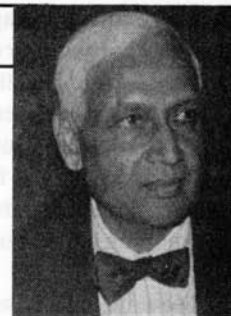


Interview: Dr. C. Kumar N. Patel



## Why South Asia needs to develop its nuclear energy

*Dr. Patel is vice chancellor of research at the University of California at Los Angeles. Until March 1993, he was executive director of the Research, Materials Science, Engineering, and Academic Affairs Division at AT&T Bell Laboratories. He has made numerous contributions in the fields of gas lasers, nonlinear optics, molecular spectroscopy, pollution detection, and laser surgery. He is a member of the National Academy of Sciences, the National Academy of Engineering, and a Foreign Fellow of the Indian National Science Academy. Dr. Patel was interviewed in Washington, D.C. on Sept. 23 by Kathy Wolfe.*

**EIR:** The Asia Society's report "South Asia and the United States after the Cold War" recommends that the United States "reexamine present policy concerning nuclear energy cooperation with India and Pakistan" because "civilian nuclear energy is an important component of the energy plans of Pakistan and especially of India." How much nuclear energy does the Subcontinent need, and why?

**Patel:** If South Asia wants to achieve economic growth, the region will require 20 to 50 times its present electricity generating capacity over the next 10 to 20 years. Taking into account the emission of CO<sub>2</sub> which would occur if this were done using fossil fuel plants, it is clear that nuclear power can avoid a long-term ecological catastrophe. This cannot be accomplished by conservation or improved energy efficiency, even if you were to use nothing and conserve everything. Hydroelectricity is fine, but it is finite, and the sources in South Asia are not where the population is. Solar is too expensive, given the weight of the construction material per unit energy output, for base load power needs.

The recent UNCED report after the Rio environmental summit points out that global development will mean rising carbon dioxide, which must be capped. But if we use our tried-and-true fossil fuel plants to increase South Asian electricity generation 50 times, doing this in South Asia alone would double worldwide CO<sub>2</sub> emission levels. Nuclear power is cleaner, and at a comparable cost, and should play a major role in development of the area.

**EIR:** What do you say to malthusians who ask, "Why does South Asia need all this electricity?"

**Patel:** You can make a linear plot of energy consumption to

GDP for any country in the world, and you find that economic growth cannot occur without energy growth, particularly in electricity consumption. Improving economic conditions means more energy consumption. If you deny these countries rising energy consumption, you simply are proposing to deny them economic growth.

**EIR:** South Asia also has a water management problem; can nuclear power help with desalination, for example?

**Patel:** Desalination is not viable for such huge population concentrations, but there are major capital requirements for all sorts of water management, dams, and other water infrastructure improvements, which require energy. Much of this investment can be generated internally, if we can mobilize India's 22% saving rate. But the match to light a whole wave of investment in infrastructure will be the expansion of electrical power.

**EIR:** Doesn't this argument for nuclear power apply equally to China and all developing countries?

**Patel:** I'm not a China specialist, but certainly it does—whether it is China, India, or the United States. The principal question to be asked regarding electricity generation is: Does it mortgage our future? Burning coal in South Asia, China, or anywhere would mortgage the future of the next two generations with a buildup of CO<sub>2</sub> emissions waste. Technology can always find a better way.

As to nuclear waste, this is a problem which science can solve, as it has solved problems before. As I mentioned in the conference, with fossil fuel emission of CO<sub>2</sub>, all that smog is gone out into the atmosphere forever, and you can't get it back. Nuclear waste, however, is much more compact, and at least you still have it, so we still have the chance for science to discover something to do with this waste.

**EIR:** The Asia Society report continues that "a policy review to determine whether continued denial of civilian nuclear and space technology, under suitable safeguards, serves U.S. nonproliferation goals, is warranted." What about the U.N.'s Nuclear Non-Proliferation Treaty (NPT), which denies this technology to South Asia?

**Patel:** NPT and related present policies have not worked, especially the NNPA, the U.S. law requiring that countries

sign an additional bilateral Nuclear Non-Proliferation Agreement or NNPA, with the United States, in order to import U.S. technology. A new policy is needed. You can't just dictate to sovereign nations. The nuclear genie in South Asia will not go back in the bottle. We need to use some carrots, not just rely on sticks. You cannot chain technology, because you cannot chain an idea, which is created in the minds of men everywhere.

First of all, civilian nuclear power does not lead to an arms race, as can clearly be seen in Japan, 45% of whose electricity is nuclear-generated, which yet is a completely and avowedly non-nuclear-weapons nation. So linking civilian nuclear power to the arms race is not appropriate. The fact that wastes do get created is not military-related, but, as I said, something which must be compared with wastes produced by other fuel sources.

And even if a nation does join the NPT, and pledges to have nuclear power plants under U.N. surveillance but no nuclear weapons, most of the technologies which go into a nuclear power plant are not dissimilar to weapons technologies. So conversely, even an NPT member nation can quickly develop weapons technology if they should decide to do so. To think that even full observation of the NPT can stop weapons proliferation, is itself a fiction.

**EIR:** Since nuclear power is cleaner, i.e., the extreme environmentalist argument against nuclear power is phony, aren't the NPT and these sorts of controls on technology exports a form of technological apartheid?

**Patel:** The NPT, and especially the NNPA, as it is now, is clearly that way, and many people all over the world think so. The "have" nations want to remain the "have" nations, and keep the "have-nots" as "nots"!

This is not 1954, it's 1994. Times have changed. The technologies are too widely available to restrict them; any nation which really wants military nuclear technology, can get it. Since they can get it with or without NPT, it is especially ridiculous to enforce NPT rules against *weapons*, by making *civilian* technologies unavailable, especially to large numbers of people who need civilian power and other technologies for their development.

NNPA especially is a cure which is worse than the disease. India can't get uranium for its four plants which the United States earlier had built there, so now it's separating out plutonium from used fuel and burning it in the MOX [mixed oxidized] mode. While the United States has heavily discouraged Japan from using plutonium, and so the U.S. has guaranteed uranium shipments to Japan, the U.S. is paradoxically forcing India to a plutonium economy.

**EIR:** So the view of NPT in South Asia and around the world is that it's unfair?

**Patel:** The NPT is clearly discriminatory. Every knowledgeable person on the subject in India and Pakistan feels

that the NPT, as well as the Missile Technology Control Regime (MTCR), the Pressler Amendment, and so on, are discriminatory. First of all, the countries with the really large nuclear weapons stocks are supposed to build them down, but this has not occurred. Then, the NPT is supposed to prevent rogue nations from getting nuclear technology, but clearly India and Pakistan are not rogue nations. It's like the old story of the fisherman who killed all the dolphins he found in his nets, as well as the sharks. When asked why, he said, "I do it as a warning to the sharks." So South Asian nations are being discriminated against as a warning to rogue nations such as Iran or North Korea.

This does not work, either in our case or theirs. If the United States is not willing to invade a country to enforce the NPT, which is not wise anyway, it can't be enforced, and the U.S. does not want to invade friendly countries.

So the stick extends only so far; we've got to start using carrots, and make the economic pie bigger, so that there is enough development to go around for everyone. Then countries will not want or need the bomb.

Furthermore, the real danger is not the non-weaponized development of nuclear deterrence up until this point. The real danger is the next generation of technologies being developed now; for example, India and Pakistan are now developing missile technology to weaponize a bomb, technology to actually deliver warheads.

You cannot turn back the clock; India and Pakistan already have nuclear weapons. They don't yet have the missiles to deliver them. The MTCR, however, will never prevent weapons missile development, as it is supposed to do, because it relies upon preventing countries from also developing generally a full range of technologies for space, for peaceful space exploration or other peaceful space technologies. This, these countries cannot allow.

So we should junk this MTCR approach, and work with them to help them develop peaceful space programs. Sticks don't work. We should get into a cooperative mode and work with them now on a peaceful space program; then we are in a position to argue against weaponization.

**EIR:** The NPT expires in 1995, and many countries think it should not be renewed for these reasons of discrimination. What are the prospects?

**Patel:** I think the NPT will be renewed next year, but not indefinitely, as the Big Five nuclear weapons states would like; perhaps for 25 years. But nothing serious can be done short of re-examining the entire issue from the ground up. What are we really trying to do here? Are we trying to prevent weapons from getting into the wrong hands? Or are we trying to keep technology out of people's hands, technology vital to economic development? The only way to really stop the spread of weapons, is to minimize the *need* for anyone to have nuclear weapons—which means to create major economic growth in the developing world.