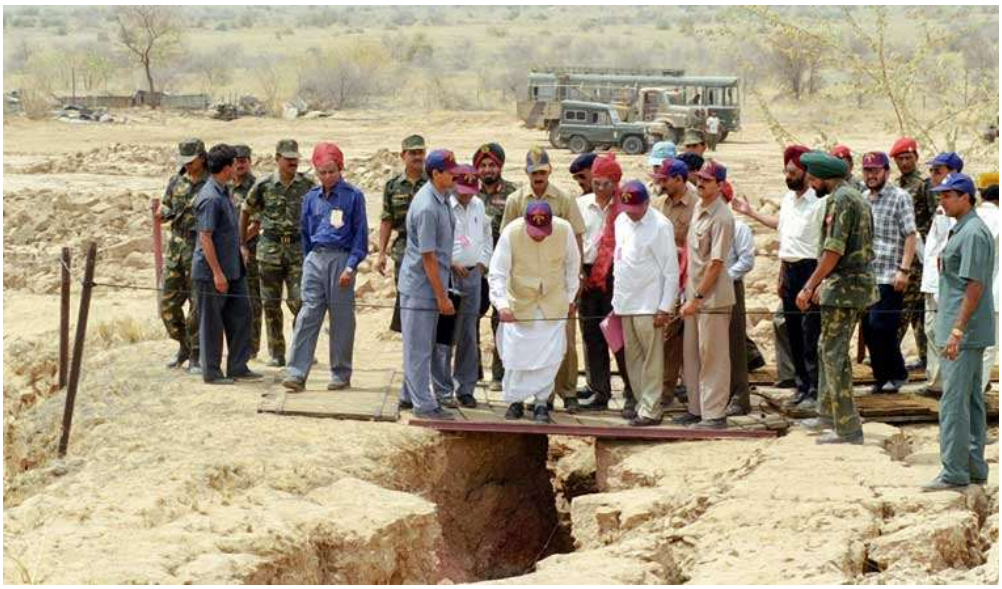
'India a responsible country with advanced nuclear technology'

Interview with Anil Kakodkar, former chairman, Atomic Energy Commission

By Dr Elsa Lycias Joel Updated: May 11, 2023 12:45 IST



(FILE) Former prime minister Atal Bihari Vajpayee visits the nuclear test site in Pokhran | PTI

We remember the nuclear tests that established India as a nuclear power. Though events are talked about, curiosity about the brains behind them lingers. Not many of us are intrigued about what happened behind the scenes, how the scientists stepped up as a team, the huge practical challenges and the eagerness for thrilling, extraordinary results that would put India on the N-map.

Talking to Dr Anil Kakodkar, former chairman, Atomic Energy Commission and one of the key persons behind Pokhran I & II, we understand that a set of imperatives arises from the fact that for countries with different values, views and strategies to co-exist in this

planet without erasing one another from this map, for rivals to constrain their deplorable behaviour, credible nuclear deterrence is a necessity.

Excerpts from the interview:

You have been interviewed by all the national news channels. Which one of those do you remember vividly and why?

Whenever the conversation has been either with the well-informed or with those with genuine curiosity, it has been very enjoyable. Some of them come across as simple conversations helping me speak up with enthusiasm. Almost all interviews I remember have made me feel good. It is such a joy to understand other people's perspectives too. So, it is difficult to single out one as the best.

Who in your family influenced you the most in your formative years?

My mother. With my father deported to Portugal to serve nine-year imprisonment because of his participation in Goa's freedom movement, my childhood years were entirely under my mother's care. She chose to get trained as a Montessori teacher and started a Montessori school in a small town in Madhya Pradesh for our sustenance. Thus, my mother was mother, father and a teacher—all three in one for me. Her life had a strong Gandhian influence, having studied and spent several years at Sevagram and Wardha. That also has deeply impacted me.

Being a recipient of all the three highest civilian honours is a huge responsibility as well.

Responsible behaviour is indeed a good attribute always. With recognitions, it is pretty much impossible to go under the radar. It then becomes your responsibility to ensure that the prestige of the recognition is always upheld and not dented in any way.

One sentence on 'Fire and Fury'.

With high stakes involved while you are negotiating uncharted territory, *Fire and Fury* is inevitable.

You were part of two nuclear tests—1974 and 1998—that changed India's image. Why was 1974 code-named smiling Buddha? What were the circumstances that led to all the tests that have been conducted so far?

1974 test was a 'peaceful' nuclear explosion experiment. Secrecy management needed a code name. 'Smiling Buddha' was appropriate. 11th May 1974, the day when the test was conducted was a Buddha Purnima.

We have pursued a broad-based and autonomous R&D programme to be able to address the emerging national needs. Talking about national security, India has been a reluctant nuclear power driven by her security needs. We have always emphasised universal non-discriminatory nuclear disarmament and continue to do so. While 1974 was an experiment (well within the scope of peaceful nuclear explosions that were being conducted then), 1998 was about weapons tests to address national security needs (for eg two nuclear capable adversaries on her border). India was well within her international agreements and obligations in the conduct of these tests and is recognised for her responsible behaviour.

Modern India has always been an epitome of scientific and technological development. The Green Revolution in 1960, launching of Nike-Apache in 1963,the White Revolution in 1970, Smiling Buddha in 1974, the launching of Agni in 1989, of Aryabhata in 1975 followed by Chandrayaan-1 and Mangalyaan. Why was Pokhran-II chosen as the basis for National Technology Day?

Nations become strong essentially on the basis of technological superiority. Technology enables both military as well as economic strength. Countries tend to become restrictive in technologies that have high strategic potential to preserve and enhance their relative advantage. With nuclear technology, because of its very high strategic

potential, such restrictions are very strong and comprehensive. Achieving capability in this area in a self-reliant manner is a major technology driven inflection point in national capability, not only with respect to nuclear strength but in a broader sense. I believe that to be the reason for celebrating national technology day to commemorate the tests done on May 11, 1998 when India transitioned into a nuclear weapon state on its own technological capacity.

The 1974 test provoked America to stop giving technological assistance for space research, communications and missile development and again the 1998 tests resulted in immediate economic sanctions by America and other major countries against India. Did these come across as spoilers? How was the mood in South Block?

That the sanctions would be imposed was not unexpected. The country did manage to cushion the impact of sanctions and progress steadily on our nuclear programme, fairly unabated. Looking back, rather than being spoilers, the 1998 tests and post-tests management have made the country much stronger not only in matters nuclear but more comprehensively.

Fooling the CIA should have been a high bar...

Of course, one has to take care of all aspects for successful implementation of any programme.

One emotional moment that you would like to recall as the army, DRDO and BARC went about business.

The team spirit and the camaraderie evolved exceptionally. Bonds of friendship strengthened and trust transcended organisational boundaries. Issues, both simple and deep involved us all. Everyone contributed to some insight during the process. We bonded over our common mission.

Is it true that when nuclear weapons are tested underground, some particles with long half-lives get concentrated in the soil and water

tables in and around the test site?

At Pokhran radioactivity was well-confined. Samples including soil and water were regularly collected along all potential pathways to monitor migration of radioactivity and to confirm effective confinement. There is no evidence of any harm of the kind mentioned in the question at and around Pokhran site. It would be inappropriate for me to comment on nuclear test sites in other countries.

Can we agree that all it takes is an irresponsible, emotionally unstable leader to wipe out millions of lives in a jiffy and continue to kill many more, rather slowly, over the years?

Irresponsible acts, more so of the powerful with guile in their hearts, are always a danger to mankind whether as a catastrophe or as a slow and continuous damage over the years. India has been recognised as a responsible country with advanced nuclear technology.

For the sake of deterrence or defense, when nations participate in the nuclear arms race, are countries charging into Thucydides's trap?

India's has adopted the policy of credible minimum nuclear deterrence to protect her from attacks using weapons of mass destruction by her adversaries. India is not in the nuclear arms race.

Nuclear technology in medicine and agriculture is indeed a blessing. Is renewable energy slowly replacing nuclear energy? Why nuclear energy is considered indispensable by certain countries?

Peaceful applications of nuclear technology have indeed led to large-scale benefits for the mankind. India has a large programme on applications in medicine, agriculture, food preservation, city sewage hygienisation and industrial processing besides nuclear power. Nuclear and renewable energy are both clean and need to inevitably co-exist to sustainably meet the energy needs in a net zero world to which we are all committed. For India, in my assessment, nuclear and renewable energy will share the energy supply burden equally in the

long run. My contention is that the total energy needs of a developed India cannot be met even after maximising the use of all six renewable energy sources (wind, solar, biomass, tidal ocean, geothermal and hydro).

What according to you is 'technology with a human face'? Is a nuclear free world possible, 100 years from now?

Technology is a human capability multiplier. Whether it would be used for exploiting or destroying other humans or to empower everyone depends on how well we nurture or foster human values. To me, 'technology with a human face' means deployment of technology done in a manner to empower everyone and exploit none. If the world at large adopts Gandhian philosophy and values, I believe that a nuclear weapons-free world is eventually possible.

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