

Response to SDAA Audit Question

Question Number: A-6.2-3

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Question:

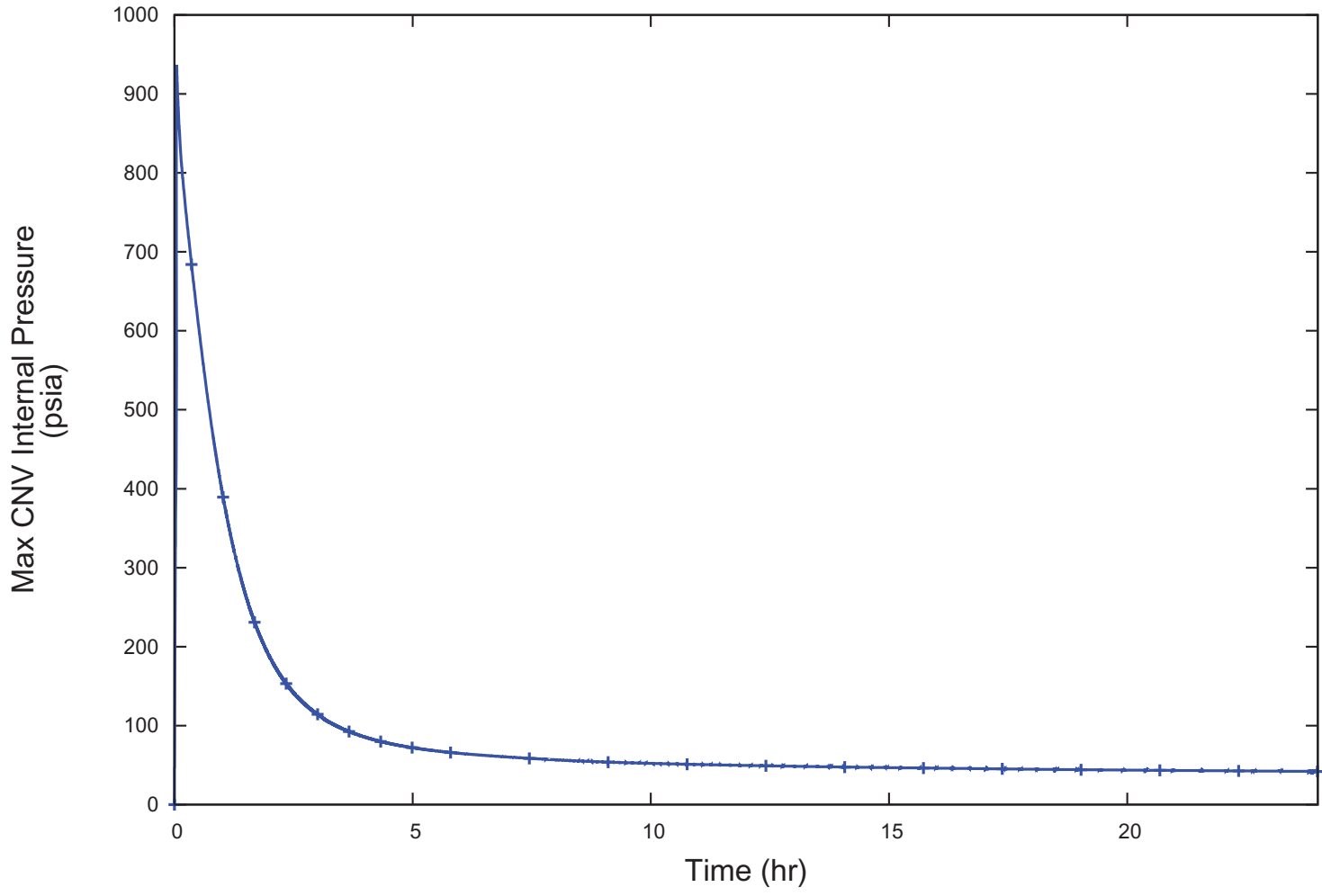
SDAA Section 6.2.1.3.5 (Description of the Long-Term Cooling Model) states that the containment response analyses demonstrate that the CNV pressure and temperature rapidly reduce and remain at acceptably low levels following postulated mass and energy releases, including LOCA, into the containment. NuScale DSRS Section 6.2.1.1.A, Acceptance Criteria 2 states that to satisfy GDC 38 to rapidly reduce the containment pressure, the pressure should be reduced to less than 50 percent of the peak calculated pressure within 24 hours after the postulated design basis accident. SDAA Figure 6.2-7 shows that for the limiting CNV pressure DBA, the CNV internal pressure reaches its peak of 937 psia at 170 sec, and then decreases to about 690 psia (74% of the peak) around 1400 sec. The figure does not show the CNV pressure reducing to less than 50% of peak pressure (~468 psia) within 24 hours, as mandated by the Acceptance Criteria 4. Figure 6.2-7 needs to be updated to demonstrate that the GDC 38 requirement is met.

Response:

Figure 6.2-7 below shows the limiting containment pressure case extended for 24 hours, with the reactor pool temperature boundary condition maintained at 140°F. The containment pressure is less than 50% of the peak pressure within a few hours after the break occurs and remains acceptably low. This figure has been updated in the SDAA.

Markups of the affected changes, as described in the response, are provided below:

Figure 6.2-7: Maximum Containment Internal Pressure - Peak Containment Vessel Pressure Case



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