

Preservation and Enhancement of Nuclear Knowledge Toward Indonesia's Plan to Operate First Nuclear Power Plant By 2016.

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Nuclear power is needed to sustain economic development in the world's fourth most populous country. More than half of Indonesia's 220 million people live on the island of Java. The problem is not that Indonesia lacks resources, but that they are far from Java - much of the coal, oil, natural gas and other assets are hundreds of miles away in the northern part of the island of Sumatra. Indonesia will need a nuclear power plant (NPP) to overcome the lack of power supply due to increasing consumption of electricity while the traditional power supply, including crude oil, has been decreasing. The National Nuclear Energy Agency (Batan) has advocated the introduction of nuclear power in Indonesia as a part of a long term national energy system. According to the landmark of Batan, the first Indonesian nuclear power plant construction would start by 2010 and the plant would be operational by 2016. Since the decision to build nuclear power plant, according to the law number 10 year 1997, has to be consulted to the Parliament, it is indeed necessary to have always excellent communication with members of Parliament, to be understood by them and has to be supported by the society at large.

In the past, efforts to launch nuclear power programs based mainly on economic justification have failed for various reasons; ones of the most important reasons were due to the lack of public support. Indonesia is pushing ahead with nuclear power at a time when the commercial use of nuclear power is in decline after 40 years of expansion. It is being rejected because of escalating costs, faulty technology and continuing public concern about accidents and radioactive waste disposal. Again this mean strong, effective and credible public information, public education and public relation organization have to be established to win the heart and the mind of the public. The problem is the majority of the people in Indonesia is low educated that makes them easy to be manipulated by the non-governmental organizations that have their own agenda. Therefore the public information has to be intensified in line with the dissemination of proven nuclear technology application activities already carried out for couple years in various provinces together with various research and development institutes and local governments, universities, private companies, and non-governmental organizations.

The Batan nuclear workforce is aging - that is, more and more nuclear workers are approaching retirement age, without a corresponding influx of appropriately qualified younger personnel to replace them. This situation happens due to zero growth policy in government employment or more precisely negative growth policy on Batan employment. Between years 2000 and 2004, from 3704 batan employees there is 280

retired or quitting Batan, but only 108 recruitments of newer employees have been accepted. The statistic shows a significant brain-drain flow from government research institutes to the private sectors and industrial countries. The establishment and maintenance of a formal human resources policy and nuclear knowledge management strategies are important to ensure that an organization maintains adequate numbers of competent and motivated personnel, and the availability of essential technical information (explicit knowledge) in the form of scientific research, engineering analysis, design documentation, operational data, maintenance records, regulatory reviews, and other documents and data to achieve the organization's mission.

Human resources development for the design, construction, installation and safe operation of the NPP's should be inseparable from the package in the procurement of the NPP's. Polytechnic Institute of Nuclear Technology, as an educational institute under Batan, was inaugurated in August 2001. The main objective of the institute is to provide education and training facilities to support human resource development program in nuclear science and technology. A center of Batan namely the Education and Training Center (ETC) has the responsibility of conducting education and training of nuclear science and technology in Indonesia. The ETC has been cooperation with some Universities and colleges (such as University of Indonesia, Gajah Mada University, Bandung Institute of Technology, etc.) for education and training on nuclear science and technology. In this day and age of the Internet, the quantity and quality of explicit knowledge that can be accumulated have expanded exponentially. Batan need to make better use of advanced information technology, software capabilities, and computerized management systems to accumulate, store and disseminate nuclear knowledge throughout the organization.

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