Setzer, Thomas

From: Ambrosini, Josephine
Sent: Thursday, August 16, 2012 10:26 AM
To: Setzer, Thomas
Subject: UHS basis info
Attachments: U2 FSAR Chapter 14 selections.docx

Looks like 77 is the design basis starting point for U2, according to their FSAR accident analysis section. I'm attaching a couple of pages copied from the FSAR.

The tech spec appears conservative and able to be changed from the 24-hour 75 degree value, but they still have some engineering work to do. For example, are there any plugged tubes in heat exchangers that would be ok with 75 degrees, but not ok with 77? That sort of thing.

I'll verify U3 has the same info in their FSAR if he wants it, but really this is NRR's job when Millstone comes in with an amendment request, not ours.

I don't have a fundamental problem with their licensing approach on this issue. Should they have done this long before now? Probably, but I don't see any technical concerns with what they are doing, provided they finish the analysis. Whether we allow them to do this in an emergency/exigent setting is, as they say, above my pay grade.

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TABLE 14.8.2-2 INITIAL CONDITIONS FOR PRESSURE ANALYSES

Reactor Coolant System	
NSSS power level (MWt)	18.1
0% plus pump heat of 17.1 MWt	
Coolant pressure (psig)	2300
Inlet coolant temperature (°F)	534.25
Internal coolant volume (cubic feet) (excludes the pressurizer)	10,104.4

Containment System	
Pressure (psia)	15.7
Relative humidity (%)	25
Inside temperature (°F)	120
Outside temperature (°F)	100
Service Water Inlet temperature (°F)	77
Refueling Water Storage Tank (RWST) water temperature (°F)	100
Safety Injection Tank (SIT) water temperature (°F)	120

b. Initial containment pressure is 15.7 psia.

c. Initial containment humidity is assumed to be 25 percent as in the MSLB.

d. The minimum usable Refueling Water Storage Tank (RWST) volume assumed for calculation of the time of Sump Recirculation Actuation Signal (SRAS) is 298,800 gallons.

e. Both the HPSI and the LPSI pumps operate prior to SRAS. Following SRAS, the LPSI are automatically stopped.

f. The Reactor Building Closed Cooling Water (RBCCW) is modeled with assumed flows before and after SRAS. The RBCCW is cooled by Service Water at 77°F.

g. The heat removal from the CAR fan cooler is modeled in the CONTRANS Code. It takes into account the steam latent heat and the sensible heat removed from the containment atmosphere.

14.8.2.2.4 Results

The limiting LOCA was determined to be the double-ended discharge leg slot break with the LOP, the failure of two CAR fans and one spray train, and minimum ECCS. The maximum containment pressure and temperature of this limiting LOCA are bounded by the MSLB results provided in section 14.8.2.1.

14.8.2.2.5 Conclusion

The maximum containment pressure and temperature of the LOCA are less than the containment design pressure and temperature of 54 psig and 289°F.

14.8.3 DELETED

14.8.4 RADIOLOGICAL CONSEQUENCES OF THE DESIGN BASIS ACCIDENT

14.8.4.1 General

A LOCA would increase the pressure in the containment resulting in a containment isolation and initiation of the ECCS and containment spray systems. A SIAS signal automatically starts the Enclosure Building Filtration System (EBFS) which maintains a negative pressure within the enclosure building during accident conditions. The nuclide inventory assumed to be initially available for release is consistent with the requirements of Regulatory Guide 1.183 (Reference 14.8-5). A SIAS also isolates the control room by closing the fresh air dampers within 20 seconds. Within 1 hour after control room isolation, the control room emergency ventilation (CREV) is properly aligned. CREV recirculates air within the control room through a charcoal filter at 2,500 cfm (±10%) to remove iodines from the control room envelope.