Dominion Resources Services, Inc.
Innsbrook Technical Center
5000 Dominion Boulevard, 2SE, Glen Allen, VA 23060

Dominion®

January 25, 2012

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

Serial No. 11-712
LIC/CDS/R3
Docket No. 50-305
License No. DPR-43

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION:
LICENSE AMENDMENT REQUEST 244, PROPOSED REVISION TO RADIOLOGICAL ACCIDENT ANALYSIS AND CONTROL ROOM ENVELOPE HABITABILITY TECHNICAL SPECIFICATIONS (TAC NO. ME7110)

By application dated August 30, 2011 (Reference 1), Dominion Energy Kewaunee, Inc. (DEK), requested an amendment to Facility Operating License Number DPR-43 for Kewaunee Power Station (KPS). This proposed amendment (LAR 244) would revise the KPS Operating License by modifying the Technical Specifications (TS) and the current licensing basis (CLB) to incorporate changes to the current radiological accident analysis (RAA) of record. This amendment would also fulfill a commitment made to the NRC in response to Generic Letter 2003-01, "Control Room Habitability" (References 1 and 2) to submit proposed changes to the KPS TS based on the final approved version of TSTF-448, "Control Room Habitability."

Subsequently, on December 5, 2011 the Nuclear Regulatory Commission (NRC) staff transmitted a request for additional information (RAI) regarding the proposed amendment (Reference 3). The RAI questions and associated DEK responses are provided in Attachment 1 to this letter.

If you have any questions or require additional information, please contact Mr. Craig Sly at 804-273-2784.

Sincerely,

J. Alan Price
Vice President – Nuclear Engineering

A102
NRR

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and State 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 25 day of January, 2012.

My Commission Expires: 4/30/2015.

Ginger Lynn Rutherford
NOTARY PUBLIC
Commonwealth of Virginia
Reg. # 310847
My Commission Expires 4/30/2015

Ginger L Rutherford
Notary Public

Attachment:

1. NRC Request for Additional Information Questions and Dominion Energy Kewaunee Responses

Commitments made in this letter: None

References:

1. Letter from J. A. Price (DEK) to Document Control Desk (NRC), "License Amendment Request 244, Proposed Revision to Radiological Accident Analysis and Control Room Envelope Habitability Technical Specifications," dated August 30, 2011. [ADAMS Accession No. ML11252A521]
2. Letter from Craig W. Lambert (NMC) to Document Control Desk (NRC), "Generic Letter 2003-01; Control Room Habitability – Supplemental Response," dated April 1, 2005. [ADAMS Accession No. ML050970303]
3. E-mail from Karl D. Feintuch (NRC) to Craig D. Sly, Jack Gadzala (DEK), "ME7110 Kewaunee Amendment request Re: Chi-over-Q – EICB Request for Additional Information (RAI)," dated December 5, 2011. [ADAMS Accession No. ML11339A001]

cc: Regional Administrator, Region III
U. S. Nuclear Regulatory Commission
2443 Warrenville Road
Suite 210
Lisle, IL 60532-4352

Mr. K. D. Feintuch
Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North, Mail Stop O8-H4A
11555 Rockville Pike
Rockville, MD 20852-2738

NRC Senior Resident Inspector
Kewaunee Power Station

Public Service Commission of Wisconsin
Electric Division
P.O. Box 7854
Madison, WI 53707

ATTACHMENT 1

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION: LICENSE AMENDMENT REQUEST 244, PROPOSED REVISION TO RADIOLOGICAL ACCIDENT ANALYSIS AND CONTROL ROOM ENVELOPE HABITABILITY TECHNICAL SPECIFICATIONS

NRC REQUEST FOR ADDITIONAL INFORMATION QUESTIONS AND DOMINION ENERGY KEWAUNEE RESPONSES

KEWAUNEE POWER STATION

DOMINION ENERGY KEWAUNEE, INC.

NRC REQUEST FOR ADDITIONAL INFORMATION QUESTIONS AND DOMINION ENERGY KEWAUNEE RESPONSES

By application dated August 30, 2011 (Reference 1), Dominion Energy Kewaunee, Inc. (DEK), requested an amendment to Facility Operating License Number DPR-43 for Kewaunee Power Station (KPS). This proposed amendment (LAR-244) would revise the KPS Operating License by modifying the Technical Specifications (TS) and the current licensing basis (CLB) to incorporate changes to the current radiological accident analysis (RAA) of record. This amendment would also fulfill a commitment made to the NRC in response to Generic Letter 2003-01, "Control Room Habitability" (References 1 and 2) to submit proposed changes to the KPS TS based on the final approved version of TSTF-448, "Control Room Habitability."

Subsequently, on December 5, 2011 the Nuclear Regulatory Commission (NRC) staff transmitted a request for additional information (RAI) regarding the proposed amendment (Reference 3). The RAI questions and associated DEK responses are provided below.

1. NRC Question 1 (ME7110-RAII-EICB-Alva-001-2011-12-29)

"In DEK's License Amendment Request (LAR)-210, DEK proposed incorporating the control room envelope operability and surveillance requirements, R-23 operability requirements, and the control room post-accident recirculation (CRPAR) system requirements into the KPS Technical Specification (TS) ensures the systems, structures, or components (SSCs) credited for mitigating the consequences of an accident for control room occupants were included in the TS. At the same time, DEK requesting removing crediting R-23 and the control room envelope boundary from the KPS Waste Gas Decay Tank (GDT) and Volume Control [Tank] (VCT) rupture accident analysis, since it determined that occupant dose consequences are achieved without crediting the control room envelope boundary or the CRPAR system. Later DEK withdrew LAR-210. However, based on the information provided in LAR-210, it is not clear why DEK in LAR-244 is requesting deleting R-23 from the TS, even though in the accident analysis performed for both LARs, DEK stated that R-23 was not credited in the proposed accident analysis. Please explain the reason to remove R-23 and replace with analysis and manual operation of the isolation dampers."

DEK Response:

LAR-210 and LAR-244 are different in how they credit the use of the control room ventilation radiation monitor (R-23) in the revised radiological accident analyses (RAAs). The RAAs submitted in LAR-210 credited the control room isolation function of R-23 for the fuel handling accident (FHA) and locked rotor accident (LRA) in order to maintain control room dose within limits. The RAAs submitted in LAR-244 do not credit R-23 in any of the RAAs. Consequently, DEK is proposing to eliminate all credit for R-23 in isolating the control room. The rationale for eliminating credit for R-23 isolation is explained in LAR-244, Attachment 4, Section 2.7, "Removal of R-23 Credit for Control Room Isolation," which states:

> *"The R-23 system is not safety grade and consists of a single radiation monitor. In addition, the isolation signal generated by R-23 is only a partial signal that will not assure closure of all control room inlet and outlet ventilation dampers to provide complete control room isolation."*

Because of these factors, DEK has opted to assume no credit in the revised RAAs for the R-23 control room isolation function. However, for defense-in-depth, the alarms and functions associated with R-23 will be maintained in operation.

In order to maintain FHA control room dose within limits without crediting the isolation function provided by R-23, the proposed FHA analysis in LAR-244 requires; 1) the control room is isolated prior to moving recently irradiated fuel, and; 2) the CRPAR system is manually initiated within 20 minutes of the release. In order to maintain LRA control room dose within limits without crediting the isolation function provided by R-23, the proposed LRA analysis in LAR-244 requires manual operator action within one hour following the LRA to isolate the control room and start CRPAR. DEK is proposing to credit manual initiation of SI as an approved method to accomplish this requirement. Initiation of SI isolates the control room and starts the CRPAR system. Since R-23 will no longer be credited in the RAAs for mitigating the consequences of an accident and will no longer meet any of the four 10 CFR 50.36 criteria for inclusion in the TS, DEK is proposing in LAR-244 to relocate the current KPS TS Actions and Surveillance Requirements associated with R-23 into the KPS Technical Requirements Manual. DEK also plans to maintain the description of R-23 in the USAR, as discussed in LAR-244, Attachment 1, Section 2.2.3.

2. NRC Question 2 (ME7110-RAII-EICB-Alva-002-2011-12-29)

"NUREG-0737, "Clarification of TMI Action Plan Requirements," Item III.D.3.4, "Control Room Habitability Requirements," required licensees to assure that control room operators will be adequately protected against the effects of accidental release of toxic and radioactive gas and that the plant can be safely operated or shutdown under design basis accident conditions. LAR proposed removing radiation monitor channel R-23 as a required channel for CRPAR initiation, modifying DEK previously approved by the NRC compliance with NUREG-0737. Please describe if R-23 is removed, how DEK will comply with NUREG-0737."

DEK Response:

NUREG-0737, Item III.D.3.4 states the following:

"In accordance with Task Action Plan item III.D.3.4 and control room habitability, licensees shall assure that control room operators will be adequately protected against the effects of accidental release of toxic and radioactive gases and that the nuclear power plant can be safely operated or shut down under design basis accident conditions (Criterion 19, "Control Room," of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50)."

A discussion of the proposed deletion of the control room ventilation radiation monitor (R-23) from the KPS TS is provided in DEK LAR-244, Attachment 1, Section 4.2.3. In addition, a discussion of the effects of this proposed amendment on NUREG-0737, Item III.D.3.4 requirements is provided in LAR-244, Attachment 1, Section 3.2.1.

R-23 is currently credited as the primary means to ensure control room habitability in the event of a LRA, FHA, and for the volume control tank (VCT) rupture and waste gas decay tank (GDT) rupture accidents. R-23 also acts as a non-credited backup to an SI signal for the loss-of-coolant accident (LOCA), rod ejection accident (REA), main steam line break (MSLB), and steam generator tube rupture (SGTR) accident. An SI signal isolates the control room and initiates the CRPAR system (see response to Question 7 for details).

DEK has performed a revised radiological accident analysis (RAA) that assumes no credit for R-23 in mitigating the radiological consequences of postulated design basis accidents. The revised RAA is provided in DEK LAR-244, Attachment 4 and requires the following with respect to the accidents discussed above.

- Consistent with the revised RAA for the fuel handling accident, a new requirement has been proposed for TS 3.7.10, "Control Room Post Accident Recirculation (CRPAR) System," which specifies the control room must be isolated prior to movement of recently irradiated fuel assemblies. The revised RAA also requires the CRPAR system is manually initiated within 20 minutes of the release.
- The revised RAA requires that the control room is isolated and CRPAR is started and running within 1 hour after a LRA.
- The revised RAA assumes no credit for control room isolation for the GDT and VCT rupture accidents. (See response to Question 5 below for details.)
- For the other design basis accidents (DBAs), the revised RAA assumes an SI signal will perform the necessary control room isolation function and maintain dose within acceptable limits.

A description of, and justification for, both of the proposed two new manual actions mentioned above is provided in DEK LAR-244, Attachment 5. DEK is requesting approval of the two manual actions as part of the NRC review of this license amendment.

Based on the results of the revised RAAs, DEK concludes that NUREG-0737, Item III.D.3.4 requirements for control room habitability will continue to be met. The revised RAA does not assume any credit for R-23 in isolating the control room or initiating CRPAR, and the calculated doses for applicable DBAs remain within the relevant dose criteria specified in 10 CFR 50.67 (see LAR-244, Attachment 1, Table 3-3). Therefore, DEK concludes: 1) that the radiological consequences analyzed and submitted are acceptable; 2) control room operators will continue to be adequately protected against the effects of accidental release of radioactive gases, and; 3) the nuclear power plant can be safely operated or shut down under design basis accident conditions.

3. NRC Question 3 (ME7110-RAII-EICB-Alva-003-2011-12-29)

"During the NRC staff review of LAR-210, EICB issued RAI January 30, 2008 letter (ADAMS Accession No. ML080280107). DEK provided a response on its April 3, 2008 letter (ADAMS Accession No. ML080950096); the response to question 1b included a logic diagram for operation of the control room ventilation radiation monitor. To assist NRC staff review, please address the following:

a. Section 3.1.1 of Attachment 1 of LAR-244 (ADAMS Accession No. ML11252A521) states that radiation monitor R-23, as a single channel, initiates both trains of the CRPAR system and each SI train initiates the associated CRPAR fan and filtration unit train. If R-23 is removed from the logic, will it be necessary that both SI trains be actuated to initiate CRPAR fans, filtration unit trains, and close dampers ACC-1A, ACC-1B, ACC-2, and ACC-5?

b. This logic shows that safety injection (SI) train A closes dampers ACC-1A and ACC-1B, and SI train B closes dampers ACC-2 and ACC-5. If R-23 is removed, how will dampers ACC-2 and ACC-5 close if the SI train B actuation signal fails?

c. Provide a marked logic for the control room ventilation radiation monitor assuming that R-23 is removed from the logic."

DEK Response:

a. As discussed in LAR-244, the control room ventilation radiation monitor (R-23) is a single channel non-safety-related instrument. Therefore, DEK has proposed to not credit R-23 in the revised RAAs. However, DEK intends to maintain R-23 in service and functional for defense-in-depth. DEK also plans to relocate the current TS requirements for R-23 into the KPS Technical Requirements Manual and maintain the description of R-23 in the USAR, as discussed in LAR-244, Attachment 1, Section 2.2.3 (see response to Question 1 above). Therefore, R-23 will not be removed from the logic diagram for control room air conditioning. Actuation of either train of SI will isolate the control room and initiate the CRPAR system (see response to question 7 for details).

b. Actuation of either train of SI will cause an isolation of the control room boundary. The CRPAR trains are redundant and either train is sufficient to perform the CRPAR function. Operation of the control room dampers following an SI actuation is described in the response to Question 7 below.

c. Applicable logic diagrams are provided in Enclosure 1 to this letter. R-23 will not be removed from the logic diagrams.

4. NRC Question 4 (ME7110-RAII-EICB-Alva-004-2011-12-29)

"LAR-244 is requesting removal of R-23 from the CRPAR system. Please describe how DEK would reflect removal of R-23 from the CRPAR system in an update of the FSAR for the following items:

a. Figure 9.6-6, "Control Room Air Conditioning System-Flow Diagram," in the Final Safety Analysis Report (FSAR) shows R-23 location in the CRPAR system. Provide a marked diagram for an update of the FSAR after removal of R-23.

b. Section 7.7.1, "Control Room," in the FSAR describes how R-23 monitors and activates the control room ventilation."

DEK Response:

a. There is no physical plant change proposed by LAR-244. Therefore, KPS USAR Figure 9.6-6, "Control Room Air Conditioning System-Flow Diagram," will remain unchanged. Although the control room ventilation radiation monitor (R-23) is not credited in the revised RAAs, DEK intends to maintain R-23 in service and functional for defense-in-depth.

b. The discussion in USAR Section 7.7.1 will remain in place since R-23 will remain in service and functional for defense-in-depth. The current design capabilities of R-23 (i.e., monitoring and activating control room ventilation) will not be changed by the proposed LAR-244.

After NRC issuance of the requested amendment, the Safety Analyses contained in Chapter 14 of the KPS USAR will be revised to document removal of accident analysis credit for R-23. However, DEK intends to continue to maintain R-23 in service and functional for defense-in-depth.

5. NRC Question 5 (ME7110-RAII-EICB-Alva-005-2011-12-29)

"LAR-244, Attachment 1, Section 4.2.3 and Attachment 4, Section 2.7 state that revised radiological accident analysis (RAA) credits R-23 to limit consequences of the Locked Rotor Action (LRA) and Fuel Handling Accident (FHA). However, the RAA approved in license amendment 190 (current radiological analysis of record for KPS) credited R-23 high radiation signal for mitigating the radiological consequences to control room occupants for the LRA, GDT and VCT Rupture, and FHA. Please explain why the revised RAA (submitted in LAR-244) does not state whether credit for R-23 is considered for mitigating GDT and VCT rupture."

DEK Response:

The revised RAAs do not directly state that the control room ventilation radiation monitor (R-23) is not credited for mitigating the GDT and VCT rupture accidents. However, the RAA's for these accidents do state that no credit is taken for control room isolation, so the radiological release is assumed to transport directly to the control room. For the GDT and VCT rupture accidents, delayed isolation of the control room produces higher dose rates to control room operators than cases where the control room is not isolated for the duration of the accident. Since R-23 will continue to be maintained in service and functional, from a realistic perspective automatic isolation of the control room may occur after these accidents. Therefore, sensitivity runs were evaluated for various control room isolation times and for no control room isolation. The evaluations concluded that control room dose is maximized for the GDT and VCT rupture accidents if the control room isolates at 30 minutes after accident initiation. Even though R-23 will no longer be credited for isolation, the revised GDT and VCT rupture RAAs provide assumptions and results assuming control room isolation at 30 minutes in order to conservatively maximize control room dose consequences.

In summary, while R-23 is not credited for mitigating the GDT and VCT rupture accidents, an R-23 actuation can increase the control room dose consequences of these accidents. Therefore, DEK has assumed the worst case R-23 actuation time in the revised GDT and VCT rupture RAAs to ensure conservative results.

6. NRC Question 6 (ME7110-RAII-EICB-Alva-006-2011-12-29)

"LAR-244, Section 4.2.3 describes that removal of R-23 would require manual actions to ensure post-accident control room dose is maintained within limits and are required to limit consequences of the FHA and LRA events. Note that the current accident analysis does not credit operator action to isolate the control room during for FHA. Attachment 3, Section B.3.3.7 states that manual actuation of the CRPAR System is a backup for the SI signal actuation. To assist NRC staff review, please address the following:

a. Manual actuation is not part of the logic diagram for operation of the control room ventilation radiation monitor (FSAR Figure 9.6-6). Please clarify if this would be included in the logic diagram.

b. SI signal is not considered for all accident events (i.e., FHA, LRA, and GDT/VCT ruptures don't consider SI). In these cases manual action would be required. Please clarify if this would be included in the logic diagram."

DEK Response:

a. DEK does not plan to change USAR figure 9.6-6 to include a reference to manual action. DEK is requesting approval of two new manual actions in LAR-244. LAR-244, Attachment 5 describes the two proposed new manual actions for FHA and LRA and provides a justification as to why these manual actions are reasonable and should be approved.

The revised FHA requires that the control room be isolated prior to moving recently irradiated fuel. This requirement has been proposed as a new TS 3.7.10 requirement. The revised FHA also requires that the CRPAR is started by manual operator action within 20 minutes of the release. This is accomplished by placing the control switch to ON to start the respective fan. The proposed manual action is simple, can be accomplished from the control room, and will be procedurally controlled. The manual start of CRPAR is shown on the CR ventilation logic diagram (see Logic Diagram E-2003 in Enclosure 1).

The revised LRA analysis requires that the control room is isolated and CRPAR is started and running 1 hour after the LRA. DEK is proposing to credit a manual SI actuation as an approved method to accomplish this requirement. A manually actuated SI signal will isolate the control room and start CRPAR. This manual action is simple, can be accomplished from the control room, and will be procedurally controlled. The effects of an SI actuation (manual or automatic) on

CR isolation and CRPAR start is shown on Logic Diagram E-2003 (see Enclosure 1).

b. In the MSLB, REA, LOCA, and SGTR RAAs, SI is actuated automatically (e.g. pressurizer pressure low, high containment pressure, steam line pressure low). The LRA RAA requires that the control room is isolated and CRPAR is initiated within 1 hour after the LRA. DEK is proposing to credit a manual SI actuation as an approved method to accomplish this requirement. All actuation signals for SI, including manual actuation, are included on the current SI logic diagram. An SI actuation signal (either manual or automatic) isolates the control room and starts CRPAR.

   The FHA requires pre-isolation of the control room (a proposed new TS requirement in LAR-244) and a manual initiation of either train of the CRPAR system within 20 minutes after the release. The VCT/GDT rupture RAAs do not require manual action to isolate the control room. See response to Question 5 above for a complete discussion. SI actuation is not required for these RAAs.

7. NRC Question 7 (ME7110-RAII-EICB-Alva-007-2011-12-29)

"LAR-244, Attachment 4, Section 2.7, 3.3.1, and 3.6.1, state that full control room isolation require action by the operator to close monitor dampers that are not included in the isolation logic (of the control room ventilation radiation monitor). This was not discussed in previous LARs or in FSARs. Please explain the following:

a. Where is this information described? Provide a logic diagram and a description for operation of all dampers required for the control room ventilation radiation system.

b. Are these monitor dampers closed by the SI signal? If not, what signal actuates them?"

DEK Response:

a. Actuation of the control room ventilation radiation monitor (R-23) is described in logic diagram E-2003, "Integrated Logic Diagram - Control Room A/C System." A copy of this logic diagram is included in Enclosure 1 of this letter. A description of the system response to an R-23 actuation is as follows:

- Post-Accident Recirculation Fans A and B start.
- A/C Fans A and B start if in **ON** or **AUTO.**
- Motor Operated Dampers ACC-1A/MD-32367 and ACC-1B/MD-32368 close to isolate both control room fresh air intakes.
- Solenoid Valve SV-33094 de-energizes and closes the Non-Accident Fresh Air Damper ACC-5/CD-34007.
- Post-Accident Recirculation Dampers ACC-3A/MD-32397 and ACC-3B/MD-32371 open.
- Normally closed Post-Accident Fresh Air Damper ACC-2/MD-32370 closes if open.

The following dampers must be closed to achieve full isolation of the control room boundary and are not isolated by an R-23 actuation signal. These dampers must be manually closed after an R-23 actuation signal unless the R-23 signal is accompanied by an SI signal.

- Close Recirculation Relief to Turbine Room Dampers ACC-20/CD-34061 and ACC-21/CD-34602.
- Close Kitchenette/Toilet Exhaust Dampers ACC-10/CD-34064 and ACC-11/CD-34063.

As previously discussed, DEK is proposing no credit for R-23 actuation in the revised RAAs but intends to maintain R-23 in service and functional for defense-in-depth.

b. Manual or automatic actuation of SI produces the same system response as an actuation of R-23 and also isolates the dampers listed above that are not isolated by an R-23 signal. The following automatic actions occur upon receipt of a SI signal/sequence.

- Post-Accident Recirculation Fans A and B start.
- A/C Fans A and B start if in **ON** or **AUTO.**
- Motor operated Dampers ACC-1A/MD-32367 and ACC-1B/MD-32368 close to isolate both fresh air intakes.
- Solenoid Valve SV-33094 de-energizes and closes the Non-Accident Fresh Air Damper ACC-5/CD-34007.
- Post-Accident Recirculation Dampers ACC-3A/MD-32397 and ACC-3B/MD-32371 open.
- Normally closed Post-Accident Fresh Air Damper ACC-2/MD-32370 closes if open.
- Recirculation relief to Turbine Room Dampers ACC-20/CD-34061 and ACC-21/CD-34602 close.
- Kitchenette/Toilet Exhaust Dampers ACC-10/CD-34064 and ACC-11/ CD-34063 close.

The following logic diagrams for CRPAR and associated dampers are provided in Enclosure 1 of this letter:

- E-2003, Integrated Logic Diagram - Control Room AC
- E-2004, Integrated Logic Diagram - Control Room AC
- E-2074, Integrated Logic Diagram - Aux Building Special Vent
- E-1616, Integrated Logic Diagram - Aux Building Special Vent
- E-2189, Schematic Diagram - Solenoid Valves SV33433, SV33441, SV33444 & SV33442
- E-2199, Schematic Diagram - Damper Control Relays
- E- 1635, Integrated Logic Diagram - Diesel Generator Electric

References

1. Letter from J. A. Price (DEK) to Document Control Desk (NRC), "License Amendment Request 244, Proposed Revision to Radiological Accident Analysis and Control Room Envelope Habitability Technical Specifications," dated August 30, 2011. [ADAMS Accession No. ML11252A521]
2. Letter from Craig W. Lambert (NMC) to Document Control Desk (NRC), "Generic Letter 2003-01; Control Room Habitability – Supplemental Response," dated April 1, 2005. [ADAMS Accession No. ML050970303]
3. E-mail from Karl D. Feintuch (NRC) to Craig D. Sly, Jack Gadzala (DEK), "ME7110 Kewaunee Amendment request Re: Chi-over-Q – EICB Request for Additional Information (RAI)," dated December 5, 2011. [ADAMS Accession No. ML11339A001]

ENCLOSURE 1

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION: LICENSE AMENDMENT REQUEST 244, PROPOSED REVISION TO RADIOLOGICAL ACCIDENT ANALYSIS AND CONTROL ROOM ENVELOPE HABITABILITY TECHNICAL SPECIFICATIONS

Logic Diagrams

1. E-2003, Integrated Logic Diagram - Control Room AC
2. E-2004, Integrated Logic Diagram - Control Room AC
3. E-2074, Integrated Logic Diagram - Aux Building Special Vent
4. E-1616, Integrated Logic Diagram - Aux Building Special Vent
5. E-2189, Schematic Diagram - Solenoid Valves SV33433, SV33441, SV33444 & SV33442
6. E-2199, Schematic Diagram - Damper Control Relays
7. E- 1635, Integrated Logic Diagram - Diesel Generator Electric

KEWAUNEE POWER STATION

DOMINION ENERGY KEWAUNEE, INC.

E-2003

POST ACCIDENT RECIRCULATION FILTERS DELUGE VALVE CONTROL

FRESH AIR SUPPLY DAMPER CONTROL

CONTROL ROOM CONTROL SWITCH ES 46545

ON AUTO OFF

SAFETY INJECTION TRAIN A DWG. E-1636

BLACKOUT SEQUENCE ONLY STEP LOSS SEQ. STEP 9 TRAIN A DWG. E-1636

STEAM EXCLUSION ZONE TRAIN A ISOL. SIGNAL DWG. E-2074

CONTROL ROOM VENT ISOLATION DWG. E-3748

AUTO INHIBIT TRAIN A DWG. E-1636

POST ACC RECIRC. FLTR 1A HT DET HD-1

POST ACC RECIRC. FLTR 1A HT DET HD-2

HD 26345

200°F

POWER AVAILABLE

POWER ON LOCAL

SPRAY OPEN LOCAL

NOTE 1

VENDORS X-4300-20

POST ACC RECIRC. FLTR 1B HT DET HD-1

POST ACC RECIRC. FLTR 1B HT DET HD-2

HD 26346

RESET

SV 33353

F.C.

FILTER BANK DELUGE VALVE

SV 33354

44909 1102

CONTROL ROOM CONTROL SWITCH ES 46833

NORMAL AUTO ALTERNATE

STEAM EXCLUSION ZONE SV AREA ISOL. SIGNAL DWG. E-2074

CONTROL ROOM VENT ISOLATION DWG. E-3748

SAFETY INJECTION TRAIN A DWG. E-1636

M

F.C. N.C.

AUX BLDG A/C UNIT DWG. E-2007

44841 02

44841 01

SEE DETAIL 11 FOR MOTOR DRIVEN DAMPER LIMIT SWITCH LEGEND

44842 02

44842 01

ACC-1A/MD-32367 CONTROL ROOM FRESH AIR INLET DAMPER A MOTOR NO. 1-577

ACC-1B/MD-32368 CONTROL ROOM FRESH AIR INLET DAMPER B MOTOR NO. 1-578

START STOP

480V STARTER DETAIL 6

CRPA RECIRCULATION FAN A COMP. NO. 132-291 MOTOR NO. 1-265

46545 02

46545 01

CONTROL RM A/C UNIT A DWG. E-2004

CONTROL ROOM CONTROL SWITCH ES 46546

ON AUTO OFF

SAFETY INJECTION TRAIN B DWG. E-1636

BLACKOUT SEQUENCE ONLY STEP LOSS SEQ. STEP 9 TRAIN B DWG. E-1636

STEAM EXCLUSION ZONE SV AREA ISOL. SIGNAL DWG. E-2074

CONTROL ROOM VENT ISOLATION DWG. E-3748

AUTO INHIBIT TRAIN B DWG. E-1636

SV 33094

A/S VENT

F.C. N.O.

ACC-5/CD-34007 NON-ACCIDENT FRESH AIR DAMPER

RESET

44909 1106

START STOP

480V STARTER DETAIL 6

CRPA RECIRCULATION FAN B COMP. NO. 132-292 MOTOR NO. 1-266

46546 02

46546 01

CONTROL RM A/C UNIT B DWG. E-2004

SMOKE DETECTOR IN RETURN AIR DUCT

10 SEC.

10 SEC.

NOTE 1

LOCAL CONTROL SWITCH ES 19903

CLOSE AUTO OPEN

M

F.O. N.O.

44867 02

ACC-4/MD-32374 CONTROL ROOM A/C NORMAL RECIRC. DMPR MOTOR NO. 1-581

44867 01

CONTROL ROOM CONTROL SWITCH ES 46827

CONTROL ROOM CONTROL SWITCH ES 40031

CONTROL ROOM CONTROL SWITCH ES 40030

F.C. N.C.

44843 02

44843 01

ACC-2/MD-32370 CRPA FILTERED FRESH AIR INLET DAMPER MOTOR NO. 1-579

44844 02

44844 01

ACC-3B/MD-32371 CRPA RECIRCULATION DAMPER B MOTOR NO. 1-580

OPEN CLOSE

N.C. NOTE 2

44065 02

44065 01

ACC-3A/MD-32397 CRPA RECIRCULATION DAMPER A MOTOR NO. 1-1009

START STOP

MCC BREAKER ON

CONTROL VOLTAGE

70%

CURRENT OVERLOAD RELAY

CLOSE CONTACTOR

MOTOR RUN

42 a 42 a 42 b

480 VOLT MOTOR STARTER DETAIL 6

AIR OPERATED VALVE LIMIT SWITCH LEGEND

SWITCH SYMBOL	SWITCH DESIGNATION	CLOSED	VALVE POSITION	OPEN
1	ao			
2	ao			
3	bo			
4	bo			
5	bc			
6	bc			
7	ac			
8	ac			

MOTOR OPERATED VALVE LIMIT SWITCH LEGEND

SWITCH SYMBOL	SWITCH DESIGNATION	CLOSED	VALVE POSITION	OPEN
1	ao			
2	ao			
3	bo			
4	bo			
5	bc			
6	bc			
7	ac			
8	ac			
9	ao			
10	ao			
11	bo			
12	bo			
13	bc			
14	bc			
15	ac			
16	ac			
17	tc	SWITCH NORMAL CLOSED (NC) OPENS WHEN MOTOR IS OVERTORQUED WHILE CLOSING VALVE		
18	to	SWITCH NORMAL CLOSED (NC) OPENS WHEN MOTOR IS OVERTORQUED WHILE OPENING VALVE		

VALVE LIMIT SWITCH LEGEND
DETAIL 13

DETAIL 11

MOTOR DRIVEN DAMPER LIMIT SWITCHES

SWITCH SYMBOL	SWITCH DESIGNATION	CLOSED	DAMPER POSITION	OPEN
1	ac			
2	bo			
3	ac			
4	bo			
5	bc			
6	ao			
7	bc			
8	ao			

SWITCH TYPES

SWITCH NO.	POSITIONS	LEGEND PLATE DATA
40030	3 POSITION,SPRING RETURN TO AUTO	CLOSE/AUTO/OPEN
40031	3 POSITION,SPRING RETURN TO AUTO	CLOSE/AUTO/OPEN
46545	3 POSITION,SPRING RETURN TO AUTO	OFF/AUTO/ON
46546	3 POSITION,SPRING RETURN TO AUTO	OFF/AUTO/ON
46827	3 POSITION SPRING RETURN TO AUTO	CLOSE/AUTO/OPEN
46833	3 POSITION SPRING RETURN TO AUTO	NORMAL/AUTO/ALT
19903	3 POSITION MAINTAINED	CLOSE/AUTO/OPEN

REFERENCE:

FLOW DIAGRAM-AIR CONDITIONING ADMINISTRATION BLDG & CONTROL ROOM.....M-603

NOTES:

1. FIRE PROTECTION SYSTEM ZONE NO.804 REF.DWG.E-1620.
2. MD-32397 HAS LIMITORQUE OPERATOR SEE SCHEMATIC E-3260 FOR LIMIT SWITCH OPERATION.

REVISION

J
DCR 1885 COMP. SEE REV. H-1
APP'D: DMW 12/16/91
FILMED: WPS 12/23/91

J-1
REVISED DRAWING AND REDRAFTED TO CADD. PER DCR 2704
BY: BCY 6/13/94
CHK'D: CDE 06-15-94
APP'D: BDG 06-17-94

K DCR 2704 COMPL. SEE REV. J-1
FILMED(WPS): 07-26-94

K-1
ADDED COMMENTS FROM WPS REVIEW MEETING OF 6-29-93 PER DCR 2172
BY: ESS 8-17-94
CHK'D: RES 8-23-94
APP'D: TLW 08-23-94

L DCR 2172 COMPL. SEE REV. K-1
FILMED(WPS): 09-20-94

L-1 DCR 3023
ADDED LOCAL CONTROL SWITCH ES 19903
BY: JWS 12-08-99
APP'D: RER 08-24-01

M DCR 3023 COMPLETE SEE REVISION L-1.
FILMED(WPS): 09-04-01

M-1 DCR 3048
ADDED CONTROL ROOM A/C FAN 'A & B' NOTES.
BY: SAM 04-25-02
APP'D: RER 05/14/02

N DCR 3048 COMPL SEE REVISION M-1.
FILMED(WPS) 05-28-02

N-1 PDR 0184
REVISED NUMBER OF SWITCH POSITIONS.
BY: NTH 08-19-02
APP'D: DAK 09-03-02

P PDR 0184 COMPLETE. SEE REVISION N-1.
FILMED(WPS) 09-10-02

P-1 PDR 0184
ADDED MOTOR NUMBERS.
BY: NTH 09-16-02
APP'D: AS 09-23-02

Q PDR 0184 COMPLETE. SEE REVISION P-1.
FILMED(WPS) 10-01-02

R DCR AB 3697
REVISED ACC-3A/MD-32397.
DRFT'D: AMH 10-15-09
APP'D: CAD 10-20-09

S RE PUR 10-022
ADDED PRIORITY DWG. STAMP
DRFT'D: EAB 07-22-10

T DC 10-01019
REVISED LOGIC.
DRFT'D: NTH 03-16-11

E-2003

PRIORITY DRAWING

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION

INTEGRATED LOGIC DIAGRAM
CONTROL ROOM A/C SYSTEM

DESIGNED BY
WISCONSIN PUBLIC SERVICE CORP.
GREEN BAY, WISCONSIN

CADD | DRWN BCY 12/1/93 | SCALE NONE | DWG. NO. E-2003 | REV. T

E-2004

CONTROL ROOM A/C 1A

CONTROL ROOM A/C SS OFFICE

SS OFFICE DAMPER MIN THERMOSTAT

A/S

TC 26201

CD-34086 CONTROL ROOM SS OFFICE A/C SUPPLY AIR VARIABLE AIR VOLUME DAMPER

AIR TEMPERATURE TO CONTROL ROOM SENSING BULB

TC 26330

55° SETPOINT

FROM CHILLED WATER COIL 1A

TO CHILLED WATER COIL 1A

TO CHILLER 1A

FROM CHILLER 1A

MV-32143 CHILLED WATER FLOW CONTROL VALVE 1A MOTOR NO. 1-769

REFRIGERANT PRESSURE SENSING LINE CIRCUIT 1

F.C. NOTE 2

CV-31129 CONTROL ROOM A/C 1A CONDENSER 1 SERVICE WATER RETURN

REFRIGERANT PRESSURE SENSING LINE CIRCUIT 2

F.C. NOTE 2

CV-31906 CONTROL ROOM A/C 1A CONDENSER 2 SERVICE WATER RETURN

AUTO INHIBIT TRAIN A REF. DWG. E-1636 SEQ. STEP 1 SEQ. STEP 9 TRAIN A DWG. E-1636

CONTROL ROOM CONTROL SWITCH ES 46592

ON / AUTO / OFF

CRPA RECIRCULATION FAN A DWG. E-2003

UNIT 1A CHILLED WATER TEMPERATURE BULB

60° F

TS 16219

15 MIN.

19 MIN.

CHILLER 1A SERVICE WATER BYPASS SOLENOID VALVE SV-33908 DWG. E-3821

SER 49001 050

20 SEC

CRAC CHILLER 1A CHILLED WATER RETURN ISOL VLV CV-31912 DWG. E-3821

SER 49001 169

CONTROL ROOM A/C CHILLER 1A PLC TROUBLE ALARM

SER 49001 033

START / STOP NOT USED

480V STARTER DETAIL 7

CONTROL ROOM A/C FAN A MOTOR NO. 1-317 COMP. NO. 132-131

46592 02 (R) / 46592 01 (G)

480V STARTER DETAIL 7 W/O LIGHTS

CONTROL ROOM CHILLED WATER PUMP 1A MOTOR NO. 1-463 COMP. NO. 145-471

CONTROL ROOM A/C CHILLER 1A REMOTE PUMP AUX CONTACT E-1385

CONTROL ROOM A/C 1B

AIR TEMPERATURE TO CONTROL ROOM SENSING BULB

TC 26331

55° SETPOINT

HUC 28050 A/S

HUC 28006 90% R.H.

SV-33344 VENT

F.C.

CV-31346 HUMIDIFIED STEAM FLOW CONTROL VALVE

FROM CHILLED WATER COIL 1B

TO CHILLER 1B

TO CHILLED WATER COIL 1B

FROM CHILLER 1B

MV-32144 CHILLED WATER FLOW CONTROL VALVE 1B MOTOR NO. 1-770

REFRIGERANT PRESSURE SENSING LINE CIRCUIT 1

F.C. NOTE 2

CV-31130 CONTROL ROOM A/C 1B CONDENSER 1 SERVICE WATER RETURN

REFRIGERANT PRESSURE SENSING LINE CIRCUIT 2

F.C. NOTE 2

CV-31907 CONTROL ROOM A/C 1B CONDENSER 2 SERVICE WATER RETURN

AUTO INHIBIT TRAIN B REF. DWG. E-1636 SEQ. STEP 1 SEQ. STEP 9 TRAIN B DWG. E-1636

CONTROL ROOM CONTROL SWITCH ES 46593

ON / AUTO / OFF

CRPA RECIRCULATION FAN B DWG. E-2003

UNIT 1B CHILLED WATER TEMPERATURE BULB

60° F

TS 16220

15 MIN.

19 MIN.

CHILLER 1B SERVICE WATER BYPASS SOLENOID VALVE SV-33909 DWG. E-3821

SER 49001 051

20 SEC

CRAC CHILLER 1B CHILLED WATER RETURN ISOL VLV CV-31913 DWG. E-3821

SER 49001 170

CONTROL ROOM A/C CHILLER 1B PLC TROUBLE ALARM

SER 49001 034

SER 49001 558

START / STOP NOT USED

480V STARTER DETAIL 7

CONTROL ROOM A/C FAN B MOTOR NO. 1-318 COMP. NO. 132-132

46593 02 (R) / 46593 01 (G)

480V STARTER DETAIL 7 W/O LIGHTS

CONTROL ROOM CHILLED WATER PUMP 1B MOTOR NO. 1-464 COMP. NO. 145-472

CONTROL ROOM A/C CHILLER 1B REMOTE PUMP AUX CONTACT E-1441

PRIORITY DRAWING

CADD

480 VOLT MOTOR STARTER DETAIL 7

MCC BREAKER ON

START / STOP

CONTROL VOLTAGE

70%

CURRENT OVERLOAD RELAY

CLOSE CONTACTOR

42 a / 42 b

MOTOR RUN

R / G

VOL. TANK

FROM DWG. E-2766 CO_2 TIMER START

A

SV33641

A.S.

VENT

3408402

F.C. NOTE 2

TO FIRE PROTECTION DRW E-2766

CD-34084 (ACC15) RELAY ROOM SUPPLY DAMPER

3408502

F.C. NOTE 2

TO FIRE PROTECTION DRW E-2766

CD-34085 (ACC16) RELAY ROOM EXHAUST DAMPER

AIR OPERATED DAMPER LIMIT SWITCH

SWITCH SYMBOL	SWITCH DESIGNATION	CLOSED	DAMPER POSITION	OPEN
1	aa			
2	ac			
3	ba			
4	bc			
5	ca			
6	cc			
7	da			
8	dc			

REFERENCE:

FLOW DIAGRAM-AIR CONDITIONING ADMINISTRATION BLDG & CONTROL ROOM.....M-603

NOTES:

1. ULV1 - UNLOADING SOLENOID VALVE #1
   ULV2 - UNLOADING SOLENOID VALVE #2
   ULV3 - UNLOADING SOLENOID VALVE #3
   SLV1 - LIQUID LINE SOLENOID VALVE #1
   SLV2 - LIQUID LINE SOLENOID VALVE #2
2. FAILS CLOSED ON LOSS OF AIR ONLY.
3. HPC AND LPC ARE ALSO CALLED THE REFRIGERANT DUAL PRESSURE CONTROL. (RPC)
4. CV-31129 & CV-31130 FAIL CLOSED ON LOW REFRIGERANT PRESSURE.
5. SWITCH TYPES:

SWITCH NO.	POSITIONS	LEGEND PLATE DATA
46592	(3 POSITION MAINTAINED)	OFF/AUTO/ON
46593		

REVISION

G	DCR 1885 COMP. SEE REV. E-1 APP'D: DMW 12/16/91 FILMED: WPS 12/23/91
G-1	REVISED LOGIC UNIT A AND UNIT B. REDRAFTED TO CADD. PER DCR 2704 DR'T'D: BCY 6/13/94 CHK'D: CDE 06-15-94 APP'D: BDC 06-17-94
H	DCR 2704 COMPL. SEE REV. J-1 FILMED: WPS) 07-26-94
H-1	ADDED MOTOR NO. TO MV-32143, MV-32144 & LOGIC FOR SS OFFICE. PER PDD 0131 BY: BCY 1/12/95 CHK'D: BCY 1/12/95 APP'D: DMW 1-18-95
J	PDD 0131 COMP. SEE REV. H-1 FILMED: WPS 1-31-95
J-1	PDR 0161 ADDED EQUIP. NO.'S TO DESTINATIONS & REVISED NOTE 3. BY: SJD 4-28-98 APP'D: PCM 4-29-98
K	PDR 0161 COMPL. SEE REV. J-1. FILMED: WPS) 5-12-98
K-1	PDR 0170 ADDED CHART REVISED SUPPLY & EXH DAMPERS BY: BJD 1-6-00 APP'D: DAK 1-21-00
L	PDR 0170 COMPL. SEE REV. K-1. FILMED: WPS) 02-01-00
L-1	DCR 3048 REVISED LOGIC UNIT A AND UNIT B. BY: SMJ 05-10-02 APP'D: RER 05-14-02
M	DCR 3048 COMPL. SEE REV. L-1. FILMED: WPS) 05-28-02
M-1	CAP 26656 ADDED NOTE 5. DR'T'D: SJA 05/22/05 APP'D: EW 05/26/05
N	CAP 26656 COMPL. SEE REV. M-1. FILMED: WPS) 05/31/05
N-1	CAP 043179 REVISED LABELS FOR CONTROL ROOM A/C UNITS. DR'T'D: SJA 04-22-07 APP'D: RER 04-23-07
P	CAP 043179 COMPL. SEE REV. N-1. FILMED: 05-01-07
Q	RE PUR 09-040 ADDED DRAWING CONTINUATION NUMBERS. DR'T'D: NTH 06-25-09 APP'D: LEM 06-29-09
R	RE PUR 10-022 ADDED PRIORITY DWG. STAMP. DR'T'D: EAB 07-22-10
S	DCR 3669 REVISED LOGIC. ADDED SER 49001050 AND SER 49001051. DR'T'D: AMM 02-17-11
T	DC 10-01019 REVISED LOGIC. DR'T'D: NTH 03-16-11

E-2004

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION

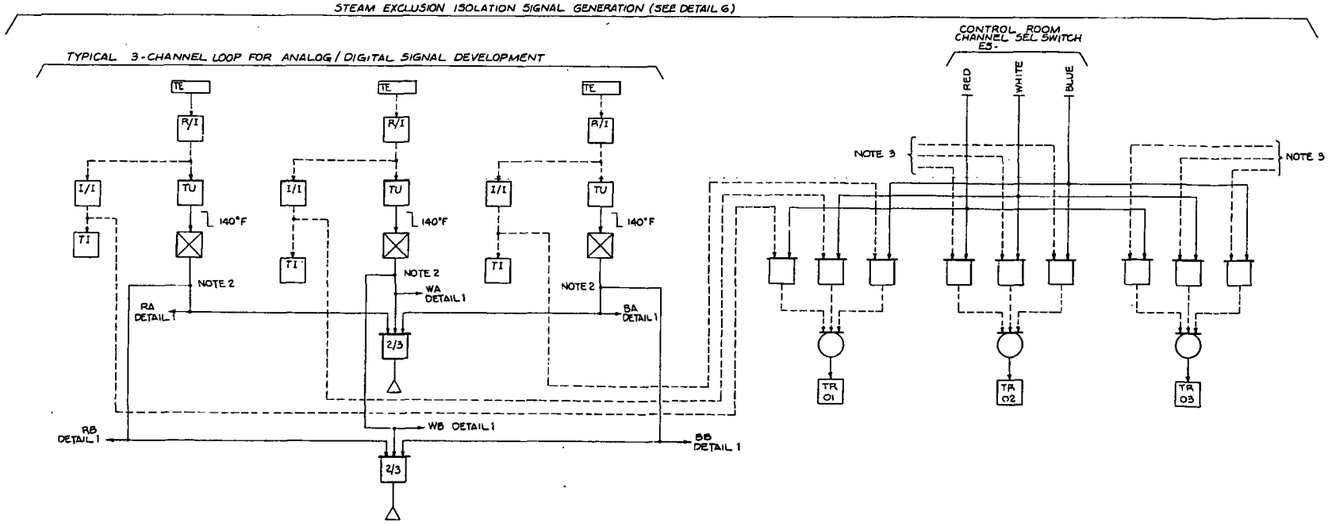
INTEGRATED LOGIC DIAGRAM
CONTROL ROOM A/C SYSTEM

DESIGNED BY
WISCONSIN PUBLIC SERVICE CORP.
GREEN BAY, WISCONSIN

DRAWN BY	DWG. NO.	REV.
BCY 11/30/93	E-2004	T
SCALE NONE		

E-2074

STEAM EXCLUSION ISOLATION SIGNAL GENERATION (SEE DETAIL 6)

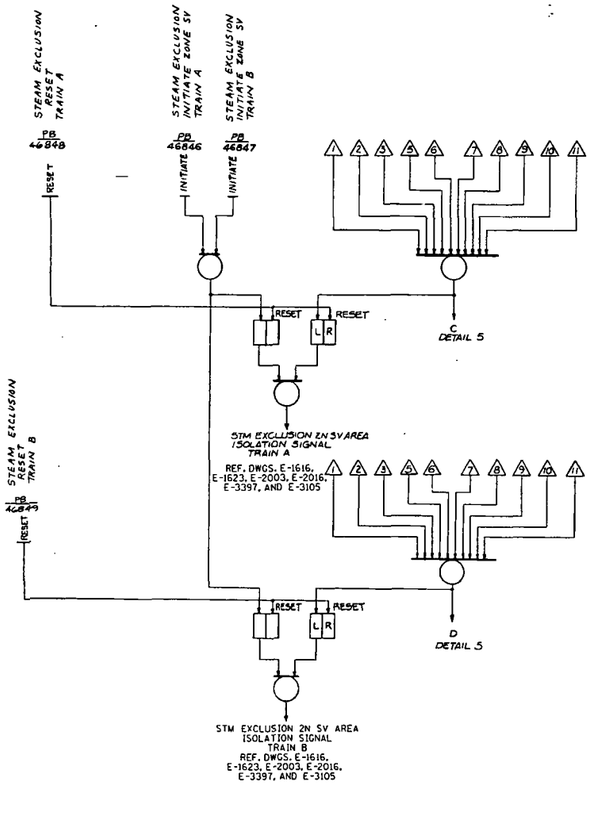


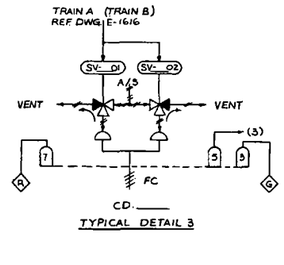
LOCATION (NOTE 1)	TE	CHAN	R/I	TU	I/I	TI	SEE DETAIL 1	TR	SEL. ES
CONTROL ROD DRIVE RM. INLET	15252	R	72001	7210101	72201	41575	4900/620	42577 01	46840
	15261	W	72010	7210601	72210	41576	421		
Δ1	15270	B	72019	7211101	72219	41577	422		
CONTROL ROD DRIVE RM. OUTLET Δ1	16253	R	72002	7210102	72202	41578	423	42577 02	
	15262	W	72011	7210602	72211	41579	424		
	15271	B	72020	7211102	72220	41580	425		
BATTERY ROOMS INLET Δ1	16254	R	72003	7210201	72203	41581	426	42577 03	
	15263	W	72012	7210701	72212	41582	427		
	15272	B	72021	7211201	72221	41583	428		
TB DRIVEN AFW PUMP ROOM Δ1	15264	W	72013	7210702	72213	41584	429	42578 01	
	15273	B	72022	7211202	72222	41585	430		
	15279	Y	72028	7211601	72228	41586	431		
AUX. BLDG. AREA INLET Δ1	15265	W	72014	7210801	72214	41587	432	42578 02	46841
	15274	B	72023	7211301	72223	41588	433		
	15280	Y	72029	7211602	72229	41589	434		
AUX. BLDG. FAN FLOORS Δ1	15266	W	72015	7210802	72215	41590	435	42578 03	
	16215	B	72024	7211302	72224	41591	436		
	15281	Y	72030	7211701	72230	41592	437		
AUX. BLDG. AREA OUTLET Δ1	15253	R	72004	7210202	72204	41593	438	42579 01	
	15267	W	72016	7210901	72216	41594	439		
	15282	Y	72031	7211702	72231	41595	440		
CONTROL ROOM A/C RECIRC. Δ1	16256	R	72005	7210301	72205	41596	441	42579 02	46842
	15268	W	72017	7210902	72217	41597	442		
	15283	Y	72032	7211801	72232	41598	443		
CONTROL ROOM A/C MAKEUP AIR Δ1	15257	R	72006	7210302	72206	41599	444	42579 03	
	15269	W	72018	7211001	72218	41600	445		
	15284	Y	72033	7211802	72233	41601	446		
AUX BLDG LAB AREAS	15258	R	72007	7210401	72207	41602	447	42580 01	
	15276	B	72025	7211401	72225	41603	448		
Δ1	15285	Y	72034	7211901	72234	41604	449		
AUX BLDG A/C EXHAUST FILTERS Δ1	16259	R	72008	7210402	72208	41605	450	42580 02	46843
	15277	B	72026	7211402	72226	41606	451		
	15286	Y	72035	7211902	72235	41607	452		
SPARE Δ1	15309	R	72257	7224301	72240	41619	895	42580 03	
	15310	B	72258	7224401	72241	41620	896		
	15311	Y	72259	7224501	72242	41621	897		

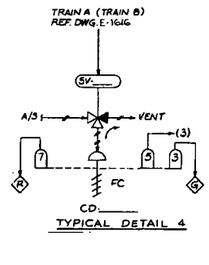
DETAIL 6

AIR OPERATED VALVE LIMIT SWITCH LEGEND					
ENTITY SYMBOL	ENTITY NOMENCLATURE	CLOSED	VALVE POSITION	OPEN	
1	ex				
2	ex				
3	ex				
4	ex				
5	ex				
6	ex				
7	ex				
8	ex				

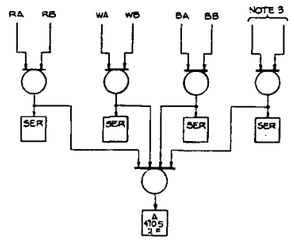
DETAIL 13

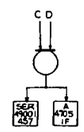


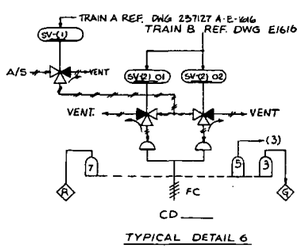


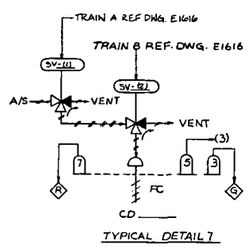


DAMPER	DESCRIPTION	SOLENOID VLV	GREEN LITE	RED LITE	(3) NOTE 5	TRAIN	TYPICAL DETAIL
34050	ACA-21/CO-34050 CRD. RM. SPLY. STM. EXCL. DMPR.	33429	4487801	4487802	AA	A	4
34051	ACA-21/CO-34051 CRD. RM. SPLY. STM. EXCL. DMPR.	33430	4487901	4487902	BB	B	4
34052	ACA-23/CO-34052 CRD. RM. EXH. STM. EXCL. DMPR.	33431	4488001	4488002	CC	A	4
34053	ACA-23/CO-34053 CRD. RM. EXH. STM. EXCL. DMPR.	33432	4488101	4488102	DD	B	4
34054	ASV-21/CO-34054 AUX. BLDG. BSMT. & MEZZ. SPLY. DUCT DMPR.	33433	4488201	4488202	EE	B	3
34055	ASV-41/CO-34055 AUX. BLDG. FAN FLOORS SPLY. DUCT DMPR.	33434	4488301	4488302	FF	B	4
34057	TAV-81/CO-34057 SFGRD. EQPT. RM. WEST STM. EXCL. DMPR.	33437	4488501	4488502	GG	A	4
34058	TAV-80/CO-34058 SFGRD. EQPT. RM. WEST STM. EXCL. DMPR.	33438	4488601	4488602	HH	B	4
34059	TAV-21/CO-34059 BATTERY RM. A & B STM. EXCL. DMPR.	33439	4488701	4488702	KK	A	4
34060	TAV-22/CO-34060 BATTERY RM. A & B STM. EXCL. DMPR.	33440	4488801	4488802	LL	B	4
34061	ACC-20/CO-34061 CR TO TURB. BLDG. STM. EXCL. DMPR.	33441	4488901	4488902	MM	A	4
34062	ACC-21/CO-34062 CR TO TURB. BLDG. STM. EXCL. DMPR.	33442	4489001	4489002	NN	B	4
34063	ACC-11/CO-34063 CR TOILET & KITCHEN STM. EXCL. DMPR.	33443	4489101	4489102	PP	A	4
34064	ACC-10/CO-34064 CR TOILET & KITCHEN STM. EXCL. DMPR.	33444	4489201	4489202	RR	B	4
34065	ASV-80/CO-34065 AUX. BLDG. A/C UNIT STM. EXCL. DMPR.	33445	4489301	4489302	TT	B	4
34120	TAV-25/CO-34120 SFGRD. EQPT. RM. EAST STM. EXCL. DMPR.	33769	4492901	4492902	JJ	A	4
34121	TAV-26/CO-34121 SFGRD. EQPT. RM. EAST STM. EXCL. DMPR.	33770	4493001	4493002	VV	B	4









DAMPER	DESCRIPTION	SOLENOID VALVE (1)	SOLENOID VALVE (2)	GREEN LITE	RED LITE	TBI NOTE 5	TYPICAL DETAIL
34056	ACA-5/CO-34056 AUX. BLDG. FAN FLOORS EXH. STM. EXCL. DMPR.	33435	33436	4488401	4488402	X	6
34066	AAC-25/CO-34066 AUX. BLDG. EXH. VENT TO FILTER PLENUM	33446	33447	4489401	4489402	Y	7
34067	AAC-21/CO-34067 AUX. BLDG. EXH. VENT. TO FILTER PLENUM	33448	33449	4489501	4489502	Z	7

NOTES:
1. EACH LOCATION CONTAINS 3 SEPARATE CHANNELS.
2. TRAIN A & TRAIN B SIGNALS ARE DEVELOPED FROM SEPARATE TESTABLE ISOLATION RELAYS.
3. SIGNALS FROM OTHER CHANNELS FROM OTHER FIELD LOCATIONS.
4. SWITCH TYPES

SWITCH NO.	POSITIONS	LEGEND PLATE DATA
46846, 46847, 46848, 46849	MOMENTARY PUSHBUTTON	INITIATE / RESET
46840, 46841, 46842, 46843	3 POSITION MAINTAINED	RED / WHITE / BLUE; WHITE / BLUE / YELLOW; RED / WHITE / YELLOW; RED / BLUE / YELLOW

5. SEE ALARM DETAIL 1, REF. DWG. E-1616

U

PRIORITY DRAWING

REVISION

M-1 REMOVED TDAFW PUMP ROOM STEAM EXCLUSION ISOLATION LOGIC, NOTE 6, AND SWITCHES 46844, 46845 AND 19595 PER DCR 2690 BY: BTR/TER 7-27-99 CHKD: [illegible] APP'D: [illegible]

N DCR 2690 COMPL. SEE REV M-1 FILMED: WPS 8-7-99

N-1 REVISED INFO CHART AND DETAIL 1 AT C-08 E-10 PER PDD 0133 BY: DDG 01-31-95 CHK'D: BCY 04-24-95 APP'D: PCM 2-3-95

P PDD 0133 COMPL. SEE REV N-1 FILMED: WPS 2-21-95

P-1 DCR 2960 REVISED DETAIL 1 BY: JMS 04-13-00 APP'D: KJS 04-13-00 SCANNED TO CADD & REM REF. DWG. PER RE PUR APP'D: DAK 04-17-00

Q DCR 2960 COMPL. SEE REV. P-1 FILMED: WPS 04-18-00

Q-1 PDR 0176 CHANGED I/I FOR TE15263 FROM 7722121 TO 72212 BY: JB 8-9-00 APP'D: DAK 08-10-00

R PDR 0176 COMPL. SEE REV. Q-1 FILMED: WPS 08-15-00

R-1 RE PUR 04-035 ADDED DRAWING REFERENCE TO STEAM EXCLUSION TRAIN A & B. DRFT'D: PJB 11/06/04 APP'D: TDH 11-09-04

S RE PUR 04-035 COMPL. SEE REV. R-1 FILMED: 11-16-04

T CR 028504 CHANGED DRAWING REFERENCE. DRFT'D: MTH 01-15-08 APP'D: JRR 01-16-08 FILMED: 01-22-08

U RE PUR 10-022 ADDED PRIORITY DWG. STAMP DRFT'D: EAB 07-22-10

E-2074

WISCONSIN JOHN C. CUSTINE E-18354 EXPIRES: DEC 31, 2011 REGISTERED PROFESSIONAL ENGINEER

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION

INTEGRATED LOGIC DIAGRAM
AUXILIARY BUILDING SPECIAL VENT

DRAWN	DESIGNED	AED
SCALE NONE	CHECKED	
APPROVED	PROJ. & DWG. NO. E-2074	SHT OF (U)

HYBRID CADD

E-1616

SAFETY INJECTION SEQUENCE STEP 5 TRAIN A REF. DWG. E-1636
SAFETY INJECTION SEQUENCE STEP 5 TRAIN B REF. DWG. E-1636
AUTO INHIBIT TRAIN A REF. DWG. E-1636
AUTO INHIBIT TRAIN B REF. DWG. E-1636
AUX BLDG VENT EXHAUST HIGH RADIATION E-3748
SAFETY INJECTION SIGNAL TRAIN A REF. DWG. E-1636
AUX BLDG VENT EXHAUST HIGH RADIATION E-3748
SAFETY INJECTION SIGNAL TRAIN B REF. DWG E-1636
STEAM EXCLUSION ZONE SV AREA ISOL SIGNAL TRAIN A REF. DWG. E-2074
STEAM EXCLUSION ZONE SV AREA ISOL SIGNAL TRAIN B REF. DWG E-2074

CONTROL ROOM CONTROL SWITCH ES 46836 (CLOSE / AUTO / OPEN)
RESET RESET
TRAIN B REF. DWG. E-2074 & E-2068
TRAIN A REF. DWG. E-2074 & E-2068
A DET. I

AUX BLDG EXHAUST FAN 1A (AUTO/ON) REF. DWG. E-1623
AUX BLDG EXH FAN 1B (AUTO/ON) REF. DWG. E-1623
AUX BLDG EXHAUST FAN 1A (ON) REF. DWG. E-1623
AUX BLDG EXH FAN 1B (ON) REF. DWG. E-1623
SPENT FUEL POOL EXHAUST FAN 1A (AUTO/ON) REF. DWG. E-1623
SPENT FUEL POOL EXH FAN 1A (ON) REF. DWG. E-1623
SPENT FUEL POOL EXH FAN 1B (AUTO/ON) REF. DWG. E-1623
SPENT FUEL POOL EXH FAN 1B (ON) REF. DWG. E-1623
START SPENT FUEL POOL EXH FAN 1A REF. DWG. E-1623
START SPENT FUEL POOL EXH FAN 1B REF. DWG. E-1623
START AUXILIARY BUILDING EXHAUST FAN 1B REF. E-1623
START AUXILIARY BUILDING EXHAUST FAN 1A REF E-1623

SV 33211 — N DETAIL I — 44809 02 CD 34028 ASV-40/CD-34028 AUX. BLDG. FAN FLOORS SUPPLY BOUNDARY DAMPER 44809 01
SV-3342 SV 33267 — K DETAIL I — 44810 02 CD 34025.01 ASV-66/CD-34025 RADIATION PROTECTION OFFICE AREA & TOILET EXH 44810
SV 33259 — C DETAIL I — 44855 02 CD 34017 ASV-81/CD-34017 AUX BLDG A/C UNIT BOUNDARY DAMPER 44855 01
SV-33428 SV 33366 — B DETAIL I — 44877 02 CD 34003 ASV-65/CD-34003 RADIATION PROTECTION OFFICE AREA & TOILET EXH BOUNDARY DAMPER 44877 01

SV-3342 SV-3341 SV-3340 SV-33419 SV-3342 SV 33249 SV 33258 SV 33266 SV-33300 SV-33307
SV-332680 SV-332680 SV-332610 SV-332610 SV-3326201 SV-332620 SV-332630 SV-332630 SV-332640 SV-332640 SV-332649 SV-332658 SV-332660 SV-3326607
DETAIL I — E DETAIL I — F DETAIL I — G DETAIL I — H DETAIL I — M DETAIL I

44806 02 CD 34026 ASV-10/CD-34026 AUX BLDG SV AREAS TO EXH FANS BOUNDARY DAMPER 44806 01
44800 01 44800 02 CD 34019 ASV-22/CD-34019 AUX BLDG SV AREAS TO EXH FANS BOUNDARY DAMPER
44801 01 44801 02 CD 34020 ASV-23/CD-34020 AUX BLDG SV AREAS TO EXH FANS BOUNDARY DAMPER
44802 01 44802 02 CD 34021 ASV-51B/CD-34021 AUX BLDG SV EXH FAN B STACK BOUNDARY DAMPER
44803 01 44803 02 CD 34022 ASV-51A/CD-34022 AUX BLDG SV EXH FAN A STACK BOUNDARY DAMPER
44804 01 44804 02 CD 34023 ASV-31A/CD-34023 AUX BLDG SV SFP EXH FAN A STACK BOUNDARY DAMPER
44807 01 44807 02 CD 34016 ASV-30/CD-34016 AUX BLDG SV AREAS TO EXH FANS BOUNDARY DAMPER
44805 01 44805 02 CD 34024 ASV-31B/CD-34024 AUX BLDG SV SFP EXH FAN B STACK BOUNDARY DAMPER
44808 01 44808 02 CD-34027 ASV-20/CD-34027 AUX BLDG BSMT & MEZZ SUPPLY BOUNDARY DAMPER

SV33427 — SV-3325 — T DETAIL I — 44811 02 CD 34049 ASV-50/CD-34049 AUX BLDG SV BOUNDARY DAMPER 44811 01

SV-33416 SV-33426 SV-33428 SV-33265 SV-33275 SV-33285 SV-33295
D DET. I — P DET. I — R DET. I
44856 02 CD 34018 ASV-60/CD-34018 RADIATION PROTECTION OFFICE AREA AND LAUNDRY ROOM EXH. BOUNDARY DAMPER 44856 01
44853 02 CD 34046 ASV-70/CD-34046 I&C SHOP EXHAUST BOUNDARY DAMPER 44853 01
44854 02 CD 34047 ASV-75/CD-34047 DOSIMETRY ROOM EXHAUST BOUNDARY DAMPER 44854 01

CONTROL ROOM CONTROL SWITCH ES 46834 (OPEN / AUTO / CLOSE)
SV 33255 — A/S — VENT — FC — DETAIL I
3401303 3401302 3401301 3401301
46834 02 CD 34013 46834 01 ASV-90A/CD-34013 AUX BLDG. SV EXH FILTER A INLET DMPR

CONTROL ROOM CONTROL SWITCH ES 46577 (OFF / AUTO)
SER 49001 142 — A DET. I — RESET — SV 33256 — A/S — VENT — F.O. — RUN — 480 V. MTR DETAIL 22
CD 34014 ASV-91A/CD-34014 AUX BLDG SV EXH FAN A DMPR 44910 02 0901
SV33309 — F.C. — LOCAL LIGHT — ZONE SV EXH FILTER 1A DELUGE VALVE — 44909 1101
46577 01 AUX BLDG SV EXH FAN A MOTOR NO. 1-126 COMP. NO. 132-201

ZONE SV EXHAUST FILTER 1A — HD 26341 — HEAT DETECTOR NO. 1 — HEAT DETECTOR NO. 2 — SPRAY SYS. POWER AVAILABLE — 200 F NOTE 2 — 200F NOTE 2 — LOCAL LIGHTS
TS 1639901 — 175°F — ON — HEATER — ZONE SV FILTER ASSEMBLY 1A HEATING COIL MOTOR NO. 1-449 — LOCAL LIGHTS
TO ZONE 0803 FIRE PROTECTION SYS. REF. DWG. E-1620

CONTROL ROOM CONTROL SWITCH ES 46835 (OPEN / AUTO / CLOSE)
SV 33252 — A/S — VENT — F.O. — RUN — 480 V. MTR DETAIL 22
CD 34010 ASV-90B/CD-34010 AUX. BLDG SV EXH. FILTER B INTER. DMR 46835 02 46835 01

CONTROL ROOM CONTROL SWITCH ES 46578 (OFF / AUTO)
SER 49001 169 — B DET. I — RESET — SV 33257 — A/S — VENT — F.O. — RUN — 480 V. MTR DETAIL 22
CD 34015 ASV-91B/CD-34015 AUX BLDG SV EXH FAN B DMPR 3401502
SV33310 — F.C. — LOCAL LIGHT — ZONE SV EXH FILTER 1B DELUGE VALVE — 44909 1105
46578 02 AUX BLDG SV EXH FAN B MOTOR NO. 1-144 COMP. NO. 132-202 46578 01

ZONE SV EXHAUST FILTER 1B — HD 26342 — HEAT DETECTOR NO. 1 — HEAT DETECTOR NO. 2 — SPRAY SYS POWER AVAILABLE — 200 F NOTE 2 — 200 F NOTE 2 — LOCAL LIGHT
TS 1639902 — 175°F — ON — HEATER — ZONE SV FILTER ASSEMBLY 1B HEATING COIL MOTOR NO. 1-450 — LOCAL LIGHTS
TO ZONE 0803 FIRE PROTECTION SYSTEM REF. DWG. E-1620
44910 0905

AIR OPERATED VALVE LIMIT SWITCH LEGEND

SWITCH SYMBOL	SWITCH NUMBER	CLOSED	VALVE POSITION	OPEN
1	aa			
2	ab			
3	ba			
4	bb			
5	ca			
6	cb			
7	da			
8	db			

MOTOR OPERATED VALVE LIMIT SWITCH LEGEND

SWITCH SYMBOL	SWITCH NUMBER	CLOSED	VALVE POSITION	OPEN
1	aa			
2	ab			
3	ba			
4	bb			
5	ca			
6	cb			
7	da			
8	db			
9	ea			
10	eb			
11	fa			
12	fb			
13	ga			
14	gb			
15	ha			
16	hb			
17	ia	SWITCH NORMAL CLOSED (NC) OPENS WHEN MOTOR IS OVERLOADED WHILE CLOSING VALVE		
18	ib	SWITCH NORMAL CLOSED (NC) OPENS WHEN MOTOR IS OVERLOADED WHILE OPENING VALVE		

VALVE LIMIT SWITCH LEGENDS DETAIL 13

480 VOLT MOTOR STARTER DETAIL 22

ZONE SV EXHAUST FLTR ASSY. 1A HUMIDITY HUM 18495 — 70% — SER 49001 173 — 4705 3G
ZONE SV EXHAUST FLTR ASSY. 1B HUMIDITY HUM 18496 — 70% — SER 49001 174

Y — AA BB CC DD EE FF GG HH JJ KK LL MM NN PP QQ RR SS TT UU VV WW XX YY ZZ — 46836 02 — 46836 01 — A — SER 49001 175 — 4705 2G — DETAIL I

NOTES
1. SWITCH TYPES

SWITCH NO.	POSITIONS	LEGEND PLATE DATA
46577	2 POSITION MAINTAINED	OFF/AUTO
46578		
46834	3 POSITION SPRING RETURN TO AUTO	CLOSE/AUTO/OPEN
46835		
46836		

2. FUSIBLE LINK-MUST BE MANUALLY REPLACED TO ELIMINATE INPUT SIGNAL ONCE IT IS ACTIVATED.
3. FOR INPUTS AA THROUGH Z ON DETAIL I SEE DRAWING E-2074 DETAIL 6.

A B — 4705 1G — DETAIL II

W
PRIORITY DRAWING

REVISION

O-1	RAP 1901 RELEASED ROOM NAME AT CO-06b & 10. BY: SAS 10-1-98 APP'D: TMM 10-13-98
O	RAP 1901 COMPL. SEE REV O-1. PRINTED: (WPS) 10-20-98
O-1	DCR 2529 REVISED 1A & 1B HUMIDITY EQUIPMENT NO.'S BY: JMS 03-01-00 APP'D: DJR 03-07-00
R	DCR 2529 COMPLETE SEE REV. O-1 FILMED: WPS 03-14-00
R-1	RE PUR 0296 DRAWING SCANNED BY: JMS 08-29-00 APP'D: DAK 08-31-00
S	RE PUR 0296 COMPLETE SEE REV. R-1 FILMED: WPS 09-05-00
S-1	RE PUR 0305 REVISED CONTROLLER NO.'S. BY: SMJ 07-30-01 APP'D: DAK 08-21-01
T	RE PUR 0305 COMPLETE SEE REV. S-1 FILMED: WPS 08-28-01
T-1	RE PUR 0307 ADDED NOTE 3. BY: NTH 11-15-01 APP'D: DAK 11-15-01
U	RE PUR 0307 COMPLETE. SEE REVISION T-1. FILMED: WPS 11-20-01
V	RE PUR 08-034 REVISED SV-33419 TO READ SV-33418. DRFT'D: NTH 07-08-08 APP'D: JER 07-10-08
W	RE PUR 10-022 ADDED PRIORITY DWG. STAMP DRFT'D: EAB 07-19-10

E-1616

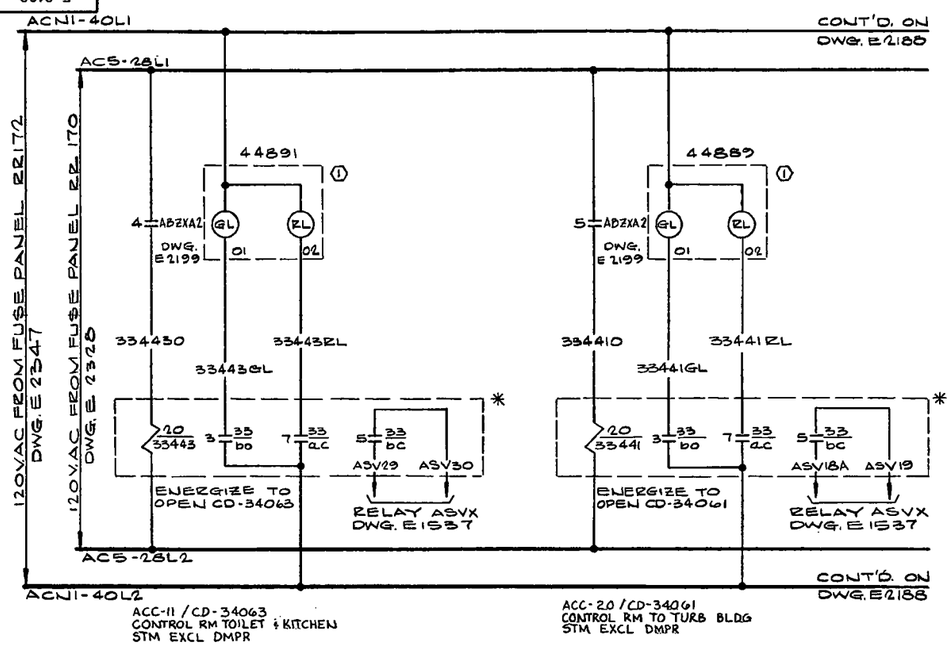
DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION

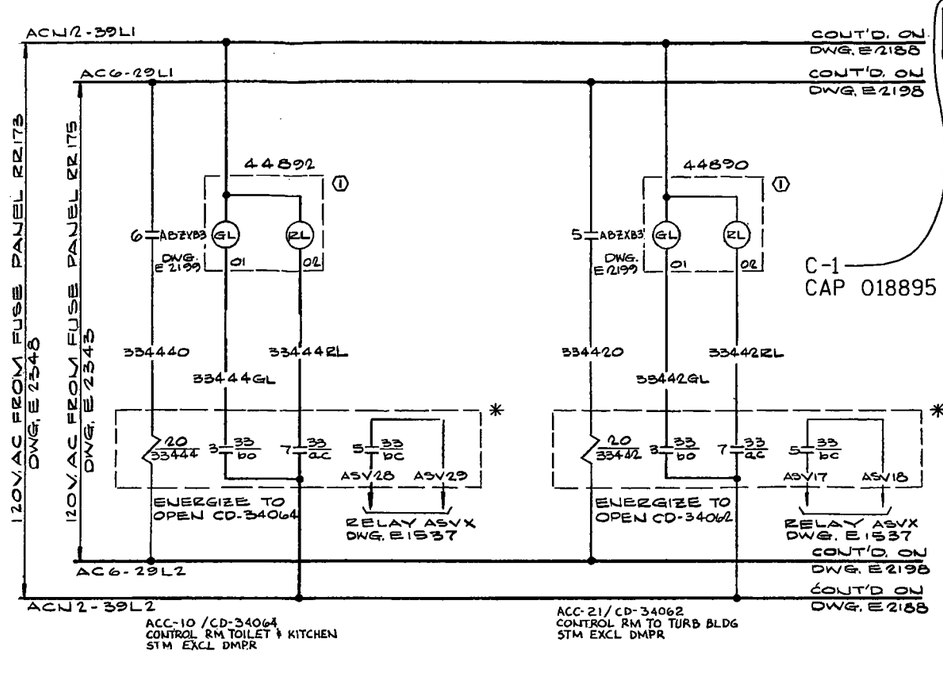
INTEGRATED LOGIC DIAGRAM
AUX BLDG SPEC VENT

DESIGNED BY
WISCONSIN PUBLIC SERVICE CORP.
GREEN BAY, WISCONSIN

HYBRID CADD — Public Service — DRAWN N/A — SCALE NONE — DWG. NO. E-1616 — REV. W

E-2189





RG 1.97 DRAWING
SEE NOTE 1

C-1
CAP 018895

NOTES:

1. THE PURPOSE OF THIS DRAWING IS TO ILLUSTRATE THE EQUIPMENT ASSOCIATED WITH THE REGULATORY GUIDE (RG) 1.97 ACCIDENT MONITORING INSTRUMENTATION VARIABLE.

   THIS LOOP DRAWING CONTAINS THE RG 1.97 EQUIPMENT INCLUDED ON THE RG 1.97 MASTER EQUIPMENT LIST FOR THE SPECIFIED VARIABLE. DEDICATED RG 1.97 DRAWINGS WERE NOT DEVELOPED FOR THIS VARIABLE. THEREFORE EQUIPMENT OUTSIDE THE SCOPE OF RG 1.97 MAY ALSO BE ILLUSTRATED ON THIS DRAWING.

   CONTACT THE RG 1.97 PROCESS OWNER PRIOR TO SUBMITTING CHANGES TO THIS DRAWING.

REFERENCES:

2. FOR SYMBOL LIST SEE DWG. E1094

REVISIONS

A	DCR 1195 COMPL SEE REV 0-1 APP'D: JBV 4-24-86 FILM'D(WPS) 5-6-86
A-1	REVISED EQUIP TITLES. DWN: S. CHOE CHK'D: LA 11-19-91 APP'D: JJB 2-13-91
	INFO TRANSFER FROM FD EOR WPS PER DCR 1885 BY: D. GIESLER 8-26-91 CHK'D: JJM 9-03-91
B	DCR 1885 COMP SEE REV. A-1 APP'D: DMM 1-15-92 FLM'D: WPS 1-28-92
B-1	RE PUR 0302 SCANNED TO CADD REMOVED DRAWING REF. BY: ABF 07-03-02 APP'D: RAF 07-18-02
C	RE PUR 0302 COMPLETE SEE REV. B-1. FILMED:(WPS) 07-23-02
C-1	CAP 018895 ADDED NOTE 1 AND RG 1.97 INDICATION. DRFT'D: NTH 12-27-04 APP'D: PPB 01-03-05
D	CAP 018895 COMPLETE. SEE REVISION C-1. FILMED: 01-11-05

ACC

WISCONSIN PUBLIC SERVICE CORPORATION
KEWAUNEE NUCLEAR POWER PLANT
CARLTON, KEWAUNEE COUNTY, WISCONSIN

SCHEMATIC DIAGRAM - SOLENOID VALVES SV33443, SV33441, SV33444, & SV33442

DESIGNED BY
WISCONSIN PUBLIC SERVICE CORP.
GREEN BAY, WISCONSIN

HYBRID CADD

DRAWN	DWG. NO.	REV.
JG 4-30-73	E-2189	D
SCALE		

E-2199

ACS-31L1

46836 (I) 13-A-9 CLOSE — AUTO — OPEN

1R 1L 2R 2L 4R 4L 5R 5L

L-1
DCR 2172

ABZXA4 — ABZXA1 — ABZXA3 — ABZXA2 — ABZXA4 — 9 — SI10X (C) — 13 — ABZXA2 — DWG E2170 — E RMKA 29098 (E1) — ABZXA1 — 1 — SE10X (J1) DWG. E2605 — ABZXA

120V. AC FROM FUSE PANEL RR170 DWG. E-2328

ACS-24L1 — ABZXA4 — ABZXA1

2	3	4	5	6	7	8
332620 TO SV33264 DWG E1534	332590 TO SV33259 DWG E1539	332600 TO SV33260 DWG. E1539	332680 TO SV33268 DWG E1536	332700 TO SV33270 DWG E1536	332710 TO SV33271 DWG E1536	332670 TO SV33267 DWG E1537

ACS-30L1 — 3326302 — ABZXA3

2	3	4	5	6	7	8
332540 TO SV33254 DWG E1917	332590 DWG E1917	332610 TO SV33260 DWG E1534	332630 TO SV33263 DWG E1534	334350 TO SV33435 DWG. E2188	334460 DWG. E2190	334480 DWG. E2190

ACS-27L1 — ACS-28L1 — ACS-29L1 — 3326402 — ABZXA2

2	3	4	5	6	7	8
334370 TO SV33437 DWG. E2186	334390 TO SV33439 DWG. E2186	334430 TO SV33443 DWG. E2189	334410 TO SV33441 DWG. E2189	334310 TO SV33431 DWG. E2188	334290 TO SV33429 DWG. E2188	332640 TO SV33264 DWG. E1535

ACS-27L1 — 3378702 — 3381503 — ABZXA4

1	2	3	4
ABZXA3 THIS DWG.	337690 E2198	3378901 E3262	3381504 E 3360

ABZXA1 GE CR120B (TB1624) — ABZXA2 GE CR120B (TB1624) — ABZXA3 GE CR120B (TB1624) — ABZXA4 GE CR120B (TB 1624)

ACS-31L2

RELAYS ABZXA1, ABZXA2, ABZXA3, ABZXA4

120V. AC FROM FUSE PANEL RR175 DWG. E-2344

ACG-32L1 — ABZXB4 — ABZXB1 — ABZXB3 — ABZXB2 — 1 — SI20X (D) — 9 — 13 — ABZXB2 — G RMKB 29098 (D1) DWG E2171 — ABZXB1 — 1 — SE20X (K1) DWG. E2684 — ABZXB

ACG-26L1 — ABZXB4 — ABZXB1

2	3	4	5	6	7	8
334180 TO SV33418 DWG. E1534	334190 TO SV33419 DWG E1534	334200 TO SV33420 DWG E1535	334210 TO SV33421 DWG E1537	334160 TO SV33416 DWG E1539	334150 TO SV33425 DWG E1917	334260 TO SV33426 DWG E1917

ACG-29L1 — ACG-30L1 — ABZXB3

2	3	4	5	6	7	8
334220 TO SV33422 DWG E1536	334170 TO SV33417 DWG E1534	334330 TO SV33433 DWG E2179	334420 TO SV33442 DWG E2189	334440 DWG E2189	334340 DWG E2198	334450 SV33445 DWG E2190

ACG-28L1 — ACG-31L1 — ABZXB2

2	3	4	5	6	7	8
334400 TO SV33440 DWG E2187	334380 TO SV33438 DWG E2187	334360 TO SV33436 DWG E2188	334470 TO SV33447 DWG E2190	334490 TO SV33449 DWG E 2190	334320 TO SV33432 DWG E2188	334300 TO SV33430 DWG E2188

ACG-28L1 — 1-671C101 — 1-673C101 — ABZXB4

1	2	3	4
ABZXB3 THIS DWG	337700 E2198	1-671C E-1402	1-673C E-1401

ABZXB1 GE CR120B (TB1739) — ABZXB2 GE CR120B (TB1739) — ABZXB3 GE CR120B (TB1739) — ABZXB4 GE CR120B (TB 1739)

ACG-32L2

RELAYS ABZXB1, ABZXB2, ABZXB3, ABZXB4

AUX BLDG SPECIAL VENT BOUNDARY DAMPERS CONTROL

REFERENCES:
1. FOR SYMBOL LIST SEE DWG E-1094
2. L/D AUX BLDG SPEC VENT E-1616

L-1
DCR 2172

REVISIONS

J-1 REMOVED PROJECT NO'S. SYMBOL K1 FOR RELAY SE20X WAS K PER RE PUR 0132 BY: BCY 12/23/92 CHK'D: RJS 12/29/92 APP'D: TRR 01-04-93

K RE PUR 0132 COMPL. SEE REV. J-1 FILMED:(WPS) 01-12-93

K-1 REMOVE RELAYS TAFRA & TAFRB, MTR 1-724, RELAY 42/1-724 & ASSOC. CONTROLS PER DCR 2690 BY: BCY 7/13/94 CHK'D: GJV 07-19-94 APP'D: BDG 07-22-94

L DCR 2690 COMPL. SEE REV. K-1 FILMED:(WPS) 08-09-94

L-1 REVISED RM AUX. RLY TAG NOS. ADDED DWG REF. 2. PER DCR 2172 BY: BCY 9/12/94 CHK'D: GV 09-20-94 APP'D: TLM 09-28-94

M DCR 2172 COMPL. SEE REV. L-1 FILMED:(WPS) 10-18-94

ASV

HYBRID CADD

E-2199

WISCONSIN PUBLIC SERVICE CORPORATION
KEWAUNEE NUCLEAR POWER PLANT
CARLTON, KEWAUNEE COUNTY, WISCONSIN

SCHEMATIC DIAGRAM DAMPER CONTROL RELAYS

DESIGNED BY
WISCONSIN PUBLIC SERVICE CORP.
GREEN BAY, WISCONSIN

DRAWN	DWG. NO.	REV.
N/A	E-2199	M
SCALE		
NONE		

edw107 29-OCT-2007 16:15 E-2199.HYB

E-1635

SAFETY INJECTION MANUAL CONTROL

SAFETY INJECTION TRAIN A START — PB 4647201
SAFETY INJECTION TRAIN B START — PB 4647501
SAFETY INJECTION TRAIN A RESET — PB 4647202

COMPUTER YO 9200
COMPUTER YO 9210
TO RBV SYSTEM DWG E3310

REACTOR TRIP
RESET
RESET
90 SEC.
AD
YY
SI GRP 2 REF. DWG E2581 (E-2)
44905 1202
44905 1201
A 4702 A
SER 1396
YYY
EEE REF. DWG. E1636
REF. DWG.# 237127A-E1634

SAFETY INJECTION TRAIN A BLOCK/UNBLOCK

ES 46369
SAFETY INJECTION UNBLOCK C.S
SAFETY INJECTION BLOCK C.S
PRESSURIZER PRESSURE HIGH REF. DWG #237127A-E2038 — PC 429D-XA
PRESSURIZER PRESSURE HIGH REF. DWG #237127A-E2038 — PC 430F-XA
PRESSURIZER PRESSURE HIGH REF. DWG #237127A-E2038 — PC 431I-XA

TT — 44908 0101 — T — COMPUTER P0492D
UU — 44908 0102 — U — COMPUTER P0493D
VV — 44908 0103 — V — COMPUTER P0494D

2/3
AC
RESET
WW
44905 1102
COMPUTER P0495D
TO SAFETY INJECTION SYS REF. DWG. 237127A-E2034

SAFETY INJECTION AUTOMATIC ACTUATION SIGNALS

LOOP A STEAM LINE PRESSURE LOW-LOW — PC 468A-XA
LOOP A STEAM LINE PRESSURE LOW-LOW — PC 469A-XA
LOOP A STEAM LINE PRESSURE LOW-LOW — PC 482A-XA

EE — 44908 0701 — E — COMPUTER P0400D
FF — 44908 0702 — F — COMPUTER P0401D
GG — 44908 0703 — G — COMPUTER P0402D
W — A 4706 1B — SER 1174

LOOP B STEAM LINE PRESSURE LOW-LOW — PC 478A-XA
LOOP B STEAM LINE PRESSURE LOW-LOW — PC 479A-XA
LOOP B STEAM LINE PRESSURE LOW-LOW — PC 483A-XA

HH — 44908 0707 — H — COMPUTER P0420D
II — 44908 0708 — I — COMPUTER P0421D
JJ — 44908 0709 — J — COMPUTER P0422D
X — A 4706 1C — SER 1172

PRESSURIZER PRESSURE LOW REF. DWG. E2036 — PC 429C-XA
PRESSURIZER PRESSURE LOW REF. DWG. E2036 — PC 430E-XA
PRESSURIZER PRESSURE LOW REF. DWG. E2036 — PC 431G-XA

LL — 44908 0201 — L — COMPUTER P0489D
NN — 44908 0202 — N — COMPUTER P0490D
PP — 44908 0203 — P — COMPUTER P0491D
Z — A 4704 1B — SER 1173

CONTAINMENT PRESSURE HI REF DWG #237127A-E1609 — PC 945A-XA
CONTAINMENT PRESSURE HI REF DWG #237127A-E1609 — PC 947A-XA
CONTAINMENT PRESSURE HI REF DWG #237127A-E1609 — PC 949A-XA

QQ — 44908 0901 — Q — COMPUTER P1000D
RR — 44908 0904 — R — COMPUTER P1001D
SS — 44908 0902 — S — COMPUTER P1002D
AA — A 4702 3D — SER 1176

BB — SER 49001 310 — A 4702 2B — D — COMPUTER P0405D
CC — SER 49001 315 — A 4702 2C — C — COMPUTER P0423D
DD — SER 49001 321 — A 4702 2A — B — COMPUTER P0 4790
FF — SER 49001 300 — A 4702 2D — A — COMPUTER P1003D

TO REACTOR BUILDING VENT SYSTEM DWG. 237127A-E3310

TRAIN A
TRAIN B

SAFETY INJECTION MANUAL CONTROL

SAFETY INJECTION TRAIN B RESET — PB 4647502
TO RBV SYSTEM DWG 3310

REACTOR TRIP
RESET
RESET
90 SEC
AD
YY
SI GRP 2 REF. DWG E2581 (E-1)
A 4702 D — SER M41 — FFF REF. DWG E1636
ZZZ
REF. DWG.# 237127A-E1634

SAFETY INJECTION TRAIN B BLOCK/UNBLOCK

ES 46370
SAFETY INJECTION UNBLOCK C.S
SAFETY INJECTION BLOCK C.S
PRESSURIZER PRESSURE HIGH REF. DWG #237127A-E2038 — PC 429D-XB
PRESSURIZER PRESSURE HIGH REF. DWG #237127A-E2038 — PC 430F-XB
PRESSURIZER PRESSURE HIGH REF. DWG #237127A-E2038 — PC 431I-XB

TT — T
UU — U
VV — V

2/3
AC
RESET
WW
COMPUTER P0496D
TO SAFETY INJECTION SYS. REF. DWG. 237127A-E2034

SAFETY INJECTION AUTOMATIC ACTUATION SIGNALS

LOOP A STEAM LINE PRESSURE LOW-LOW — PC 468A-XB
LOOP A STEAM LINE PRESSURE LOW-LOW — PC 469A-XB
LOOP A STEAM LINE PRESSURE LOW-LOW — PC 482A-XB

EE — E
FF — F
GG — W

LOOP B STEAM LINE PRESSURE LOW-LOW — PC 478A-XB
LOOP B STEAM LINE PRESSURE LOW-LOW — PC 479A-XB
LOOP B STEAM LINE PRESSURE LOW-LOW — PC 483A-XB

HH — H
II — I
JJ — X

PRESSURIZER PRESSURE LOW REF. DWG. E2036 — PC 429C-XB
PRESSURIZER PRESSURE LOW REF. DWG. E2036 — PC 430E-XB
PRESSURIZER PRESSURE LOW REF. DWG. E2036 — PC 431G-XB

LL — L
NN — N
PP — P
Z

CONTAINMENT PRESSURE HI REF DWG #237127A-E1609 — PC 945A-XB
CONTAINMENT PRESSURE HI REF DWG #237127A-E1609 — PC 947A-XB
CONTAINMENT PRESSURE HI REF DWG #237127A-E1609 — PC 949A-XB

QQ — Q
RR — R
SS — S
AA

BB — D
CC — C
DD — B
FF — A

TO REACTOR BUILDING VENT SYSTEM DWG. 237127A-E3310

REFERENCES:

FOR PRESSURIZER PRESSURE ALSO SEE XX-100-148 AND E-2038.
FOR SI ACTUATED, ENABLED, & BLOCKED ALSO SEE XX-100-150.
CONTAINMENT PRESSURE 17 PSIG E-1627, 23 PSIG E-1604
ALL ON XX-100-150.
STEAM LINE PRESSURE ALSO SEE XX-100-149.

PRIORITY DRAWING

HYBRID CADD

REVISION
M DCR 1885 COMP SEE REV. L APP'D: DMM 12-16-91 FILM'D: WPS 12-23-91
M-1 DWG WAS SCANNED & REVISED UNDER THE ELECTRICAL DWG QUALITY BASELINE PROJECT SARGENT & LUNDY BY: GT 09-02-92 CHK'D: RFJ 09-04-92 APP'D: JDR 09-04-92 APP'D: DWP'S, TTR 11-04-92
N PDD-0051 COMPLETE SEE REV. M-1 FILMED: WPS 11-17-92
N-1 PDD 0093 REV'D DESIG'S AT LOC-3 3-0, 5-0, 7-0, & 9-0. BY: CB 1-17-94 CHK'D: RJS 1-18-94 APP'D: PCM 02-03-94
P PDD 0093 COMPL. SEE REV. N-1 FILMED: WPS 02-15-94
P-1 PDD 0122 COMPUTER PO 4790 WAS PO 4800. BY: BCY 11/9/94 CHK'D: BCY 11/9/94 APP'D: PCM 11-10-94
Q PDD 0122 COMPL. SEE REV. P-1 FILMED: WPS 11-29-94
R RE PUR 10-022 ADDED PRIORITY DWG. STAMP DRFT'D: EAB 07-22-10

E-1635

DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION

INTEGRATED LOGIC DIAGRAM
DIESEL GENERATOR ELECTRIC

DESIGNED BY
WISCONSIN PUBLIC SERVICE CORP.
GREEN BAY, WISCONSIN

DRAWN	DWG. NO.	REV.
N/A	E-1635	R
SCALE: NONE		