

## **SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

### **APR1400 Design Certification**

**Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD**

**Docket No. 52-046**

**RAI No.: 29-7926**  
**SRP Section: 03.02.01 – Seismic Classification**  
**Application Section: 3.2.1**  
**Date of RAI Issue: 06/15/2015**

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### **Question No. 03.02.01-6**

In DCD Tier 2, Table 3.2-1, the letdown heat exchanger supply and return piping between the valves CC-297, CC-301, CC-1685, and CC-1686 in division I, which appears to be part of the component cooling water system (CCW), is identified as seismic Category II, Quality Group D. This is supported in Figure 9.2.2-1 (Page 9.2-149). The letdown heat exchanger itself (part of the chemical and volume control system (CVCS)) is classified as seismic Category I, Quality Group C. This transition is not illustrated in the system figure. Please justify why a portion of CCW, a safety-related system, is not seismic Category I, and why its classification is not consistent with the heat exchanger that it supports. Updates to DCD Tier 2, Table 3.2-1 and associated system figures may be needed to clarify these classifications.

### **Response**

The CVCS including the letdown heat exchanger is not required to perform any accident mitigation or safe shutdown function and the letdown line in the CVCS is automatically isolated by the engineered safety features actuation signal (ESFAS) following a LOCA. The cooling function for the letdown heat exchanger is not also required. Therefore the letdown heat exchanger supply and return piping between the valves CC-297, CC-301, CC-1685, and CC-1686 in the CCWS is classified as seismic Category II, Quality Group D in accordance with classification criteria of USNRC RG 1.26 and RG 1.29.

### **Supplemental Response**

This supplemental response is to clarify the specification difference in the shell (CCW) and tube (CVCS) portions of the letdown heat exchanger and to provide an understanding of the lack of complete piping specification notation on the flow diagrams for the CCW system, Figure 9.2.2-1, of the DCD.

The tube portion of the letdown heat exchanger is part of the CVCS system and is classified as seismic Class I, Quality Group B in accordance with Table 3.2-1. The shell side of the letdown heat exchanger is part of the CCW system and is classified as seismic Class I, Quality Group C. The quality group classification of the heat exchanger is in accordance with RG 1.26 and is not uncommon for a component such as a heat exchanger to have two classifications since two separate systems interface within the same structure.

As stated in DCD Section 3.2.2, the tube side of the heat exchanger is Quality Group B since it removes heat directly from the reactor and is part of the CVCS that form the RCS letdown loop. The shell side of the heat exchanger is Quality Group C since it supports a safety system function and forms the portion of the CCW that cools other safety systems.

Specification breaks between piping and the associated components are not normally depicted on the flow diagrams that are provided in the DCD; but rather, are depicted on the system P&IDs which are separate, more detailed drawings maintained by KHNP.

In addition, the flow diagram for the CCWS will be revised for equipment not included in the CCWS to be indicated with dotted lines.

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#### **Impact on DCD**

DCD Tier 2 Figure 9.2.2-1 will be revised as indicated in the attached markup.

#### **Impact on PRA**

There is no impact on the PRA.

#### **Impact on Technical Specifications**

There is no impact on the Technical Specifications.

#### **Impact on Technical/Topical/Environmental Reports**

There is no impact on any Technical, Topical, or Environmental Report.

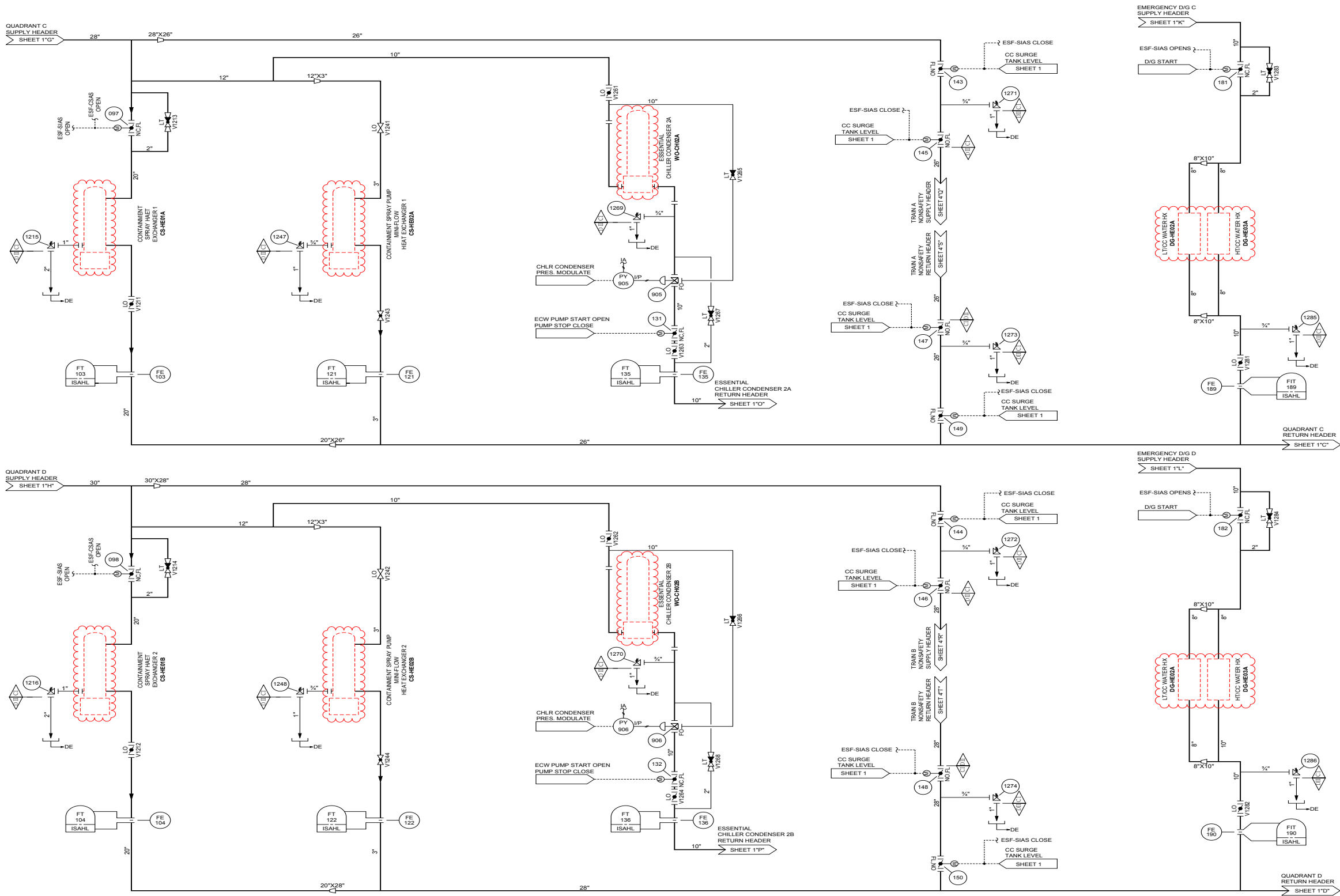
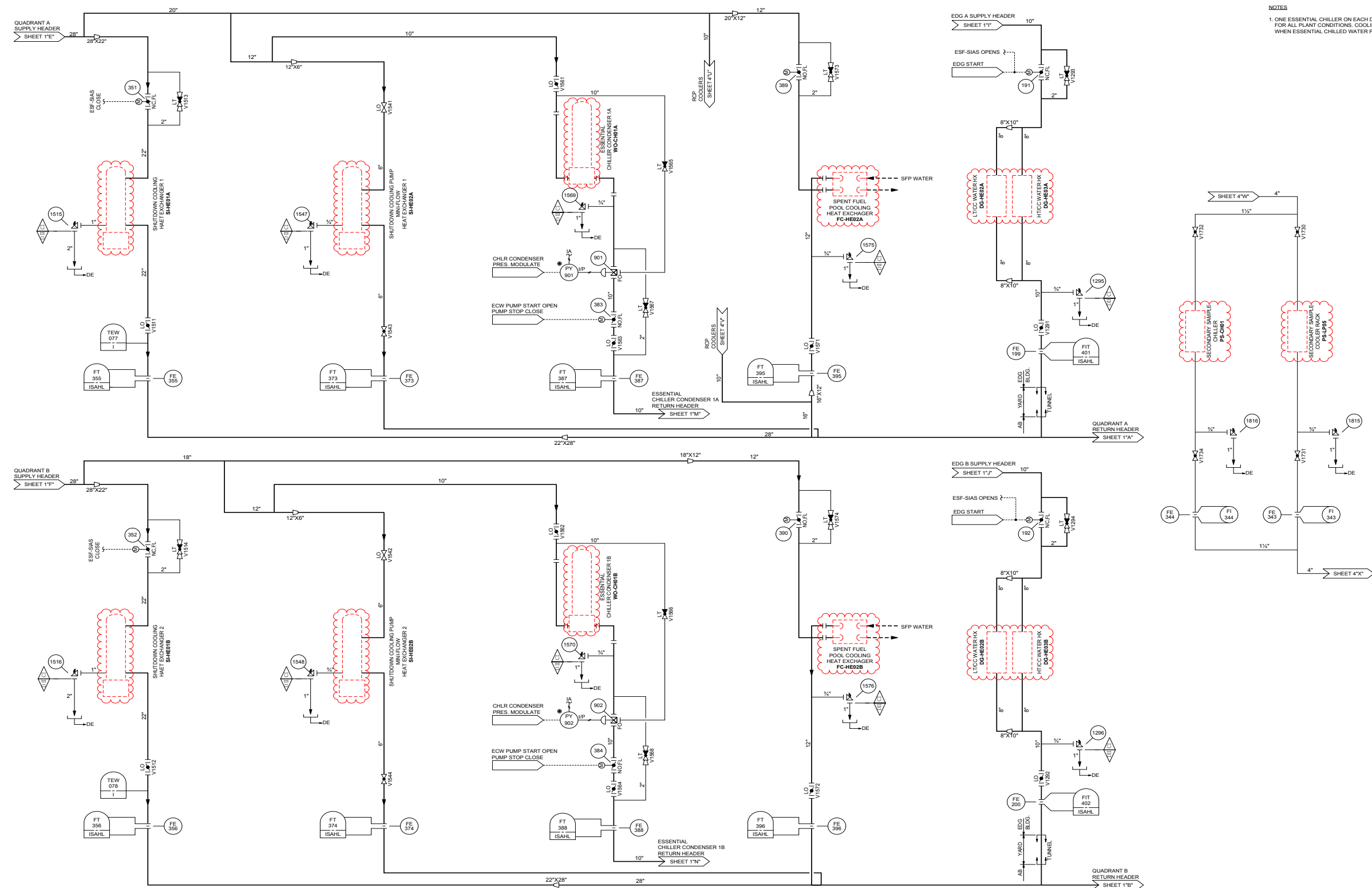


Figure 9.2.2-1 Component Cooling Water System Flow Diagram (Sheet 2 of 4)



**Figure 9.2.2-1 Component Cooling Water System Flow Diagram (Sheet 3 of 4)**

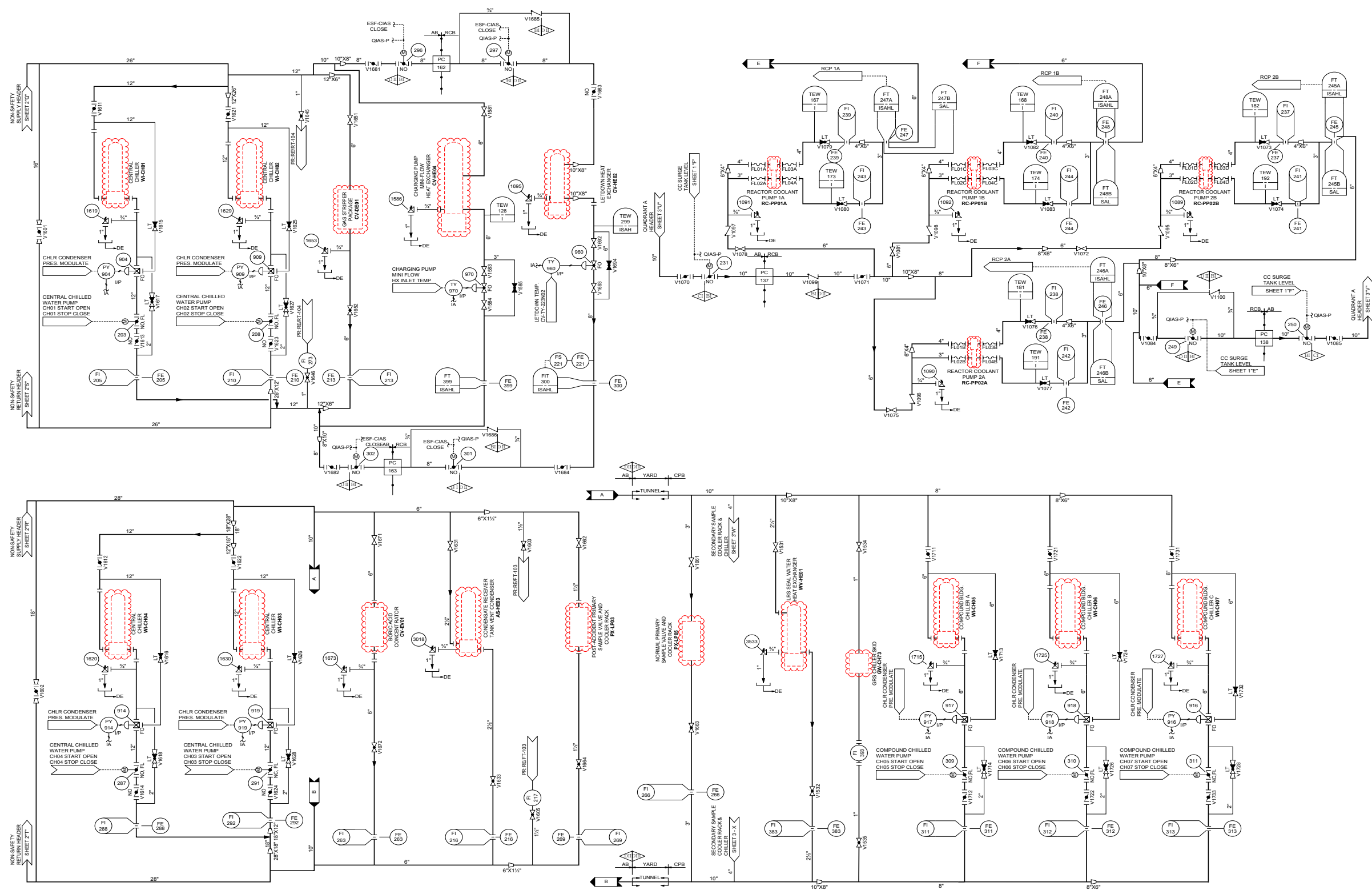


Figure 9.2.2-1 Component Cooling Water System Flow Diagram (Sheet 4 of 4)