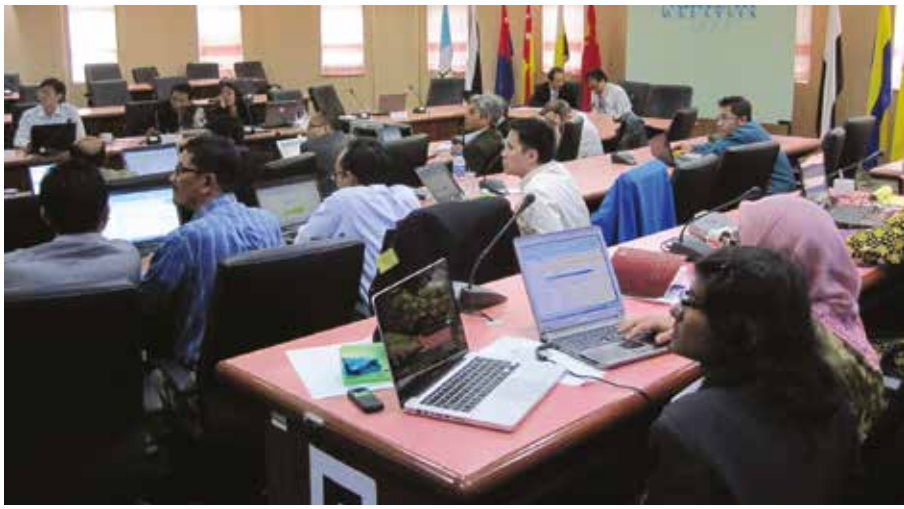
TRAINING TOMORROW'S NUCLEAR WORKFORCE

Start with the children. That is the message Brian Molloy, a human resources expert in the IAEA's Nuclear Power Engineering Section, wants to convey to any country considering launching or expanding a nuclear power programme. Mathematics and science curricular and extra-curricular activities at secondary and even primary schools are of crucial importance to future recruiting efforts at nuclear power plants, he says: "You need to interest children in science and physics and engineering. The teaching needs to be robust enough to teach them, but it must also gain their interest."

Recruiting high-calibre engineers needed for the operation of nuclear power plants is a growing challenge, even for existing nuclear power programmes, because of a wave of retirements combined with increasing global demand. But essential as engineers are, they are only a component of the staff at any nuclear power plant. In fact, most employees at nuclear power plants are not university graduates — they are skilled technicians, electricians, welders, fitters, riggers and people in similar trades. Molloy argues that this part of the workforce needs more focus. "It's about getting a balance between focusing on the academic and the skilled vocational", he says, adding that countries considering nuclear power programmes often initially place undue focus on nuclear engineers.

Planning the nuclear workforce of the future begins up to 10 years before the trained staff will need to be recruited. Education and training begins from an early school age when the curriculum already includes a firm grounding in science and mathematics. "Several years of science and maths education, as well as training, are needed to build up a knowledge level in society through the education system and through outreach", Molloy says. Other key components of human resources management in the nuclear power field include continuous education and succession planning to ensure that personnel turnover is anticipated and skilled staff can be replaced in smooth succession. The IAEA offers its Member States wide-ranging support in human resources management through workshops, technical meetings, assessments and professional advice.

IAEA publications such as *Milestones in the Development of a National Infrastructure for Nuclear Power, Managing Human Resources in the Field of Nuclear Energy and Workforce Planning for New Nuclear Power Programmes* provide guidelines. The IAEA's Integrated Nuclear Infrastructure Reviews highlight human resource development as one of the 19 infrastructure issues. The IAEA has a Technical Working Group on Managing Human Resources in the Field of Nuclear Energy to provide advice and support in all areas of human resource management. The IAEA has also developed a core curriculum for nuclear engineering that can be used by universities.



The IAEA offers its Member States wide-ranging support in human resources management through workshops, technical meetings, assessments and professional advice. (Photo: IAEA)

By adopting the IAEA Action Plan on Nuclear Safety, IAEA Member States emphasized the importance of human resource management. One of the Action Plan's 12 actions calls on countries with operating or planned nuclear power programmes to strengthen capacity-building programmes to "continuously ensure sufficient and competent human resources necessary to assume their responsibility for safe, responsible and sustainable use of nuclear technologies." The Action Plan also calls on the IAEA Secretariat to assist as Member States requested.

Such assistance is in high demand in newcomer countries, but, according to Molloy, human resource management is just as important in countries that already operate nuclear power plants. He highlighted the example of the Finnish Government's demand that utilities review the national nuclear capability as a condition of clearance for expansion as a useful approach. "They looked at whether they had enough human resources to build and operate the plants in the long run", Molloy says. "That is a very good model."