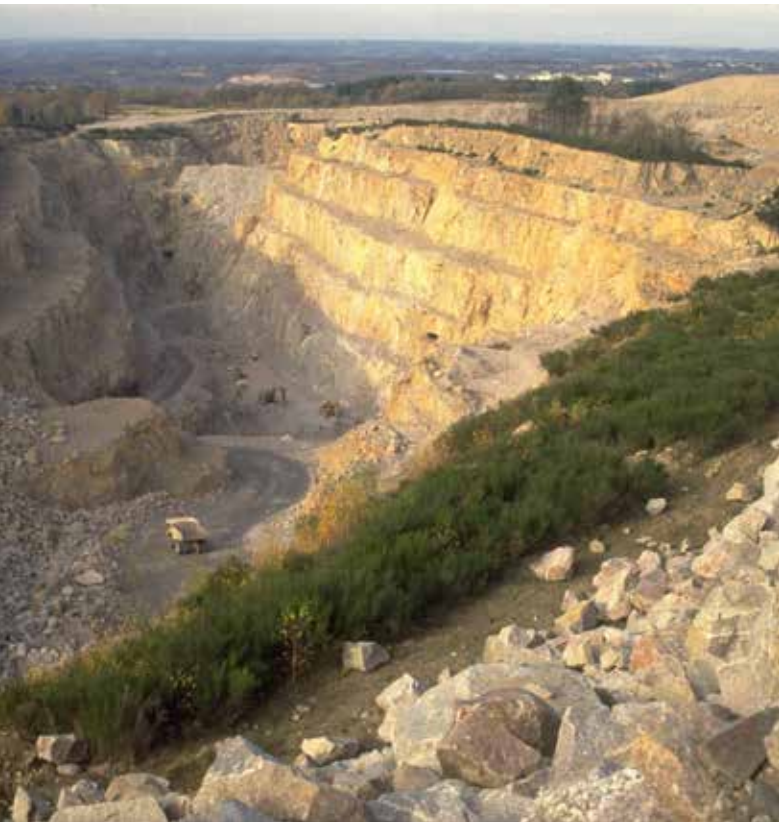
From uranium mine to fishing lake: environmental remediation in France's Limousin region

By Aabha Dixit



Before and after: environmental remediation in France's Limousin region.
(Photo: AREVA/France)

Artificial lakes, fishing spots and solar farms dot the landscape in France's Limousin region, where uranium operations have gradually come to an end. This transformation would not have been possible without stakeholder involvement, transparent processes and well-coordinated activities, said Yves Marignac, the coordinator of the French Pluralistic Expert Group (GEP), involved with remediation activities in the region. The local population had an important consultative role during the environmental remediation programme, and they now use the former mining sites for recreation.

"A consultative approach to remediation management is key to having the people's support when we had to deal with the closing of the uranium mining sites in Limousin," Marignac said. Uniquely, the non-governmental organizations (NGOs) were the driving force behind broadening the scope of environmental remediation, he added.

An important factor for any successful remediation project is public engagement in the decision-making process. The local communities have the most interest in successful environmental remediation, and they need to get satisfactory answers to questions on why, when and how will it impact them. "Their involvement is vital and necessary to ensure technically sound and socially acceptable decisions," Marignac said.

Public involvement

Initially, the responsible organization for remediation work, AREVA, did not widely advertise its plans, Marignac explained. However, with NGOs and experts conducting independent assessments on radioactive residues, the responsible parties for the remediation activities quickly broadened the scope of the remediation work to take into consideration public concerns. That was

achieved through greater public participation in the decision-making process, he said.

Acting decisively and swiftly, the French authorities established GEP to develop a dialogue by taking on board experts from stakeholder communities to freely discuss and address remediation issues for the closed mines. This interactive dialogue also provided a platform for discussions of priority remediation activities and awareness-building.

The GEP was composed of more than 20 experts with diverse backgrounds, including independent experts as well as those from institutions in France and abroad, associations and industry groups.

They were involved in dealing with specific technical and operational aspects of the remediation implementation programme.

The environmental remediation plan shared with GEP involved securing the areas surrounding the closed mines, building special disposal sites, removing and covering contaminated rocks and taking special measures to eliminate the risk of radioactive elements seeping into the water system. "Contaminated drainage from waste rock piles was an essential concern. The water had to be collected and treated before being released for public consumption," Marignac said. In some areas, water monitoring and management are still going on.

The Institute for Radiological Protection and Nuclear Safety and the National Institute for the Industrial Environment and Hazards provided guidance and support in the remediation work. International experts from the IAEA, Belgium, Israel, Luxembourg, Switzerland and the United Kingdom were also consulted.

Today, the former uranium mining sites hardly reveal the past activities, perfectly blending into the surrounding landscape.

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— Yves Marignac, Coordinator, Pluralistic Expert Group, France

Remediation activities

Once the Limousin uranium mines were shut down, management strategies were developed, including a methodology in line with the 2006 French law on sustainable management of radioactive waste and materials.

The Regional Directorate for Industry, Research and the Environment (DRIRE) and the Nuclear Safety Authority (ASN) were given the task to oversee and implement the remediation process. The main objectives were to make sure the process was transparent, to ensure public safety and to seal any leaks and other contamination from the shutdown mines, Marignac said.

The authorities also evaluated the condition of the uranium mines, including mining work done, status of the waste rock piles, mill tailing ponds, water collection and treatment systems, identification of disposal sites for contaminated sediments and the possible re-use of waste rocks.

Information on the impact on the local ecosystem, workers' radiation dose assessment, monitoring of radioactive release to the environment and proposals for corrective actions were also reviewed.

Between 2006 and 2008, priority actions, such as safe transfer of the radioactive and non-radioactive wastes to disposal sites, safe transportation of radioactive waste material and ensuring that stringent legal measures were applied for public and environmental protection were implemented.

The public also had access to the government inventory of the mines in the region and details of the radioactive waste to be disposed of, Marignac said.

In remediating the sites, the French authorities in Limousin sought to minimize residual impact of former mining activities, and to reintegrate the site into the landscape. To make the areas safe for public use, they also performed rigorous radiological and environmental monitoring, and undertook extensive water treatment.