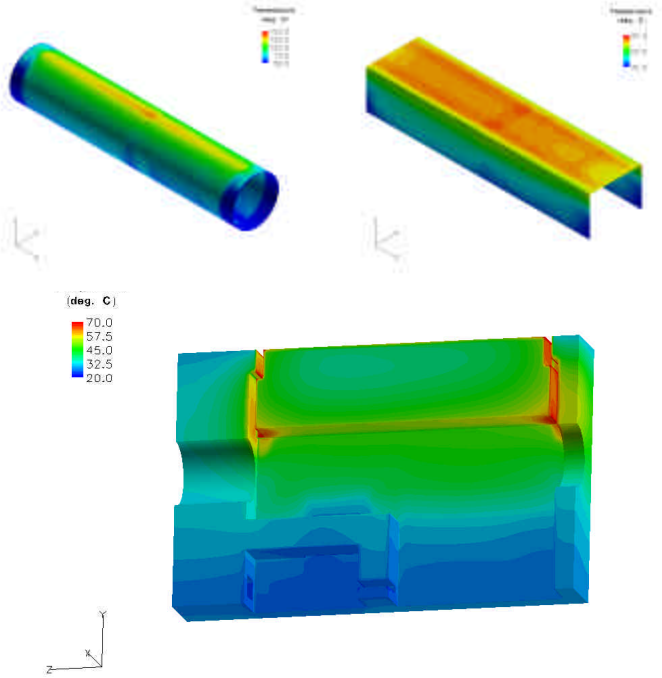
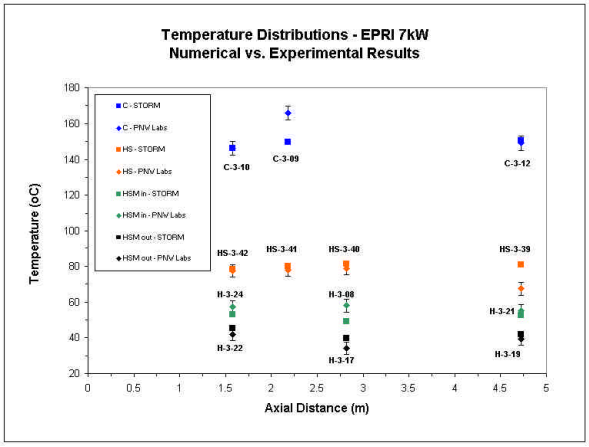
Validation for Fluid/Thermal Analysis of Nuclear Waste Storage System

Adaptive Research
A Division of Simunet Corporation

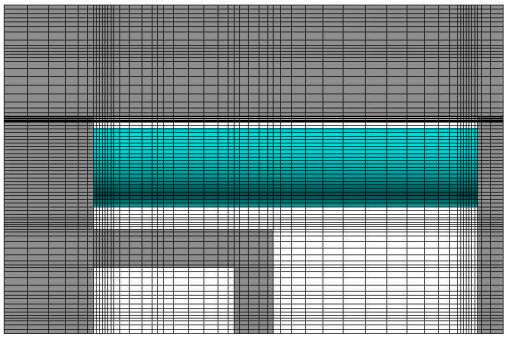
Computational Fluid Dynamics is used to perform a complete fluid and thermal analysis of a nuclear waste storage unit. Numerical modeling of the system includes thermally-driven turbulent flow and heat transfer by convection, conduction and radiation. The CFD results show good agreement with the experimental temperature measurements available for the canister, heat shields and concrete walls. The ability to simultaneously predict flow patterns and temperature distributions makes Computational Fluid Dynamics a very efficient tool for assessing the overall cooling design of nuclear waste storage systems



Canister, Heat Shields and Concrete Temperature Distributions



Comparison between CFD Results and Experimental Measurements



CFD2000 Grid at Symmetry Plane

STORM®/CFD2000®

A powerful computational fluid dynamics software program developed by Adaptive Research. STORM/CFD2000 solves real-world engineering problems by simulating virtually any physical process involving fluid flow and heat transfer.