of gas voids.

The system is sufficiently full of water when the voids and pockets of entrained gases in the ECCS and CS piping are small enough in size and number to not interfere with the proper operation of the ECCS and CS systems. Verification that the ECCS and CS piping is sufficiently full of water can be performed by venting the necessary accessible high point ECCS and CS vents, using NDE, or using other engineering-justified means.

Maintaining the piping and components from the ECCS pump suction sources to the final isolation valve before connection to the RCS sufficiently full of water ensures that the system will perform properly, injecting its full capacity into the RCS upon demand. This will also prevent pump cavitation and air binding, water hammer, and pumping of excess non-condensable gas (e.g., air, nitrogen, or hydrogen) into the reactor vessel following an SI signal or during shutdown cooling.

One exception to the ECCS system being sufficiently full of water, is the RHR 14” suction line from the B Containment Sump through and including valves SI-350 A&B and SI-351 A&B. Due to concerns regarding pressure locking of these valves, the KPS licensing bases for this line is that it is OPERABLE in an air filled condition.

Maintaining the piping and components from the CS pump suction sources to the discharge to containment sufficiently full of water ensures that the system will perform properly, injecting its full capacity into containment upon demand.

BASES

ALCO and APPLICABILITY

Two SI, RHR and CS trains shall be sufficiently full of water to be OPERABLE. The SI, RHR and CS systems (two trains for each system) are required to be OPERABLE when the reactor is critical, except when performing LOW POWER PHYSICS TESTS. Outside these conditions, the SI, RHR and CS systems are not required to be operable, except as specified in TS 3.1 and TS 3.8. (References 4 and 5).

This ALCO is modified by a Note as stated in TS 3.3.b and TS 3.3.c.1.A.3, that allows one train of SI, RHR and CS to be inoperable for 72 hours during recovery from an inadvertent trip.

ACTIONS

The Actions are modified by a Note. The Note provides clarification that each train allows separate entry into a Condition. This is allowed based upon the functional independence of each train. The SI and RHR systems together comprise the ECCS system. These systems work in tandem to provide core cooling and negative reactivity to ensure that the reactor core is protected. Thus, the SI/RHR system consists of two trains and the CS system consists of two trains.

A.1, A.2 and A.3

With one ECCS or CS train inoperable and at least 100% of the ECCS or CS flow is available via the redundant train, the inoperable components must be returned to OPERABLE status within 72 hours. The 72-hour Completion Time is based on a reasonable time for repair of many ECCS/CS components and the OPERABILITY of the redundant train. An ECCS train is inoperable if it is not capable of delivering design flow to the RCS. A CS train is inoperable if it is not capable of delivering design flow to containment. Individual components are inoperable if they are not capable of performing their design function or supporting systems are not available.

B.1

Condition B is applicable when two trains of ECCS or CS are inoperable. With two trains of ECCS or CS inoperable, the facility is in a condition outside of the accident analyses. Therefore, LCO 3.0.c must be entered immediately.

This action is modified by a note that alerts the operator to apply the requirements of TS 3.1.a.2 when two inoperable RHR

BASES

ACTIONS (continued)

systems are present. In this condition, per TS 3.1.a.2.A, when the average RCS temperature descends below 350°F, the RHR system needs to be considered for decay heat removal requirements. In addition, per TS 3.1.a.2.B, both RHR trains need to be restored to OPERABLE status before entering COLD SHUTDOWN mode.

C.1, C.2 and C.3

If the inoperable ECCS or CS train cannot be returned to OPERABLE status within the associated Completion Time, the plant must be brought to a MODE in which the ALCO does not apply. To achieve this status, the following TS sections are invoked to provide for an orderly unit shutdown:

For the SI system, apply TS 3.3.b.2.A.
For the RHR system, apply TS 3.3.b.2.B.
For the CS system, apply TS 3.3.c.1.A.3.

The allowed Completion Times in the TS sections 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.

SURVEILLANCE REQUIREMENTS

ASR 3.5.6.1

The ECCS and CS System pumps are normally in a standby non-operating mode. As such, some flow path piping has the potential to develop pockets of entrained gases. Plant operating experience and analysis has shown that after proper system filling (following maintenance or refueling outages), some entrained non-condensable gases remain. These gases will form small voids, which remain stable in the system in both normal and transient operation. Mechanisms postulated to increase the void size are gradual in nature, and the system is operated in accordance with procedures to preclude growth in these voids. In addition, other mechanisms, such as valve seat leakage into the stagnant systems from other gas-laden sources, system fluid velocities and physical geometries can cause a gradual increase in the size of gas voids.

To provide additional assurances that the system will function, verification is performed every 92 days that the system is sufficiently full of water. The system is sufficiently full of water when the voids and pockets of entrained gases in the ECCS and CS piping are small enough in size and number to not interfere with the proper operation of the ECCS and CS systems.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Verification that the ECCS and CS piping is sufficiently full of water can be performed by venting the necessary accessible high point ECCS and CS vents, using NDE, or using other Engineering-justified means.

Maintaining the piping and components from the ECCS pump suction sources to the final isolation valve before connection to the RCS sufficiently full of water ensures that the system will perform properly, injecting its full capacity into the RCS upon demand. This will also prevent pump cavitation and air binding, water hammer, and pumping of excess non-condensable gas (e.g., air, nitrogen, or hydrogen) into the reactor vessel following an SI signal or during shutdown cooling. The 92-day frequency takes into consideration the gradual nature of the postulated gas accumulation mechanisms.

One exception to the ECCS system being sufficiently full is the RHR 14" suction line from the B Containment Sump through and including valves SI-350 A&B and SI-351 A&B. Due to concerns regarding pressure locking of these valves, the KPS licensing bases for this line is that it remains in an air filled condition.

Maintaining the piping and components from the CS pump suction sources to the discharge to containment sufficiently full of water ensures that the system will perform properly, injecting its full capacity into containment upon demand. The 92-day frequency takes into consideration the gradual nature of the postulated gas accumulation mechanisms.

REFERENCES

1. USAR 6.2, "Safety Injection System".
2. USAR 6.4, "Internal Containment Spray System".
3. TS 3.3, "Engineered Safety Features and Auxiliary Systems".
4. TS 3.1, "Reactor Coolant System".
5. TS 3.8, "Refueling Operations".

JUSTIFICATION FOR DEVIATIONS
ITS 3.5.2, ECCS - OPERATING

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. ISTS 3.5.2 LCO NOTE 1 states that in MODE 3, both SI pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve (PIV) testing per SR 3.4.14.1. KPS does not need this allowance to perform PIV testing required by SR 3.4.14.1. Both SI flow paths are not simultaneously isolated during PIV testing. Therefore, this NOTE is not applicable to KPS and has been deleted. ISTS 3.5.2 LCO NOTE 2 states, in part, that in MODE 3 the ECCS pumps may be incapable of injection in order to support a transition into or out of the Applicability for the Low Temperature Overpressure Protection (LTOP) System for up to 4 hours or until the temperature of the RCS cold legs exceed the LTOP arming temperature. Per the information in USAR 9.3.3.8, the Kewaunee Power Station (KPS) LTOP system is to be operable at or below the RCS temperature of 200°F. This temperature is outside of the ECCS Applicability temperature range of MODES 1 through 3 (≥ 350°F) thus the operation of the ECCS pumps will not be affected by LTOP system restrictions. Therefore, this NOTE is not applicable to KPS and has been deleted.

3. An ITS 3.5.2 LCO Note has been added consistent with the allowance in CTS 3.3.b.5. The Note was added to allow an SI train to be considered OPERABLE for up to 1 hour when it is being used to refill an SI accumulator. This allowance was approved by the NRC in License Amendment 143, dated February 23, 1999 (ADAMS Accession No. ML020770343).

4. The KPS design is such that the valve operator still has AC power when the power breaker is locked out. This AC power is only provided so that valve position indication is available in the control room. However, locking out of the breaker does ensure that the motor operator cannot move the valve, since there is no motive power. Therefore, the word "motive" has been added to ISTS SR 3.5.2.1 to clarify that while the motor operator has power, there is no motive power. This still accomplishes the intent of the ISTS SR.

5. Changes made to be consistent with the KPS design of the containment sump strainers and debris interceptors.

6. ITS SR 3.5.2.3 has been modified to add the word "sufficiently," so that the SR reads "Verify ECCS piping is sufficiently full of water." Plant operating experience and analysis has shown that after proper system filling (following maintenance or refueling outages), some entrained non-condensable gases remain. These gases will form small voids, which remain stable in the system in both normal and transient operation. The system is sufficiently full of water when the voids and pockets of entrained gases in the ECCS piping are small enough in size and number to not interfere with the proper operation of the ECCS. Verification that the ECCS piping is sufficiently full of water can be performed by venting the necessary accessible high point ECCS vents, using non-destructive examination (NDE), or using other engineering-justified means. The Frequency of 92 days has been provided in lieu of the 31 day Frequency stated in the ISTS. The 92 day Frequency has been determined to be adequate based on plant operating experience and engineering

JUSTIFICATION FOR DEVIATIONS
ITS 3.5.2, ECCS - OPERATING

analysis as discussed in the Dominion Energy Kewaunee (DEK) response to Generic Letter 2008-01 (letter dated October 14, 2008, ADAMS Accession No. ML082880707). Furthermore, this proposed Surveillance and Frequency are consistent with the current Surveillance and Frequency, which is in the KPS Technical Requirements Manual.

This proposed 92 day Frequency was also accepted by the NRC in the close-out letter for the acceptance of the DEK response to Generic Letter 2008-01, dated April 1, 2010 (ADAMS Accession No. ML 100880212).

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 17 of 40

Licensee Response/NRC Response/NRC Question Closure

Id	**3031**
NRC Question Number	**MEH-002**
Select Application	**NRC Response**
Response Date/Time	**5/17/2010 6:00 PM**
Closure Statement	
Response Statement	**NRC does not agree that the acceptability of the proposed 92 SR frequency has been established. Please see the attached document for further explantation.**
Question Closure Date	
Attachment 1	**Kewaunee SR 3.5.2.3 Frequency.pdf** (54KB)
Attachment 2	
Notification	**Kewaunee ITS Conversion Database Members** **NRC/LICENSEE Supervision** **Victor Cusumano** **Matthew Hamm** **Peter Tam**
Added By	**Matthew Hamm**
Date Added	**5/17/2010 12:43 PM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 18 of 40

May 11, 2010

Assessment of Kewaunee Justification for 92 day ECCS, RHR, and CS Gas Surveillance Frequency

The licensee's assessment that the NRC staff has found the 92 day surveillance frequency to be acceptable is not completely accurate. Effectively, the finding was that no further information was necessary regarding the response to GL 2008-01 and that the NRC staff was satisfied that the subject systems were and would be operable until a confirmatory inspection established that long term operability was reasonable ensured. In the Kewaunee case, the inspection would address the basis for the licensee's conclusion that the 92 day surveillance was acceptable, including an in-depth evaluation of such areas as history and monitoring and trending of plant parameters that could indicate a change in gas behavior that would necessitate more frequent follow-up and surveillances. The background regarding this statement is provided in the following paragraphs.

The NRC staff reviews are being performed by the NRR Reactor Systems Branch (SRXB). The original SRXB review approach was to perform an in-depth review of each response and to write Requests for Additional Information (RAIs) that addressed all shortcomings with respect to the NRC expectations identified by W. Ruland[1]. This was to be followed by an in-depth assessment report that also provided recommendations for conducting inspections in accord with Temporary Inspection (TI) 2515/177[2]. After completing several sets of licensee reviews with associated RAIs, SRXB determined that this was a labor-intensive approach that did not appropriately prioritize the topics, would unnecessarily increase regulatory burden, did not appropriately respond to a licensees omitting information that was acceptably addressed by on-site information, and did not appropriately utilize regional inspector practices and knowledge in conducting TI 2515/177 inspections.

Consequently, SRXB modified the review process to focus on information necessary to reasonably ensure plant operability is maintained in the short term with respect to finding and fixing voids when preparing RAIs and to consolidate the RAI information in a focused assessment report that contains suggestions for follow-up confirmatory inspections. The W. Ruland expectations continue to apply. For example, if a licensee GL response did not provide certain criteria, the previous approach would have relied upon a RAI to obtain the criteria and SRXB would have addressed this in its report with a suggestion that the inspection confirm the criteria. The revised approach suggests that the inspectors do a confirmatory check of the licensee's criteria against SRXB-provided criteria as part on any inspections conducted. This eliminates the need for many RAIs as well as the need for repeated RAI submittals, thus conserving NRC and licensee resources while achieving the overall objective of reasonable assurance that the subject systems are and will continue to be operable subject to the more in-depth confirmatory inspection.

[1] Ruland, William H., "Preliminary Assessment of Responses to Generic Letter 2008-01, 'Managing Gas Accumulation in emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems,' and Future NRC Staff Review Plans," NRC letter to James H. Riley, Nuclear Energy Institute, ML091390637, May 28, 2009.

[2] "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Contain Spray Systems (NRC Generic Letter 2008-01)," Temporary Instruction 2515/177, ML082950666, June 9, 2009.

Section 2515/177-04 of the TI, INSPECTION GUIDANCE, addresses a number of items that are applicable to the licensees claim. SRXB review of the licensee responses to GL 2008-01 is addressed in the publically available generic document "GUIDANCE TO NRC/NRR/DSS/SRXB REVIEWERS FOR WRITING TI SUGGESTIONS FOR THE REGION INSPECTIONS" (ML100350656) that was provided to NEI and we understand forwarded to all licensees by NEI. Section 1 covers NRC expectations and Section 2 provides wording that SRXB reviewers can use for suggesting topics for the inspectors to pursue during the TI inspection. For example, if the SRXB reviewer found that a licensee did not adequately address surveillances, then the reviewer would suggest that the inspection "verify that areas not covered by TSs and TS Bases, such as not providing surveillance requirements (SRs) for ECCS suction piping and not ensuring a void assessment at high points that are not equipped with a vent, are identified and the process of ensuring adequate coverage is identified." and, if the licensee uses a surveillance frequency that is greater than every 31 days and it is not acceptably justified, then "since the licensee uses a surveillance frequency of greater than 31 days, verify that the surveillance frequency is acceptably justified."

Acceptable monitoring and trending are closely related to justifying any deviations from the 31 day surveillance frequency. In this regard, the inspection guidance states to "verify the acceptability of the licensee's processes for monitoring and trending such parameters as void volumes, accumulator level and temperature, reactor coolant system (RCS) leakage, and ECCS discharge pressure and temperature to ensure that pre-cursor parameters are addressed and that entry into the CAP will be accomplished if acceptable trending criteria are not met."

And Section 1 provides extensive information that addresses overall expections that should be addressed by the combination of SRXB reviews and regional inspection follow-up.

The history described in the licensee's original GL response appears to illustrate that the licensee had little or no historic data to substantiate that voids remained below acceptable volumes. Such historic or more recent data are necessary as part of the rationale to support a surveillance frequency greater than 31 days. One of the difficulties with extended surveillance intervals is that periodic testing may cause valves to reseat differently and introduce a gas accumulation problem that did not previously exist. Further, note that reference to other licensees and pre-GL NRC approvals are not an acceptable justification due to the more recent understanding of the issues. Consequently, enhanced trending coverage of parameters that may indicate a problem should be provided.

The licensee appears to have performed significant work to assess piping configurations and found voids at a number of locations that it stated were of little concern. Almost no quantitative void information is presented in the licensee's original GL response, although the licensee's November 20, 2009, response identifies a 0.01 cubic foot acceptance criterion at one location that we would likely find acceptable. The licensee's response in its October 16, 2009, submittal is more informative. It references a 0.01 cubic foot suction line acceptance criterion in several places and it reported that it found a 1.13 cubic foot void in a LHSI discharge line inside containment. I have not assessed this volume, but my judgment is that it would be acceptable.

The licensee also identified in that submittal that it used a Fauske methodology for pressure spike assessment. I have not completed assessment of the Fauske methodology but I believe it will be found acceptable. I would have to spend more time on some of the void movement information to form a conclusion.

The October 16, 2009 response also addresses accumulator behavior and test line leakage issues. Although this is informative and substantially better than what was provided in the original response, it is not sufficient to support the licensee's conclusion that a 92 day surveillance frequency is acceptable.

The licensee may have more in-depth supporting information at its site that would support its 92 day surveillance frequency. Part of the inspection will address this possibility.

On Page 51 of 133 of its Attachment 1, the licensee stated that "This proposed 92 day Frequency was also accepted by the NRC in the close-out letter for the acceptance of the DEK response to Generic Letter 2008-01, dated April 1, 2010 (ADAMS Accession No. ML 100880212)." The NRC's closeout letter states that "your response is considered complete and no further information or action is requested of you. Not withstanding, the NRC's Region III staff may decide to perform " a TI 2515/177 inspection that is confirmatory in nature to "selectively verify that the licensee has acceptably implemented the actions described in the licensee's response to GL 2008-01, and that the plant-specific information supports a conclusion that operability of the subject systems is reasonably ensured." Thus, the NRC staff has found that the licensee's assessment is correct <u>if</u> the NRC's Region III staff does not perform a TI 2515 inspection <u>or if the inspection confirms that the licensee has acceptably implemented the actions that the licensee has described.</u> We believe Region III will perform the inspection and that the inspection has not been completed. Consequently, in light of the above discussion, the NRC has in effect determined that operability of the subject systems is reasonably ensured in the short term and the longer term determination will be addressed by the regional inspection. Further, significant industry research and NRC review of issues is continuing and new information may change previous conclusions regarding what is necessary to support a reasonable assurance of operability.

Licensee Response/NRC Response/NRC Question Closure

Id	**3141**
NRC Question Number	**MEH-002**
Select Application	**Licensee Response**
Response Date/Time	**5/24/2010 2:15 PM**
Closure Statement	
Response Statement	**Dominion Energy Kewaunee (DEK) has reviewed the attachment to the NRC response for RAI MEH-002 and considered the information discussed during the subsequent informal phone conversation with the NRC reviewer.** **Kewaunee continues to maintain systems in a safe configuration within the industry guidance provided in Generic Letter (GL) 2008-01 (as do many other stations in the industry that do not have a specific technical specification). Those current surveillance activities are controlled by the DEK Technical Requirements Manual and implemented via DEK surveillance procedures.** **As stated in the NRC attachment (last paragraph), the NRC has determined that this manner of controlling the issue is acceptable and that "operability of the subject systems is reasonably ensured for the short term and the longer term determination will be addressed by the regional inspection." Other current NRC documents state, "Further, significant industry research and NRC review of issues is continuing and new information may change previous conclusions regarding what is necessary to support a reasonable assurance of operability."** **The NRC and industry are currently and actively discussing how to control this issue in the Technical Specifications, and a proposed TSTF will be submitted in the future.** **DEK is interested in the optimal long-term solution and believes that a near-term resolution of this issue, negotiated via the DEK ITS License Amendment Request, would likely not be consistent with any long term resolution between the NRC and the industry. And, further, is not necessary to assure safety.** **DEK has committed in the GL-2008-01 letter to monitor the status of the industry/NRC Technical Specifications Task Force (TSTF) Traveler to be developed as a follow-up to GL 2008-01. Following NRC approval of this TSTF, DEK will evaluate adopting it.** **Much of the industry/ NRC interface since this was introduced in 1981 (NUREG 0452 Rev 4) deals with the rigor of the process to prevent voids.**

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 22 of 40

The Surveillance Frequency appears to be secondary in that there is a large variation in the industry for the Frequency. Some sites with sub atmospheric containments only test during outages and others have either 31 days or 92 days, mostly dependent upon the vintage. The NRC has published 20 information notices (INs), two GLs, and a NUREG related to this issue and has interacted with the nuclear industry many times in relation to these publications and in response to gas accumulation events. In the NRC temporary instruction (TI 2515/177) the NRC states, "This TI requires NRC inspectors to selectively verify that the licensee has implemented or is in the process of acceptably implementing the commitments, modifications, and programmatically controlled actions described in the licensee's response to GL 2008-01." DEK's response to GL-2008-01 outlines actions DEK will take that are based on set frequencies, post-maintenance, or condition specific activity.

Therefore, DEK has concluded that the best approach to closing out this ITS Amendment issue in the near-term is to withdraw the bracketed SR from the DEK ITS Amendment, thus maintaining consistency with current licensing basis. As stated in the attached JFD 6 (part of the draft markup), DEK believes this is acceptable since our current licensing basis does not include this SR in the DEK CTS.

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	**MEH-002 Markup, Rev. 1.pdf** (872KB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Victor Cusumano** **Matthew Hamm** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**5/24/2010 2:20 PM**
Modified By	
Date Modified	

ITS

A01

ITS 3.5.2

3. Containment Fancoil Units

Each fancoil unit shall be tested once every operating cycle or once every 18 months, whichever occurs first, to verify proper operation of the motor-operated service water outlet valves and the fancoil emergency discharge and associated backdraft dampers.

See ITS 3.6.6

b. Component Tests

1. Pumps

M04

SR 3.5.2.4

A. The safety injection pumps, residual heat removal pumps, and containment spray pumps shall be started and operated quarterly during power operation and within 1 week after the plant is returned to power operation, if the test was not performed during plant shutdown.

See ITS 3.6.6

LA03

L04

SR 3.5.2.4

B. Acceptable levels of performance are demonstrated by the pumps' ability to start and develop head within an acceptable range.

See ITS 3.6.6

at the flow test point is greater than or equal to the required developed head

M04

2. Valves

A. The containment sump outlet valves shall be tested during the pump tests.

LA02

B. The accumulator check valves shall be checked for OPERABILITY during each major REFUELING outage. The accumulator block valves shall be checked to assure "valve open" requirements during each major REFUELING outage.

See ITS 3.5.1

C. ~~Deleted~~

D. Spray additive tank valves shall be tested during each major REFUELING outage.

See ITS 3.6.7

E. ~~Deleted~~

F. Residual Heat Removal System valve interlocks shall be tested once per operating cycle.

See ITS 3.4.14

Add proposed SR 3.5.2.1, SR 3.5.2.2, ~~SR 3.5.2.3,~~ SR 3.5.2.7, and SR 3.5.2.8

M05

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 24 of 40

SHUTDOWN within the following 6 hours, and achieve and maintain the RCS Tavg < 350ºF by use of alternate methods within an additional 36 hours. ITS 3.5.2 Required Action B.1 requires that the unit be in MODE 3 (equivalent to CTS HOT SHUTDOWN) within 6 hours and in MODE 4 (equivalent to CTS RCS Tavg < 350ºF) within 12 hours. This change deletes the requirement to be in HOT STANDBY (equivalent to ITS MODE 2) within 6 hours, changes the time required to be in HOT SHUTDOWN (equivalent to ITS MODE 3) from 13 hours to 6 hours, and changes the time to reduce RCS temperature to < 350ºF (equivalent to ITS MODE 4) from 48 hours to 12 hours.

The purpose of CTS 3.3.b.2.A and 3.3.b.2.B is to place the unit in a condition in which the LCO does not apply. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. Allowing 6 hours to be in MODE 3 in lieu of the current 13 hours and 12 hours to be in MODE 4 in lieu of the current 48 hours ensures a unit shutdown is commenced and completed within a reasonable period of time upon failure to restore the ECCS to OPERABLE status within the allowed Completion Time. Additionally, since ITS 3.5.2 Required Action B.1 requires the unit to be in MODE 3 within 6 hours, there is no need to maintain the requirement to be MODE 2 within 7 hours. This change is designated as more restrictive because less time is allowed for the unit to reach MODE 3 and MODE 4 than was allowed in the CTS.

M04 CTS 4.5.b.1.A requires the safety injection and residual heat removal pumps be started and operated quarterly during power operation and within 1 week after the plant is returned to power operation, if the test was not performed during plant shutdown. CTS 4.5.b.1.B states, in part, that an acceptable level of performance is demonstrated by the pump's ability to develop a head within an acceptable range. ITS SR 3.5.2.4 requires verification that each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head. This changes the CTS by requiring that the developed head is greater than or equal to the required developed head. The change in the test Frequency is discussed in DOCs LA03 and L04.

The purpose of CTS 4.5.b.1 is to demonstrate that the ECCS pumps are able to perform their design functions. ITS SR 3.5.2.4 confirms the pump OPERABILITY, trends the performance, and detects incipient failure by indicating abnormal performance. This change is designated as more restrictive because a more specific test of the ECCS pumps will be performed than was required in the CTS.

M05 CTS 4.5 does not provide a Surveillance Requirement to verify the valves listed in CTS 3.3.b.1.B are in the required condition. The ITS adds a Surveillance Requirement (SR 3.5.2.1) to verify the valves are in the proper position with motive power to the valve operator removed once every 12 hours. CTS 4.5 does not provide a Surveillance Requirement to verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position. The ITS adds a

Surveillance Requirement (SR 3.5.2.2) to verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position once every 31 days. ~~CTS 4.5 does not provide a Surveillance Requirement to verify ECCS piping is full of water. The ITS adds a Surveillance Requirement (SR 3.5.2.3) to verify the ECCS piping is sufficiently full of water once every 92 days.~~ CTS 4.5 does not provide a Surveillance Requirement to verify each ECCS throttle valve has its position stop in the correct position. The ITS adds a Surveillance Requirement (SR 3.5.2.7) to verify each ECCS throttle valve has its position stop in the correct position once every 18 months. CTS 4.5 does not provide a Surveillance Requirement to verify the containment sump strainer inlet is not restricted by debris and the debris interceptors and strainer show no evidence of structural distress or abnormal corrosion. The ITS adds a Surveillance Requirement (SR 3.5.2.8) to verify, by visual inspection, the containment sump strainer inlet is not restricted by debris and the debris interceptors and strainer show no evidence of structural distress or abnormal corrosion once every 18 months. This changes the CTS by adding new Surveillance Requirements to the Technical Specifications.

This change is acceptable because the added Surveillance Requirements provide additional assurance that the ECCS is capable of automatically delivering cooling water to the reactor core in the event of a LOCA during both the injection and recirculation phases of the accident. This change is designated as more restrictive because new Surveillance Requirements are added.

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.3.b.1.A requires two SI/RHR trains be OPERABLE with each train consisting of the following: 1) one OPERABLE safety injection pump; 2) one OPERABLE residual heat removal pump; 3) one OPERABLE residual heat removal heat exchanger; and 4) an OPERABLE flow path consisting of all valves, piping, and interlocks associated with the above train of components and required to function during accident conditions. This flow path shall be capable of taking suction from the Refueling Water Storage tank upon a Safety Injection signal and after manual transfer taking suction from the containment sump. ITS LCO 3.5.2 requires two ECCS trains to be OPERABLE, but does not define the components and the associated flow path that comprise an OPERABLE ECCS train. This changes the CTS by moving the description of the ECCS trains to the Bases.

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 both ECCS trains to be

CTS

All changes are 1 unless otherwise noted

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
3.3.b.1.B, DOC M05	SR 3.5.2.1	[Verify the following valves are in the listed position with power to the valve operator removed. motive Number / Position / Function [ ] / [ ] / [ ] [ ] / [ ] / [ ] [ ] / [ ] / [ ] INSERT 1	12 hours] 4
DOC M05	SR 3.5.2.2	Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
DOC M05 ~~DOC M05~~	SR 3.5.2.3	Not used. [Verify ECCS piping is ~~full of water~~ sufficiently	92 31 days] 6
4.5.b.1.A, 4.5.b.1.B	SR 3.5.2.4	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
4.5.a.1.A	SR 3.5.2.5	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months
4.5.a.1.A	SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	[18] months
DOC M05	SR 3.5.2.7	[Verify, for each ECCS throttle valve listed below, each position stop is in the correct position. Valve Number [ ] [ ] [ ] SI-10A SI-10B	[18] months]

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 27 of 40

JUSTIFICATION FOR DEVIATIONS
ITS 3.5.2, ECCS - OPERATING

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. ISTS 3.5.2 LCO NOTE 1 states that in MODE 3, both SI pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve (PIV) testing per SR 3.4.14.1. KPS does not need this allowance to perform PIV testing required by SR 3.4.14.1. Both SI flow paths are not simultaneously isolated during PIV testing. Therefore, this NOTE is not applicable to KPS and has been deleted. ISTS 3.5.2 LCO NOTE 2 states, in part, that in MODE 3 the ECCS pumps may be incapable of injection in order to support a transition into or out of the Applicability for the Low Temperature Overpressure Protection (LTOP) System for up to 4 hours or until the temperature of the RCS cold legs exceed the LTOP arming temperature. Per the information in USAR 9.3.3.8, the Kewaunee Power Station (KPS) LTOP system is to be operable at or below the RCS temperature of 200°F. This temperature is outside of the ECCS Applicability temperature range of MODES 1 through 3 (≥ 350°F) thus the operation of the ECCS pumps will not be affected by LTOP system restrictions. Therefore, this NOTE is not applicable to KPS and has been deleted.

3. An ITS 3.5.2 LCO Note has been added consistent with the allowance in CTS 3.3.b.5. The Note was added to allow an SI train to be considered OPERABLE for up to 1 hour when it is being used to refill an SI accumulator. This allowance was approved by the NRC in License Amendment 143, dated February 23, 1999 (ADAMS Accession No. ML020770343).

4. The KPS design is such that the valve operator still has AC power when the power breaker is locked out. This AC power is only provided so that valve position indication is available in the control room. However, locking out of the breaker does ensure that the motor operator cannot move the valve, since there is no motive power. Therefore, the word "motive" has been added to ISTS SR 3.5.2.1 to clarify that while the motor operator has power, there is no motive power. This still accomplishes the intent of the ISTS SR.

5. Changes made to be consistent with the KPS design of the containment sump strainers and debris interceptors.

6. ~~ITS SR 3.5.2.3 has been modified to add the word "sufficiently," so that the SR reads "Verify ECCS piping is sufficiently full of water." Plant operating experience and analysis has shown that after proper system filling (following maintenance or refueling outages), some entrained non-condensable gases remain. These gases will form small voids, which remain stable in the system in both normal and transient operation. The system is sufficiently full of water when the voids and pockets of entrained gases in the ECCS piping are small enough in size and number to not interfere with the proper operation of the ECCS. Verification that the ECCS piping is sufficiently full of water can be performed by venting the necessary accessible high point ECCS vents, using non-destructive examination (NDE), or using other engineering justified means. The Frequency of 92 days has been provided in lieu of the 31 day Frequency stated in the ISTS. The 92 day Frequency has been determined to be adequate based on plant operating experience and engineering~~

Insert JFD 6

INSERT JFD 6

ISTS SR 3.5.2.3 is a bracketed Surveillance Requirement that requires verifying the ECCS piping is full of water every 31 days. This SR has not been included in the KPS ITS submittal. The KPS CTS does not include this SR. This specific requirement is currently being controlled outside of the CTS in the KPS Technical Requirements Manual. This method of controlling this SR was provided to the NRC in the KPS response to Generic Letter 2008-01 (letter dated October 14, 2008, ADAMS Accession No. ML082880707). KPS is aware that this issue (maintaining ECCS piping full of water) is a generic industry issue currently being discussed with the NRC. KPS is also aware that the TSTF group will be proposing a generic change to the ISTS to adequately control the issue in a manner that is acceptable to both the industry and the NRC. As part of the KPS response to the Generic Letter, KPS committed to following the industry effort and reviewing any Technical Specification changes recommended.

KPS believes that this is an acceptable approach to this issue, since it has yet to be fully resolved by the NRC. As stated, the KPS current licensing basis does not include a specific Tecnical Specification Surveillance Requirement. In the NRC's attachment to the second NRC MEH-002 question, the NRC stated, with respect to this issue, that "NRC has in effect determined that operability of the subject systems is reasonably ensured in the short term and the longer term determination will be addressed by the regional inspection. Further, significant industry research and NRC review of issues is continuing and new information may change previous conclusions regarding what is necessary to support a reasonable assurance of operability." These words are in reference to the NRC response to the KPS response to Generic Letter 2008-01. Thus, KPS believes that the ECCS OPERABILITY is being maintained using our current requirements controlled outside of Technical Specifications, and that maintaining this approach until the generic issue is resolved is acceptable. Note that if KPS was not performing an ITS conversion, then this approach is the approach accepted by the NRC (maintaining requirements outside of Technical Specifications until the issue is resolved).

JUSTIFICATION FOR DEVIATIONS
ITS 3.5.2, ECCS - OPERATING

~~analysis as discussed in the Dominion Energy Kewaunee (DEK) response to Generic Letter 2008-01 (letter dated October 14, 2008, ADAMS Accession No. ML082880707). Furthermore, this proposed Surveillance and Frequency are consistent with the current Surveillance and Frequency, which is in the KPS Technical Requirements Manual.~~

BASES

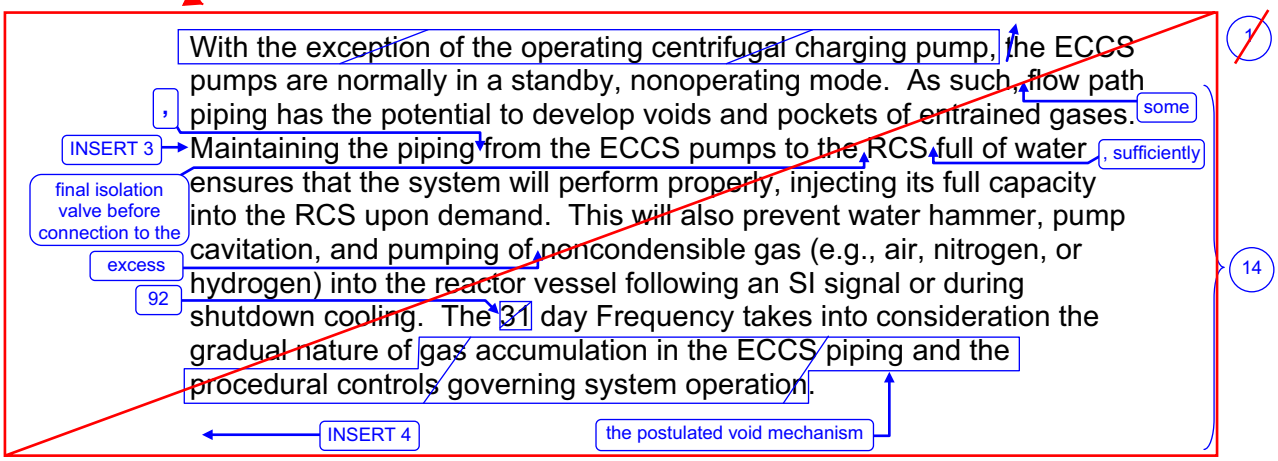
SURVEILLANCE REQUIREMENTS (continued)

SR 3.5.2.2

Verifying the correct alignment for manual, power operated, and automatic valves in the ECCS flow paths provides assurance that the proper flow paths will exist for ECCS operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these were verified to be in the correct position prior to locking, sealing, or securing. A valve that receives an actuation signal is allowed to be in a nonaccident position provided the valve will automatically reposition within the proper stroke time. This Surveillance does not require any testing or valve manipulation. Rather, it involves verification that those valves capable of being mispositioned are in the correct position. The 31 day Frequency is appropriate because the valves are operated under administrative control, and an improper valve position would only affect a single train. This Frequency has been shown to be acceptable through operating experience.

Not used.

SR 3.5.2.3



SR 3.5.2.4

Periodic surveillance testing of ECCS pumps to detect gross degradation caused by impeller structural damage or other hydraulic component problems is required by the ASME Code. This type of testing may be accomplished by measuring the pump developed head at only one point of the pump characteristic curve. This verifies both that the measured performance is within an acceptable tolerance of the original pump baseline performance and that the performance at the test flow is greater than or equal to the performance assumed in the plant safety analysis. SRs are specified in the Inservice Testing Program of the ASME Code. The ASME Code provides the activities and Frequencies necessary to satisfy the requirements.

14

INSERT 3

Plant operating experience and analysis has shown that after proper system filling (following maintenance or refueling outages), some entrained non-condensable gases remain. These gases will form small voids, which remain stable in the system in both normal and transient operation. Mechanisms postulated to increase the void size are gradual in nature, and the system is operated in accordance with procedures to preclude growth in these voids. In addition, other mechanisms, such as valve seat leakage into the stagnant systems from other gas-laden sources, system fluid velocities and physical geometries can cause a gradual increase in the size of gas voids.

To provide additional assurances that the system will function, verification is performed every 92 days that the system is sufficiently full of water. The system is sufficiently full of water when the voids and pockets of entrained gases in the ECCS piping are small enough in size and number to not interfere with the proper operation of the ECCS. Verification that the ECCS piping is sufficiently full of water can be performed by venting the necessary accessible high point ECCS vents, using non-destructive examination (NDE), or using other engineering-justified means.

14

INSERT 4

One exception to the ECCS being sufficiently full is the RHR 14 inch suction line from the B Containment Sump through and including valves SI-350 A&B and SI-351 A&B. Due to concerns regarding pressure locking of these valves, the KPS licensing bases for this line is that it remains in an air filled condition.

JUSTIFICATION FOR DEVIATIONS
ITS 3.5.2 BASES, ECCS - OPERATING

9. The first sentence of the Bases paragraph describes how a single component can result in the inoperability of both ECCS trains. This description is adequately covered in the LCO Section (in the description that each flow path must maintain its designed independence) and is not appropriate for the Bases of this ACTION (one or more ECCS trains inoperable but 100% capability maintained). In addition, the second and third sentences are covered by the Bases of ACTION C.1, and, consistent with the content of the ISTS Bases for many other ACTIONS, is not necessary to be included in the Bases for this ACTION.

10. The ISTS SR 3.5.2.5 and SR 3.5.2.6 Section states, "The actuation logic is tested as part of ESF Actuation System testing, and equipment performance is monitored as part of the Inservice Testing Program." This statement is not necessary since this type of cross reference information is included in the appropriate Specifications and does not need to be referenced in the SR Bases. Therefore, this statement has been deleted.

11. Changed to be consistent with changes to the Surveillance.

12. The term "design function" has been changed to "safety function" to be consistent with the terminology in the definition of OPERABLE – OPERABILITY.

13. ISTS 3.5.2 Bases Background references General Design Criteria. Kewaunee Power Station (KPS) was designed prior to promulgation of 10 CFR 50, Appendix A. Therefore, ITS 3.5.2 Bases Background has been revised to discuss the design standards used by KPS. Additionally, bases references to 10 CFR 50, Appendix A have been replaced with references to the appropriate section of the USAR.

14. ~~The Bases have been modified to reflect changes to the actual Surveillance. ITS SR 3.5.2.3 has been modified to add the word "sufficiently," so that the SR reads "Verify ECCS piping is sufficiently full of water." Plant operating experience and analysis has shown that after proper system filling (following maintenance or refueling outages), some entrained non-condensable gases remain. These gases will form small voids, which remain stable in the system in both normal and transient operation. The system is sufficiently full of water when the voids and pockets of entrained gases in the ECCS piping are small enough in size and number to not interfere with the proper operation of the ECCS. Verification that the ECCS piping is sufficiently full of water can be performed by venting the necessary accessible high point ECCS vents, using non-destructive examination (NDE), or using other engineering justified means. The Frequency of 92 days has been provided in lieu of the 31 day Frequency stated in the ISTS. The 92 day Frequency has been determined to be adequate based on plant operating experience and engineering analysis as discussed in the DEK response to Generic Letter 2008-01 (letter dated October 14, 2008, ADAMS Accession No. ML082880707). Furthermore, this proposed Surveillance and Frequency are consistent with the current Surveillance and Frequency, which is in the KPS Technical Requirements Manual.~~

Change made due to deletion of the Surveillance Requriedment.

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 33 of 40

Licensee Response/NRC Response/NRC Question Closure

Id	**3521**
NRC Question Number	**MEH-002**
Select Application	**Licensee Response**
Response Date/Time	**6/18/2010 8:05 AM**
Closure Statement	
Response Statement	**This response modifies the previous response to MEH-002, dated 5/24/10. Based upon discussion with the NRC, KPS has decided to change the last sentence of the 6th paragraph of the previous response. Specifically, the statement that following NRC approval of this traveler, DEK will "evaluate" adopting it is changed to, "following NRC approval of this traveler, DEK will adopt applicable portions of the traveler." The 5/24/10 response is included in its entirety with the change to avoid confusion.** **"Dominion Energy Kewaunee (DEK) has reviewed the attachment to the NRC response for RAI MEH-002 and considered the information discussed during the subsequent informal phone conversation with the NRC reviewer.** **Kewaunee continues to maintain systems in a safe configuration within the industry guidance provided in Generic Letter (GL) 2008-01 (as do many other stations in the industry that do not have a specific technical specification). Those current surveillance activities are controlled by the DEK Technical Requirements Manual and implemented via DEK surveillance procedures.** **As stated in the NRC attachment (last paragraph), the NRC has determined that this manner of controlling the issue is acceptable and that "operability of the subject systems is reasonably ensured for the short term and the longer term determination will be addressed by the regional inspection." Other current NRC documents state, "Further, significant industry research and NRC review of issues is continuing and new information may change previous conclusions regarding what is necessary to support a reasonable assurance of operability."** **The NRC and industry are currently and actively discussing how to control this issue in the Technical Specifications, and a proposed TSTF will be submitted in the future.** **DEK is interested in the optimal long-term solution and believes that a near-term resolution of this issue, negotiated via the DEK ITS License Amendment Request, would likely not be consistent with any long term resolution between the NRC and the industry. And, further, is not necessary to assure safety.**

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 34 of 40

DEK has committed in the GL-2008-01 letter to monitor the status of the industry/NRC Technical Specifications Task Force (TSTF) Traveler to be developed as a follow-up to GL 2008-01. Following NRC approval of this TSTF, DEK will adopt applicable portions of the traveler.

Much of the industry/ NRC interface since this was introduced in 1981 (NUREG 0452 Rev 4) deals with the rigor of the process to prevent voids. The Surveillance Frequency appears to be secondary in that there is a large variation in the industry for the Frequency. Some sites with sub atmospheric containments only test during outages and others have either 31 days or 92 days, mostly dependent upon the vintage. The NRC has published 20 information notices (INs), two GLs, and a NUREG related to this issue and has interacted with the nuclear industry many times in relation to these publications and in response to gas accumulation events. In the NRC temporary instruction (TI 2515/177) the NRC states, "This TI requires NRC inspectors to selectively verify that the licensee has implemented or is in the process of acceptably implementing the commitments, modifications, and programmatically controlled actions described in the licensee's response to GL 2008-01." DEK's response to GL-2008-01 outlines actions DEK will take that are based on set frequencies, post-maintenance, or condition specific activity.

Therefore, DEK has concluded that the best approach to closing out this ITS Amendment issue in the near-term is to withdraw the bracketed SR from the DEK ITS Amendment, thus maintaining consistency with current licensing basis. As stated in the attached JFD 6 (part of the draft markup), DEK believes this is acceptable since our current licensing basis does not include this SR in the DEK CTS.

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	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Matthew Hamm** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**6/18/2010 8:08 AM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 35 of 40

Licensee Response/NRC Response/NRC Question Closure

Id	**3681**
NRC Question Number	**MEH-002**
Select Application	**NRC Question Closure**
Response Date/Time	
Closure Statement	**Based on the Licensee's response to MEH-002, dated 6/18/2010 (ID # 3521), this question is closed and no further information is required at this time to draft the Safety Evaluation.**
Response Statement	
Question Closure Date	**7/7/2010**
Attachment 1	
Attachment 2	
Notification	**Kewaunee ITS Conversion Database Members** **NRC/LICENSEE Supervision** **Victor Cusumano** **Robert Elliott** **Matthew Hamm**
Added By	**Matthew Hamm**
Date Added	**7/7/2010 11:01 AM**
Modified By	
Date Modified	

ITS NRC Questions

Id	**1811**
NRC Question Number	**MEH-005**
Category	**Technical**
ITS Section	**3.5**
ITS Number	**3.5.4**
DOC Number	
JFD Number	**2**
JFD Bases Number	
Page Number(s)	**96 and 97 of Att 1, Vol 10**
NRC Reviewer Supervisor	**Rob Elliott**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	**STS SR 3.5.4.1 verifies RWST borated water temperature. JFD 2 on page 97 of Attachment 1, Volume 10 states that STS SR 3.5.4.1 is not being adopted because the RWST at KPS is housed in the Aux building and the Aux building ventilation system is designed to maintain a building temperature of 60 F when outside temps are as low as -20 F. The JFD also states that Aux building ambient air temp is maintained as described in USAR Section 9.6.3. USAR Chapter 14 page 14.2-23 (Updated 10/29/09) states that RWST assumed min temp is 40 F. This appears to meet Criterion 2 of 10 CFR 50.36, Why is there no TS for RWST temperature?**
Attach File 1	
Attach File 2	
Issue Date	**2/25/2010**
Added By	**Matthew Hamm**
Date Modified	
Modified By	
Date Added	**2/25/2010 12:55 PM**
Notification	**NRC/LICENSEE Supervision** **Matthew Hamm**

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 37 of 40

Licensee Response/NRC Response/NRC Question Closure

Id	**2471**
NRC Question Number	**MEH-005**
Select Application	**Licensee Response**
Response Date/Time	**3/8/2010 10:15 AM**
Closure Statement	

Response Statement

There is a Technical Specification for RWST temperature. LCO 3.5.4 (Volume 10, Page 95 of 133) states that the RWST shall be OPERABLE. In the ISTS, the Bases describes what the OPERABILITY requirements are to meet the LCO statement. The ITS 3.5.4 Bases, LCO section, last paragraph (Page 102), states that "To be considered OPERABLE, the RWST must meet the water volume and boron concentration limits established in the SRs and the RWST temperature must be ≥ 40ºF and ≤ 120 ºF." Thus, if the water temperature is not within the above limits, the RWST is inoperable and ITS 3.5.4 Condition B must be entered.

As stated by the NRC reviewer, ISTS SR 3.5.4.1, which requires a verification that RWST temperature is within limits is not being adopted by Kewaunee Power Station (KPS). As stated in JFD 2 (Page 97), KPS does not have an installed indicator to measure and indicate RWST temperature. Thus, to actually determine the water temperature, KPS would either have to modify the plant to install a monitor/indicator, or would have to open up the tank every 24 hours and use a portable thermometer. The JFD further explains why none of these options should be required. The reviewer stated a portion of the JFD reason for why the low temperature limit is not needed to be verified in the question. The complete reason for why the temperature limits are not reached during operations is as follows:

"During cold weather operation, the design for each Auxiliary Building Ventilation train has a preheat coil capable of increasing -20°F air to 35°F followed by a reheat coil capable of increasing 35°F air to 75°F. During hot weather operation, non-safeguards fan coil units in the Auxiliary Building cycle on at 105°F and their associated service water supply valves open at 105°F and close at 85°F. This is adequate to ensure the RWST minimum and maximum water temperature limits assumed in the accident analysis (40ºF and 120ºF) are not exceeded."

Furthermore, this specific Surveillance is not included in the KPS CTS. Both of the other limits (on volume and boron concentration) are included in the CTS.

Therefore, KPS does have an ITS limit on water temperature, but does not include the corresponding SR.

Question

Closure Date	
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Matthew Hamm** **Robert Hanley** **Jerry Jones** **Bryan Kays**
Added By	**David Mielke**
Date Added	**3/8/2010 10:17 AM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 39 of 40

Licensee Response/NRC Response/NRC Question Closure

Id	**2741**
NRC Question Number	**MEH-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	**4/9/2010**
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision**
Added By	**Matthew Hamm**
Date Added	**4/9/2010 1:45 PM**
Modified By	
Date Modified	

Enclosure, Q&A to Attachment 1, Volume 10 (Section 3.5) Page 40 of 40