Request for Additional Information No. 112 (1251), Revision 0

10/28/2008

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 10.04.03 - Turbine Gland Sealing System
Application Section: FSAR Ch. 10

QUESTIONS for Balance of Plant Branch 1 (AP1000/EPR Projects) (SBPA)

10.04.03-1

a. According to FSAR Tier 2 Sections 10.4.3.2.1, "General Description," and 10.4.3.2.2, "Component Description," the gland steam condenser receives the steam and non-condensable gases from the turbine gland seal steam (TGSS) and condenses steam and routed to the shell side of the low pressure (LP) condenser through a steam trap. Whereas, the air and non-condensable gases from the gland steam condenser are removed via one of two gland steam exhausters which discharge to the nuclear auxiliary building ventilation (NAVB) system. Also, FSAR Tier 2 Section 10.4.3.2.3, "System Operation," states that excess steam is routed to the main condenser through a seal steam leak-off valve. The FSAR further states that leak-off steam from the seals of the main stop and control valves is also discharged into the TGSS header.

   However, in its review of the TGSS flow diagram in Figure 10.4.3-1, the staff finds no depiction of these leak-offs from the main stop and control valves or other turbine valves. Also, the staff finds no gland steam exhaust fans and associated motors for discharging the air and non-condensable gases from the gland steam condenser to the nuclear auxiliary building ventilation system. According to SRP Section 10.4.3, Item III.1, the staff needs to review the piping and instrumentation diagrams to verify the source of sealing steam and the disposition of steam and non-condensables vented from the gland seal. The staff requests the applicant to include the above missing information in FSAR Figure 10.4.3-1. The staff needs this additional information to complete its review of Section 10.4.3.

b. In FSAR Tier 2 Section10.4.3.4, of the DCD, the applicant described the TGSS inspection and testing program. The TGSS components are inspected during construction and functionally tested as part of the initial plant startup testing. Test No. 064 will ensure proper valve operation, the ability of the system to perform its function during turbine startup and normal plant operation as load increases on HP turbine steam. This test program will verify performance of the sealing steam exhauster blowers and gland team condenser function. However, during its review, the staff finds an inconsistency; Test No. 064 Step 3.2 states that it will verify power operated valves fail upon loss of motive power as designed per Section 10.4.3. However, the FSAR Tier 2 Section 10.4.3 does not provide any details on the fail positions of any of the TGSS valves. Confirm there are no power

operated valves in this system. The staff requests the applicant to provide clarification in the FSAR in this regard, and also requests the applicant to provide additional information in the FSAR regarding the pressure regulating valves in the system.