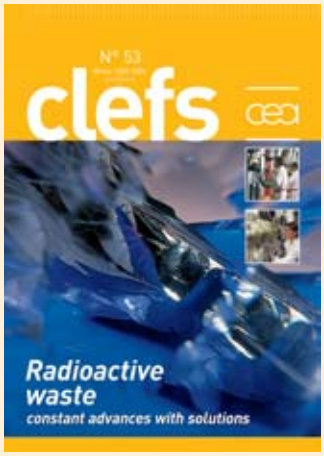


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**Main picture:**
**Artistic presentation of a block of "nuclear" glass, used for the vitrification of long-lived, high-level radioactive waste.**
Dominique Sarraute/CEA

**Inset**
**(top): Shielded cells in the C18 and C19 lines of the DHA (*déchets de haute activité*: high-level waste) group of the Atalante facility, at CEA/Marcoule, allowing fabrication of confinement matrices (glasses, ceramics), and investigation of the long-term behavior of high-level waste packages.**
P. Stroppa/CEA

**(bottom): Filtration operation, carried out in an Atalante glovebox, during investigations on actinide separation, at CEA's Marcoule Center.**
T. Foulon/CEA

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# Editorial

Less than four years ago, *Clefs CEA* came out with an initial issue devoted to the topic of radioactive waste management research. This set out the main results of this effort, the focus being on a range of solutions that, at a more or less distant date, might reach the form of new, safe industrial processes. This overview thus provided, within the bounds of such a publication, an initial scientific summing up of the research effort carried out under the aegis of the French Act of 30 December 1991.

At a time when the 15-year period set for investigations by the Act is drawing to a close, and a new Act is being prepared, through which the nation's representatives should set the framework governing the long-term management of the more highly radioactive waste, along with the future research effort to support this, a new survey and summing up was required. Government can base itself, for the purposes of drawing up legislation, on the findings from the investigations steered by CEA and ANDRA, on the assessments by the National Review Board, or by international auditors (OECD), on the report returned by the Parliamentary Office for the Assessment of Scientific and Technological Options, in March 2005, and on the perspective from citizens, included in the conclusions from the public debate engaged in over the closing months of 2005.

All of these contributions highlight a certain complementarity of the solutions that may be considered, which in any event occupy highly diverse positions across timescales. Most importantly, they indicate that deployment of these solutions will be gradual, as part and parcel of a process of ongoing advances, which has already enabled the issue to be taken up in distinctly different terms to those prevailing in 1991, at any rate quantitatively, with regard to the volume of waste involved, in particular with respect to long-lived and high-level waste, targeted by the "Bataille" Act of 1991. While these advances may seem to be presented in a purely, almost narrowly French context, it should not be forgotten that the state of maturity, and excellence, of the French nuclear power industry, and research organizations, has gained international recognition in this respect.

It is, first and foremost, these constant, ongoing advances, already achieved, nearing completion, or anticipated in a near or more distant future, that form the warp and woof of this new issue of *Clefs CEA*. These advances draw on the deeper scientific understanding that research workers at CEA, in other research organizations, and in academe, together with their partners in Europe, keep making ever more accessible. They already warrant the claim that radioactive waste management, if ever it may have stood as an "issue" in past times, nowadays stands, above all, as a matter for political decisions, from a whole range of solutions, some of which are deployed as of now.

**> Bernard Bouquin**

**CEA is one of the foremost technological research organizations in Europe, with respect to energy, defense, security, and new information and health technologies. Through the gamut of its diverse programs, it pursues two major goals: that of becoming the leading technological research organization in Europe, and ensuring the continuing viability of the French nuclear deterrent, one of its historic briefs, as Atomic Energy Commission.**
**The organization's assets are a meeting of cultures, bringing together engineers and research scientists, conducive to synergies between fundamental research and technological innovation; outstanding facilities; and actual involvement in the industrial and economic fabric, with some 339 currently valid license agreements, and a portfolio of 1,245 currently valid priority patents,* and 629 priority patents, covered by working licenses or agreements at the end of 2005.**

**With sites in France accommodating nine research centers, distributed across the country, CEA, with a workforce of nearly 15,000 and an annual budget of € 3,21 billion, benefits from its strong involvement at regional level, and sound partnerships with other research organizations, local authorities, and universities.**
**Internationally recognized for its expertise in its areas of competence, CEA, operating as a public-sector establishment of industrial and commercial character under French law (EPIC), while itself forming a unique category of public-sector establishment, is fully involved in the European Research Area.**
**A major protagonist in the field of research, development and innovation, the organization, since 1984, has presided over the setting up of 97 new companies in the high-technology sector.**

* Breakdown of figures according to current internationally accepted practice.