

## Nuclear energy: half a century of experience



Nuclear energy currently benefits from about 13 000 reactor-years of experience worldwide. This considerably strengthens its ability to ensure very high standards of nuclear safety and radiological protection of workers, the public and the environment. Such experience can also contribute to increased public confidence in nuclear power, provided that the public is well-informed of the various aspects of this energy source as discussed in the article on page 4.

This increasing body of experience is, of course, the result of increasing numbers and years of operation of nuclear power plants. With this comes the need to look more closely at questions of ageing management. The NEA has several studies and projects under way in this area, which are described on pages 16-19. Such studies can also provide useful feedback for the design of new nuclear power plants, and is beginning to be used in many member countries. Ageing management studies and associated analyses are also important when deciding on the possible extension of the lifetime of nuclear power plants, usually by an additional 10 or 20 years depending on the regulatory framework in place, as the prerequisite safety criteria must be defined and met.

A number of nuclear power plants are nevertheless reaching the moment when they need to be decommissioned. The article on page 13 specifically addresses the lessons learnt during decommissioning that can be applied to new reactors. Indeed, this feedback from decommissioning experience can provide useful insight into improvements that can be made at the design stage, with potential economic, radiological protection and waste management benefits.

Overall, the trend towards a revival of nuclear power continues, with many countries showing new or increased interest in nuclear power based on its security of supply and near absence of CO<sub>2</sub> emissions on a full life cycle basis. Financing the necessary investment to build new nuclear power plants will be challenging, however, in the current economic context. Guaranteed loans and other selected measures will enable governments to support cost-effective investments in the nuclear sector without jeopardising market competition.

A handwritten signature in black ink, which appears to read 'Luis E. Echávarri'. The signature is stylized and cursive.

Luis E. Echávarri  
NEA Director-General