



# **NRWR**

**National Radioactive Waste  
Repository**

Bátaapáti



## Dear Reader,

As it is certainly known for you, a significant ratio of the demand of our country for electric power is supplied by MVM Paks Nuclear Power Plant. However, the use of nuclear energy is accompanied by the generation of radioactive wastes while the final disposal of these wastes means serious challenges.

The National Project launched for the final disposal of low and intermediate level radioactive wastes produced by the nuclear power plant reached to a phase, where, as a result of long lasting research and construction work and after receiving the social acceptance of the affected region, a safe repository site and a solution was found for the disposal of such wastes.

The underground exploration work began in 2005 with sloping the inclined tunnels. Following the basic approval of the Parliament, and a local referendum and after obtaining the required authority permits, the surface facility of the National Radioactive Waste Repository was put into operation in 2008, which allowed the start of the first waste transport from the nuclear power plant to Bataapati.

A new milestone was achieved in 2012, when the first underground chamber was ceremonially opened.

Of course, we have a lot of work ahead of us, since the underground construction work shall continue to provide a sufficient number of chambers for the safe disposal of the low and intermediate level wastes, which are generated during the designed and the extended service life and also the decommissioning of the nuclear power plant.

Together with my colleagues, we are proud of this repository, which has been constructed with the contribution of many others, will serve for solving a problem of national significance. I am certain that the professional success achieved so far will give us incentives to carry out our work with our best proficiency and responsibility.

We dedicate this publication with all of our heart to everyone who visits here, in order to supply them as much information as possible about our activity in Bataapati region.

Dr. Ferenc Kereki  
Managing Director

## What kind of waste shall be disposed of?

A significant part of the low and intermediate wastes from the nuclear power plant includes used items of personal protective equipment, tools, parts and air filters, which are probably contaminated with radioactive material. At Paks, these solid wastes are loaded into 200 l metal drums and are stored in solidified form. Another large group of the wastes are generated in the technological processes.

The wastewaters contaminated with radioactive materials are purified, which results in remaining evaporation residues and exhausted ion-exchange resin. These wastes are stored in tanks on the site of nuclear power plant. The liquid wastes are later processed, because the wastes shall be converted into solid state before final disposal.

## The receipt and storage of the wastes

In the first phase of the operation of National Radioactive Waste Repository (NRWR), solid wastes loaded into 200 l drums are only transferred from the nuclear power plant. One important condition for being able to guarantee the safety is that waste packages, which fully comply with the acceptance criteria previously approved by the nuclear authority, are permitted to be transported into the repository facility. Therefore, a strict control is undertaken as early as in the waste take-over phase on the site of the nuclear power plant. Each transfer includes 16 drums loaded into 4 transport frames.

The vehicle transporting the waste is received in the central building of the repository site. Following the inspection, the vehicle drives to the process hall, where the transport frames are taken off by a crane and are transferred to the storage area.

In the hall, which is capable of accommodating 3000 drums, the wastes go through a quality inspection process and are prepared for underground storage. The first 3000 drums of waste were transferred to NRWR during the period between 2008 and 2011. The transfer of this volume of waste to its final disposal place started in 2012. This allowed the reception of further transports from the nuclear power plant.

The drums, which are ready for final disposal, are loaded into concrete containers, which are subsequently transferred by lift trucks to the disposal vault developed in a depth of 250 m. This disposal chamber, which was put into operation in December 2012, is capable of accommodating 510 containers, i.e. app. 4600 waste drums. (The extension of the disposal area will make the facility capable of accommodating all the wastes generated during the entire service life of the existing nuclear power plant and all those generated by the new Units to be constructed in the future, and, in addition, the repository will also have capacity for the receipt of wastes arising from decommissioning of the power plant.)

The entire plant site is monitored by a radiation protection monitoring system. The data supplied by the installed measuring devices are supplied to the dosimetry control room. A part of these data, along with the potential warning and alarm signals, are also displayed in the central control room.





## Environmental monitoring

Safety is the most important social expectation of a radioactive waste disposal repository. It shall be clearly and unambiguously demonstrated that we are able to assess, with high accuracy, the processes in the region of the disposal facility and we are able to recognise the potential environmental changes and to take the required actions.

All of the above can be achieved by the operation of the environmental monitoring system, and by processing and continued evaluation of the obtained measurements results. A measurement program was developed for controlling the radiation conditions on the site and for monitoring environment. The monitoring system includes geological, hydrogeological, radiological, and conventional environmental monitoring work. The regular water and soil sampling forms an integral part of the latter one.

A monitoring, control, and warning system operate in the near and distant vicinity of the repository, which supplies data on the changes of the facility and its environment and on the radiation and contamination conditions.

## Social control

The exploration work and the process of construction of the repository have been monitored by the Social Control and Information Association (TETT) since its establishment, which also plays a significant role in the information of the public since then. The role of the association has extended since the date of receipt of the first waste drums: it had to prepare for the fulfilment of its control function as indicated in its name.

Based on an agreement of PURAM and TETT, a Public Control Group has been set up by the citizens of the seven member settlements of the association for the representation of the social control work. Following a professional training and an exam, the inspectors of the Group were equipped with measuring devices to make them capable of inspecting the waste transfers from the nuclear power plant and monitoring the environment. They followed the waste drums from the date of the first transfer from the nuclear power plant. The result of their inspection work is regularly communicated to the inhabitants of the settlements.

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H-7031 Paks, Pf.:12.

Phone: +36/75/519-534

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E-mail: [honti.gabriella@rhk.hu](mailto:honti.gabriella@rhk.hu), [kakasy.bernadett@rhk.hu](mailto:kakasy.bernadett@rhk.hu), [krodi.gabriella@rhk.hu](mailto:krodi.gabriella@rhk.hu)