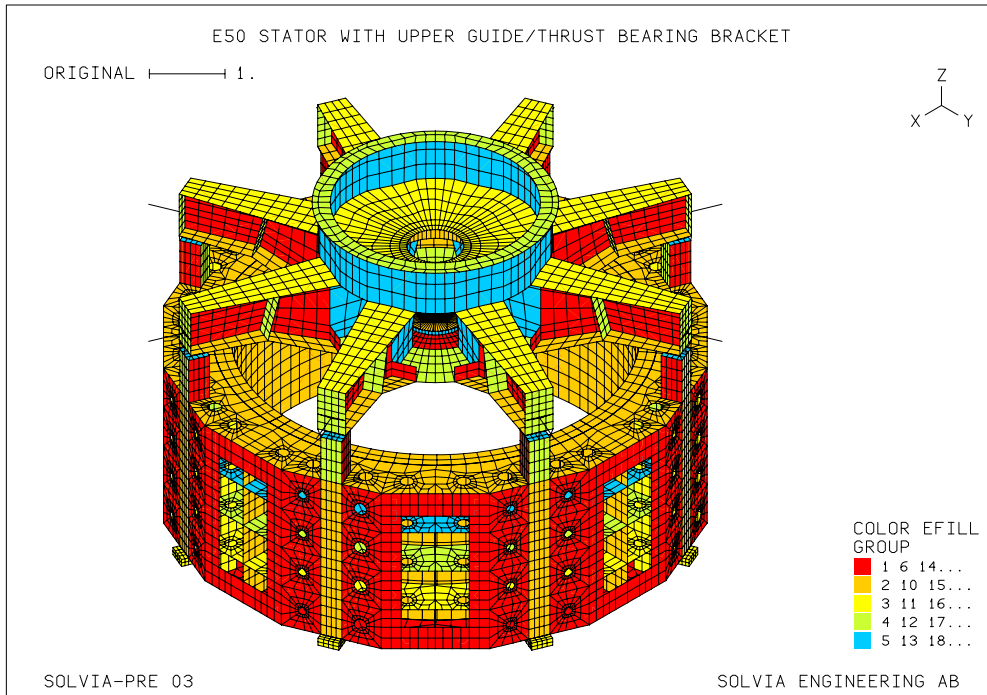
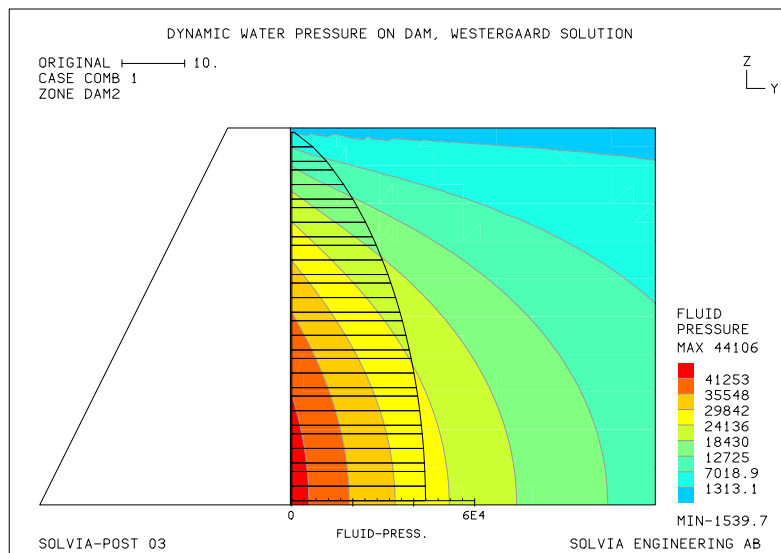


Examples of Capabilities in the SOLVIA® Finite Element System

New Parallel Direct Sparse Solver and New Fluid Element



The stator model consists of 20120 elements including SHELL, SOLID, BEAM and SPRING elements. The model employs 75803 nodes and 353398 degrees of freedom. Factorization, back-substitution and calculation of element stresses for one solution step took 26 seconds in SOLVIA version 03.0.9 using an Intel Core 2 Duo processor and 32-bit Windows XP. The total peak memory needed by SOLVIA was 1079 MB using the parallel direct sparse solver.



The upstream vertical face of a dam is in this example assumed to be rigid and subjected to a harmonic horizontal motion to obtain the Westergaard solution for the dynamic water pressure acting on the dam using the new potential-based fluid element. Flexible dams in 2D and 3D may be analyzed under earthquake loading with consideration of the interaction between the fluid and the dam.

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