

Nuclear Energy for the Poor

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The subject of nuclear energy, arousing hope and anxiety in almost equal degree, is of interest to all mankind. Of late, however, attention has focused on the implications of the spread of nuclear power and technology to Third World countries, and in that context the views of Pakistan—a developing country with similar economic compulsions—may be of some general interest.

Thirty years after Hiroshima-Nagasaki one sees nuclear energy being used beneficently all over the world in research institutions and hospitals, in farms and factories. But a number of recent developments have reawakened the fear and moral doubt concerning man's capacity to make wise use of the terrible power his intelligence has unleashed: the explosion by India of a nuclear device in 1974; disclosures about the real risks of accidents in power reactors; and the fear that terrorists, political or criminal, may obtain recourse to nuclear bombs to further their ends. These are valid fears and concerns that must be discussed with the seriousness and urgency the situation demands. We find it more difficult to appreciate the consternation with which many people view the fact that nuclear power and energy are spreading to the countries of the Third World. The idea that there are peculiar and greater dangers involved in the introduction of peaceful nuclear power into the Third World is one we cannot accept.

Prometheus was condemned to eternal punishment—but no one has tried to put out the fire. Nuclear energy, too, despite its dangers, is here to stay. The promise of solar energy and fusion power lies in the future. Thirty-two eminent American scientists, among them eleven Nobel laureates, declared a few years ago that there was no reasonable alternative to an increased use of nuclear power to satisfy the energy needs of the United States, a country whose reserves of coal amount to 250 billion tons and whose annual consumption of energy per capita

is more than 10,000 KW—the highest in the world. What is to be said, then, of the requirements of countries such as mine, possessing neither coal nor oil, and with per capita energy consumption of less than 200 KW per year, or 2 per cent of the U.S. consumption? Can there be any doubt or question that if these countries are to develop their resources and potential and meet even the bare requirements of their people, they can only turn to atomic energy to carry out the necessary economic development? Neither is there a dispute about the necessity of effective regulation and control of nuclear development. The relevant questions are: What is to be controlled and regulated? How and by whom? And to what ultimate end and purpose?

The first comprehensive attempt at effective regulation is embodied in the Nonproliferation Treaty of 1968. The treaty recognized the existence of five nuclear weapons powers that had already exploded nuclear weapons prior to January 1, 1967, i.e., China, France, USSR, U.K., and the USA—all, coincidentally, permanent members of the Security Council. The essential object of the treaty was to prevent any country other than these five from carrying out a nuclear explosion, either of a weapon or a device for peaceful uses. Nonproliferation of nuclear weapons was recognized, however, as only a step toward the larger end, which was to call a halt to the nuclear arms race and bring about nuclear disarmament. Indeed, the treaty has been described as a compact between nuclear weapons powers and nonnuclear weapons states in which the latter accepted restraints on their sovereignty in return for measures toward nuclear disarmament by nuclear weapons states.

On neither count can the NPT be considered a success. A sixth state, India, carried out a nuclear explosion, and stockpiles of nuclear weapons have not decreased but greatly increased both in quantity and quality since the treaty was signed.

The Nonproliferation Treaty was preceded by the International Atomic Energy Agency's (IAEA) system of safeguards. These safeguards have proved effective and are under constant review. Seven major exporting

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countries have reached agreement to follow uniform and tightened procedures and policies with regard to nuclear exports. The decision to adopt a uniform policy is welcome, though it comes rather late in the day. It would not help, however, if the exporters' consortium were to become an instrument for preventing countries from acquiring the technology they need for their development. That the transfer of nuclear technology should take place under proper conditions and only for legitimate reasons is not disputed; but that the countries of the Third World, striving to give meaning and substance to their recently acquired independence, should be asked to accept something akin to a system of technological capitulations is neither acceptable nor necessary.

It is essential to view the nuclear problem in perspective. The imminent and present danger the world faces comes from the stockpiles of weapons accumulated by the nuclear weapons powers, and particularly by the most powerful among them. These stockpiles can destroy the world entirely many times over; yet, due to the built-in compulsion of the nuclear arms race, they continue to grow in size and sophistication, and no end is in sight. Concern over proliferation should not be allowed to overshadow the dangers of a world in which stocks of nuclear weapons keep on increasing, in which the nuclear weapons powers themselves refuse to give up the nuclear option and decline to consider renouncing the use of nuclear weapons against nonnuclear countries, even against those that do not have the protection of one or the other nuclear power. The continuation of the nuclear arms race not merely sets a bad example in moral terms but is the factor most responsible for the prevailing atmosphere of insecurity and the pervasive sense of danger in the contemporary world.

We do not insist that vertical and horizontal proliferation are directly linked with each other; nor do we belittle the difficulties of disengaging from the nuclear arms race. Much less do we question the moral credentials of a nuclear weapons power exhorting others about the dangers of nuclear weapons. Nevertheless, we are entitled—and by we I mean the nonnuclear weapons states, particularly those that are asked to accept onerous and one-sided restrictions on their sovereignty as a gauge of their good faith—to ask the nuclear weapons powers to give clearer evidence than they have done so far of their good faith.

Undoubtedly there is going to be a great increase all over the world in nuclear power generation in the coming years; the developing countries have even greater need of turning to nuclear power. However, the fact that by-products of the nuclear fuels *can* be made into nuclear bombs does not mean they *will* be made into bombs. If this were so, almost all West European countries, Canada, and Japan would be in possession of nuclear arsenals today.

What guarantee is there against the diversion of a nonnuclear weapons state's program to military purposes? Is a developing state capable of running nuclear power stations efficiently and safely, and can it safeguard nuclear material against theft by terrorists? I

fully accept the validity of these questions, speaking as the representative of a developing country and one whose policy in the matter of nuclear arms and proliferation has been consistent, clear, and free of ambiguity. We have supported the establishment and every strengthening of international safeguards on nuclear facilities. Pakistan sponsored the Nonnuclear Weapon States Conference in 1968. Pakistan was among the most fervent proponents of the idea of a treaty to prevent proliferation of nuclear weapons. Even after India exploded a nuclear device Pakistan's response was to propose a nuclear-weapons-free zone for the Subcontinent.

I may be forgiven if I digress from the general issue to say a few words about Pakistan, on which, ironically, suspicion has tended to focus ever since India set off its nuclear explosion. A distinguished spokesman of the U.S. ascribed Pakistan's nuclear program to "The Iron Law of Proliferation." Let me assure him and others that there is no "Iron Law" in human affairs that cannot yield to good will and common sense. True, Pakistan and India have been at war three times in the last thirty years, but we are solemnly committed to settling our disputes by peaceful means.

I have already referred to Pakistan's need for energy and, in the absence of conventional sources, the necessity to turn to nuclear energy. The program is to install between now and the end of the century hydroelectric, thermal, as well as nuclear capacity to generate 26,000 MW of electricity. Even so, in the year 2000 the per capita consumption of energy in Pakistan would be only 800–1,000 KWH, as compared to the expected world average four times greater and the present-day United States average ten times greater. A reprocessing plant will be part of a nuclear complex consisting of six nuclear power plants to be completed by 1990 to generate about 4,000 MW of electricity. The cost of the plant at about \$100 million dollars corresponds to only 3 per cent of the total cost of the nuclear complex. Spent fuel from nuclear power plants has to be reprocessed in order to recover unburnt uranium and produce fissionable material such as plutonium. There has been a *fivefold increase* in the cost of uranium in recent years. This necessitates optimum utilization of uranium by recycling uranium and plutonium in the near term and eventually introducing breeder reactors.

The program of the Pakistan Atomic Energy Commission is based on utilization of nuclear energy for peaceful purposes only, and as a result it has placed *all its existing nuclear facilities under IAEA safeguards*. Pakistan has accepted application to the reprocessing plant of the stringent safeguards and conditions recently agreed upon by the seven exporting countries restricting the use of nuclear material, equipment, service facilities, and technological information to strictly peaceful purposes. Pakistan has agreed to safeguards not only on special fissionable materials produced but also on the subsequent generation of such materials. Pakistan has also agreed not to build any duplicate of this reprocessing plant without subjecting such a plant to safeguards. The willingness of my country to accept all these conditions and safeguards should dispel all doubt regarding our intentions.



The truth is that the whole field of nuclear development and control is at present a patchwork. Israel has already produced nuclear weapons; South Africa is quite obviously headed that way. Some threshold countries have not adhered to the Nonproliferation Treaty. Peaceful nuclear explosions are held to be no different from nuclear weapons, but the Indian nuclear explosion has been accepted as peaceful. Peaceful nuclear explosions are described as useless and uneconomical, but the threshold treaty permits the Soviet Union and the United States to carry out such explosions up to a yield of 150,000 kilotons.

We need a new and comprehensive approach to the questions of nuclear energy, to its potentiality as well as its perils, if we are to establish an effective, equitable, and nondiscriminatory system for controlling as well as developing nuclear energy all over the world. Such an approach must seek to prevent not the transfer but the misuse of technology. The choice today is between sharing and transferring of technology in an orderly manner under reasonable safeguards and leaving countries to develop nuclear technology independently and therefore without adequate restraints. My country would like to

see a dialogue between the exporters and recipients of nuclear technology to devise agreed norms and regulations governing its use. Such an agreement will help to avoid misunderstandings between the two sides and strengthen the cause of peace and nonproliferation.

A truly effective arrangement must be based on recognition of realities. There are today in fact more than five nuclear weapons powers in the world. The division of the world between nuclear weapons powers and nonnuclear weapons states is too simplistic and does not correspond to the complex nature of the actual situation. Furthermore, an international system against proliferation will gain if it is buttressed by promoting regional arrangements, such as the one Pakistan has proposed for creating a nuclear-weapons-free zone in the South Asian Subcontinent. The zone could include arrangements for mutual inspection and verification under international auspices: cooperative development of all peaceful uses of nuclear energy, again under proper auspices, and even multilateral ventures wherever feasible in appropriate branches of nuclear technology. It must provide for the security of the countries that are asked to give up the nuclear option in a world in which nuclear arms are rampant and the nuclear arms race seems unending.

The fear and moral doubt that surround the subject of nuclear power is not difficult to appreciate. The moralistic abhorrence with which many well-intentioned people have come now to view the development of nuclear power anywhere is understandable. But these sentiments offer no guide to correct action; still less does the particular alarm voiced at the prospect of nuclear power spreading to developing countries as such. There are some who find it lamentable that the wider dissemination of nuclear technology was initiated by this country under the late President Eisenhower. In doing so, they ignore the fact that knowledge knows no frontiers. The "Atoms for Peace" program was an act of political wisdom—but also of generosity and faith in the future so characteristic of the history and temperament of the American people.

The subject we are discussing is placed in better perspective if coupled with the idea of world development. We must be clear what we mean by world order. For order can also mean the status quo, a stability based on perpetuating, by one means or another, the existing patterns of economic, political, social, and cultural relationships. In the field of nuclear development the choices are made more difficult because perils and potentialities are so closely intertwined. In April of 1976 Senator Edward Kennedy said: "it is too late to *impose* nonproliferation on the rest of the world." There is no doubt, however, that nonproliferation is in the interest of all the countries of the world. It is our belief that it is possible to agree upon arrangements on this matter that would enlist the enlightened self-interest of those to whom they must apply. The objective will be easier to attain if we proceed without passion or prejudice, if we accept that, in our changing world, order must not mean domination and discrimination but the unfolding of all the best possibilities of man and his institutions.