

## **Dry Spent Fuel Storage Facility (DSFSF) for Kozloduy NPP**

In May 2004, the Kozloduy Nuclear Power Plant (KNPP) in Bulgaria signed a contract with the German Consortium NUKEM - GNS for the design of a Dry Spent Fuel Storage Facility (DSFSF) which will be used to store approximately 8000 VVER-440 spent fuel assemblies and 2500 VVER-1000 spent fuel assemblies from the six Kozloduy reactors. The contract includes the construction of the first stage that will store 2800 VVER-440 spent fuel assemblies. The project is financed with the proceeds of the Kozloduy International Decommissioning Support Fund (KIDSF) administered by the European Bank for Reconstruction and Development (EBRD) and has a value of Euro 48.7 million. The Consortium is a joint venture partnership of the two German companies NUKEM Technologies and GNS Gesellschaft für Nuklear-Service mbH. The Consortium was awarded the Contract after a competitive Open Tender, the tendering process having been conducted by Kozloduy NPP in accordance with the EBRD Procurement Policies and Rules

The Storage Facility utilizes the technology of dry long-term storage of spent fuel in composite steel and heavy concrete CONSTOR<sup>®</sup> casks. The DSFSF is designed to store spent nuclear fuel for a period of at least 50 years. Commissioning of the first stage of the DSFSF is scheduled for 2010. The standard of safety and equipment for the Storage Facility will comply with the latest requirements of the European Union and Bulgaria using well-established and understood technology. The facility also incorporates state-of-the-art physical protection (security) systems. The scope of the project covers design, preparation of licensing documentation, manufacturing and delivery of equipment, construction, installation, testing and commissioning of the DSFSF and the delivery of 34 CONSTOR<sup>®</sup> casks for the storage of 2800 fuel assemblies. The design was approved by the Bulgarian Regulatory Authority and manufacture and site construction started in 2008. In January 2010 the contract was amended to extend the building to provide space for a further 38 CONSTOR<sup>®</sup> casks (3192 fuel assemblies). This extensioned building will be finished in 2011.

The division of work between the companies is as follows:

- NUKEM Technologies –design and construction of the storage building, supply of all the auxiliary handling equipment for the casks and the equipment for transporting the casks on site. The scope also includes the provision of the state-of-the-art physical protection/security systems and radiation monitoring systems.
- GNS – Supply of 34 CONSTOR<sup>®</sup> casks and auxiliary equipment for loading the casks in the existing adjacent wet spent fuel store.

The Spent Nuclear Fuel Store at Kozloduy is one of three spent fuel storage projects in Eastern Europe carried out jointly by GNS and NUKEM. The two partners jointly implemented a similar project at the Dukovany nuclear power plant in the Czech Republic, where a store for CASTOR<sup>®</sup> casks was built in the mid -1990s. They are currently working together on a contract, signed in 2005, for the storage of fuel assemblies at Ignalina NPP in Lithuania, where the fuel elements will be stored in CONSTOR<sup>®</sup> casks. NUKEM Technologies works with local companies to deliver the building and the mechanical handling equipment.

