

Nuclear plant mulls waste disposal issue

A world spent fuel retrievable repository makes very good sense and wealth to the owners

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Hungary's Paks Nuclear Power Plant Rt has reached a crossroads concerning options for the long-term disposal of its nuclear waste.

One option is to transport its used, high-radiation fuel containers to Russia for dismantling and partial reprocessing. The other option is to place the fuel containers into a special disposal facility to be built in Hungary. Currently, the containers are stored at a temporary facility in Paks.

The stakes are high, according to experts. Besides the requirement for the firm to comply with tightening EU nuclear waste disposal norms, it must find the cheapest solution in order to maintain its competitiveness.

"The projected costs of handling high-radiation nuclear waste have already been built into the company's power prices in order to create a financial reserve," said Péter Kaderják, head of the Regional Energy Economic Research Center (REKK). "Depending on the actual cost of the waste treatment mechanism, the company, which currently produces the cheapest electricity in Hungary, may have to increase its prices. This will hurt its market position."

According to data of the Hungarian Energy Office (MEH), the price of electricity produced in Paks currently hovers around Ft 8/kWh. Approximately one fifth of this sum goes to the Central Nuclear Fund, which is responsible for financing the safe disposal of all kinds of nuclear waste in Hungary, as well as related research. Paks provides for approximately 40% of Hungary's total power consumption.

The Paks plant is by far the biggest contributor to the fund, with a Ft 24 billion (€97.1 million) annual allocation. Other institutions and industrial firms producing low-intensity nuclear waste together contribute Ft 6 million annually. At the end of last year, the fund had a budget of Ft 47.2 billion.

According to József Hegyháti, managing director of Radioactive Waste Management Kht, the company in charge of coordinating Hungary's nuclear waste handling strategy, the Paks plant will produce 11,266 fuel containers during its 30-year lifetime. Of these, 2,331 have been transported to Russia based on earlier bilateral agreements.

“EU directives state that member states can export their nuclear waste to other member states or third countries only if the receiving country has the same level of norms as the sender,” Hegyháti explained. “EU officials have repeatedly expressed doubts concerning Russia meeting this criterion.”

Another problem Hegyháti mentioned is the political risk involved in the Russian scenario.

“It would be hard to secure a guarantee that Hungary can transport the high-radiation waste throughout the lifetime of the power plant,” he noted. “If Russia rejected a single shipment of waste, Hungary would have to build a special disposal facility. This would double the originally planned waste disposal budget.”

The other option is to create a special facility in Hungary, to be located approximately 600 meters under the surface. So far no such facility has been created in the world, although several countries, including the U.S., Sweden and Finland, are at a very advanced stage of developing one. According to Hegyháti, Sweden is expected to have its facility by 2015, and Finland by 2020.

“Most scientists consider this type of containment the safest and most feasible,” he said. “However, a complicating factor in this case is that the site must have very special features from the morphological, seismological, tectonic and hydrogeological points of view.”