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Kewaunee Nuclear Power Plant
Operated by Nuclear Management Company, LLC

July 6, 2004

NRC-04-073
10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Kewaunee Nuclear Power Plant
Docket 50-305
License No. DPR-43

License Amendment Request 205 To The Kewaunee Nuclear Power Plant Technical Specifications, Change to Accumulator Completion Time and Deletions of Items from Table TS 4.1-1

References

1) TSTF-370, "Increase Accumulator Completion Time from 1 hour to 24 hours," dated November 11, 2000.

2) WCAP-15049-A, "Risk-Informed Evaluation of an Extension to Accumulator completion Times," dated April 1999.

3) NUREG-1366, "Improvements to Technical Specification Surveillance Requirements," December 1992.

4) Generic Letter (GL) 93-05, "Line-Item Technical Specification Improvements to Reduce Surveillance Requirements for Testing During Power Operation," September 27, 1993 (ML031070342).

Pursuant to 10 CFR 50.90, the Nuclear Management Company, LLC, (NMC) is submitting this License Amendment Request (LAR) to the Kewaunee Nuclear Power Plant (KNPP) Technical Specifications (TS) to revise TS 3.3.a.2.B for the accumulators and to relocate Table TS 4.1-1, Item 22, "Accumulator Level and Pressure," and Table TS 4.1-1, Item 25, "Portable Radiation Survey Instruments," to licensee controlled documents.

The LAR proposes to extend the completion time in the KNPP TS 3.3.a.2.B for an inoperable accumulator for any reason other than boron requirements. The extension is from one hour to 24 hours. This change is consistent with the NRC approved Industry/Technical Specification Task Force (TSTF) Technical Specification Change Traveler, TSTF-370, "Increase Accumulator Completion Time from 1 hour to 24 hours," (Reference 1). The availability of this TS improvement was announced in the *Federal Register* on March 12, 2003, as part of the Consolidated Line Item Improvement

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topical report WCAP-15049-A, "Risk-Informed Evaluation of an Extension to Accumulator Completion Times," (Reference 2).

Items 22 and 25 of Table TS 4.1-1 will be deleted from the TS and moved to licensee controlled documents. The relocation of Item 22, "Accumulator Level and Pressure," is based on NUREG-1366, "Improvements to Technical Specification Surveillance Requirements," (Reference 3) and Generic Letter (GL) 93-05, "Line-Item Technical Specification Improvements to Reduce Surveillance Requirements for Testing During Power Operation," (Reference 4). The relocation of Item 25, "Portable Radiation Survey Instruments," is based on the application of 10 CFR 50.36(c)(2) criteria.

Enclosure 1 to this letter contains an evaluation of the changes including a Regulatory Safety Analysis and an Environmental Considerations Assessment. Enclosure 2 contains the marked-up TS pages and Enclosure 3 contains the affected (revised) Technical Specification pages. Enclosure 4 contains the proposed Technical Requirements Manual (TRM) section, which will contain the relocated surveillance requirements for deleted item 25 of Table TS 4.1-1. Enclosure 4 is being provided for information only to aid in the review of this LAR.

No new commitments are made as a result of this LAR.

Once approved, it is requested the amendment be implemented within 60 days. If you have any questions or require additional information, please contact Mr. Gerald Riste at (920) 388-8424. A complete copy of this submittal has been transmitted to the State of Wisconsin as required by 10 CFR 50.91(b)(1).

I declare under penalty of perjury that the foregoing is true and correct.
Executed on July 6, 2004.

Thomas Coutu

Thomas Coutu
Site Vice President, Kewaunee Nuclear Power Plant
Nuclear Management Company, LLC

Enclosures (4)

cc: Administrator, Region III, USNRC
Senior Resident Inspector, Kewaunee, USNRC
Project Manager, Kewaunee, USNRC
Public Service Commission of Wisconsin

ENCLOSURE 1

NUCLEAR MANAGEMENT COMPANY, LLC ,

EVALUATION OF LICENSE AMENDMENT REQUEST 205 TO KEWAUNEE NUCLEAR POWER PLANT, OPERATING LICENSE NO. DPR-43, DOCKET NO. 50-305

1.0 DESCRIPTION

The Nuclear Management Company (NMC), LLC, proposes to amend the Kewaunee Nuclear Power Plant (KNPP) operating license DPR-43, Appendix A, "Technical Specifications." The License Amendment Request (LAR) will extend the completion time in KNPP Technical Specification (TS) TS 3.3.a.2.B for the accumulators from one hour to 24 hours. The LAR will also move Items 22 and 25 of Table TS 4.1-1 from the TS to licensee controlled documents.

2.0 PROPOSED CHANGE

The following changes are proposed in this LAR. Marked-up and affected pages showing the proposed changes are located in Enclosures 2 and 3, respectively. Enclosure 4 contains the proposed KNPP Technical Requirements Manual (TRM) section, "Emergency Plan Portable Radiation Survey Instruments," which will contain the deleted Item 25 from Table TS 4.1-1. Enclosure 4 is being provided for information only to aid in the review of this amendment. The corresponding TS bases will be updated appropriately to reflect the changes listed below:

1. Change the TS 3.3.a.2.B completion time for restoration of an accumulator to operable status when declared inoperable due to any reason except not being within the required boron concentration range from one hour to 24 hours.

2. Delete Table TS 4.1-1, Item 22, "Accumulator Level and Pressure," and relocate the requirement to licensee controlled procedures.

3. Delete Table TS 4.1-1, Item 25, "Portable Radiation Survey Instruments," and relocate to the TRM. With the relocation to the TRM, the monthly "check" will be eliminated and the line item description modified to "Emergency Plan Portable Radiation Survey Instruments."

3.0 BACKGROUND

<u>Proposed change to TS 3.3.a.2.B</u>

The change to the accumulator completion time is consistent with the Industry/Technical Specification Task Force (TSTF) Technical Specification Change Traveler, TSTF-370, "Increase Accumulator Completion Time from one hour to 24 hours," (Reference 1). The availability of this TS improvement was announced in the *Federal Register* on

March 12, 2003 as part of the Consolidated Line Item Improvement Process (CLIIP). The TSTF-370 is supported by the NRC approved Westinghouse topical report WCAP-15049-A, "Risk-Informed Evaluation of an Extension to Accumulator Completion Times," dated April 1999 (Reference 2). The WCAP used risk assessment consistent with the approaches in NRC Regulatory Guide (RG) 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," and RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," (References 3 and 4).

Proposed change to Table TS 4.1-1, Item 22

In December 1992, the NRC completed a comprehensive examination of surveillance requirements in TS that require testing during power operation. The effort was part of the NRC Technical Specification Improvement Program (TSIP). The results were reported in NUREG-1366, "Improvements to Technical Specification Surveillance Requirements," (reference 5). On September 27, 1993, the NRC issued Generic Letter (GL) 93-05, "Line-Item Technical Specification Improvements to Reduce Surveillance Requirements for Testing During Power Operation," (reference 6). This correspondence provided licensees with guidance for implementing the recommendations of NUREG-1366. The relocation of Table TS 4.1-1, Item 22, "Accumulator Level and Pressure," to plant procedures is consistent with and implements the recommendations of GL 93-05.

Proposed change to Table TS 4.1-1, Item 25

The relocation of Table TS 4.1-1, Item 25, "Portable Radiation Survey Instruments," from TS to licensee controlled documents is based on the selection criteria of 10 CFR 50.36, "Technical Specifications." This change will remove an item that is not specifically required to be in TS. The elimination of the monthly source check and the modification of the line item description to "Emergency Plan Portable Radiation Survey Instruments" will narrow the scope of instruments requiring the surveillances by approximately 80 percent. This results in a reduction of 40 person-hours dedicated to the surveillances each month.

4.0 TECHNICAL ANALYSIS

Proposed change to TS 3.3.a.2.B

The NMC has reviewed the safety evaluation published in the *Federal Register* on July 15, 2002, (67 FR 46542), as part of the CLIIP. This verification included a review of the NRC staff's evaluation as well as the supporting information for TSTF-370 (i.e., WCAP-15049-A). NMC has concluded that the justifications presented in the WCAP, the TSTF proposal, and the safety evaluation prepared by the NRC staff are applicable to KNPP and justify the incorporation of the change into KNPP TS. The NMC is not proposing any deviations from the TS changes described in TSTF-370 or the NRC staff's model safety evaluation published in the *Federal Register* on July 15, 2002. The associated KNPP TS basis section has been revised to reflect the change in completion time.

Proposed change to Table TS 4.1-1, Item 22

This change deletes the accumulator water level and pressure channel checks, calibrations, and functional tests from the TS and places the activities into licensee controlled documents. KNPP will relocate the surveillance requirements to plant procedures. This change is consistent with industry recognition that accumulator instrumentation operability is not directly related to the capability of the accumulators to perform their safety function. This proposed TS change implements GL 93-05, Item 7.4, "Accumulator Water Level and Pressure Channel Surveillance Requirements (PWR)."

Proposed change to Table TS 4.1-1, Item 25

The specified surveillances of Item 25 include a monthly check (e.g., source check) on one range/scale, a quarterly functional test performed on all ranges/scales of the instrument, and a yearly calibration of each instrument. The change relocates the surveillance requirements from Table TS 4.1-1 to the KNPP TRM. When relocated to the TRM, the monthly source check will be eliminated and the line item description modified to "Emergency Plan Portable Radiation Survey Instruments." The two latter changes reduce the scope of instruments requiring surveillances by this line item by approximately 80 percent. This reduction is equivalent to a person-week (40 hours) of work time each month.

Removal from TS

Table TS 4.1-1, Item 25, "Portable Radiation Survey Instruments," does not meet the requirements for being included in the TS when assessed against the selection criteria of 10 CFR 50.36(c)(2), "Limiting Conditions for Operation." Surveillance requirements, as stated in 10 CFR 50.36(c)(3), are requirements relating to test, calibration, or inspection that assure the limiting conditions for operation will be met. Specifically, portable radiation survey instruments encompassed in the TS do not meet the four criteria of 10 CFR 50.36(c)(2) for which a limiting condition of operation is established. The four criteria are stated below with the NMC's assessment:

(A) Criterion 1. Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

The portable radiation survey instrumentation described in Table TS 4.1-1 is not used to detect degradation of the reactor coolant pressure boundary. Additionally, these instruments are not installed in the plant and do not indicate in the control room.

(B) Criterion 2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Portable radiation survey instruments do not interface or connect to any plant equipment. Therefore, they are not a process variable nor do they produce a process variable that is an initial condition of a design basis accident or transient. The instruments are not a design feature of any system and do not impose any operating restrictions that are initial conditions of a design basis accident or transient.

(C) Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Portable radiation survey instruments are not structures, systems, or components that function to mitigate the consequences of a design basis accident or transient. The instruments do not interface with any plant equipment and do not provide the primary automatic response to a design basis accident or transient.

(D) Criterion 4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

The functions of portable radiation survey instruments like those of TS 4.1-1, Item 25, are not traditionally judged to represent significant risk to the public. These instruments are not part of any structure, system or component important to safety and do not have an operating experience or a probabilistic risk assessment that shows any affect on public health and safety.

The NMC concludes these surveillance requirements can be relocated to licensee controlled documents outside of the TS based on the selection criteria provided in 10 CFR 50.36(c)(2).

<u>Monthly source check elimination and line item description modification:</u>

These two changes were pursued to reduce radiation protection (RP) employee's workload. Table TS 4.1-1, Item 25, includes all portable radiation survey instrumentation used in the plant (i.e., those at job sites, in inventory, or set aside for emergency plan use), which corresponds to approximately 150 portable instruments requiring surveillance. By limiting the scope to the Emergency Plan (EP) survey instruments, the number of portable radiation survey instruments requiring surveillance reduces to approximately 30 (corresponds to a reduction of

80 percent). Elimination of the monthly check further reduces the work hours for this task.

It is acceptable to limit the scope of the instruments tested to those listed in the Emergency Plan. Non-emergency plan instruments are source checked prior to each intermittent use and can be source checked on all ranges/scales at any given time. However, many of the Emergency Plan required portable radiation survey instruments are located outside of the owner controlled area and do not have access to the proper sources to perform the source check on all ranges/scales. Therefore, the survey instruments listed in the Emergency Plan will continue to be brought into the plant on a quarterly basis for functional testing (source check on all ranges/scales). The Emergency Plan portable radiation survey instruments continue to require a source check prior to use, and this prior to use source check will be completed on one range/scale with a source that is available at the offsite facilities.

Currently, KNPP Table TS 4.1-1, Item 25, requires the monthly performance of a source check on portable radiation survey instruments. Current plant RP practices and procedures justify eliminating the monthly source check. Industry standard ANSI N323-1978, "American National Standard Radiation Protection Instrumentation Test and Calibration," states that an instrument shall be tested with the check source prior to each intermittent use. KNPP instrument use procedures require source checks prior to use. The RP technician training includes the practice of performing a source check on portable survey instruments prior to use. Therefore, KNPP practices and procedures met the ANSI standard recommendations and ensure that all portable instruments will be functional prior to use. The emergency plan implementing procedures (EPIPs) also require portable survey instruments to be source checked prior to use, and therefore, the deletion of the monthly source check applies to the emergency plan instruments as well.

Based on the above, it is acceptable to eliminate the monthly check and modify the line item description when the TS item is moved to the TRM.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

The Nuclear Management Company (NMC), LLC, proposes to amend Appendix A of the Kewaunee Nuclear Power Plant (KNPP) Operating Llicense DPR-43, "Technical Specifications." The amendments will extend the completion time in the KNPP Technical Specification (TS) TS 3.3.a.2.B for the accumulators from one hour to 24 hours and will delete Table TS 4.1-1, Items 22 and 25, "Accumulator Level and Pressure Instruments," and "Portable Radiation Survey Instruments," respectively. These items will be moved to licensee controlled documents.

The NMC has evaluated whether or not a significant hazards consideration is involved with these proposed amendments by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

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

   NMC Response for Proposed Change to TS 3.3.a.2.B:

   No. The NMC has reviewed the proposed no significant hazards consideration determination published in the *Federal Register* on July 15, 2002 (67 FR 46542) as part of the Consolidated Line Item Improvement Process (CLIIP). NMC has concluded that the proposed determination presented in the *Federal Register* notice is applicable to KNPP and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

   NMC Response for Proposed Change to Table TS 4.1-1, Item 22:

   No. This TS change removes the accumulator water level and pressure channel surveillance from the TS and places them into licensee controlled documents. This change is consistent with industry and NRC recognition that the accumulator instrumentation operability is not directly related to the capability of the accumulators to perform their safety function.

   Relocating the instrumentation surveillance requirements is an administrative change that will not affect equipment testing, availability, or operation. Therefore, the change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   NMC Response for Proposed Change to Table TS 4.1-1, Item 25

   No. Removing the surveillance requirements for portable radiation survey instruments from the TS is administrative and has no impact on plant equipment, accident initiators, or the safety analysis. Additionally, eliminating the monthly check and modifying the line item description does not impact plant equipment or operation. Therefore, the change does not involve an increase in the probability or consequences of an accident previously evaluated.

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

   NMC Response for Proposed Change to TS 3.3.a.2.B:

   No. The NMC has reviewed the proposed no significant hazards consideration determination published in the *Federal Register* on

July 15, 2002, (67 FR 46542) as part of the CLIIP. NMC has concluded that the proposed determination presented in the *Federal Register* notice is applicable to KNPP and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

NMC Response for Proposed Change to Table TS 4.1-1, Item 22:

No. Relocating the accumulator water level and pressure instrument surveillance requirements to licensee controlled documents is an administrative change that will not change any equipment, require new equipment to be installed, or change the way current equipment operates in the plant. Therefore, the change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

NMC Response for Proposed Change to Table TS 4.1-1, Item 25

No. Removing the surveillance requirements for portable radiation survey instruments from the TS and relocating the requirements to licensee controlled documents is administrative and has no impact on plant equipment or the way the plant equipment operates. Additionally, eliminating the monthly check and modifying the line item description does not impact plant equipment or operation. Portable radiation survey instruments are not accident initiators. Therefore, the change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

NMC Response for Proposed Change to TS 3.3.a.2.B:

No. The NMC has reviewed the proposed no significant hazards consideration determination published in the *Federal Register* on July 15, 2002, (67 FR 46542) as part of the CLIIP. NMC has concluded that the proposed determination presented in the *Federal Register* notice is applicable to KNPP and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

NMC Response for Proposed Change to Table TS 4.1-1, Item 22:

No. Relocating the accumulator water level and pressure instrument surveillance requirements to licensee controlled documents is an administrative change that will not change the safety analyses performed for the plant nor reduce the ability of the accumulators to perform their safety related function. There is no change in the operation of the accumulators or related equipment and systems. Therefore, the change does not involve a reduction in the margin of safety.

NMC Response for Proposed Change to Table TS 4.1-1, Item 25

No. Portable radiation survey instruments are not inputs to the safety analysis or to automatic plant actions. The change is administrative since it moves the requirements out of TS and into licensee controlled documents through use of the 10 CFR 50.36 selection criteria for TS. Additionally, eliminating the monthly check and modifying the line item description does not impact plant equipment or operation. Therefore, the change does not reduce the margin of safety.

Conclusion

Based on the above, it is concluded the proposed changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92(c) and, accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

The regulatory bases and guidance documents associated with the changes discussed in this amendment application include:

1. TSTF-370, "Increase Accumulator Completion Time from 1 hour to 24 hours," dated November 11, 2000.
2. NUREG-1366, "Improvements to Technical Specification Surveillance Requirements," December 1992.
3. Generic Letter (GL) 93-05, "Line-Item Technical Specification Improvements to Reduce Surveillance Requirements for Testing During Power Operation," September 27, 1993.
4. ANSI N323-1978, "American National Standard Radiation Protection Instrumentation Test and Calibration."
5. 10 CFR 50.36, "Technical Specifications."
6. 10 CFR 20, Subpart F, "Surveys and Monitoring."

6.0 ENVIRONMENTAL CONSIDERATIONS

These proposed amendments involve a change to a requirement with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or a change to a surveillance requirement. NMC has determined that the proposed amendment involves no significant hazards considerations and no significant change in the types of any effluents that may be released offsite and that there is no significant increase in the individual or cumulative occupational radiation exposure. Accordingly, this proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with this proposed amendment.

7.0 REFERENCES

1. TSTF-370, "Increase Accumulator Completion Time from 1 hour to 24 hours," dated November 11, 2000.

2. WCAP-15049-A, "Risk-Informed Evaluation of an Extension to Accumulator completion Times," dated April 1999.

3. RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the licensing Basis," July 1998.

4. RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," September 1998.

5. NUREG-1366, "Improvements to Technical specification Surveillance Requirements," December 1992.

6. Generic Letter (GL) 93-05, "Line-item Technical Specification Improvements to Reduce Surveillance Requirements for Testing During Power Operation," September 27, 1993.

7. ANSI N323-1978, "American National Standard Radiation Protection Instrumentation Test and Calibration."

8. 10 CFR 50.36, "Technical Specifications."

9. 10 CFR 20, Subpart F, "Surveys and Monitoring."

ENCLOSURE 2

NUCLEAR MANAGEMENT COMPANY, LLC ,

MARKED-UP TS PAGES FOR LICENSE AMENDMENT REQUEST 205 TO KEWAUNEE NUCLEAR POWER PLANT, OPERATING LICENSE NO. DPR-43, DOCKET NO. 50-305

Marked-Up TS Pages:

TS 3.3-1
TS B3.3-2
TS B3.3-3
TS B3.3-4
Table TS 4.1-1, Page 4 of 7
Table TS 4.1-1, Page 5 of 7

6 Pages to Follow

3.3 ENGINEERED SAFETY FEATURES AND AUXILIARY SYSTEMS

APPLICABILITY

Applies to the OPERATING status of Engineered Safety Features and Auxiliary Systems.

OBJECTIVE

To define those LIMITING CONDITIONS FOR OPERATION that are necessary: (1) to remove decay heat from the core in emergency or normal shutdown situations, and (2) to remove heat from containment in normal OPERATING and emergency situations.

SPECIFICATIONS

a. Accumulators

1. The reactor shall not be made critical unless the following conditions are satisfied, except for LOW POWER PHYSICS TESTING and except as provided by TS 3.3.a.2.

   A. Each accumulator is pressurized to at least 700 psig and contains 1250 ft^3 ± 25 ft^3 of water with a boron concentration of at least 1900 ppm, and is not isolated.

   B. Accumulator isolation valves SI-20A and SI-20B shall be opened with their power breakers locked out at or before the Reactor Coolant System pressure exceeds 1000 psig.

2. During power operation or recovery from an inadvertent trip, the following conditions of inoperability may exist during the time interval specified:

   A. One accumulator may have a boron concentration < 1900 ppm for 72 hours.

   B. One accumulator may be inoperable for a reason other than TS 3.3.a.2.A for ~~1 hour.~~ 24 hours.

   If OPERABILITY is not restored within the time specified, then within 1 hour action shall be initiated to:

   - Achieve HOT STANDBY within the next 6 hours.
   - Achieve HOT SHUTDOWN within the following 6 hours.
   - Achieve COLD SHUTDOWN within an additional 36 hours.

When the inoperable component is part of the Residual Heat Removal (RHR), Component Cooling Water (CCW) or Service Water (SW) Systems, the average Reactor Coolant System temperature (T_{avg}) will be maintained below 350°F through an alternate heat removal method. The various alternate heat removal methods include the redundant RHR train and the steam generators.

Assuming the reactor has been OPERATING at full-rated power for at least 100 days, the magnitude of the decay heat decreases as follows after initiating HOT SHUTDOWN.

Time After Shutdown	Decay Heat, % of Rated Power
1 minute	4.5
30 minutes	2.0
1 hour	1.62
8 hours	0.96
48 hours	0.62

Thus the requirement for core cooling in case of a postulated loss-of-coolant accident while in the HOT SHUTDOWN condition is significantly reduced below the requirements for a postulated loss-of-coolant accident during power operation. Putting the reactor in the HOT SHUTDOWN condition significantly reduces the potential consequences of a loss-of-coolant accident, and also allows more free access to some of the engineered safety features in order to effect repairs. Failure to complete repairs after placing the reactor in the HOT SHUTDOWN condition may be indicative of need for major maintenance, and in such cases the reactor should therefore be placed in the COLD SHUTDOWN condition.

TS 3.3.a.2.B provides a 24 hour completion time to restore an accumulator that is inoperable for a reason other than boron concentration. The 24 hours allowed to restore an inoperable accumulator to operable status is justified in WCAP-15049, Revision 1. [2]

TS 3.3.b.5 provides protection from the possibility of one SI pump reaching runout condition during SI accumulator fill concurrent with a large break LOCA. With both trains of SI and both EDGs operable, the SI system will meet accident analysis.

[2] ~~USAR Section 6.3~~ WCAP-15049-A, Rev. 1, "Risk-Informed Evaluation of an Extension to Accumulator Completion Times," April 1999.

The containment cooling function is provided by two systems: containment fancoil units and containment spray systems. The containment fancoil units and containment spray system protect containment integrity by limiting the temperature and pressure that could be experienced following a Design Basis Accident. The Limiting Design Basis accidents relative to containment integrity are the loss-of-coolant accident and steam line break. During normal operation, the fancoil units are required to remove heat lost from equipment and piping within the containment.[~~(2)~~ (3)] In the event of the Design Basis Accident, either of the following combinations will provide sufficient cooling to limit containment pressure to less than design values: four fancoil units or two fancoil units plus one containment spray pump.[~~(3)~~ (4)]

In addition to heat removal, the containment spray system is also effective in scrubbing fission products from the containment atmosphere. Therefore, a minimum of one train of containment spray is required to remain OPERABLE in order to scavenge iodine fission products from the containment atmosphere and ensure their retention in the containment sump water.[~~(4)~~ ~~(5)~~ (5) (6)]

Sodium Hydroxide (NaOH) is added to the spray solution for pH adjustment by means of the spray additive system. The resulting alkaline pH of the spray enhances the ability of the spray to scavenge iodine fission products from the containment atmosphere. The NaOH added in the spray also ensures an alkaline pH for the solution recirculated in the containment sump.

The alkaline pH of the containment sump water inhibits the volatility of iodine and minimizes the occurrence of chloride and caustic stress corrosion on mechanical systems and components exposed to the sump fluid. Test data has shown that no significant stress corrosion cracking will occur provided the pH is adjusted within 2 days following the Design Basis Accident.[~~(6)~~ ~~(7)~~ (7) (8)]

A minimum of 300 gallons of not less than 30% by weight of NaOH solution is sufficient to adjust the pH of the spray solution adequately. The additive will still be considered available whether it is contained in the spray additive tank or the containment spray system piping and Refueling Water Storage Tank due to an inadvertent opening of the spray additive valves (CI-1001A and CI-1001B).

~~(2)~~ (3) USAR Section 6.3
~~(3)~~ (4) USAR Section 6.4
~~(4)~~ (5) USAR Section 6.4.3
~~(5)~~ (6) USAR Section 14.3.5
~~(6)~~ (7) USAR Section 6.4
~~(7)~~ (8) Westinghouse Chemistry Manual SIP 5-1, Rev. 2, dated 3/77, Section 4.

The spray additive system may be inoperable for up to 72 hours. The containment spray system would still be available and would remove some iodine from the containment atmosphere in the event of a Design Basis Accident. The 72-hour completion time takes into account the containment spray system capabilities and the low probability of the worst case Design Basis Accident occurring during this period.

One component cooling water pump together with one component cooling heat exchanger can accommodate the heat removal load either following a loss-of-coolant accident or during normal plant shutdown. If, during the post-accident phase, the component cooling water supply were lost, core and containment cooling could be maintained until repairs were effected.[~~(8)~~ (9)]

A total of four service water pumps are installed and a minimum of two are required to operate during the postulated loss-of-coolant accident.-[~~(9)~~ (10)]The service water valves in the redundant safeguards headers have to be OPERABLE in order for the components that they supply to be considered OPERABLE.

The various trains of equipment referred to in the specifications are separated by their power supplies (i.e.: SI Pump 1A, RHR Pump 1A and Valve SI-4A, etc.). Shared piping and valves are considered to be common to both trains of the systems.

[~~(8)~~ (9)]USAR Section 9.3
[~~(9)~~ (10)]USAR Section 9.6

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)	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~~Deleted	~~Each shift~~	~~Each refueling cycle~~	~~Not applicable~~	
23. Steam Generator Pressure	Each shift	Each refueling cycle	Monthly	

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
24. Turbine First Stage Pressure	Each shift	Each refueling cycle	Monthly	
25. ~~Portable Radiation Survey Instruments~~Deleted	~~Monthly (a)~~	~~Annually~~	~~Quarterly~~	~~(a) Channel check required in all plant modes~~
26. Protective System Logic Channel Testing	Not applicable	Not applicable	Monthly	Includes auto load sequencer
27. Deleted				
28. Deleted				
29. Seismic Monitoring System	Each refueling cycle	Each refueling cycle	Not applicable	
30. Fore Bay Water Level	Not applicable	Each refueling cycle	Each refueling cycle	
31. AFW Flow Rate	(a)	Each refueling cycle	Not applicable	(a) Flow rate indication will be checked at each unit startup and shutdown
32. PORV Position Indication	Monthly	Each refueling cycle	Not applicable	
a. Back-up (Temperature)	Monthly	Each refueling cycle	Not applicable	
33. PORV Block Valve Position Indicator	Monthly	Each refueling cycle	Not applicable	

ENCLOSURE 3

NUCLEAR MANAGEMENT COMPANY, LLC ,

AFFECTED TS PAGES FOR LICENSE AMENDMENT REQUEST 205 TO KEWAUNEE NUCLEAR POWER PLANT, OPERATING LICENSE NO. DPR-43, DOCKET NO. 50-305

Affected TS Pages:

TS 3.3-1
TS B3.3-2
TS B3.3-3
TS B3.3-4
Table TS 4.1-1, Page 4 of 7
Table TS 4.1-1, Page 5 of 7

6 Pages to Follow

3.3 ENGINEERED SAFETY FEATURES AND AUXILIARY SYSTEMS

APPLICABILITY

Applies to the OPERATING status of Engineered Safety Features and Auxiliary Systems.

OBJECTIVE

To define those LIMITING CONDITIONS FOR OPERATION that are necessary: (1) to remove decay heat from the core in emergency or normal shutdown situations, and (2) to remove heat from containment in normal OPERATING and emergency situations.

SPECIFICATIONS

a. Accumulators

1. The reactor shall not be made critical unless the following conditions are satisfied, except for LOW POWER PHYSICS TESTING and except as provided by TS 3.3.a.2.

   A. Each accumulator is pressurized to at least 700 psig and contains 1250 ft^3 ± 25 ft^3 of water with a boron concentration of at least 1900 ppm, and is not isolated.

   B. Accumulator isolation valves SI-20A and SI-20B shall be opened with their power breakers locked out at or before the Reactor Coolant System pressure exceeds 1000 psig.

2. During power operation or recovery from an inadvertent trip, the following conditions of inoperability may exist during the time interval specified:

   A. One accumulator may have a boron concentration < 1900 ppm for 72 hours.

   B. One accumulator may be inoperable for a reason other than TS 3.3.a.2.A for 24 hours.

   If OPERABILITY is not restored within the time specified, then within 1 hour action shall be initiated to:

   - Achieve HOT STANDBY within the next 6 hours.
   - Achieve HOT SHUTDOWN within the following 6 hours.
   - Achieve COLD SHUTDOWN within an additional 36 hours.

When the inoperable component is part of the Residual Heat Removal (RHR), Component Cooling Water (CCW) or Service Water (SW) Systems, the average Reactor Coolant System temperature (T_{avg}) will be maintained below 350°F through an alternate heat removal method. The various alternate heat removal methods include the redundant RHR train and the steam generators.

Assuming the reactor has been OPERATING at full-rated power for at least 100 days, the magnitude of the decay heat decreases as follows after initiating HOT SHUTDOWN.

Time After Shutdown	Decay Heat, % of Rated Power
1 minute	4.5
30 minutes	2.0
1 hour	1.62
8 hours	0.96
48 hours	0.62

Thus the requirement for core cooling in case of a postulated loss-of-coolant accident while in the HOT SHUTDOWN condition is significantly reduced below the requirements for a postulated loss-of-coolant accident during power operation. Putting the reactor in the HOT SHUTDOWN condition significantly reduces the potential consequences of a loss-of-coolant accident, and also allows more free access to some of the engineered safety features in order to effect repairs. Failure to complete repairs after placing the reactor in the HOT SHUTDOWN condition may be indicative of need for major maintenance, and in such cases the reactor should therefore be placed in the COLD SHUTDOWN condition.

TS 3.3.a.2.B provides a 24 hour completion time to restore an accumulator that is inoperable for a reason other than boron concentration. The 24 hours allowed to restore an inoperable accumulator to operable status is justified in WCAP-15049, Revision 1. [2]

TS 3.3.b.5 provides protection from the possibility of one SI pump reaching runout condition during SI accumulator fill concurrent with a large break LOCA. With both trains of SI and both EDGs operable, the SI system will meet accident analysis.

[2] WCAP-15049-A, Rev. 1, "Risk-Informed Evaluation of an Extension to Accumulator Completion Times," April 1999.

The containment cooling function is provided by two systems: containment fancoil units and containment spray systems. The containment fancoil units and containment spray system protect containment integrity by limiting the temperature and pressure that could be experienced following a Design Basis Accident. The Limiting Design Basis accidents relative to containment integrity are the loss-of-coolant accident and steam line break. During normal operation, the fancoil units are required to remove heat lost from equipment and piping within the containment.[3] In the event of the Design Basis Accident, either of the following combinations will provide sufficient cooling to limit containment pressure to less than design values: four fancoil units or two fancoil units plus one containment spray pump.[4]

In addition to heat removal, the containment spray system is also effective in scrubbing fission products from the containment atmosphere. Therefore, a minimum of one train of containment spray is required to remain OPERABLE in order to scavenge iodine fission products from the containment atmosphere and ensure their retention in the containment sump water.[5][6] Sodium Hydroxide (NaOH) is added to the spray solution for pH adjustment by means of the spray additive system. The resulting alkaline pH of the spray enhances the ability of the spray to scavenge iodine fission products from the containment atmosphere. The NaOH added in the spray also ensures an alkaline pH for the solution recirculated in the containment sump.

The alkaline pH of the containment sump water inhibits the volatility of iodine and minimizes the occurrence of chloride and caustic stress corrosion on mechanical systems and components exposed to the sump fluid. Test data has shown that no significant stress corrosion cracking will occur provided the pH is adjusted within 2 days following the Design Basis Accident.[7][8]

A minimum of 300 gallons of not less than 30% by weight of NaOH solution is sufficient to adjust the pH of the spray solution adequately. The additive will still be considered available whether it is contained in the spray additive tank or the containment spray system piping and Refueling Water Storage Tank due to an inadvertent opening of the spray additive valves (CI-1001A and CI-1001B).

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[3] USAR Section 6.3
[4] USAR Section 6.4
[5] USAR Section 6.4.3
[6] USAR Section 14.3.5
[7] USAR Section 6.4
[8] Westinghouse Chemistry Manual SIP 5-1, Rev. 2, dated 3/77, Section 4.

The spray additive system may be inoperable for up to 72 hours. The containment spray system would still be available and would remove some iodine from the containment atmosphere in the event of a Design Basis Accident. The 72-hour completion time takes into account the containment spray system capabilities and the low probability of the worst case Design Basis Accident occurring during this period.

One component cooling water pump together with one component cooling heat exchanger can accommodate the heat removal load either following a loss-of-coolant accident or during normal plant shutdown. If, during the post-accident phase, the component cooling water supply were lost, core and containment cooling could be maintained until repairs were effected.[9]

A total of four service water pumps are installed and a minimum of two are required to operate during the postulated loss-of-coolant accident.[10] The service water valves in the redundant safeguards headers have to be OPERABLE in order for the components that they supply to be considered OPERABLE.

The various trains of equipment referred to in the specifications are separated by their power supplies (i.e.: SI Pump 1A, RHR Pump 1A and Valve SI-4A, etc.). Shared piping and valves are considered to be common to both trains of the systems.

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[9] USAR Section 9.3
[10] USAR Section 9.6

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)	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. Deleted				
23. Steam Generator Pressure	Each shift	Each refueling cycle	Monthly	

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
24. Turbine First Stage Pressure	Each shift	Each refueling cycle	Monthly	
25. Deleted				
26. Protective System Logic Channel Testing	Not applicable	Not applicable	Monthly	Includes auto load sequencer
27. Deleted				
28. Deleted				
29. Seismic Monitoring System	Each refueling cycle	Each refueling cycle	Not applicable	
30. Fore Bay Water Level	Not applicable	Each refueling cycle	Each refueling cycle	
31. AFW Flow Rate	(a)	Each refueling cycle	Not applicable	(a) Flow rate indication will be checked at each unit startup and shutdown
32. PORV Position Indication	Monthly	Each refueling cycle	Not applicable	
a. Back-up (Temperature)	Monthly	Each refueling cycle	Not applicable	
33. PORV Block Valve Position Indicator	Monthly	Each refueling cycle	Not applicable	

ENCLOSURE 4

NUCLEAR MANAGEMENT COMPANY, LLC ,
PROPOSED TECHNICAL REQUIREMENTS MANUAL (TRM) PAGES FOR LICENSE AMENDMENT REQUEST 205 TO KEWAUNEE NUCLEAR POWER PLANT, OPERATING LICENSE NO. DPR-43, DOCKET NO. 50-305

For Information Only

2 Pages to Follow

3.X.X EMERGENCY PLAN PORTABLE RADIATION SURVEY INSTRUMENTS

APPLICABILITY

During ALL plant modes.

OBJECTIVE

To perform ANSI recommended tests and calibrations on portable radiation survey instruments specifically called out in the Emergency Plan.

TECHNICAL REQUIREMENTS

Administrative Limiting Condition for Operation (ALCO)

a. There are no ALCOs associated with this TRM item.

Administrative Surveillance Requirement (ASR)

a. Perform the required CHANNEL CALIBRATION and TEST activities in accordance with the following table:

CHANNEL DESCRIPTION	CALIBRATE	TEST	REMARKS
Emergency Plan Portable Radiation Survey Monitors	Annually	Quarterly	None

BASES

The purpose of this requirement is to define the appropriate checks, calibrations, and tests for portable radiation survey instruments. An industry standard, ANSI N323-1978, "American National Standard Radiation Protection Instrumentation Test and Calibration," is the basis for the KNPP requirements.

The description "Emergency Plan Portable Radiation Survey Instruments" refers to the portable radiation survey instruments specifically listed in the Emergency Plan (EP). These EP portable instruments are located outside of the owner-controlled area. All other portable radiation survey instrument source checks and calibrations are controlled by plant procedures and not this TRM line item.

ANSI N323-1978 states that an instrument shall be tested with the check source prior to each intermittent use and several times a day during continuous use. KNPP Radiation Protection (RP) instrument use procedures and emergency plan implementing procedures (EPIPs) require source checks prior to use. Additionally, RP training (lesson plans and qualifications) includes the performance of a source check on portable radiation survey instruments daily or prior to use. Therefore, KNPP meets the standard's requirements through plant procedures & practices, and a specific TRM requirement for a source check on EP portable radiation survey instruments is not required.

The ANSI N323-1978 states instrument calibration is required at least annually. Current RP instrument use procedures require annual calibration of portable radiation survey instruments. This TRM ASR line item states the EP portable radiation survey instruments calibration frequency as annual.

The EP portable radiation survey instruments do not have the proper sources to perform a source check on all ranges/scales since the instruments are located outside of the owner-controlled area. Therefore, the survey instruments listed in the EP need to be brought into the plant on a quarterly basis for functional testing (source check on all ranges/scales). As stated earlier, the EPIPs require a source check prior to use, and the prior to use source check will be completed on one range / scale with a source that is available at the offsite emergency facilities.