

NUCLEAR EDUCATION AND TRAINING: CAUSES FOR CONCERN? A STUDY BY OECD NUCLEAR ENERGY AGENCY

H. Yamagata presented by E. Sartori
OECD Nuclear Energy Agency
Le Seine St-Germain, 12 bd des Iles, 92130 Issy-les-Moulineaux, FRANCE
E-mail: hiroshi.yamagata@oecd.org

ABSTRACT

This study was undertaken to consider the concern raised by the Member countries of the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (OECD/NEA) that nuclear education and training is decreasing, perhaps to problematic levels. The data gathered from the study and the follow-up analysis provide credence to the initial view, as this paper will show. This study covers 16 Member countries: Belgium, Canada, Finland, France, Hungary, Italy, Japan, Korea, Mexico, the Netherlands, Spain, Sweden, Switzerland, Turkey, United Kingdom, and the United States.

Mankind now enjoys many benefits from nuclear-related technologies. Nuclear energy has played an important role in electricity production for the last half-century. Even in countries not now developing additional nuclear power, qualified people are still needed to operate the existing plants and fuel-cycle facilities (many of which will operate for decades), manage radioactive waste, and prepare for future decommissioning of existing plants. Now and for generations to come, these activities will require expertise in nuclear engineering and science if safety and security are to be maintained and the environment protected.

In most countries there are now fewer comprehensive, high-quality nuclear technology programmes at universities than before. The ability of universities to attract top-quality students, meet future staffing requirements of the nuclear industry, and conduct leading-edge research is becoming seriously compromised. Facilities and faculties for nuclear education are ageing, and the number of nuclear programmes is declining. The number of degrees with a nuclear content has generally decreased. Student perception is affected by the educational circumstances: public perception, the industry's activities, and reductions in government-funded nuclear programmes. This negative perception may be shared by many others, including a student's parents, teachers, and friends. With an unclear image of the future, many young students now believe that job prospects are poor and that there is little interesting research. Low enrolment directly affects budgets, and budgetary cuts then limit the facilities available for nuclear programmes. Unless something is done to arrest it, this downward spiral of declining student interest and academic opportunities will continue.

Failure to take appropriate steps now will seriously jeopardise the provision of adequate expertise tomorrow. Governments, academia, and industry must assure that crucial present requirements are met and future options are not precluded. Governments are responsible for doing what is clearly in their countries' long-term national interest, especially in areas where necessary actions will not otherwise be taken. Universities should provide basic and attractive educational programmes; interact early and often with potential students; provide early research opportunities; and provide adequate information. There currently appear to be enough trainers and quality staff in industry and research institutes; however, industry must recognise its role and interest in assuring an adequate supply of capable students and vigorous research, as well as maintaining the high-quality training that is needed

for staff in industry and research institutes. Industry, research institutes, and universities need to work together to better co-ordinate efforts to encourage the younger generation through mechanisms such as grants, research funding, partnerships, and international collaborations. More collaboration and sharing best practices would be greatly beneficial.

The report of this study will be published by the OECD in Summer 2000.