

7 THE NEW NUCLEAR COUNTRIES

Today, a number of countries around the world, both with and without nuclear experience, are announcing their intention to develop nuclear power generating programmes. ASN, whose role is to help develop and sustain a high level of nuclear safety worldwide, is paying close attention to nuclear power generating reactor projects around the world, in particular in the “new nuclear” countries with no experience of this technology.

ASN is not the only organisation keenly watching this new nuclear safety issue. The International Atomic Energy Agency (IAEA) in 2007 and the *International Nuclear Regulators’ Association* (INRA) in 2008, clearly stated that a long time was needed to acquire the level of expertise and true safety culture required before being able to operate a nuclear power plant. It is the responsibility of a country making the long-term commitment to a nuclear programme, which also demands considerable investment, to set up an effective system of nuclear safety regulation.

A safety authority has to be both qualified and independent. It is not enough simply to import skills nor to write or even copy specific legal rules from existing models. At least 5 years are needed to draft an Act, create an Authority and

make it operational, by mobilising the appropriate safety and regulatory expertise.

Furthermore, international operating feedback shows that examination by this safety authority of the application for authorisation to create a nuclear reactor takes from 2 to 10 years. This time will be all the longer if there is no local nuclear installation of lesser complexity in operation, on which the system could be trialled.

Finally, the time needed to actually build an electricity generating reactor is about 5 years, in particular owing to incompressible technical lead-times and the need for supervision of the worksite.

Taking these factors together gives a minimum period of fifteen years before operation of a nuclear power generating reactor can start in satisfactory conditions.

For those new nuclear countries who so require, ASN can assist in developing the necessary legislative and regulatory structures, training personnel, monitoring the nuclear steam supply system, reviewing safety analysis reports and carrying out site inspections and operational checks, although these



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must always remain the responsibility of the safety authority of the country concerned.

A country that is already a nuclear operator may also make a request for cooperation to help upgrade its legislative and regulatory framework and its nuclear safety authority, as well for assistance with decommissioning of existing installations and the disposal or treatment of waste.

Worldwide, about 440 reactors are in operation in 31 countries. 250 reactors are under construction or are currently being planned. These projects concern countries which already have reactors in service and wish to develop or resume reactor construction (mainly China, India, the United States, the United Kingdom, South Africa, Brazil, the countries of eastern Europe, and so on). The reactor construction projects also concern new countries wishing to gain access to nuclear power (for example, Algeria, United Arab Emirates, Saudi Arabia, Jordan and Morocco).

Faced with the new or growing need for staff with nuclear competence on the part of the manufacturers, licensees and safety authorities, and to make up for the wave of retirements, training capacity will have to be created or

developed. This will take several years and its effects will not be felt before the medium-term.

These factors taken together mean that all the stakeholders have to set priorities. For ASN, these priorities must be based on geophysical, economic, political, social and technical criteria, along with compliance with certain international treaties and criteria resulting from the work and experience of IAEA, INRA and ASN itself.

ASN considers that developing and sustaining a high level of nuclear safety worldwide is one of its fundamental duties, one that it shares with its foreign counterparts. It will contribute to any international initiative to promote a policy of accountability with regard to safety. However, it is the responsibility of the countries which acquire nuclear installations to do what is necessary to ensure that they are operated safely. They will therefore need the necessary expertise, the required numbers of qualified staff and the necessary institutions and legal instruments.

Rigour and competence on the part of the industry, and independence of the safety authorities are essential for building and operating new nuclear power plants.