Dominion Energy Kewaunee, Inc.
5000 Dominion Boulevard, Glen Allen, VA 23060

Dominion®

May 9, 2011

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

Serial No. 11-108
LIC/JG/R0
Docket No. 50-305
License No. DPR-43

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION
LICENSE AMENDMENT REQUEST 252, OPERATION OF SERVICE WATER FLOW TO COMPONENT COOLING HEAT EXCHANGERS

Pursuant to 10 CFR 50.90, Dominion Energy Kewaunee, Inc. (DEK) requests an amendment to Facility Operating License Number DPR-43 for Kewaunee Power Station (KPS). The proposed amendment would revise the KPS current licensing basis (CLB) regarding the manner in which service water is supplied to the component cooling heat exchangers by the main return valves and the bypass flow control valves.

During 2001, the manner in which service water is supplied to the component cooling heat exchangers was changed. Previously, service water flow was automatically supplied to the component cooling heat exchangers by opening the main service water return valves upon receipt of a safety injection signal. This automatic function was removed from the main service water return valves and relocated to the lower capacity bypass flow control valves. This change was evaluated per the criteria specified in 10 CFR 50.59 and determined to not require prior NRC approval. During a recent inspection, the NRC questioned the sufficiency of the original 10 CFR 50.59 evaluation. Consequently, one aspect of the 2001 change was determined to have required prior NRC approval.

The proposed amendment requests NRC approval for the change that was performed in 2001. As documented in this request, DEK's analysis has concluded that the existing (changed) configuration is consistent with the KPS accident analyses for assuring safe reactor operation, continues to allow the affected systems to perform their safety functions, and may remain in place pending NRC approval.

Attachment 1 to this letter contains a description, technical analysis, significant hazards determination, and environmental considerations evaluation for the proposed amendment. Attachment 2 contains marked up USAR pages. Attachment 2 is provided for information to facilitate the NRC staff's understanding of this design basis change. Also enclosed are selected USAR figures to facilitate NRC staff review.

A001
NRR

The KPS Facility Safety Review Committee has approved the proposed amendment and a copy of this submittal has been provided to the State of Wisconsin in accordance with 10 CFR 50.91(b).

DEK requests approval of the proposed amendment by December 31, 2011. Once approved, the amendment shall be implemented within 60 days.

If you have any questions or require additional information, please contact Mr. Jack Gadzala at 920-388-8604.

Sincerely,

J. Alan Price
Vice President – Nuclear Engineering

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by J. Alan Price, who is Vice President – Nuclear Engineering of Dominion Energy Kewaunee, Inc. He has affirmed before me that he is duly authorized to execute and file the foregoing document in behalf of that Company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 9th day of May, 2011.

My Commission Expires: 4/30/13.

GINGER LYNN MELTON
Notary Public
Commonwealth of Virginia
310847
My Commission Expires Apr 30, 2013

Ginger L Melton
Notary Public

I was commissioned a notary as Ginger L. Allgood.

Attachments:

1. Discussion of Change, Technical Analysis, Significant Hazards Determination and Environmental Considerations
2. Marked up Updated Safety Analysis Report Page

Enclosure:

Selected Kewaunee Power Station Figures and Drawings

cc: Regional Administrator, Region III
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ATTACHMENT 1

LICENSE AMENDMENT REQUEST 252
OPERATION OF SERVICE WATER FLOW
TO COMPONENT COOLING HEAT EXCHANGERS

DISCUSSION OF CHANGE, TECHNICAL ANALYSIS, SIGNIFICANT HAZARDS DETERMINATION, AND ENVIRONMENTAL CONSIDERATIONS

KEWAUNEE POWER STATION

DOMINION ENERGY KEWAUNEE, INC.

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OPERATION OF SERVICE WATER FLOW TO COMPONENT COOLING HEAT EXCHANGERS

DISCUSSION OF CHANGE, TECHNICAL ANALYSIS, SIGNIFICANT HAZARDS DETERMINATION AND ENVIRONMENTAL CONSIDERATIONS

1.0 DESCRIPTION

Pursuant to 10 CFR 50.90, Dominion Energy Kewaunee, Inc. (DEK) requests an amendment to Facility Operating License Number DPR-43 for Kewaunee Power Station (KPS). The proposed amendment would revise the KPS current licensing basis (CLB) regarding the manner in which service water flow is supplied to the component cooling heat exchangers by the main service water return valves (SW-1300A and SW-1300B) and the bypass flow control valves (SW-1306A and SW-1306B).

During 2001, the manner in which service water is supplied to the component cooling heat exchangers after a safety injection signal was changed. Previously, service water flow was automatically supplied to the component cooling heat exchangers through control of the main service water return valves upon receipt of a safety injection signal. This automatic supply function was removed from the main service water return valves and relocated to the lower capacity bypass flow control valves. This change was evaluated per the criteria specified in 10 CFR 50.59 and determined to not require prior NRC approval. However, during a recent inspection, the NRC questioned the sufficiency of the original 10 CFR 50.59 evaluation. Consequently, one aspect of the 2001 change was determined to have required prior NRC approval.

The proposed amendment requests NRC approval of the change that was performed in 2001. As documented in this request, DEK's analysis has concluded that the existing (changed) configuration is consistent with the KPS accident analyses for assuring safe reactor operation, continues to allow the affected systems to perform their safety functions, and may remain in place pending NRC approval.

2.0 PROPOSED CHANGE

The proposed amendment would modify the KPS current licensing basis. Prior to completion of a modification performed in 2001, the automatic function of providing service water flow to the component cooling heat exchangers upon receipt of an SI signal was provided through the main service water return valves (SW-1300A/B). This automatic function was changed so that, upon receipt of an SI signal, service water flow to the component cooling heat exchangers is provided through the service water bypass flow control valves (SW-1306A/B). The specific design change to this automatic supply function requires changes to the KPS USAR that are being submitted for NRC review and approval.

2.1 USAR Revision

A proposed revision to KPS USAR Section 9.3.2.1 (reference 1) documenting the revised service water automatic function into the KPS design is provided in Attachment 2 as a marked-up USAR page.

3.0 BACKGROUND

3.1 System Description

The service water (SW) system provides a heat sink for the removal of process and operating heat from safety related components during a Design Basis Accident (DBA) or transient. During normal power operation, and normal shutdown operation, the SW system also provides this function for various safety related and nonsafety related components. The safety related function of the SW system is controlled by Technical Specification (TS) 3.7.8, "SW System."

The SW system supplies cooling water to the two Component Cooling (CC) heat exchangers, which are utilized to remove core residual heat through the Residual Heat Removal (RHR) system. The RHR system is employed during normal shutdown operations and also is placed in service following a loss of coolant accident (LOCA) for cooling of the recirculated flow from the reactor containment sump.

The design basis of the SW system is for one SW train, in conjunction with the CC system and a 100% capacity containment cooling system, to remove core decay heat following a design basis LOCA as discussed in KPS USAR Section 6.3.2. The SW system, in conjunction with the CC system, also cools the unit during shutdown conditions through the RHR system, as discussed in KPS USAR Section 9.3.1.2. Additional information about the design and operation of the SW system is presented in KPS USAR Section 9.6.2.

The CC system provides for removal of process and operating heat from safety related components during a DBA or transient. During normal operation, the CC system also provides the heat removal function for various nonessential components. The CC system also serves as a barrier to the release of radioactive byproducts between potentially radioactive systems and the Service Water system, and thus to the environment. CC system operability is controlled by TS 3.7.7, "CC System."

The design basis of the CC system is for one CC train to remove the post-LOCA heat load from the containment sump during the recirculation phase. Analysis demonstrates that the CC system can remove this heat load with CC system temperature as high as 150°F. The normal temperature of the CC water is 90°F to 100°F; and, during unit cooldown to MODE 5 (T_{avg} < 200°F), a maximum temperature of 119°F is assumed.

This prevents the containment sump fluid from increasing in temperature during the recirculation phase following a LOCA, and provides a reduction in the temperature of this fluid as it is returned to the reactor coolant system (RCS) by the ECCS pumps. Additional information on the design and operation of the CC system is presented in KPS USAR Section 9.3.2.

KPS USAR Table 6.2-10, Shared Functions Evaluation, documents that the SW system supplies cooling water to CC heat exchangers (for heat removal during the recirculation phase following a LOCA) and supplies cooling water to the lube oil coolers and the stuffing boxes on the safety injection (SI) pumps.

3.2 Design Change Request 3163

Design Change Request (DCR) 3163 was initiated on January 30, 2000, to modify the automatic service water (SW) supply to the component cooling (CC) heat exchangers. The automatic function occurs upon receipt of a safety injection (SI) signal. This facility modification removed the automatic open function from valves SW-1300A and SW-1300B (the two main service water return valves from the CC heat exchangers) and transferred that automatic open function to the lower capacity (4-inch) bypass flow control valves (SW-1306A and SW-1306B), which function as the CC water temperature control valves. The revised design specifies that valves SW-1306A/B open automatically upon receipt of an SI signal to supply SW to the CC heat exchangers (in lieu of the previous design that specified that valves SW-1300A/B open automatically upon receipt of the SI signal). This change continues to ensure that the CC heat exchangers are provided sufficient cooling water from the SW system to perform their specified function.

The primary purpose of DCR 3163 was to reduce the SW flow through the CC Heat Exchangers upon receipt of an SI signal in order to maximize flow to the containment fan coil units during early stages of a design basis accident. By reducing the amount of SW flow being supplied to the CC heat exchangers at the start of the event (when only minimal CC water cooling is needed), additional SW flow is available to the containment fan coil units. Additional flow to the containment fan coil units early in the event sequence better supports the mitigation of the effects of a postulated main steam line break (MSLB) in containment or a loss of coolant accident (LOCA) by reducing the peak containment pressure that these postulated events produce. The additional flow to the fan coil units also increases the margin for prevention of two-phase flow in the service water piping at the outlet of the fan coil units.

The design change removed the automatic open feature upon SI (initiated by an SI signal) from valves SW-1300A/B. This created the need for operator action to open valves SW-1300A/B from the control room to provide SW cooling to the CC heat exchangers when initiating post-accident containment sump recirculation. Transfer from the injection mode of SI to the containment sump recirculation mode of SI is not an automatic feature in the KPS design (and had not been in the past). Manual operator

action is, and has always been, required to accomplish the transfer. Removal of the automatic SI signal from valves SW-1300A/B added an additional manual step to the transfer procedure. Each manual step for the alignment of containment sump recirculation continues to be performed from, and appropriately indicated within, the control room. Operators have repeatedly demonstrated their ability to align the systems in a timely manner (during control room simulator evolutions) in the modified configuration, consistent with the unit's safety analyses and emergency operating procedures.

3.3 Revised System Description

The design change modified the control circuits for SW control to CC heat exchangers' bypass flow control valves CV-31406/SW-1306A (Train A) and CV-31407/SW-1306B (Train B). The design change allows the control valves to continue to modulate and control SW flow to the CC heat exchangers during normal plant operation, automatically controlling the temperature of the CC water. However, the modified controls cause the SW-1306A/B valves to open automatically on an SI signal or a loss of their non-safety control power. A diagram depicting service water flow to the component cooling heat exchangers is contained in USAR Figure 9.6-2, which is enclosed for reference.

The SW-1306 valves operate in two modes, normal control mode and safety injection mode.

- Normal Control Mode – In the normal control mode, station air is admitted to each SW-1306 valve actuator via a solenoid operated valve (SOV) and a temperature controller. The temperature controller adjusts the pneumatic signal as necessary to position its associated SW-1306 valve to maintain CC water outlet temperature at established values.
- Safety Injection Mode – The SI mode of operation is established when an SI signal is received. In the SI mode, power is interrupted to the SW-1306 SOVs, causing them to vent air from the valve actuators, which results in the SW-1306 valves being forced open by spring force. With the valves open, sufficient SW flow is provided to the CC heat exchangers to support event mitigation, with the exception of containment sump recirculation. When manually aligning for containment sump recirculation, the SW-1300 valves are opened by operators from the control room, as required by Emergency Operating Procedure ES-1.3, "Transfer to Containment Sump Recirculation."

The SW-1306A/B valves and valve actuators are classified QA-1 (safety related). The SI relay contacts, as well as the features in the modified control circuits necessary to ensure that these valves open upon receipt of an SI signal are also classified QA-1 and are separated per plant Engineering Specification ES-9010, "Cable Installation and Separation Criteria," meeting the intent of IEEE Standard 308-1971, "Criteria for Class 1E Electric Systems for Nuclear Power Generating Stations".

4.0 TECHNICAL ANALYSIS

4.1 QA Type and EQ classification

The QA Type classifications for the associated equipment are based on their required functions. The SW-1300 valves, valve actuators, and their associated control circuits were safety related prior to the modification and remain QA-1. The SW-1306A/B valves and valve actuators are classified QA-1 (safety related). The associated control systems relied upon to ensure that air is vented from the SW-1306 actuators upon a Safety Injection signal, causing the SW-1306 valves to open, are also safety related (QA-1).

4.2 Physical Change Evaluation

The implemented design modification removed the SI signal from the control scheme of SW1300A/MV32009 and SW1300B/MV32010. The removal of the auto-open signal upon SI from the control scheme reduced the length of the open control circuits of both valves. As a consequence, the change in control circuit length reduced the voltage drop across the circuit, and both SW1300A/B control circuits continue to meet acceptance criteria. The modification also moved the SW1300A/B motor operated valve (MOV) load from SI Step "0" start to a manually controlled load.

A solenoid valve that will cause the SW-1306A/B valves (temperature control valves for component cooling water) to open on an SI signal was added to each train. The SW-1306A/B valves open upon a loss of air or electrical power to their control system and provide sufficient service water flow to the component cooling heat exchangers to support event mitigation independent of the SW-1300A/B valves, with the exception of the containment sump recirculation phase of LOCA mitigation. The electrical load added as a result of this design change remained within the capability of the previously existing supply fuse on the affected circuits. An analysis of the circuit loading calculations determined that no changes were required by the small load addition resulting from this design change.

As a result of the physical plant modification, manual operator action is now required to open the SW-1300A/B valves to support containment sump recirculation. Permanently substituting a manual action for an automatic action for performing design functions could result in more than a minimal increase in the likelihood of occurrence of a malfunction of a component important to safety. However, automatic action to supply the service water flow needed to support immediate post-accident CC heat exchanger heat loads continues to be in place following this modification. This automatic function is now being performed by the bypass flow control valves (SW-1306A/B). In the modified configuration, the SW-1300A/B valves only need to be opened during the subsequent recirculation phase of LOCA mitigation. Transition to the recirculation phase of SI cooling previously was, and currently remains, achieved by a series of proceduralized manual actions. Adding a step to the procedure controlling this

transition does not significantly impact this activity. The SW-1300A/B valves are remotely operated from the control room and require only a single, easily performed step to open. Therefore, this change does not significantly impact occurrence of a malfunction of a component important to safety.

4.3 Conclusion

The revised licensing basis results in the automatic cooling supply function to the component cooling water system being provided by the service water bypass control valves. This automatic function had previously been provided by the service water main return valves. By reducing the excess supply of initial cooling water (via lower capacity valves) to the component cooling system, additional cooling water is available to the containment fan coil units for mitigating the postulated accident, and the margin to two-phase flow in the affected cooling system is improved.

However, removal of the automatic opening signal from the service water main return valves will require that these valves be manually opened during the latter stages of the postulated accidents which credit the initiation of containment sump recirculation cooling. Aligning for containment sump recirculation cooling had previously required manual actions. The proposed change would add one additional nominal step. The added step of opening the service water main return valves does not significantly impact the ability of operators to manually initiate containment sump recirculation cooling. The automatic function of supplying cooling to the component cooling system at the onset of the postulated accidents is not being changed. DEK concludes that the proposed changes will increase overall effectiveness of the engineered safety features' response to postulated accidents at KPS.

5.0 REGULATORY ANALYSIS

5.1 No Significant Hazards Consideration

Pursuant to 10 CFR 50.90, Dominion Energy Kewaunee, Inc. (DEK) requests an amendment to Facility Operating License Number DPR-43 for Kewaunee Power Station (KPS). The proposed amendment would revise the KPS current licensing basis (CLB) regarding the manner in which service water flow is supplied to the component cooling heat exchangers by the main return valves and the bypass flow control valves.

DEK has evaluated the proposed amendment to determine if a significant hazards consideration is involved 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?**

   Response: No

   The proposed amendment would modify the KPS current licensing basis by changing the automatic function of providing service water flow to the component cooling heat exchangers, from being provided by control of the main service water return valves to being provided by the service water bypass flow control valves. The probability of occurrence of previously evaluated accidents is not affected, since the affected equipment is used to mitigate certain design basis accidents (DBA's) and does not contribute to the initiation of any previously evaluated accidents.

   As a result of a physical plant modification, manual action is now required to open the service water main return valves to the component cooling heat exchangers for initiation of the sump recirculation phase of LOCA mitigation. These valves were previously designed to open upon receipt of an SI signal. However, automatic action to supply service water during the immediate injection phase of a postulated accident continues to be in place following this modification without any adverse functional impact. This automatic action is performed by the bypass flow control valves (i.e., the temperature control valves) in the same manner as previously performed by the main return valves. The bypass flow control valves automatically supply required cooling water flow, consistent with existing analyses for the injection phase of the postulated accident. The service water main return valves are only needed to be opened during the subsequent recirculation phase of safety injection (SI) for LOCA mitigation. Transition to the recirculation phase of SI cooling previously was, and currently remains, achieved by a series of manual actions. Adding an additional step to the procedure controlling this transition does not significantly impact the probability of correctly performing this activity. Since the required automatic function is maintained, and the additional manual action required to perform injection to recirculation phase realignment is simple, this change does not significantly increase the probability of a malfunction of a component important to safety. Therefore, the proposed amendment does not involve a significant increase in the consequences of a previously evaluated accident.

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

   Response: No

   The proposed amendment changes the manner in which service water is supplied to the component cooling heat exchangers immediately after a DBA involving an SI signal. Previously, service water was automatically supplied to the component

cooling heat exchangers through the service water main return valves. This design has been changed, and currently service water is supplied to the component cooling heat exchangers through the service water bypass flow control valves. No physical changes are being made to any other portion of the plant, so no new accident causal mechanisms are being introduced. The proposed change does not result in any new mechanisms that could initiate damage to the reactor or its principal safety barriers (i.e., fuel cladding, reactor coolant system, or primary containment).

Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any previously evaluated.

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

Response: No

The proposed amendment does not affect the inputs or assumptions of any of the design basis analyses that demonstrate the integrity of the fuel cladding, reactor coolant system, or containment during accident conditions. The automatic function of supplying required cooling water to the component cooling heat exchangers at the onset of a postulated accident is not being changed. Removal of the automatic opening signal from the service water main return valves will require that these valves be manually opened during the latter stages of the postulated accident when aligning for containment sump recirculation cooling. However, aligning for containment sump recirculation cooling had previously credited a series of manual actions within the analyses for the design basis accident. The added step of opening the service water main return valves does not significantly impact the ability of operators to perform this alignment. Furthermore, by reducing the initial excess supply of cooling water (via lower capacity valves) to the component cooling system heat exchangers, additional cooling water is available to the containment fan coil units for mitigating the postulated accident and the margin to two-phase flow in the affected cooling system is improved. Thus, DEK considers that the proposed changes will increase overall effectiveness of the engineered safety features' response to postulated accidents involving initiation of an SI signal.

Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

Based on the above, Dominion Energy Kewaunee, Inc. concludes that the proposed amendment presents 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 US Atomic Energy Commission (AEC) issued their Safety Evaluation (SE) of the Kewaunee Power Station (KPS) on July 24, 1972 with supplements dated December 18, 1972 and May 10, 1973. The SE, Section 3.1, "Conformance with AEC General Design Criteria," described the conclusions the AEC reached associated with the General Design Criteria in effect at the time. The AEC stated:

> *"The Kewaunee plant was designed and constructed to meet the intent of the AEC's General Design Criteria, as originally proposed in July 1967. Construction of the plant was about 50% complete and the Final Safety Analysis Report (Amendment No. 7) had been filed with the Commission before publication of the revised General Design Criteria in February 1971 and the present version of the criteria in July 1971. As a result, we did not require the applicant to reanalyze the plant or resubmit the FSAR. However, our technical review did assess the plant against the General Design Criteria now in effect and we are satisfied that the plant design generally conforms to the intent of these criteria."*

As such, the appropriate General Design Criteria (GDC), from the Final Safety Analysis (Amendment 7), as updated and included in the KPS USAR, are excerpted below.

These GDC are discussed in detail in USAR Chapter 9, "Auxiliary and Emergency Systems".

Criterion 41 – Engineered Safety Features Performance Capability

Engineered safety features, such as the emergency core cooling system and the containment heat removal system, shall provide sufficient performance capability to accommodate the failure of any single active component without resulting in undue risk to the health and safety of the public.

Criterion 52 – Containment Heat Removal Systems

Where an active heat removal system is needed under accident conditions to prevent exceeding containment design pressure, this system shall perform its required function, assuming failure of any single active component.

Conclusion

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

7.0 REFERENCES

1. Kewaunee Power Station USAR Section 9.3.2.1, System Design and Operation, Component Cooling System

ATTACHMENT 2

LICENSE AMENDMENT REQUEST 252
OPERATION OF SERVICE WATER FLOW
TO COMPONENT COOLING HEAT EXCHANGERS

MARKED UP USAR PAGE
(FOR INFORMATION)

AFFECTED USAR PAGE:

Page 9.3-3

(EXCERPT)

KEWAUNEE POWER STATION

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9.3.1.4 Codes and Classifications

All piping and components of the Auxiliary Coolant System are designed to the applicable codes listed in Table 9.3-4. Carbon steel is used in the Component Cooling System since the component cooling water contains a corrosion inhibitor. Austenitic stainless steel is used throughout the RHR and the Spent Fuel Pool Cooling Systems.

9.3.2 System Design and Operation

9.3.2.1 Component Cooling System

The Component Cooling System consists of two component cooling pumps, two component cooling heat exchangers, a component cooling surge tank, cooling lines to the various components being cooled, and associated piping, valves, and instrumentation. Component cooling piping to the various components is arranged in parallel flow circuits.

During normal operation, the component cooling pumps and heat exchangers will be operated as needed to accommodate the heat removal loads. One pump and one heat exchanger can provide 100 percent heat removal capability during normal operation. Two pumps and two heat exchangers are utilized to remove the residual and sensible heat during plant shutdown. If one of the pumps or one of the heat exchangers is not operative, safe shutdown of the plant is not affected; however, the time for cooldown is extended.

During normal operation, the main service water return valves (SW-1300A/B) are maintained closed and component cooling water temperature is maintained by the service water bypass flow control valves (SW-1306A/B). Upon receipt of a safety injection signal, valves SW-1306 A/B will open automatically to provide the cooling water flow necessary to support the automatic plant response to the safety injection signal.

Valves SW-1300A and SW-1300B do not receive an open signal on safety injection. Although the capacity of the smaller (4-inch) service water bypass flow control valves is not sufficient to remove the heat load during the recirculation phase over the entire range of postulated accidents, these temperature control valves do have sufficient capacity to supply the needed service water flow to the component cooling water heat exchangers during the injection phase of safety injection, which allows additional service water to be available to supply the containment fan-coil units.

When plant conditions or operational preferences warrant higher service water flows to the component cooling heat exchanger than are available via the service water bypass flow control valves, such as when expediting reactor plant cooldown via the decay heat removal mode of the residual heat removal system, or during containment sump recirculation following an accident, the operator can manually align valves SW-1300A/B to increase service water flow through the component cooling heat exchanger(s).

Component cooling is provided for the following heat sources:

...

[NOTE: For purposes of brevity, the final segment of information from this USAR page in Section 9.3.2.1 is not reproduced here as it is not altered by this submittal.]

ENCLOSURE

LICENSE AMENDMENT REQUEST 252
OPERATION OF SERVICE WATER FLOW
TO COMPONENT COOLING HEAT EXCHANGERS

SELECTED KEWAUNEE POWER STATION FIGURES AND DRAWINGS

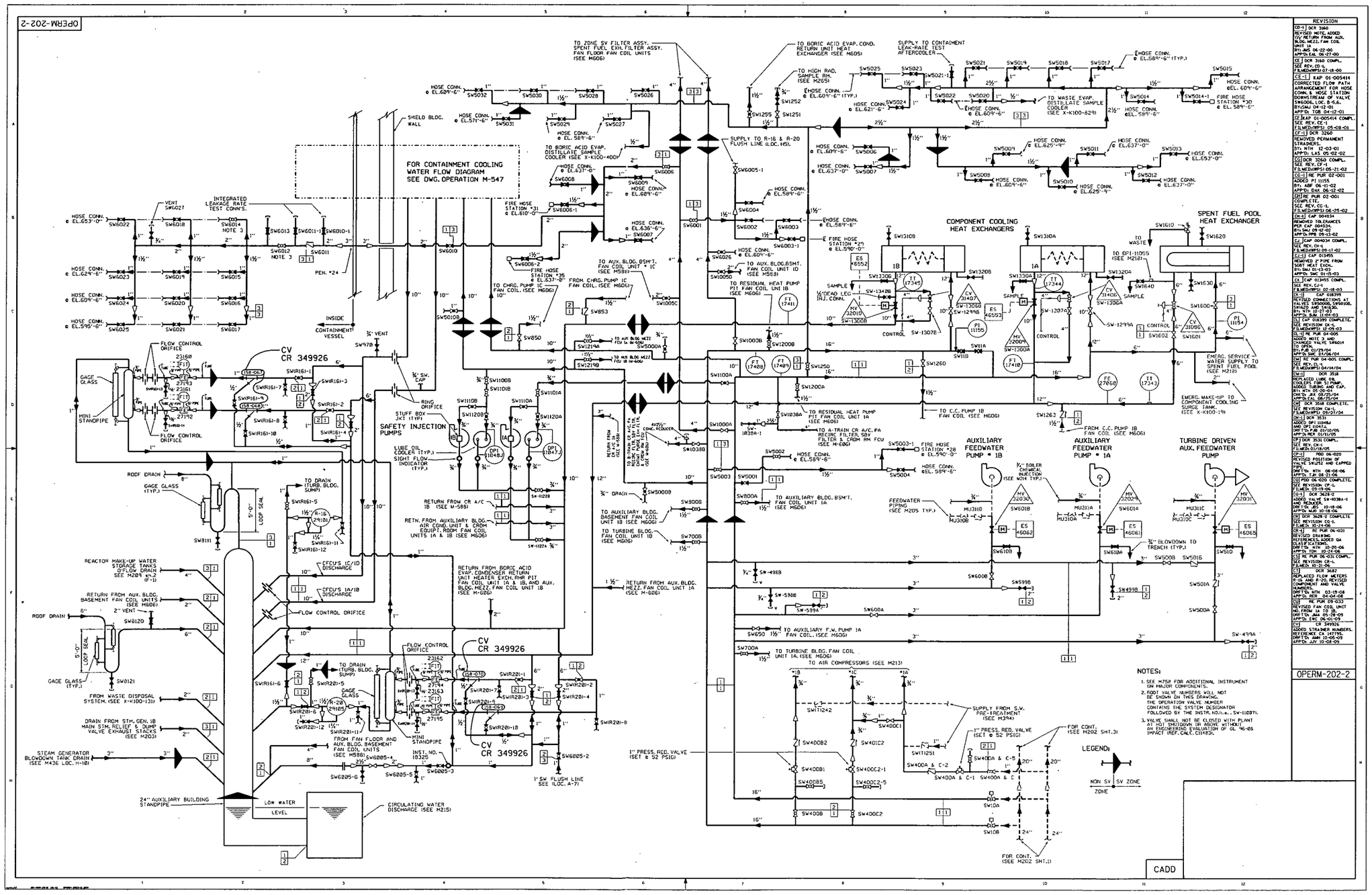
ENCLOSED FIGURES AND DRAWINGS

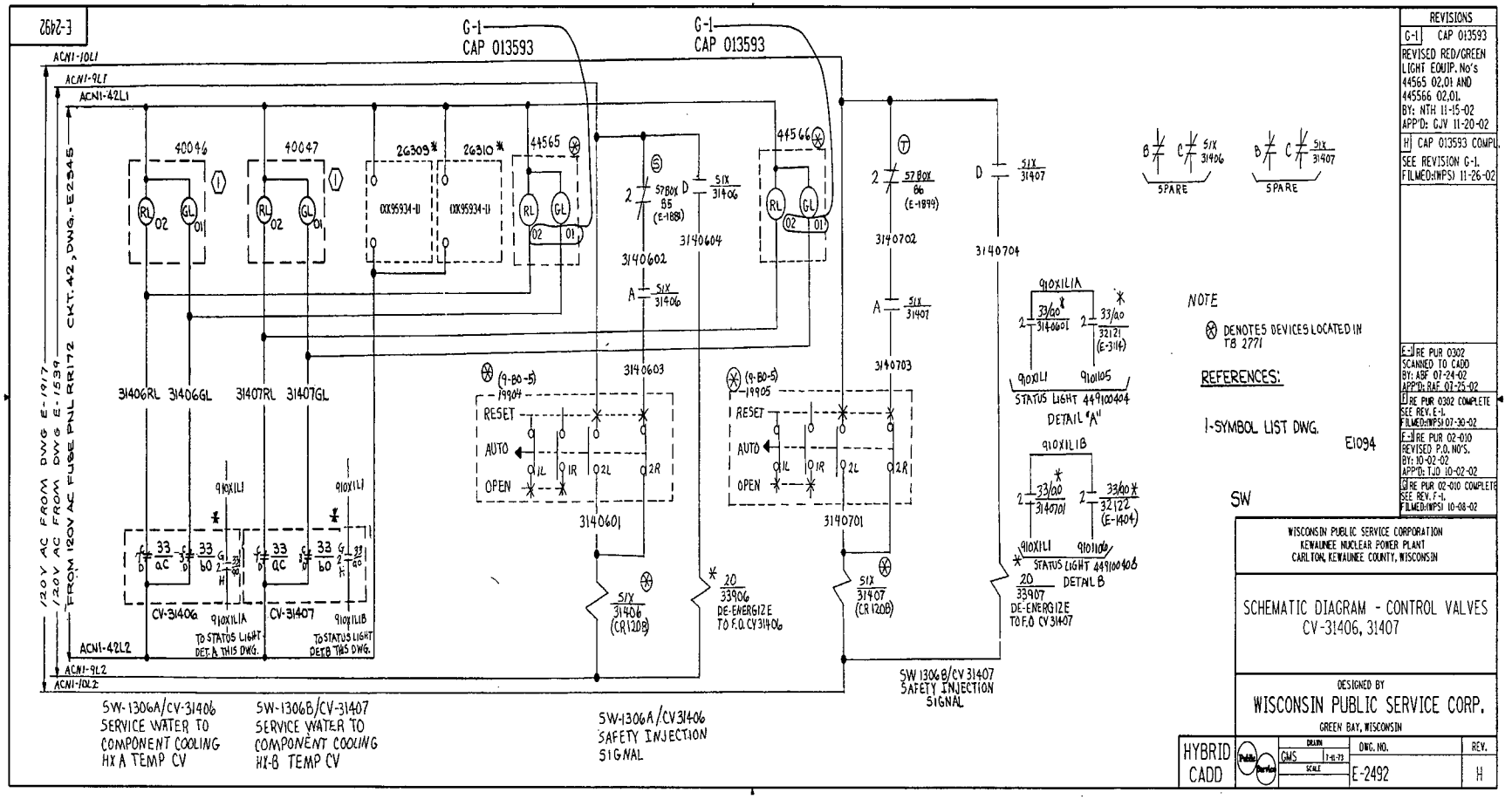
USAR Figure 9.6-2, "Service Water System – Flow Diagram Sheet 2"
Drawing Number E-2492, Revision H, Control Valves CV-31406, 31407

KEWAUNEE POWER STATION

DOMINION ENERGY KEWAUNEE, INC.

Figure 9.6-2 Service Water System-Flow Diagram Sheet 2




E-2492
ACN1-10L1
ACN1-9L1
ACN1-42L1
120V AC FROM DWG E-1917
120V AC FROM DWG E-1539
FROM 120V AC FUSE PNL RR172 CKT. 42, DWG. E2545
40046
40047
26309*
26310*
44565
44566
G-1
CAP 013593
G-1
CAP 013593
57BOX 85 (E-1888)
57BOX 66 (E-1899)
5IX 31406
5IX 31407
3140602
3140604
3140702
3140704
SPARE
SPARE
31406RL 31406GL 31407RL 31407TGL
910X1L1A
910X1L1B
33/60 314-0601
33/60 32121 (E-3114)
33/60 3140701
33/60 32122 (E-1404)
9101L1
9101L05
9101L08
STATUS LIGHT 449100404
DETAIL "A"
STATUS LIGHT 449100408
DETAIL B
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(9-80-5) 19905
RESET
AUTO
OPEN
1L 1R 2L 2R
3140601
3140603
3140701
3140703
5IX 31406 (CR120B)
5IX 31407 (CR120B)
20 33906 DE-ENERGIZE TO F.O. CV31406
20 33907 DE-ENERGIZE TO F.O CV31407
CV-31406
CV-31407
TO STATUS LIGHT DET. A THIS DWG.
TO STATUS LIGHT DET.B THIS DWG.
ACN1-42L2
ACN1-9L2
ACN1-10L2
SW-1306A/CV-31406 SERVICE WATER TO COMPONENT COOLING HX A TEMP CV
SW-1306B/CV-31407 SERVICE WATER TO COMPONENT COOLING HX-B TEMP CV
SW-1306A/CV31406 SAFETY INJECTION SIGNAL
SW 1306B/CV 31407 SAFETY INJECTION SIGNAL
NOTE
⊗ DENOTES DEVICES LOCATED IN TB 2771
REFERENCES:
1-SYMBOL LIST DWG. E1094
SW
REVISIONS
G-1 CAP 013593
REVISED RED/GREEN LIGHT EQUIP. No's 44565 02,01 AND 445566 02,01.
BY: NTH 11-15-02
APP'D: GJV 11-20-02
H CAP 013593 COMPL.
SEE REVISION G-1.
FILMED:WPSI 11-26-02
E-J RE PUR 0302 SCANNED TO CADD
BY: ABF 07-24-02
APP'D: RAF 07-25-02
F RE PUR 0302 COMPLETE
SEE REV. E-1.
FILMED:WPSI 07-30-02
E-J RE PUR 02-010 REVISED P.O. NO'S.
BY: 10-02-02
APP'D: TJD 10-02-02
G RE PUR 02-010 COMPLETE
SEE REV. F-1.
FILMED:WPSI 10-08-02
WISCONSIN PUBLIC SERVICE CORPORATION
KEWAUNEE NUCLEAR POWER PLANT
CARLTON, KEWAUNEE COUNTY, WISCONSIN
SCHEMATIC DIAGRAM - CONTROL VALVES CV-31406, 31407
DESIGNED BY
WISCONSIN PUBLIC SERVICE CORP.
GREEN BAY, WISCONSIN
HYBRID CADD
DRAWN GMS 7-11-73
SCALE
DWG. NO. E-2492
REV. H