



## ATOMENERGOPROEKT, RUSSIA

### Key Facts

**Company:** JSC Atomenergoproekt

**Website:** [www.aep.ru](http://www.aep.ru)

**Country:** Russia

**Industry:** Engineering, IT

### Products Used:

- Intergraph Smart® P&ID
- Intergraph Smart 3D
- SmartPlant® Foundation
- SmartPlant Enterprise for Owner Operators
- Intergraph Smart Instrumentation
- Intergraph Smart Electrical
- Intergraph Smart Review
- Intergraph Smart Materials

### Key Benefits:

- Comprehensive solutions, which are helpful to any specialist when designing nuclear power plants (NPPs)
- Hexagon PPM solutions help manage documentation and data at all stages of the NPP lifecycle

### JSC ATOMENERGOPROEKT EFFECTIVELY MANAGES DATA ON NUCLEAR POWER PLANT PROJECTS WITH HEXAGON PPM TECHNOLOGIES

Creating a complex information system based on SmartPlant® Enterprise products helps to form a single information asset and establishes data management throughout different NPP projects in Russia and abroad



JSC Atomenergoproekt is an engineering company that specialises in the general design of nuclear power plants (NPPs). The company delivers a wide range of services such as NPP construction, engineering, environmental monitoring, energy unit decommissioning, building and installation works, and procurement.

### IDENTIFYING GOALS

JSC Atomenergoproekt developed the designs of the majority of NPPs in Russia, Eastern Europe and CIS countries and is the General Designer of the Bushehr NPP in Iran, Kudankulam NPP in India, Belene NPP in Bulgaria, and Akkuyu NPP in Turkey. In addition, it is the General Designer and General Contractor of the Novovoronezh-2 NPP.

Also, JSC Atomenergoproekt is the General Designer of standard optimized and information-based technology running the power unit of VVER («VVER-TOI» Design). VVER-TOI is an evolutionary technology executed in the modern information environment. As the basic design program for serial construction of new generation power units, VVER-TOI provides optimized NPP construction management in Russia and increases competitiveness of Russian export offers within foreign markets.

JSC Atomenergoproekt supports the operation of existing energy units that it designed, and is in charge of revamping and decommissioning of these energy units. Such a wide range of activities requires a single information platform for better data management - Hexagon PPM technologies provided such a platform.



Atomenergoproekt initially planned to implement technologies that would lead to project execution in a modern IT environment with the possibility of managing data throughout the entire lifecycle of the energy unit. It was of utmost importance to create a single information system that would allow changes to be made automatically in project and engineering documentation, and navigate data and transfer information in any format requested by a customer. The company aimed to select and implement technologies that could be easily used by all employees in charge of NPP design, one that would gather data from engineers to create an information model. In light of these criteria the company chose Hexagon PPM solutions, which fulfilled all needs and demands of the NPP design process.

## OVERCOMING CHALLENGES

Considering Atomenergoproekt's principles of project design work and existing technology standards, the company's engineers, together with Hexagon PPM technical specialists, customized software solutions for specific needs.

Several key specifications for the project were successfully created:

- A system of documentation coding, enabling document management
- Principles of project documentation formation
- Document templates, building on the outline of the mechanism of project documentation package formation
- Package of methodological documents for setting modules of information system

Moreover, the detailed specification and manuals on how to work with the modules were made (more than 100 regulating documents). Employee training and technical support was organized to ensure the company's employees were fully aware of how to work with the information system of the project.

## REALIZING RESULTS

After four years of collaboration between Atomenergoproekt and Hexagon PPM, there now exists a complex information

system based on Hexagon PPM's SmartPlant® Enterprise (SPE) products. This system enables the gathering of documentation within one single platform in order to manage data from different CAD sources effectively.

The central component is an engineering data management system based on a SmartPlant Foundation solution where bills and materials are listed. This system enables all project engineers from different CADs to make changes, with the system concurrently merging all engineering activities.

Hexagon PPM technologies are now being implemented in most Atomenergoproekt branches and offices to create comprehensive documentation for NPP projects. Currently, solutions are being used in Novovoronezh-2 NPP, VVER-TOI, Kurskaya-2 NPP, Smolenskaya-2 NPP, and Nizhny Novgorod NPP projects.

The Hexagon PPM technical support team and Atomenergoproekt have developed integrated Hexagon solutions with numerous settlement systems, ERP systems, project systems and structural CADs. This kind of integration makes it possible to decrease working hours for issuing project documentation, significantly diminish the risk of human error during data exchange, which eventually leads to better documentation quality. Within the VVER-TOI project the system was customized significantly – Hexagon PPM generated Tag management and Room management applications.

The VVER-TOI project was executed with implemented Hexagon PPM solutions that helped to lower costs during NPP energy unit batch design and for project and engineering documentation at VVER-TOI project sites.

## MOVING FORWARD

Atomenergoproekt is constantly working on complex system developments. It is planned to fully adapt solutions for VVER-TOI project duplication, including the requirements management system and configuration and seriation system management. Although much effort is involved in the initial setup of such a system, Atomenergoproekt recognizes that the benefits of Hexagon PPM solutions far outweigh the initial challenges of implementation.

## ABOUT HEXAGON

Hexagon is a global leader in digital solutions that create Autonomous Connected Ecosystems (ACE). Our industry-specific solutions create smart digital realities that improve productivity and quality across manufacturing, infrastructure, safety and mobility applications.

Hexagon's PPM division empowers its clients to transform unstructured information into a smart digital asset to visualize, build and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire lifecycle.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 3.8bn EUR. Learn more at [hexagon.com](http://hexagon.com) and follow us @HexagonAB.