

Multi-D Technology for Optimization of Construction and Mounting Operations

The Multi-D technology is aimed at optimization of construction and mounting operations and based on detailed planning of the working operations sequence. The main goal of using the Multi-D technology consists in reduction in time of NPP generating unit construction. Application of the technology permits to plan the schedule of construction precisely and solve the problems connected with this stage of construction at the design stage. This technology supplements the traditional expert directive approach to planning of construction and mounting operations which provides for determination of completion schedule with consideration of expert assessments of stage duration.

The Multi-D model includes a comprehensive 3D model of the facility, information on schedule and network planning (4D), information on configuration, completeness and supplies of materials and equipment (5D), and information about labor, technical and other resources required for generating unit construction (6D).

The efficiency of NPP construction management with application of the Multi-D technology is increased due to:

- Optimal placement of each element of the facility with the help of a 3D-model;
- Calculation of the best path for each element's rigging;
- Calculation of the best mounting sequence with detailed planning of welded joints;
- Even distribution of workload among mounting workers within the whole period of construction;
- Reduction in labor expenditures in the mounting zone due to enlargement of elements into mounting modules;
- Detailed planning of operations (including twenty-four-hour planning) and preparation of staff of mounting organizations on the basis of this planning;
- Consideration of scheduled dates of equipment supply and possible deviations from the schedule;
- Construction process control in real time mode.

The Integrated Company is planning further development of the Multi-D technology in 2013.

