RAI Volume 2, Chapter 2.1.1.2, Second Set, Number 1:

> Provide information on the codes and standards to be used for design of the pneumatic components of the Cask Transfer Trolley (SAR Section 1.2.2.2.1).
>
> In SAR section 1.2.2.2.1, DOE states that the cask transfer trolley is to be designed in accordance with the requirements of ASME NOG-1-2004 applicable to a Type I crane trolley, except for the unique features associated with the pneumatic components. However, DOE has not provided information on the codes or standards that will be used for design of the pneumatic components.

1. RESPONSE

The cask transfer trolley system includes various pneumatic components, consisting of valves (ball, gate, pressure relief, and throttle), air cylinders, air bearings/casters, air motors, and piping.

The design codes and standards for the valves and piping are as follows:

- ASME B16.34-2004, *Valves—Flanged, Threaded, and Welding End* (for ball, gate, and throttle valves)
- *ASME Boiler and Pressure Vessel Code*, Section VIII "Unfired Pressure Vessels" (Paragraph UG-131) (for safety relief valves)
- API Std. 526, *Flanged Steel Pressure Relief Valves*
- API Std. 527, *Seat Tightness of Pressure Relief Valves*
- ASME B31.3-2004, *Process Piping*.

Other commercial pneumatic components such as air cylinders, air motors, and air bearings/casters shall be in accordance with manufacturer's standards.

2. COMMITMENTS TO NRC

None.

3. DESCRIPTION OF PROPOSED LA CHANGE

None.

4. REFERENCES

ASME (American Society of Mechanical Engineers) 2004. *2004 ASME Boiler and Pressure Vessel Code*. 2004 Edition. New York, New York: American Society of Mechanical Engineers. TIC: 256479.

ASME B16.34-2004. 2005. *Valves—Flanged, Threaded, and Welding End*. New York, New York: American Society of Mechanical Engineers. TIC: 258575.

ASME B31.3-2004. 2005. *Process Piping*. New York, New York: American Society of Mechanical Engineers. TIC: 258076.

API Std. 526. 2003. *Flanged Steel Pressure Relief Valves*. 5th Edition. Washington, D.C.: American Petroleum Institute. TIC: 254087.

API Std. 527. 2003. *Seat Tightness of Pressure Relief Valves*. 3rd Edition. Washington, D.C.: American Petroleum Institute. TIC: 254088.

RAI Volume 2, Chapter 2.1.1.2, Second Set, Number 7:

> Verify that the classification of Emergency Diesel Generator Facility (EDGF) subsystems (e.g. fuel oil storage tanks, fuel oil transfer pumps) as ITS in SAR Section 1.2.8.2 is consistent with the information shown in the Process and Instrumentation Diagrams (P&IDs). For example, the notes on the P&IDs (SAR Figure 1.2.8-17 through 1.2.8-19), appear to indicate that the entire subsystem may not be ITS.

1. RESPONSE

The important to safety (ITS) diesel generator system (SAR Figure 1.2.8-17) is comprised of the following ITS mechanical support systems. The ITS designations are provided in the SAR text and figures.

- ITS diesel generator fuel oil
- ITS diesel generator air start
- ITS diesel generator lubricating oil
- ITS diesel generator jacket water cooling
- ITS diesel generator air intake and exhaust.

As discussed in the clarification call on July 16, 2009, the ITS diesel generator and the mechanical support systems perform a safety function by providing electrical power to ITS surface nuclear confinement heating, ventilation, and air conditioning systems. The mean conditional probability for ITS electrical power failure, given the loss of offsite power, shall be less than or equal to 3×10^{-1} over a period of 720 hours following a radionuclide release, as provided in SAR Table 1.9-3. The listed conditional probability is for the diesel generator system (including the systems shown in column 3 of SAR Table 1.9-3).

The mechanical process equipment shown in SAR Figure 1.2.8-18 is ITS, including the diesel fuel oil storage tanks, diesel fuel oil transfer pumps, diesel fuel oil day tanks, and associated piping.

The notes on SAR Figures 1.2.8-18 and 1.2.8-19 mean that the instrumentation and control components and loops are specifically identified by an “ITS” marker adjacent to the component or loop on the piping and instrumentation diagram and logic diagram. The remaining instruments not marked as ITS on the same piping and instrumentation diagram or logic diagram are not relied upon to support the ITS diesel generators in the event of a loss of offsite power and are non-ITS.

SAR Figure 1.2.8-19 is an ITS diesel generator fuel oil transfer pump logic diagram. The ITS day tank low-level switch and the two ITS motor starters ensure that the ITS function of maintaining adequate fuel in the diesel fuel oil day tank is accomplished. Other components shown on the logic diagram are non-ITS.

SAR Figure 1.2.8-20 for the ITS diesel generator air start system shows an air start receiver equipped with a local non-ITS pressure indicator, a non-ITS pressure safety valve, and an ITS low-level pressure switch with a non-ITS low-level pressure alarm. The ITS function is performed by the ITS low-level pressure switch, which ensures that the air receiver tank is full and ready to provide air for the diesel generator startup when required. The local pressure indicator is correctly marked as non-ITS because it provides pressure indication for the air start receiver for maintenance and inspections.

2. COMMITMENTS TO NRC

None.

3. DESCRIPTION OF PROPOSED LA CHANGE

None.