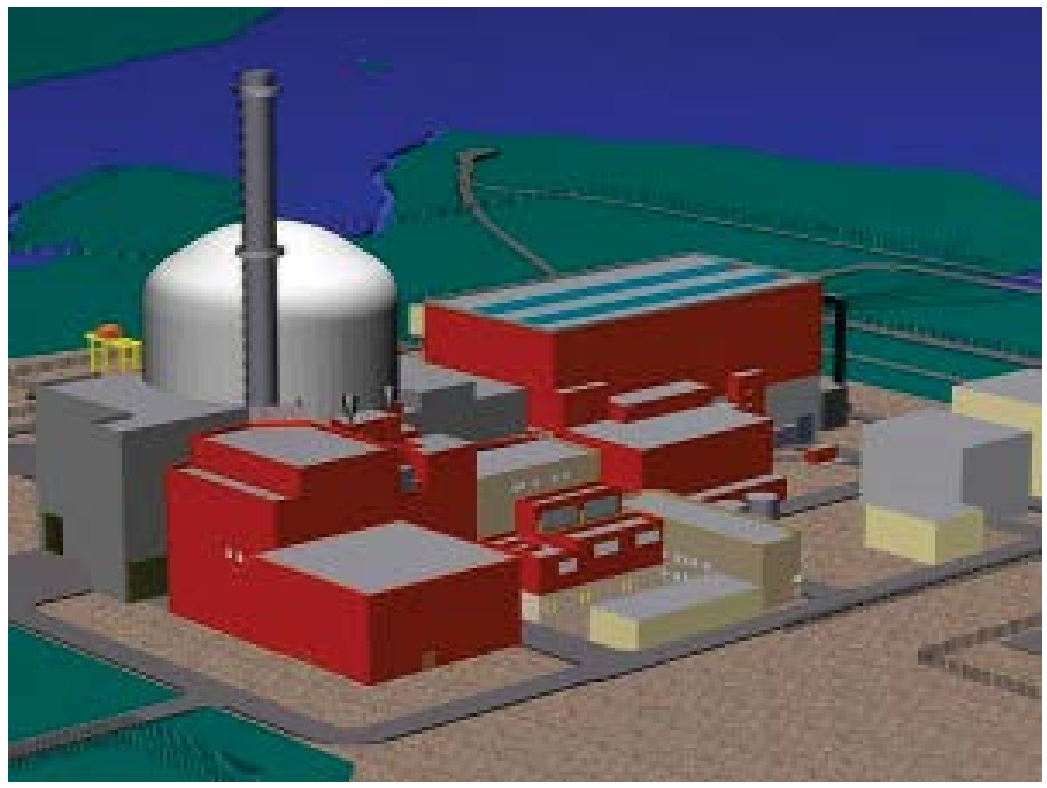
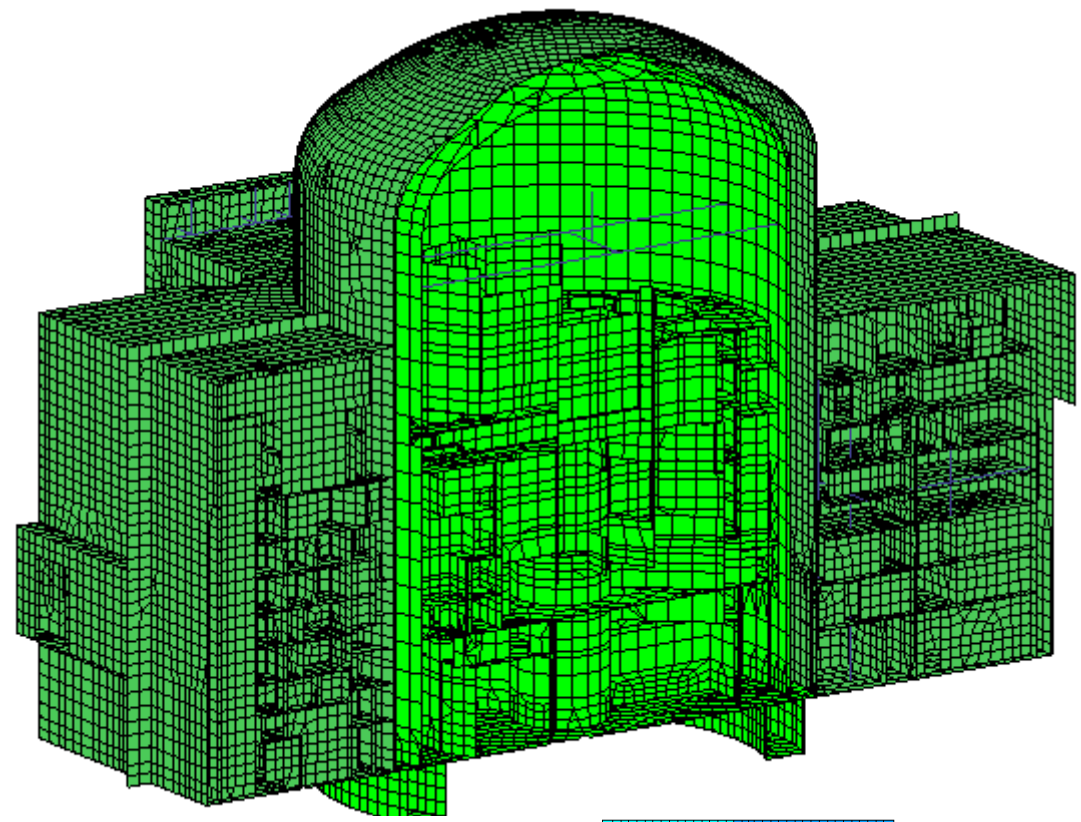
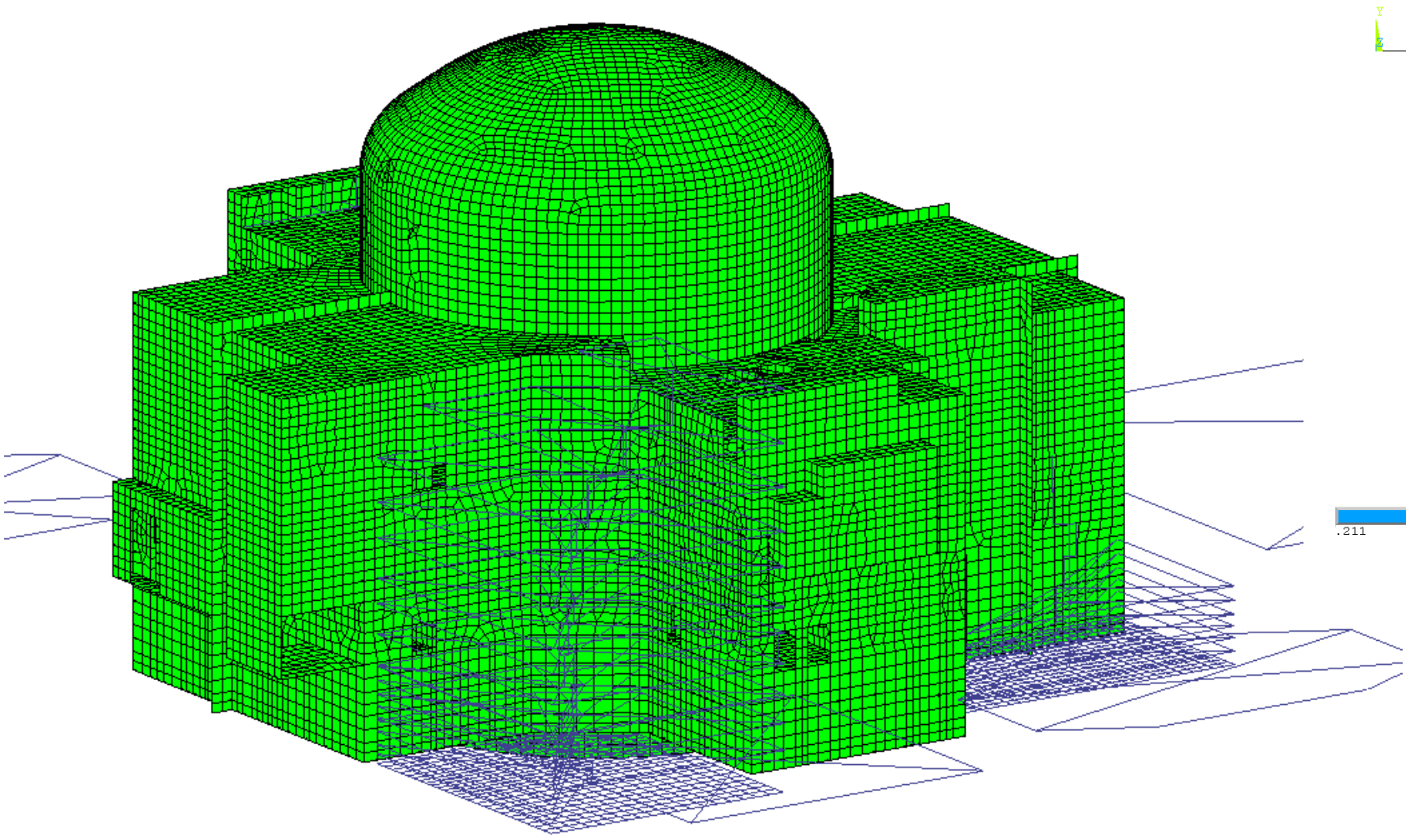
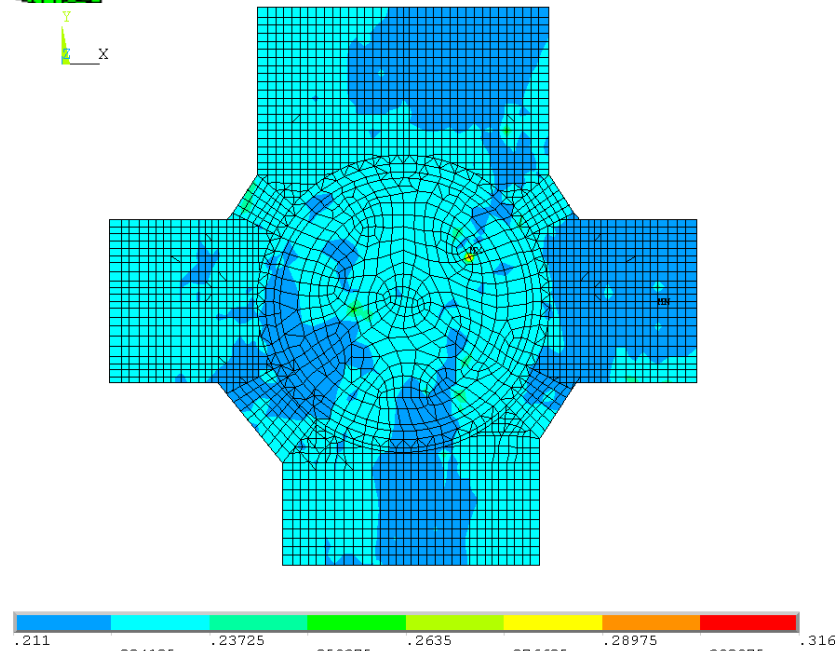
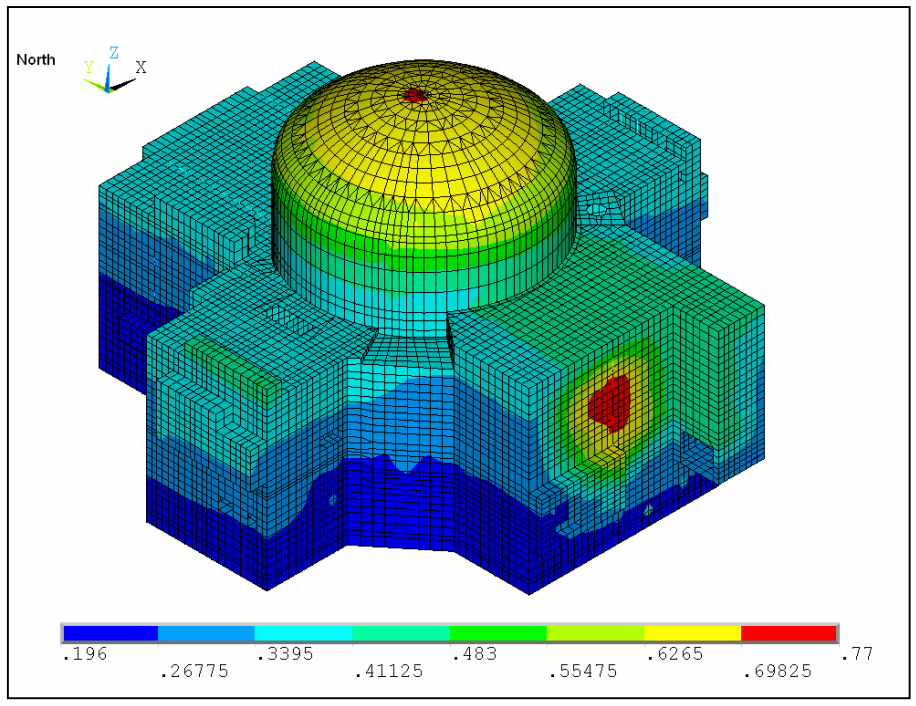
Seismic SSI Analysis of New Reactor for Standard Design Certification











MTR/SASSI High Performance Computing (HPC) was used to analyze the seismic SSI response and stability of a Pressurized Water Reactor (PWR) for standard design certification. The plant is embedded about 11.5m below ground surface and was analyzed for 13 generic soil profiles and three sets of seismic excitations including high-frequency, hard rock motions. The structure model has over 500,000 degrees-of-freedom and 55,000 interaction nodes. The results included maximum values and time histories of acceleration response, in-structure response spectra, forces and moments in the building, dynamic soil pressures on exterior basement walls, stability factors of safety and percent base slab uplift.