

K. C. Purohit
describes the rising
trends of nuclear
power generation in
India

Sound safety culture at Indian nuclear power plants



"The cooperation with WANO has been beneficial in learning from international best practices and programmes."

K. C. Purohit, Chairman and Managing Director, NPCIL

The Nuclear Power Corporation of India Limited (NPCIL) is a Public Sector Enterprise under the Department of Atomic Energy (DAE), Government of India. The company was incorporated as a Public Limited Company in September 1987 with the objective of operating atomic power stations and implementing the atomic power projects for generation of electricity in pursuance of the schemes and programmes of the Government of India.

NPCIL is responsible for the design, construction, commissioning and operation of nuclear power reactors, and is currently operating 20 nuclear power reactors with an installed capacity of 4,780MW. The reactor fleet comprises of two boiling water reactors (BWRs) and eighteen pressurised heavy water reactors (PHWRs), including one 100MW PHWR at Rajasthan which is owned by DAE, Government of India. NPCIL has six reactors under various stages of construction totalling 4,800MW capacity out of which one reactor of 1000MW capacity, at Kudankulam, attained criticality on 13 July 2013. New launches for PHWRs and LWRs are also being taken up.

To sustain the growth of nuclear power, public acceptance is a factor of extreme importance. In order to work towards public acceptance, we have to outreach extensively and widely publicise the benefits of nuclear power at all levels of society.

NPCIL and WANO

In our experience, WANO peer reviews have proven very useful in improving the safety and reliability of our nuclear power plants. The participants bring together knowledge and experience of operating plants across the globe, and make an objective assessment of the operation of the reviewed plant against the best international practices.

Similarly, we have found that the WANO good practice reports, developed as part of the WANO Technical Support and Exchange programme, are very effective in enhancing the performance of the nuclear power plant by learning from the best practices of others.

Operating Units and Units Under Construction

The operating nuclear power units are:

- Tarapur Atomic Power Station units 1 & 2 (2x160 MW BWRs)
- Tarapur Atomic Power Station units 3 & 4 (2x540 MW PHWRs)
- Rajasthan Atomic Power Station units 1 to 6 (100 MW, 200 MW and 4x220 MW PHWRs)
- Madras Atomic Power Station units 1 & 2 (2x220 MW PHWRs)
- Narora Atomic Power Station units 1 & 2 (2x220 MW PHWRs)
- Kakrapar Atomic Station units 1 & 2 (2x220 MW PHWRs)
- Kaiga Generating Station units 1 to 4 (4x220 MW PHWRs)

The units under construction are:

- Kudankulam Nuclear Power Project units 1 & 2 (2x1000 MW VVERs)*
- Kakrapar Atomic Power Project units 3 & 4 (2x700 MW PHWRs)
- Rajasthan Atomic Power Project units 7 & 8 (2x700 MW PHWRs)

* Unit 1 of KKNPP attained criticality on 13 July 2013

In addition, NPCIL has a 10MW wind farm operating at the Kudankulam site.

The WANO Operating Experience programme also enables learning from global experience. NPCIL units engage in sharing of operating experience not only among each other, but also globally under this programme.

In order to fulfil our mission, "To develop nuclear power technology and to produce nuclear power as a safe, environmentally benign and an economically viable source of electrical energy to meet the increasing electricity needs of the country", NPCIL takes advantage of WANO programmes which provide valuable resources and support to its members.