

Printed from Times of India

Terms of Nuclear Engagement

Anil Kakodkar, May 8, 2010, 12.00am IST

One of the objectives of the Nuclear Non-Proliferation Treaty (NPT) has been to benefit the world with nuclear energy. In countries allied to superpowers or their trustworthy followers, the nuclear generation capacity did grow to fill in the available space. As a result, the share of nuclear power worldwide rose to around 17 per cent rather quickly.

Proliferation concerns, however, persisted in spite of the NPT. This led to moves by the US towards abandoning the closed nuclear fuel cycle since it involved separation of weapon usable fissile materials. This meant an order of magnitude reduction in the energy potential from nuclear resources. Countries like France, Russia and Japan, however, continued to pursue the policy of closed nuclear fuel cycle on considerations of their long-term energy security.

NPT countries not belonging to either of the two blocs could not benefit from nuclear energy to any significant extent in spite of being members of the treaty. The IAEA's programme on small and medium nuclear power reactors did not produce any tangible result in spite of its existence for decades. On the other hand, comprehensive and self-reliant development of nuclear power technology in India, based on the closed nuclear fuel cycle, has made the country well poised for large-scale development of nuclear power on its own. Indian nuclear technological capability, in addition to other factors, has contributed to the change in the world's attitude towards India in spite of it not being a part of the NPT.

Climate change concerns necessitate a large-scale deployment of nuclear power as an important means of meeting global energy needs in near carbon emission-free mode. The old mindset of shunning the closed nuclear fuel recycle is thus slowly transforming to a realisation of the importance of nuclear recycle. Since recycle technologies involve large amounts of separated weapon usable fissile materials, there are added proliferation and now even security concerns. The situation is similar to the one that existed around the time the NPT was created. New modalities that allow expanded use of nuclear energy and also address security and proliferation concerns are thus becoming necessary.

The strong desire for additional controls on enrichment and reprocessing over and above the NPT commitments is likely to lead to new frameworks that would further divide the world. Signs are already visible in discussion on issues like enrichment and reprocessing transfers, multinational management of nuclear fuel cycle and nuclear security.

For us this is both a challenge and an opportunity. We would be a credible player in reprocessing and enrichment certainly for ourselves but, if the situation so warrants, for other countries as well. In the area of reactors including advanced systems like fast reactors and thorium reactors, we have specific technological advantage. We are now getting integrated with international commerce in nuclear technology. That India is a

state with nuclear weapons is now a recognised fact. We should therefore logically be a part in the emerging nuclear framework with proper recognition.

We are not a part of the NPT that would continue to be an integral part of any new emerging order. NPT and related issues would remain a major irritant in our engagement with the international community on various nuclear and related matters. We have to remain vigilant in this regard. The political dimensions of the problem of India's further integration in the world nuclear order and the question of equitable access to nuclear energy in all countries are much more difficult to resolve and much would depend on the statesmanship of world leaders. The process is inevitably dependent on the evolving global/regional dynamics, is long drawn and inherently unpredictable. We should simply carry on with our nuclear development in accordance with our predetermined programme and following our time tested policies. The world would need India as much as we need the world; hopefully a situation would emerge when we get further integrated in the emerging nuclear order in a manner consistent with our policies.

India can perhaps do a few things that help. In addition to pursuing the rapid deployment of three-stage nuclear development within the country, we should continue to build strong cooperative links with key countries in advanced nuclear technology areas. This mutually beneficial exercise should create an interdependence that would position us better and protect our interest in the emerging order. Our 220 MWe pressurised heavy water reactor systems are the smallest and yet most competitive nuclear power plants in the world. We should aggressively market Indian systems abroad and create a constituency in our favour.

Finally, we could demonstrate to the world our potential to contribute to a safe and secure global nuclear power development. This can be very effectively done through the low enriched uranium-thorium fuelled advanced heavy water reactor (AHWR-LEU) that has been developed by us and is now ready for deployment. AHWR-LEU is a simple reactor that enables a very high level of safety and is immune to malevolent acts even of an insider. Its fuel cycle is proliferation-resistant. The reactor system can be deployed without any significant safety, security and proliferation risk. Without recourse to such technological solutions, a legal framework no matter how elaborate would simply not be successful, given the complexity of this problem and the ground realities. Our synergistic pursuits on both political and technological fronts can maximise our advantage.

(The writer is former chairman of the Atomic Energy Commission.)