THE VICE-CHAIRMAN (SHRI M. P. KAUSHIK): Dr. R. K. Poddar. *(Interruption)*.

SHRI NIRMAL CHATTERJEE (West Bengal); Does he explain tho inadvertence? I mean how it came?

SHRI ASKOKE KUMAR SEN: Sir, it was because the recommendations of the new Chief Justice of the High Court came only on the 10th of November, 1986 and it was not in our hands by the time the answer was given.

THE ATOMIC ENERGY (AMENDMENT) BILL, 1986— Contd.

DR. R. K. PODDAR (West Bengal): Mr, Vice-Chairman, Sir, this is an innocuous Bill, a small amendment to the existing Atomic Energy Act. Sir, there must have been a lot of litigations in the meantime. The Act was passed in 1962. I do not know why the Government did not amend the Act in the meantime. So there is nothing to oppose. But 1 hope you will be kind enough to allow me to make some comments on the fuel position of atomic power in our country.

At present, India's atomic power programme is based on natural uranium as fuel and pressurised heavy water as moderator. lndia is self-reliant in both at this moment. But how about the future? Atomic power is only about 2 per cent of our total power generation. In advanced countries, it varies from about 12 to 30 per cent. Within the next 15 years, we also propose to increase several-fold our atomic power generation. So, unless our prospecting and mining for uranium are stepped up vigorously, we are sure to face shortage.

Atomic power from our fast breeder reactors for industrial and commercial purposes which would free us fom our heavy dependence on uranium, is still a futuristic possibility, although a bright possibility. Only a part of the 73,000 tonnes Of inferred uranium ore deposits, according to official estimates, is at present being mined, mainly at the underground mines of Jaduguda in Bihar although encouraging prospects exist in some parts of Rajasthan, Karnataka, Meghalaya and Andhra Pradesh. The quality of our uranium ore being poorer than most other countries, our efforts must be more vigorous both with regard to mining 'and with regard to efficiency of extraction. So in this regard I would like to ask the Government through you, Sir, what the present position is with regard to the very ambitious Narwapahar and Turamdih open-cast mining projects prepared by the Atomic Energy Minerals Division of the Department of Atomic involving an expenditure of about Rs- 213 crores. Perhaps it is still lying with the the Government. These projects envisage mining at about a depth of 550 metres and more. Now, in this regard I would give an example to show how lethargic the Government machinery could be. About 30 sq. kms of Orissa's foreshore territory between Gopalpur and Ganjam is endowed with the world's biggest known deposits of radioactive sands which also contain various rare-earth minerals, which are essential for nuclear reactors as well as for many industrial uses. A Rs. 110-crore project utilising these resources has only recently come up under the Department of Atomic Energy, but this project was conceived about 18 years ago in 1968. Meanwhile, as you know, prices have gone up several-fold.

We had to go for natural uranium — heavy water system for our atomic power programme because we do not have, we have to admit, the capability of producing enriched uranium, although atomic energy from enriched uranium and ordinary water reactors is considerably Jess expensive, less hazardous and technologically simpler to produce.

It is an open secret that in the 'fifties, there was tremendous international pressure on us not to produce enriched uranium. But many patriotic scientists such as Prof. Meghnath Saha strongly protested against it and advised the Government not to pay heed to this pressure. But the Government obviously did not pay heed to Prof. Saha's advice for going ahead for this kind of programme. Anyway that is an old story.

But now that Pakistan has somehow acquired not only the capability for producing power grade enriched uranium, it has acquired the capability to produce weapon grade enriched uranium, why should we not go ahead for enriched uranium at least for atomic power purposes? This will help us to have atomic power at less cost and with much less hazards.

Now I would like to make one or two comments regarding environmental pollution and radiation hazards from uranium mines. The Health Physics Division of our Bhabha Atomic Research Centre claims to maintain a constant vigil on the radiation level of river water, soil, vegetation and foodstuffs in and around uranium mines at Jaduguda. They claim, for example, radium 226 content wnich is a very poisonous mineral of downstream water in the river Suvarnarekha has remained at 1 pCi/litre while the international tolerance limit of this mineral is 13.5 pC|litia. But what about the radiation exposure of the employees and workers of the mines; and plants who are exposed daily to radio-active mineral dust through their nostrils, through their mouth and skin? Do they use protective masks? Are the total radio-active doses to which these workers are exposed daily, monthly and yearly, monitored through film budge service? We do not know. So, there has been demand from various quarters, mostly from non-official quarters, scientists and public citizens, that at least regulatory agencies like the Health Physios Division or the Radiation Monitoring System , of the Department of Atomic Energy should be delinked administratively from the DAE and put under a separate department or a different agency. Some time ago the Government constituted a committee and it also requested the Government to reconsider the position, but still the Government is sitting on it and not doing it. I would earnestly request the Minister, through you, to accept this advice and increase public credibility that this Radiation Monitoring System at least is independent of Government's administrative machinery. Thank you.

SHRI VITHALRAO MADHAVRAO JADHAV (Maharashtra): Sir, I rise to support this Bill. This Bill is a very simple Bill but it is a very important Bill The honourable Member from the other side while speaking on atomic energy, criticised our enriched uranium. I being a man from science would like to say that there is no impurity of any sort in the content of our uranium. Whether in India or in Pakistan or in any part of the world uranium is of the same strength, it has the same atomic weight, it has the same atomic principles. So, there is no question of the uranium which we are getting in India being of an inferior quality or ...

DR. R. K. PODDAR: He has not understood what I said ...

THE VICE-CHAIRMAN (SHRI M. P. KAUSHIK) : That is all right. Let him have his say.

SHRI VITHALRAO MADHAVRAO JADHAV; There are very pertinent questions. We are marching ahead towards new goals. We are having new researches', We are having a dynamic programme of research in science, technology, atomic energy, and so on. We must have a proper monitoring system or cooordination of all types of research. There are also questions about its security and safety. Recently there was an accident in Chernobyl and there has been a wide-ranging exposure of the nuclear hazards flowing from Chernobyl and world scientists were surprised, because Soviet Union is one of the most powerful countries of the world. But, in spite of that, they have accidents there. But here in our country, Sir, we have our atomic energy plants and I am proud to say one thing. I do not say this just to give my support to the Government, but because I visited a recently-buik atomic energy plant and that is why I say this. I visited the recently built Kalpakkam atomic power station and the fast breeder reactor there which is 99 per cent indigenously built and our engineers are very much competent and comparable to the other scientists of the world and they can open up new avenues of research in science and technology. Ours is a country with a rich cultural heritage and India can

[Shri Vithalrao Madhavrao Jadhav].

become equally a modern country in the world with a good base of science and technology. Sir, I remember what Shrimati Gandhi once said. She said;

"Modern man must re-establish an un-broken link with nature and life. He must again learn to invoke the energy of growing things and to recognise as did the ancients in India centuries ago, that one can take from the earth and the atmosphere only so much as one can put back into them."

Mr. Vice-Chairman, Sir, this is the satire problem with us now. Whatever things are taken from the earth, we must be able to put back and whatever we take from the earth by way of exploitaiton, we must be able to replace it. Sir, in science, matter cannot vanish, but it can only take another shape. Water cannot vanish and gas cannot vanish. No matter can vanish. But it takes another shape. It is not rebirth but it is regeneration. So, from that point of view, we can use power in another form. That is the principle of science and we have also learnt how to use power. Sir, I am very proud to say that after the first nuclear device was exploded by the United States of America in Japan, four years after that, we had also acquired the knowledge of that technology. In 1948, we had acquired that technology, the nuclear technology, under the eminent leadership of Dr. Bhabha. At that time, Sir, Dr. Bhabha was very confident. But the thing was that we could not make use of that technology because we were very new and we could not take advantage of the nuclear know-how which was available with us then and we could not explore and exploit it fully. But, later on, a lot of work was done. The Tata Institute of Fundamental Research is the main pioneering institution which opened up new avenues in research in technology where Dr. Bhabha was working. Later on, India made progress fasler.

Now, Sir, I would like to say something about power generation and its prospects. There is a large scope for power generation from nuclear sources. As you know, Sir, today, in the United States of America, there are 108 atomic reactors working and the power generation from these plants is enough to meet twenty-five per cent of the power requirements of the country. Again, if you go to France and other countries, you will see that there also they are generating power on a very large scale from nuclear sources. Today, Sir, India is one of the seven nations in the world which possess the technical know-how to generate power from atomic energy. We are having seven atomic reactors which) are working in the country now and we are today generating about 1,230 MW of power. At the end of the Seventh Plan, we would be generating power from this source to the extent of 2,730 MW and, by 2000 AD, we would be generating power up to 10,000 MW from this source. A question arises here. There were some doubts after the Chernobyl accident and people have statrted wondering whether those plants would be safe and would be secure. I would like to give you some data. Some figures have been collected with regard to the rate of death caused by diffe-rent factors. Now, it has been found that one out of 200 dies by smoking twenty cigarettes a day; accidents in deep-sea fishing cause one death per 400; natural causes, 40 years old, are responsible for one death in 500; accidents on the road, are one in 5,000; accidents at home, one in 10,000; accidents at work, one in 20,000; air crash, one in 1,00,000; and, radiation from nuclear facilities one in 1,00,000. 30, I do not think that there is and problem of security. There is no problem of safety or security. I say this because, it is obvious that the contribution due to the nuclear dischrages is very negligible which is only 0.1 per cent. The radiation exposure near a nuclear power plant is only few tens micro-sievert per year which is negligibly small and lies within the statistical variation in the natural background radation levels. This is some important data about the safety.

Sir, let us now come to the world uses of atomic energy, how this atomic energy is useful for human beings. Science is a very fascinating subject. In uranium, pluto-nium or thorium one molecule contains abou 231 to 238 atoms, and one atom is so much powerful that it can have a tremendous strength, and by its explosion

it can destroy so many things, the entire human and biological life. That is the power of the atom. I do not know what wil happen tomorrow. Today we know about the atomic power of plutonium, thorium and uranium. After a few days there may be something more powerful than these.. It is most fascinating. One scientist told me that one molecule is present in the human being which is hundred times more powerful than the atomic power of thorium, plutonium and uranium. It means, in every material, in every element, there are some atoms and some atoms are very powerful. Only the latest power of those atoms not known.

India has one of the largest reserves of thorium. At present we have acquired the atomic energy of converting thorium into enriched uranium and plutonium. I think tha India is the largest store of thorium amongst al) the countries of the world. There is a scientific assessment that if the present thorium—not today but some 20 years ago preserves have been found of in inium—we can supply 600 years' total energy requirement of the country. Similarly, we have to conduct future research. We can manufacture thorium from the sea salt also. Sir, in the coming years we are having the programme to generate lO.OOO MW of energy by atomic means. Our Pr me Minister is basically a technician. He is having a scientific approach towards all the problems, not only technical problems but even our rural living problems also. I would like to state here that by the end of 2000 AD we will be having 23 or 24 atomic power stations in the country. When we have such a larg? reserve of thorium, uranium and plutonium, I would request th; hon. Minister to revise our programme and to make it 20,000 MW by 2000 AD. *(Interruption)* it is possible. I have seen. I have worked at the Dhruva Reactor and Kalpakkam also. Our scientist, are quite confident. We had discussions with Dr. Raja Ramana eminent scientist. It is a question of making the allocation. That is true. Though the investment cost is m te yet the power generating cost comes down. I know that compared to thermal power stations, the investment cost in atomic power stations is 25 per cent or something more. But when we compare the per unit cost of power generation from the atomic power plant, it becomes less. That is because it requires less fuel as compared to thermal power station and hydro-electric power stations. Again, it is a matter for research; it is a subject tor research: By the introduction of modern science and technology, can we reduce the cost further, of these nuclear power stations or not? Now, we are having new research schemes about manufacture of atomic research reactors. India is quite capable to know so many things of the world. The only thing is that the total brilliance or the ability of scientists must be properly exploited. It must be made proper use of. Then only we can have new avenues of research.

I now come to my subject, atomic energy in agriculture. Sir, my main subject is agriculture. I have taken one year's training in the use of atomic energy for agriculture. There are different types of isotopes. Cobalt 60 is there. There are so many radioactive isotopes. By addition of one more atom with the element, you have isotopes. When the isotopes are used, the total character of the plants and animals can be changed. This is called mutation and such mutations take place at Bhabha Atomic Research Centre. We can improve the varieties of gram and rice. Isotopes are very actively used in health and medicine also. The atomic power is not only useful in generating power, but it is one of the important sources of recovernig from disease. The diseases like cancer and ofhers which are not curable can be cured with isotopes. We are facing some of the hazardous effects of the diseases which are less hazardous thin the nuclear explosion. Instead of destroying the human beings, we must have a new device for the betterment of human life. Therefore, further research should be done. Therefore, I would like to request the hon Minister. through you. that every agricultural university must have at least on? Division of Agriculture with isotope research programme. They must have one Cobalt 60 and they must have one laboratory because it is very .essential. We nave differrent regions, different climatic zones and different soil and climatic conditions. When we use radioactive isotopes

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in wheat, gram and sugarcane, we will very easily get the answer as to how much nutrients are needed. If we use 30 kilograms of nutrients today by the use of radioactive isotopes, it has been probed that we will need on 5 to 10 kilograms of nutrients in order to produce the same quantity of crop. Such type of work should be taken up on a very large scale. It is very essential to change the character of different crop varieties. It is also very useful for the human beings. From that point of view, I request the hon. minister that he must take keen interest. I know that our Minister is one ofthe ablest Ministers. Under your leadership and under the able guidance of Rajiv Gandhi. India will march ahead in the field of science and technology and we will have a most powerful country by 2000 A. D.

I do not say that we must manufacture nuclear devices. It depends upon the need of the hour and the requirement of the country. Our neighbouring country is borrowing and even stealing nuclear devices from China and the **U.S.A.** Therefore, we should not keep quiet. We must think very seriously about that. That is what I suggest. There is nothing wrong in it. As Gandhiji said, the non-violence of a weak person has no meaning. Therefore, if we want to survive in the world, we must have strength. From that point of view, the Government must reconsider its earlier policy not to manufacture the nuclear weapons. *(Time bell rings.)*

In the end, I would like to quote the famous sentences of Madam Indira Gandhi;

> "We would like to build up this country in such a manner that if India's name is mentioned anywhere or her citizens go anywhere, there goes with them a new light, a new strength and a new ideology.

With these words, 1 support this Bill.

SHRI V. RAMANATHAN (Tamil Nadu): Mr. Vice Chairman, Sir, 1 am thankful you for giving me this opportunity to speak a few words on this subject. The hon. Minister has brouht Sir, has brought forward an amendment It is purely a technical amendment and it has been brought after nearly a quarter of a century. The original enactxneut was passed in 1962 and it is the first amendment. It is a technical one and it has been brought forward after so many years. Now they have come forward with an amendment. Of course, it is highly essential now, and I welcome this 'amendment.

Sir, while on the subject, I take this opportunity to submit a few points, and I want to refer to my State of Tamil Nadu. Sir, Tamil Nadu is not having much of hydel energy or thermal energy. Even for these thermal power plants they have to take cial from North India, and even Andhra Pradesh is not able to supply the coal that is needed. New coalfields are not developing and the thermal plants are not able to get sufficient fuel for getting this energy. We have got the Kalpakkam atomic energy plant. It is not being used fully, and it is not functioning to its full capacity. Therefore, Tamil Nadu is in need of energy jn all possible ways. Sir, fee demand for power is very high. The increase jn the capacity utilisation to produce power is only 15 per cent per year. Even if all the proposed schemes are brought to life or are implemented, by the turn of the century, we will not be 'able to meet 40 per cent of the demand. That is the position as far as Tamil Nadu is concerned. Energy shortage is very much 'nigh. Therefore, setting up of another atomic energy station i'n Tamil Nadu is highly essential. Sir, a Committee which went into the location of installing another atomic energy station submitted its report. And one of the places recommended by the Committee was Kudamangalam in Tirunelveli district of Tamil Nadu. This recommendation was made long back. There is power deficiency in Tamil Nadu, and this may be taken up for consideration immediately. The Chief Minister of Tamil Nadu, hon. MGR has also written to the Government here asking for immediate sanction of this scheme. No consideration has been given to this so far. Agricultural pumpsets need power. As on

31.3.1985, 3,50,500 applications are pending for sanction of agricultural pumpsets. Daily hundreds and hundreds of applications aire being received. The Government is not able to supply power even to the agricultural pumpsets. That is the position there. Therefore, this should be taken into consideration. Sir the per capita consumption of power in 1951 was 12 units. Now, it is rising to 200-odd units. In another 15 years, it may go beyond 300 units. By that time, we will not be able to meet the energy needs of the people unless we take serious measures to improve the position whether in the field of atomic, energy or hydel power or thermal power. Unfortunately, hydel power is not possible in Tamil Nadu, That is the position there. Even for thermal energy, the problem of coal is there. There are no rail links and there are no shipping arrangements. Even for importing coal, the Government of India is not coming forward with any schemes. When the position is so acute, Tamil Nadu must be given the 'atomic plant at Kudamangalam. if it is sanctioned, Tamil Nadu will be in a position to meet their needs at least partly. With these words, Sir, I conclude. Thank you.

SHRI P. N. SUKUL (Uttar Pradesh): Mr. Vice-Chairman, Sir, I rise to support this very simple Bill. As our Minister has already explained, since the Government has total monopoly of uranium and nobody can purchase it from the market and the Government has to ac-quire it compulsorily, there should be no objection to the present amendment that is sought to be brought about in the original Act. And, as the Minister has said, it is being given retrospective effect, per-haps Just to avoid a huge sales tax on uranium because of the misinterpretation of the existing Act. As I said, when there is total monopoly of the Government and the Government has to acquire it com-pulsorily then the transaction does not involve any sale and if it does not involve sale, then the levy of sales tax is of course improper. However, I think it is by way of clarification that this amendment is being effected in the Act and there cannot be any objection to it.

Sir, as so many Members have already said, it is a matteer of great satisfaction and in fct pride for all of us that today in India as regards science and technology we have the third largest contingent in the world. But, Sir, although we know that without energy there cannot be any economic growth in the country, the nation Cannot develop without energy? and as regards traditional sources of energy like coal and petroleum, you see the reserves that we have at the moment are supposed not to last beyond a century at the most. Our entire coal, our entire - oil will be used up in a century's time, that is one assessment. While our population will have multiplied several times within the next century, our traditional sources of energy will diminish like anything. And that is why it is essential that we must harness, we must exploit the nuclear energy fast as possible in our country. Today our scientists are very capable and today we are one of those six countries in the world which can design, construct and operate nuclear reactors. We have designed our own reactors indigenously and our scientists are so capable that they are also able to evolve a special fuel for our own reactor at Kalpakkam, a mixture of Plutonium carbide and natural uranium carbide. So, when our scientists are so capable and when we have ourselves, as Mr. Jadhav was saying, our uranium reserves are of the order of 60.000 tonnes and thorium deposits of 3.60 lakh tonnes, and if we are able to exploit this nu-clear energy, the resources being there, I think we will be safe for another 6 or 7 hundred years or even one thousand years. Because, maybe, further deposits are discovered by that time and further reserves are found.

The situation today is, however, that of the total energy generated in our country, I mean etectricity, only 2.6 per cent is from nuclear power, whereas in America it is 12 per cent and in France it is 38 per cent of the total energy. But in our case it is very small, that way. Although then there we are equal to China. China also is planning to produce 10,000 m.w. of nuclear energy by the turn of the century and that is our own target also. So, there is nothing wrong in planning things like that, in having more reactors in generating as much nuclear power as possible and what

[Shri P. N. Sukul]

I feel is that all fears and apprehensions that are sometimes expresses by the people against exploiting this nuclear energy, by and large, them seem to be misconceived. In our country, we have never 'ad any accident in our reactors or the nu-clear plants, so far, and when there was a disaster at Chernobyl, in Russia, people started raising a lot of doubt und fear and apprehension about our own plants. But our plants are entirely different from the Chernobyl plant reactors. All the four reactors in Chernobyl are high pressure and enriched uranium reactors while our reactors are natural uranium reactors; except one at APSARA that we had from the United States, all our reactors use only natural uranium and that is why we are not going to have that kind of accidents here in India. And moreover, 'adequate precautions are already taken. Our plants are already encased in a building which is inside another building. So, as regards the plant in the immediate vicinity, it is very well fortified and then, of course, in an area of one kilometre radius, there is barb-ed wire fencing, although barbed wire fencing does not matter much because once the radiation comes into open, one kilometre is nothing. But it is the encasement of the plant in a building which is within another building, made of reinforced concrete, that makes it quite safe, and, therefore, there should not be any misapprehension in this regard.

As I was saying about our scientists, we can design, construct and commission and operate our own nuclear plants. Similarly, our scientists have also been able to manufacture heavy water and they have also been able to evolve ways and techniques for the disposal of the waste from these plants. The first waste immobilisation plant has already been commissioned 'at Tarapore, and the second one will be commissioned at Kalappakkam not in the distant future. So, our scientists are alive to these problems, to the hazards of nuclear plants in the country. They have taken adequate measures. Our Government is also alive and so, there should be no objection in harnessing more and more, in exploiting more and more of nuclear energy for our peaceful purposes, as we are doing, applying it to agriculture;, to the fiel'd of medicine, to industry as our friend said, isotopes in agriuclture as well as medicine. We should 'nave 'as many reactors as possible and in this connection? I would also like to mention that as far as possible, in backward areas where power generation is not up to the mark, we should have these nuclear power stations In Uttar Pradesh, we are having one at Narora which is under construction but I suggest there should be one in the Eastern U.P., on the border of U.P. and Bihar. That area is one °f 'he most backward areas in northern India and if we have electricity at cheap rate there, it will give a lot of fillip to our agriculturists and will also make people set up industries there, and that will help the people get rid of their economic backwardness very much. As our Prime Minister has already made it clear, and I congratulate him for his decision, that here is not going to he any slowing down in our nuclear programme because of accidents, like the one at Chernobyl, and there is, of course, no need of being different about it; there is no need of being discouraged in this regard. Instead of slowing down, we must,

> if possible, move .more speedily. Of course, latest designs and techniques have to be adopted.

There is no doubt about it. Our scientists are capable of evolving up-to-date technology and latest designs. Therefore, I am confident that ,our scientists will be able fo do a lot in this direction.

There was a mnetion about availability of funds. Naturally, there is constraint of funds. Even for atomic power generation, we are not able to provide adequate funds. In the Third Five-Year Plan, Rs. 51 crores were provided for the purpose. In the Seventh Five-Year Plan, we have provided Rs. 1,410 crores. whereas the demand was for Rs. 7,000 crores or near about. We have been able to provide only Rs. 1,410 crores, which is only 20 per cent of the demand. Naturally, if we are not able to provide adequate funds, we will not be able to exploit it so well and so soon. It will take a long time.

Sir, by the sale of power that is generated by our nuclear power plants, at the

moment, we are earning about Rs. 150 to Rs. 200 crores per year. But it is expected that by 1993, that is, within another seven years' time we will be in a postion to earn more by selling nuclear power, nuclear energy, generated by the nuclear power plants, than what we will be spending on them. Therefore, We will be in a profitable situation. Our nuclear power plants will be profitable ones. They will be earning more and reinvesting the income into developing those very plants, those very reactors.

Finally I join my friend who spoke before me. I have raised this question earlier also. It is all very well to say that we wil] use nuclear energy only for peaceful purposes. But in view of the acquiring •of nuclear capability by our immediate neighbour Pakistan, which is always at loggerheads with us and which is bent upon creating mischief in uor couutry, trying to destabilise us, we shall have to be prepared to' meet any threat, even nuclear threat. It does not mean that we want to have the atom bomb for territorial aggrandisement or for imperialist de-s. We should have the atom bomb if possible and I am confident that our scientists are capable of producing the atom bomb. Of course, it is for our defence only. Therefore, I will request my Government to kindly reconsider its present policy of using nuclear energy only for peaceful purposes. We should also ac-qu re the atom bomb, in our own larger est interests. Thank you.

SHRIMATI RENUKA CHOWDHURY: Mr, Vice-Chairman, Sir, this Bill essentially deals with specific 'amendments to section 6 and 11—insertion of a new section, section 11A—of the Atomic Frergy Act; with retrospective effect, which goes back to 24 years. It says that the compulsory acquisition of minerals, concentrates and other materials must not be preceded by compulsory payment of compensation. Now, this has to be viewed in the proper perspective because in reel to what is removed, the State must play fair. Compensation has to be Paid for what is being removed from the land. *You* cannot isolate it totally. While I ee with our policy of using atomic energy for peace and for constructive productivity, I want to seek a clarification as to what is our vision about the building up of the nuclear atomic activity by our neighbours. How do we perceive it and how do we visualise implementing our own policies for our defence? Are we going to deviate from our original concept of atomic energy being utilised for other means than peaceful and constructive productivity? I also want to know whether the consent of the Department of Environment has been obtained while setting up nuclear power plants in our country. Have they been consulted? Have they been, taken into consideration? I am asking this question because nuclear power plants do affect environment and other essential aspects of life. I also want to know whether the Nuclear Power Board have implemented the positive preventive checks for safety. Is there any body who is keeping an eye on what is happening in the existing atomic power plants? Who is answerable for all this? In Hyderabad there is a nuclear fuel complex, where the water was contaminated and the people around the complex were affected. Those who touched the fuel waste were burnt. It was realised that this had occurred be-' cause the water was contaminated. I am not an atomic energy expert, but 1 speak as a citizen of this country. Safety does not include only protecting our borders but environment and other essential aspects of our life also. So, I want to know, who is doing the analysis, are we publishing the reports? As far as I know, the analysis of this go back to the BARC. I do not think there are sufficient positive checks. The other day it was in the news that the radio active needles have disappeared and they have never been found What has happened to them. Nothing has been published. Press is being muzzled and that goes against the basic right of information of every citizen of this country. You have to educate the masses about the pros and cons of the safety of Atomic Power Plant. The Minister has repeatedly been given assuraces on the floor of House that there is no danger but that is wrong. Dr. Ramanna has said that we do not have to worry. DT. Ramanna is a very eminent man in this field. I have the greatest regard for

him. He has chaired two inter-

[Smt. Renuka Chowdhury]

national meetings where 28 countries including India had participated. There they have signer a memorandum expressing solidarity in dealing with tho nuclear atomic problem in relation to human life. So, we cannot rule out the danger of contamination or other breakdowns. I also want to know if the Government has done analysis. When we are projecting the lofty targets, I want to know what type of trial and error methods, we are adopting. A team of experts from the Centre had come to Andhra pra-desh. I am not just speaking because it is my State but this what the Government have projected. They had put down Nagarjunasagar as the next viable site for a plant like this. But for reasons best known to them, they have just left us in the lurch and pushed off. I want to know if the Government will reconsider Nagarjuna Sagar because it has met with all the targets and the State Government has put forward every cooperation from their side that they will need and the necessary requisites of the State Government's needs. I do not know why they are neglecting Andhra. Is there a political angle to that? That really must be clarified.

I also want to know the overalllife span of a nuclear power plant. What are the checks and what is Government's capacity in regard to disaster management and disposal of nuclear wastes7 That is a very important point. In atomic energy plants, it is not enough to view the positive side of it by saying that we will have more electricity, more productivity etc. etc. It is not just the economic price that we have to think about. We have to think about the other aspects of implementing plants like this all over. As far as I know, or the little that I see, I don't see much implementation of the prescribed safety measures, and as far as tho Bill is concerned, what I see of it is that there is not any legal provision by which the Government is going to be held responsible for not implementing the safety provisions. And what is the check on the agencies? I have a small suggestion to make to the Minister. In order to facilitate the public to comprehend what an atomic energy plant, is, or for the public to rest assured that there is not going to be a Chernobyl incident in India, we have to educate the masses before you put up a plant in a State. Kerala, as the Minister knows, has refused the people of Keala objected to the nuclear plant as they are not convinced about the safety and security measures that the Government takes in implementing these plants. So it is important to educate the people and take cognizance of what they are thinking. You must tell the negative rside also be- cause you cannot say that accidents do not happen. There is element of human error always. Bhopal gas tragedy, which has nothing to do with this, has proved lethal and we are just entangled in nonsensical law suits where charges and counter-charges are being made and pe°~ ple are dying constantly and there is mutation for generations to come where there is a defect in human foetus.

Then I also want to know whether we are going to have a budget for this Department also. They are always guillotined before they come up, before the year is over, and Parliament is not taken into overall confidence. Involvement with the atomic power plants comes once in a while when something like this Bill comes up and not many of us are technical experts on a subject like this. Recently there was a survey conducted amongst parliamentarians regarding their involvement in science and technology. I think the emphasis must be that we must have—maybe wth audiovisual aids—more feedback, professional feedback from experts who will come and address the parliamentarians in order to keep us uptodate with the present techniques and procedures that we are using all over the country in the implementation of such plants, and the technology that we hope to achieve in the near future. While T commend our own scientists for the indigenous technology that we have acquired and are utilising for benefit of the nation, I also want to emphasise that they do not relate to the financial targets that we have established. as mentioned by some of my other respected colleagues. I think you must go into all these details. *Why* I am emphasising so much on safety is because if the people are not to be pre-

pared to accept it, it is a terrible price to pas if there is going to be a break down on behalf of the Government. And there is going to be no productivity for human life if human life is not going to accept it. So you must take the masses into consideration before you go ahead with any[1] kind of nuclear programming.

With a word of caution I welcome the Bill. Thank you.

SHRI MURLIDHAR CHANDRAKANT BHANDARE (Maharashtra): Mr. Vice-Chairman, Sir, this is a very inno-US Bill. There is no dissent, there is no opposition. Yet, one finds that the Members are very alert, very active, very vocal and also very concerned. The amendment is purely formal. Nobody would have thought that compulsory acquisition, as they say, would entail any sales tax, particularly the acquisition of such a mineral like uranium. Therefore, let us ar in our mind about it.

I am glad that the honourable Minister for Chemicals is here. I do not know whether he is here because he is on the roster or because he is interested in the subject.

THE MINISTER OF STATE IN THE DEPARTMENT OF CHEMICALS AND PETROCHEMICALS IN THE MINISTRY OF INDUSTRY (SHRI R. K. JAICHANDRA SINGH) You can take it as both.

SHRI MURLIDHAR CHANDRA-KANT BHANDARE; When we rise here today, we rise really to debate far more serious issues—issues which relate to the connection between science and man, ntific progress and the welfare of mankind. There can be no two opinions that science and scientific progress must at all times remain the slaves of man. Man cannot be the slave of science but science must remain the slave of man. Man must, therefore, be in a position at all times to control science in a way which serves humanity. That is why Einstein at one stage said that religion without science is lame but science without religion is blind, and he did not conceive religion in a narrow sense. He meant the very existence of mankind and the very fine elements which make man the best speciman on this planet. Yet, this is a subject which is far too vaast. But if we are agreed that we have to reconcile science with the welfare of mankind, then let lis look at one or two incidents which have happend in the recent past and which require us to take a pause and look at the issue afresh.

As a student of physics I myself have been a very ardent advocate of harnessing science, particularly nuclear energy, for the good of mankind. I know the passion of the honourable Minister in this regard, I fully appreciate it. If I say anything in the nature of criticism, it is only constructive criticism. Two things have happened recently. One is the Bhopal tragedy, two years of which we completed only a week earlier. The other is the disaster in Russia, the Chernobyl disaster. Now we know after the Chernobyl disaster, what people have been saying. Our scientists are very eminent and, yes, we are one of the six nations who can manufacture their own reactors. We can manufacture our own reactor and our capability in the nuclear field is so great that sometimes these days we ourselve are advocating that we should not really restrict ourselves in the use of nuclear energy only for peaceful purposes but we should also match the efforts which are going on in the neighbouring country of Pakistan. But whatever that may be and whatever may be the claims of our scientists, I do not think that there is any system which is 100 per cent foolproof. In fact, because of the way in which France went ahead, the Americans have gone ahead, everybody thought that it was a fairly safe and foolproof methods of producing power for peaceful purposes. In fact, in an article which I read now, the Russian scientists boasted of the same thing:

> "The same was said about Chernobyl. Its former chief engineer, Nikolai Fomin, reacting to the Three Mile Islands incident had said: "The huge reactor is housed in a concrete silo, and it has environmental protection systems. Even if the incredible safety system would shut down the reactor in a matter of seconds. The plant has emergency cooling systems and many other technological safety designs."

[Shri Murlidhar Chandrakant Bhandare]

"But when the incredible did happen, the safety systems were not adequate enough to deal with the consequences, although even those in the west, who were sceptical of the Chernobyl design, conceded"

They conceded that this was tremendous. This is what I am saying. We are also saying the same thing. I have got a lot of material on how water tank would pour, this and that. Therefore, I am not belittling it. But when they say that there are adequate safety measures. I am not the one who feels either complacent or who is prepared to accept it at its face value because it is one thing to provide a thing and another thing for that provision to succeed. And it is always in the second stage that we find that incalculable, unprecedented, incredible disasters happen in one part or the other part of the world.

Therefore, what 1 would like to suggest is that we should have a system of checking carefully. Last year there was the Sriram Fertilizers gas-leakage disaster. If the inspectors who are supposed to inspect these plants, had done their duty even reasonably—I won't say very thoroughly or very efficiently but reasonably—they would have detected and avoided. Today our inspection system, our implementation machinery under any statute is really the poorest one can find. Whether it is implementing of ther labour, we find that they only existt on implementing of laws which protect child labour, we find that they only txist on paper and in name. And I have no reason to believe that it is something different in this so very vital area. Therefore, with all humility, I would say that the first thing that they should do is inspection. In fact, the Ministry itself should monitor and get every three months reports to see that everything is in order because I just shudder to think what will happen to Bombay. If something goes wrong withi the reactor in the Bhabha Centre, I just cannot think of what will happen to that island. So, please don't be complacent about this at all.

The second point which has been very ably and with considerable emphasis made by hon. Member, Mrs. Renuka Chowdhury, is that we must make the society cafety conscious. I think there is, particularly at this stage, a very serious need for developing the safety culture in our society. We talk of work culture. Recently we had also a seminar on productivity. But we do find that despite our talking the work culture and productivity have not improved. We are fortunate in having Mr. Narayanan as Minister in charge, who allways display that sensitivity. I hope he will bring up that sensitivity, that dedication and that determination for developing the safety culture. Since the Minister for Chemicals is also here, I would request all the connected Ministries—the Ministry of industry, the Ministry of Chemicals, Fertilisers and Oil—to sit together and work out a programme whereby we are able to promote safety culture in our society.

There is one more aspect which I would like to point out That is regarding the targets to be achieved. Hardly 18 per cent of the promises which were held in the 50s and 60s have been fulfilled. At one stage it was felt that by now one hundred per cent of the world's electricity would have been produced by,the atomic fusion. However, that proportion today is only 18 per cent. Therefore, one has to consider whether we can push beyond a point. In any way, as I said in the beginning, this is a stage when we have to take a pause. The nature has given us a warning. Give a heed to it. Do not merely heed to what our eminent scientists, for whom I have the highest respect and regard, have to say. You must examine the issue in all its aspects, because ultimately even the scientific evaluation which our very eminent nuclear physicists make is capable of a great deal of subjectivity and want of objectivity. To that extent it is the professional bias in the representation made to the Ministry. It is very often said that the Minister has been carried away by the bureaucrat or the technocrat. I hope at least this will not happen on a very very important area like this.

There is one last point which I want to make and I have done. As I said at the beginning no amount of time will be sufficient to discuss this issue at length. I would really request the hon. Minister to dwell on that. To what extent can We say the nuclear devices and reactors in our country are fail-safe? Let us hope and pray they will not fail. But if they fail, are they safe? Now, the concept is that even in their failure they should be safe. 'If you have to do that you have to look to what the Russians have achieved. It is all right to say that we have helicopters and. we will send helicopters. But they hac thousands of bone—marron transplants and other operations done. I want to know whether we can do free or even two or three such operations, if there was a disaster of this kind? Therefore, look at the aspect of safety. When there is a failure, you must realise what must be the back-up at that time; what should be the medical attention and other attention required to defuse the whole situation? For how many days will there be a fall out and how are you prepared to meet that situation? These are the things which sometimes make me anxious and lead me even to spend sleepless nights because there is a looming danger that something might fail despite the efficiency of man. Such danger is always not only real but large. I do hope that today'S debate will persuade the Government to take a close look at various issues which I and other Members have raised in this He use.

With this I support the Bill.

SHRI JASWANT SINGH (Rajasthan): Mr. Vice-Chairman, Sir, the Atomic Energy (Amendment) Bill, 1986 is in its contents a simple and enabling provision with which we have no difficulty and hence I support the Bill. lust as most of the Members have done, I would nevertheless like to utilise this occasion to raise four issues which are vitally connected with atomic energy and its utilisation for peaceful purposes in our country.

Sir, these four issues are safety, which is an aspect which every Member that has participated in the debate has mentioned, the second is about Rajasthan atomic power plant. I, the third is about Dhruva and the fourth is about heavy water programme.

Now, Sir, about safety, I cannot sufficiently underline the concern which the earlier speaker, my esteemed colleague, hon. Mr. Murlidhar Chandrakant Bhandare has shown and as indeed others have. My esteemed colleague, Shrimati Renuka Chowdhury, for instance, brought in a very interesting and worthy aspect of educating public opinion on aspects of safety as also the positive benefits of nuclear energy. So I will not go into theoretical aspects as far as our nuclear programme is concerned. I would ask specific questions relating to safety in nuclear plants.

I refer, Sir, to Unstarred Question No. 3044 dt. 4.12.1986 which I had raised in this House and this question was addressed to the Prime Minister. The Prime Minister, had given an interview t° Richard Weintraub of the International Herald Tribune on 13th and 14th September, 1986 wherein Richard Weintraub has spoken of the Chernobyl accident and had asked our Prime Minister what India was doing thereafter? The Prime Minister had replied that he was having a deep look into the whole question of safety of our nuclear power plants.

Sir, I sought a clarification from the Prime Minister as to what this 'deep look' implies? I got a very unsatisfactory reply to this clarification of 'deep look'. Here I would share my concern with the hon. Minister of State, whom I hold in very high esteem, a person who has spent his life achieving great distinction in diplomacy and in the world of academics but I cannot help observing that he is somewhat misplaced in this portfolio. He is somewhat misplaced not because I doubt his abvious abilities to handle any portfolio that his Government might entrust him with, but I do believe that his native ability and his life-long work could be utilised elsewhere. But, however, that is altogether a different thing.

[Shri Jaswant Singh]

Sir, the reply that had come from the Ministry in response to my U.Q. No. 3044 says "While the safety record in nuclear reactors has been very good, in the context of Charaobyl accident, a high level committee is reviewing the existing procedures of handling any unforeseen off-site emergencies. Following the Chernobyl accident, greater care in controlling the reactor has been specified. Additional instrumentation has been introduced to im-prove the control system."

Now, the question itself begs a few questions. Firstly, which every other previous speaker has mentioned that whereas our safety record has without any doubt been good, if those of us who participate in this debate here now caution the Government and caution the very many eminent Indians who' are today involved in the field of atomic energy in the country that merely because we have a safety record which is something that we can be proud of, it is not something that we can be complacent about and I would appeal to the hon. Minister that whenever he replies us and whenever he says that our safety record has been good, please assuage all our fears which might be unreal, which may be unjustified" but are not irrelevant. That the fears about nuclear accidents not just in India but the world over are such that whenever you speak of our good record in safety, please take into account the not irrelevant fears about the unforseen contingencies that might arise. Now, perhaps, it is not an occasion for me to ask the Minister to elaborate the reply that has already been given. Therefore, I will limit myself to three other specific questions of safety jn nuclear power plants. Now, when we talk of safety of nuclear power plant, it is not just Chernobyl that I am referring to. I am trying to the limited extent that my knowledge extends in this field, to take into account the Three Mile Island accident as well. Therefore, firstly, is it correct and I would be very happy to be informed and educated on this—that boiling water and the reactor functioning at Tarapur could be considered to be susceptible to Three Mile island kind of accident? This is my first clarification that I would seek. Secondly, is it correct that the United States Nuclear Regulatory Commission has concluded in respect of its own equipment that General Electric Mark-I Containment System, similar to the kind that we have in Tarapur, will not be able to survive 9 out of 10 severe accidents? This is a conclusion which has been arrived at by the Nuclear Regulatory Commission of the United States. It refers to a General Electric Mark-I kind of containment system which is used in the United States, which is not dissimilar to what we are using in Tarapur? Therefore, my clarification is— have they arrived at such a conclusion? Is our equipment similar to the General Electric Mark-I equipment and is it, therefore, correct what the U.S. Nuclear Regulatory Commission has concluded that their equipment will not be able to survive 9 out of 10 severe accidents? Does that not, therefore, by logical devolution; the same conclusion also apply to Tarapur? Thirdly, is it correct that we sent three nuclear engineers from our Nuclear Regulatory Board and the Shaba Atomic Energy Research Centre to a special conference on Chernobyl accident on August 25 this year and if I am not mistaken, it was held in Vienna. What were the recommendations of this conference and what has the department of the Atomic Energy been doing about those recommendations? This was a specific conference, an international conference held post-Chernobyl in which, I do believe that for the first time, immediately after the Chernobyl accident, the Soviet Nuclear Scientists had participated and for the first time. Soviet Union came out with a very detailed and very exhaustive explanation of what had taken place in Chernobyl so that rest of the world could benefit from that mis-adventure from their experience. These three specific questions, I would like to ask on safety without going into the theoretical aspect of it.

I will now quickly take UP Rajasthan Atomic Power Plant I both for parochial reasons because Rajasthan is involved, as also because it involves the whole gamut of nuclear energy for power. I had made a mention of this, as a Special Mention

during the last session. The hon. Minister of State, who was then handling the portfolio, was good enough to reply to my queries. We all know that it is shut down, that there is a crack in the southern-end shield and that despite persistent and very laudable efforts by Our scientists to mend that crack, it could not be done. To mend a crack in a nuclear power plant is not an easy task. This is a Candou type of reactor, amongst the earliest that the country 'has imported from Canada. It has been running for a l°ng time. And so wa are now faced with the problem of what to do with RAPP I, which has got a crack in the southern-end shield. I do not know whether it is the southern-end shield or the northern-end shield, but it has got a crack and because of this crack, this atomic power plant is not working. Therefore, I asked the Government: what are the options available to us? And the op-tons given to me by the hon. Minister are confusing. I would request the hon. Minister to listen to me because my questions are really very specfiic and not theoretical at all. Now, the options given to me by the Government for RAPP I are; (1) to operate it at low power. I do not believe that you can operate RAPP 1 with a crack in the end shield, whether it is the southern end or the northern end at a lower rate of power production. I might be mistaken. But if you have made such an assertion to me in writing, I believe it is incorrect. You cannot operate RAPP I at low power. The second option is replace the end shield. Again this option is not available to us because this is a Candou type of plant from Canada and after 1974, Canada has stopped all assistance to us. So where are you going to replace the end shield *from?* Again an obfuscatory answer. The third is decommission the reactor. I think this is a very reasonable and perhaps the most practical suggestion, and possibly the only alternative left. And fourthly: thereafter, salvage some equipment which can be utilised for new reactors like RAPP III and IV. I think no other option is available as far as RAPP I is concerned It is not a question of putting to test our scientific ability. it is a question of seeing reality in the field of nuclear power production.

Therefore, if decommissioning the plant and salvaging some equipment is all that is left to us as options, one question will still remain. How will you salvage that equipment because it is radioactive? And that again emphasises the question which a number of other Mambers nave raised; what do you do with spent nuclear fuel? Therefore the Minister must take us into confidence that as far as spent fuel is concerned, this is what we are going to do to ensure that the spent fuel will never sully the soil or sub-soil water or the environment of India. Therefore, I would request the hon. Minister, without labouring this point too much, to take us into confidence about the spent fuel, about salvaging RAPP I, given the aspect of residual radioactivity.

My next question relates to "Dhruva". "Dhruva" is a very exciting experiment. I accept that it is an experimental reactor. I accept that it is a reactor with which we will face difficulties. It is a very laudable venture. When it went "critical", I believe, in August 1985—I do not remember the exact date—I made a Special Mention in this House; I congratulated the Government, I congratulated all our scientists who had been involved with "Dhruva", saying that it was an achievement which the country should applaud and be proud of. I repeat all that. But while repeating all that, there are two aspects which worry me today. Dhruva is the only reactor— It is an experimental reactor but it is the only reactor—-which produces weapons grade plutonium; at least it is supposed to produce weapons grade plutonium. Now, what are the difficulties? Dhruva has faced difficulties. It is an experimental reactor. I repeat that. Dhruva has faced difficulties ever since the stage of attaining critically. I am given to understand that some of those difficulties relate to vibration, that on account of vibration some of the fuel rods have broken, fallen off or that the aluminium covers containing the rods have peeled off. I am not privy to the information which is the Minister's prerogative on. I base my information on the reading which we necessarily have to do those of us who want to take some interest in the field. I would like to know from the Minister what the exact status of Dhruva is. It

[Shri Jaswant Singh]

not a challenge of, I do not for a minute even question the scientific ability of, the great many very eminent Indians who are involved in this experiment. If I voice this concern, it is a concern which I am sharing with you, not in a political, combative manner, but in a manner which I must share with, because there is nobody else that I can share it with. I would, in the context of Dhruva, just ask three or four other simple questions and then conclude.

At what percentage of its installed capacity is Dhruva today producing power? At what percentage? And please do not, by giving us a reply, think that any judgmental effort is being made. Secondly, since its stage of criticality how many shutdowns has it had? Thirdly, what are the problems behind these repeated shut-downs of Dhruva? And I have already asked about questions about damaged fuel rods, aluminium covers, etc.

Just one final word in conclusion, because it is something which has been referred to by other Members. The present is not perhaps the right occasion on which to talk about India's nuclear policy in its totality. But I am sure my esteemed colleague, the Minister of State, would understand when I say that ambiguity in nuclear policy is perhaps the worst policy. It gets us to the worst of both options or all options. Therefore, when we talk about nuclear policy in the context of national security, please at some stage take into note what I am saying, that ambiguity in the context of national security is possibly the worst nuclear policy. Thank you.

श्री मोर्जा ईर्शादबेग (गुजरात) : मान्यवर उपसभाध्यक्ष महोदय, मैं एटामिक एनर्जी अमेंडमेंट बिल के समर्थन में बोलने के लिए खड़ा हुआ हूं। मान्यवर, परमाणु उत्पादन के क्षेत्र में भारत 8 परमाणु रिएक्टरों के साथ विश्व में आज अपना 7वां स्थान रखता है। मैं आपके माध्यम से देश के उस नेतृत्व का अभिनन्दन करूंगा जिसमें पंडित जवाहर लाल नेहरू, स्व० श्रीमती इंदिरा गांधी और वर्तमान काल में राजीव गांधी जिस नीति को ले करके चल रहे हैं उसकी सक्षमता के दर्शन हमें आज इन बातों में हो रहे हैं, मान्यवर, इस क्षेत्र में और खास करके परमाणु उत्पादन के क्षेत्र में हमें यह भी नहीं भूलना चाहिए कि देश के महान वैज्ञानिक होमी भाभा विक्रम साराभाई और डा० सेठना जैसी विभूतियों ने इतना अधिक योगदान दिया है। आज विश्व परमाणु अस्त्रों की होड़ में भी चल रहा है। भारत के नेताओं ने और भारत ने हमेशा इस बात को दोहराया है, प्रधानमंत्री राजीव गांधी जी ने भी इस बात को दोहराया है कि विश्व में, देश में अगर हम परमाणु-शक्ति का उत्पादन करेंगे, तो हम इसका उपयोग शांतिपूर्ण तरीकों के लिये करेंगे और इसका उपयोग हम अपनी विकास योजनाओं के लिये करेंगे। किन्तु मान्यवर, जैसे कि आज हमारा एक पड़ौसी राष्ट्र पाकिस्तान अपनी शक्ति को लेकर जो धमकी बरत रहा है, मैं समझता हूं कि हमारी इस नीति में जो सक्षमता है, इससे हम पर्याप्त स्वरूप में उसको जवाब दे पाएंगे।

मान्यवर, ऊर्जा उत्पादन देश के औद्योगिक और कृषि विकास के लिए अग्रतम आवश्यकता है। आज देश में कोयला, जल ऊर्जा संसाधन, पनचक्कों तथा अन्य साधनों से और सौर-ऊर्जा से भी हम ऊर्जा का उत्पादन कर रहे हैं, यह हमारे देश की जो आवश्यकता है, उससे कहीं कम है। कोयले की अपेक्षा देश में पेट्रोल की पैदावार कम है और मान्यवर, आने वाले वर्षों में अर्ध-शताब्दी तक यह जो हमारे भण्डार हैं, यह तब तक उपलब्ध हो सकेंगे देश में आज सिर्फ तीन प्रतिशत ऊर्जा उत्पादन परमाणु ऊर्जा से उत्पादित है, जबकि उसे सातवीं योजना में 10 प्रतिशत तक ले जाने का लक्ष्यांश की मर्यादा बनायी है।

मान्यवर, विश्व की आज परिस्थिति यह है कि विश्व में 360 परमाणु ऊर्जा के प्लांट हैं, जबकि हमारे तीन प्रतिशत ऊर्जा-उत्पादन की अपेक्षा हमारी आवश्यकता बहुत है। फ्रांस आज अपनी आवश्यकता की 75 प्रतिशत ऊर्जा परमाणु से बनाता है, ताइवान 40 प्रतिशत, बुल्गारिया 30 प्रतिशत, ब्रिटेन 40 प्रतिशत तथा यूनाइटेड स्टेट्स आफ अमरीका 18 प्रतिशत परमाणु ऊर्जा से विद्युत शक्ति प्राप्त

करते हैं । मैं मानता हूं कि इसके प्लांट इंस्टालेशन का जो खर्चा आता है, इस पर जो राशि लगती है, वह अधिक है । लेकिन उससे जब परमाणु ऊर्जा का उत्पादन होता है तो वह मैं समझता हूं कि काफी सस्ती पड़ती है और इसी दिशा में अगर हम इसके लक्ष्यांक्षों को बढ़ाते रहेंगे तो मैं समझता हूं कि देश में खासकर के कृषि विभाग को इससे अधिक लाभ हो सकता है ।

माननीय, सन् 2001 तक 10,000 मेगावाट परमाणु-ऊर्जा उत्पादन का लक्ष्य है और आज इंस्टाल्ड केपेसिटी पावर प्लांट की 170 मेगावाट है, जबकि सन् 1990 तक 2300 मेगावाट क्षमता हम प्राप्त कर पाएंगे । माननीय 15 वर्ष की योजना न्यूकलीयर पावर बोर्ड ने बनाई और वर्तमान परिस्थिति में 1400 करोड़ के संसाधन जुटाने की मांग भी उपलब्ध है, जिससे 10,000 मेगावाट लक्ष्य प्राप्ति के लिये इसे अधिक प्रोत्साहन देना आवश्यक है । शायद मैं गलत हो सकता हूं, लेकिन मेरी जानकारी के मुताबिक इस वर्ष के बजट में इस पावर न्यूकलीयर प्लांट के लिये कोई भी धनराशि का आवण्टन नहीं हुआ है । मैं मांग करता हूं कि इसके लिये आप अधिक आवंटन करें, जिससे हम इस योजना को त्वरित गति से निपटा सकें । माननीय, जनरेशन की क्षमता में सातवीं योजना में 1410 करोड़ के प्रावधान से क्या हम इस लक्ष्यांश की प्राप्ति कर सकेंगे, यह मैं मंत्री जी से पूछना चाहता हूं ?

माननीय, मैं मांग करता हूं कि इसके लिए अधिक धनराशि का आवंटन करना चाहिए, जिससे यह जो विश्व की एक प्रगति है, इसके साथ अपना कदमताल कर सकें । माननीय, हमने पहले जो एक प्लांट डाला तारापुर का प्लांट, वह अमरीका के सहयोग से डाला । दूसरा राजस्थान का जो डाला, वह कनाडा के सहयोग से डाला । लेकिन जहां तक हमने अपनी इन-डीजनस-टेक्नोलोजी अपनाई और जैसे मद्रास का कलपक्कम डाला तथा आने वाले दिनों में ककरापाट का डालने जा रहा हैं तथा नरौरा में डालने जा रहे हैं । यह अपनी ही इन-डिजनस टेक्नोलोजी से हम डालने जा रहे हैं । मैं यह समझता हूं कि भारत की सरकार के लिये भारत की जनता के लिये और भारत के वैज्ञानिकों के लिये, यह एक बड़ी अभिनंदन की बात होगी । इसके साथ की यह भी कहना चाहूंगा आपके माध्यम से मान्यवर, कि जो आज दो प्लांट चल रहे हैं, उसमें तो कहीं-कहीं क्षति आयी है, लेकिन जो हमारी इनडिजनस टेक्नोलोजी है, जिसमें काम हमने किए हैं, उसके अंदर बराबर अपना काम दे रहे हैं । मान्यवर, जैसे कि ऊसवन्त सिह जी ने बताया मैं अभिनन्दन करता हूं । साइंटिस्टों का कि उन्होंने 100 मेगावाट का नेचुरल यूरेनियम ध्रुव बनाया । मैं समझता हूं कि यह विश्व का सबसे बड़ा रिएक्टर है और वैज्ञानिक दृष्टि से हमारी अनोखी सिद्धि है जिसके लिए साइंटिस्टों का जितना अभिनन्दन किया जाय कम है । हमारे पास 73 हजार टन मीट्रिक यूरेनियम का एक्सप्लोरेशन आगामी 15 वर्षों में करने की संभावना है । उससे हम परमाणु ऊर्जा का उत्पादन भी कर सकेंगे ।

माननीय उपसभाध्यक्ष महोदय, चेरनेबिल की घटना समग्र विश्व में बड़ी घटना थी जिस पर बहुत सारे लोगों ने अपने मत को व्यक्त किया है । मैं भी उन लोगों के साथ हूं क्योंकि भोपाल की ट्रेजेडी के बाद हिन्दुस्तान में यह क्षमता नहीं है कि ऐसी किसी और दुर्घटना का सामना कर सके । इसलिए कहीं नेगलीजेंस न हो । यह भी मैं बताए देता हूं कि चेरनेबिल में, जहां दुर्घटना हुई, वहां एक ही शील्डिंग रखी गई, जबकि हमारे वैज्ञानिकों ने दो शील्डिंग बनाई हैं, जिसकी वजह से संभावना कम हो जाती हैं । मैं मांग करता हूं कि आने वाले दिनों में ऐसी दुर्घटनाएं न हो इसके लिए अधिक सावधानी रखे जाने की जरूरत है । इसी संबंध में राजा रमन्ना की अध्यक्षता में विश्व के 58 देशों ने मिल कर बातचीत की कि ऐसी दुर्घटनाओं का निवारण किया जाय और जो बातें कहीं गई उन पर अपने हस्ताक्षर किए हैं । देशों ने इसके लिए अपना कमिटमेंट व्यक्त किया, इसके लिए मैं सराहना करता हूं और मांग करता हूं कि इस दिशा में आगे कदम उठाए जाने चाहिए ।

[श्री मीर्जा ईर्शादबेग]

मैं यह भी सुझाव देता हूं कि रेडियो एक्टिव पदार्थ रिएक्टर के नजदीक ले जाने से चूंकि दुर्घटनाएं होती हैं, इसलिए इस बात की व्यवस्था की जाय कि जहां जहां रिएक्टर हैं वहां रेडियो एक्टिव पदार्थ न जा सकें।

जैसा और सदस्यों ने कहा, मैं भी उसे समर्थन देना चाहूंगा कि रेडियो आइसोटोप के निर्माण से देश के विकास को एक नई दिशा मिल सकती है, एक नवीनतम टेक्नोलोजी प्राप्त कर सकते हैं। आरोग्य की दिशा में भी हम रेडियो आइसोटोप के निर्माण से नए लक्ष्य प्राप्त कर सकते हैं। इस संबंध में मैं यह भी कहना चाहूंगा कि इसी सदन की सदस्या डा० नाजमा हेपतुल्ला ने एक बुक लिखी 'इंडियाज प्रोग्रेस इन साइंस एंड टेक्नोलोजी: कन्टीनुइटी एंड चेंज'। मैं उनका अभिनन्दन करता हूं कि उन्होंने एक सुन्दर पुस्तक देश के सामने रखी और बड़ी अच्छी बातें बताई हैं। मैं आपके माध्यम से जो दो सुझाव उन्होंने दिए हैं आपके समाने रखना चाहूंगा। उन्होंने कहा है कि एक ऐसा नेशनल कमीशन बनाया जाय जो देश की साइंस और टेक्नोलोजी की प्रोग्रेस पर निरंतर वाच रख सके और निरंतर उस बारे में सजेशन दे सके। उसके साथ साथ पार्लियामेंट में एक स्टैंडिंग कमेटी का गठन होना चाहिए जो एडाप्टेड पोलिसी पर निरंतर विचार करे और जो नयी नयी तकनीकें हैं उनके माध्यम से अधिकतम योगदान देश के विकास में दें। मान्यवर, इसी के साथ मैं अपने वक्तव्य को समाप्त करता हूं आपने मुझे जो समय दिया उसके लिए आभारी हूं। धन्यवाद।

4 P.M.

श्री **सत्य प्रकाश मालवीय** (उत्तर प्रदेश) : माननीय उपसभाध्यक्ष महोदय, परमाणु उर्जा अधिनियम 1962 में देश की संसद ने पारित किया था और आज हम 24 वर्ष बाद उस की धारा 6 और 11 संशोधन करने के लिये यहां पर विचार विमर्श कर रहे है। जहां तक संशोधन का प्रश्न है; यह संशोधन बहुत ही निर्दोष और बहुत ही छोटा है। लेकिन फिर भी इसके माध्यम से परमाणु उर्जा ऐसे महत्वपूर्ण विषय पर चर्चा करने का अवसर हम सभी को आज मिल रहा है। परमाणु उर्जा एक ऐसी चीज है कि यदि हम उस का सही इस्तेमाल नहीं करते तो समस्त विश्व का और समस्त मानवता का विनाश हो सकता है। लेकिन यदि इस का हम ठीक तरीके से अच्छे काम के लिये इस्तेमाल करते हैं तो न केवल विश्व का, मानवता का, बल्कि भारत का भी इस से विकास हो सकता है और भारत के लोग भी उन्नतिशील हो सकते है और हम आत्मनिर्भर हो सकते है और शायद इसी लिये अभी हाल में प्रधान मंत्री जी ने देशवासियों को बतलाया है कि परमाणु उर्जा के संबंध में खुली बहस इस देश में होनी चाहिए।

[उपसभाध्यक्ष (श्री पवन कुमार बांसल) पीठासीन हुए।]

और किस प्रकार हम परमाणु उर्जा का इस्तेमाल करते हैं इस सिलसिले में बहस, चलनी चाहिए और साथ साथ इसके जो खतरनाक पहलू हैं, उस ओर भी देशवासियों को जाग्रत करना चाहिए और इस संबंध में श्रीमती रेणुका चौधरी ने विस्तार से अपने सुझाव दिये हैं। उन को मैं दोहराना नहीं चाहता।

परमाणु उर्जा से वातावरण भी प्रदूषित होता है। तो मैं यह जानना चाहता हूं आप के माध्यम से कि परमाणु उर्जा से वातावरण किस हद तक दूषित होता है और यदि प्रदूषित होता है तो उस को कम करने के लिये किस प्रकार से कम प्रदूषण हो इस के लिये क्या कदम सरकर उठाने जा रही है।

दूसरी ओर अभी ईर्शाद बेग साहब ने इस बात की चर्चा की कि जो परमाणु उर्जा के प्लान्ट है उन को बैठाने में काफी लागत आती है। यह बात सही है लेकिन मैं सुझाव देना चाहता हूं कि हमारे देश में जो और साधन हैं—जैसे सौर उर्जा, गोबर गैस या पानी से भी उर्जा उत्पन्न होती है, उनके संबंध में भी सरकार को

विशेष प्रोत्साहन देना चाहिए क्योंकि यह ऐसी ऊर्जायें हैं कि जो देश भर में कहीं न कहीं मिलती हैं और उन के प्लान्ट को बिठाने के लिये बहुत ज्यादा लागत की जरूरत नहीं है। छोटे छोटे गांवों में, कस्बों में भी उन के माध्यम से हम ऊर्जा उत्पन्न कर सकते हैं। दूसरी ओर जो वर्तमान विधेयक है उस में एक धारा गोपनीयता की भी है। तो मैं जानना चाहता हूं कि 24 वर्ष बाद जब यह संशोधन करने हम बैठे हैं तो गोपनीयता का जो प्रावधान है उसको हटाने का काम भी हम क्यों नहीं करते हैं। आखिर कौन-सी चीज है जिस को विधेयक के माध्यम से आप देश की जनता से छिपाना चाहते हैं और देश की संसद से उसको छिपाना चाहते हैं। हमारे देश के संविधान के अंतर्गत भी देश के नागरिकों को और देश की संसद को हर चीज जानने का अधिकार है। राइट टु नो, जनतंत्र में प्रत्येक व्यक्ति का और देश की संसद का और विधान सभाओं का मौलिक अधिकार है। तो मेरा सुझाव है कि जहां एक ओर आप यह संशोधन लाये हैं दूसरी ओर जो गोपनीयता का प्रावधान इस विधेयक में कर रखा है उस को भी आप हटाने का काम करें और उस को रिपील करिये।

उत्तर प्रदेश में नरौरा, बुलन्दशहर जिले में है। वहां एक परमाणु ऊर्जा का प्लांट है। लेकिन मेरा सुझाव है कि मिर्जापुर और बिहार के पलामू जिलों में काफी खनिज पदार्थ हैं और वहां जंगल भी बहुत बड़ा है और वहां पर और बहुत बड़ी-बड़ी खानें भी हैं और प्राकृतिक संपदा वहां बहुत अधिक है और ऊर्जा के साधन भी वहां पर बहुत हैं। इस लिए मेरा सुझाव है कि आप उत्तर प्रदेश में मिर्जापुर और पलामू के बीच की जगह को इस्तेमाल करिये और अगर वहां पर परमाणु ऊर्जा का कोई प्लांट स्थापित करते हैं तो निश्चित तौर पर उस से देश के विकास में हम को बहुत सहायता मिलेगी और बिहार और उत्तर प्रदेश का जो पिछड़ापन है, जो वहां की गरीबी है उस को दूर करने में हम को सहायता मिलेगी और साथ साथ पूरा देश उस से लाभान्वित होगा।

अंत में एक बात पूछना चाहता हूं कि आखिर कौन सी आवश्यकता पड़ गयी कि 24 वर्ष बाद धारा 6 और धारा 11 का आप संशोधन कर रहे हैं। संशोधन करिये इसमें कोई आपत्ति नहीं है लेकिन इस संशोधन को क्यों प्रभाव बना रहे हैं यह बात समझ नहीं आ रहा है। संशोधन आप आज कर रहे हैं और इसमें प्रावधान करते हैं कि आज से 24 वर्ष पूर्व जिस दिन वर्तमान विधेयक लागू हुआ था उस दिन से लागू होगा। पार्लियामेंट के पिछले सालों के सारे कानून उठा कर देखें हैं मुझे कोई दूसरा ऐसा कानून नहीं मिला जो पूर्व प्रभाव कायम किया गया हो। मेरा समझ में यह काम आपत्तिजनक है। यह काम इसलिए ठीक नहीं है इसको अब कानून बनाकर पीछे से प्रभाव करने से अच्छा नहीं लगता। (व्यवधान) हां, 1975 में जब हाई कोर्ट का फैसला हो गया था उसके बाद पीपल्स रिप्रेजेन्टेटिव एक्ट में संशोधन किया गया और संशोधन करके उसको पूर्व प्रभाव किया गया और वह-वही उसमें संशोधन किये गये जिसमें श्रीमती गांधी के इलेक्शन पैटिशन के सम्बन्ध में निर्णय लिया गया था। सारे फैसले को बेकार करने की कोशिश की गयी इस संशोधन के माध्यम से। साथ साथ पापल्स रिप्रजेन्टेटिव एक्ट में भी संशोधन किया गया लेकिन वह भी 5 या 6 महीने पूर्व प्रभाव किया गया। मैं स्पष्ट जानना चाहता हूं कि आखिर कौन सा ऐसा कारण है जिसके कारण इसको 24 वर्ष पूर्व से प्रभाव करने जा रहे हैं? इन शब्दों के साथ जो विधेयक प्रस्तुत है इस पर विचार व्यक्त करता हूं।

SHRI DHARAM CHANDER PRASHANT (Jammu and Kashmir): Mr. Vice-Chairman, Sir, I rise in support of this Amendment which is simple but also important, as my colleagues have said.

Sir, India is a developing country. We are advancing very fast in the fields of science and technology. And we have made tremendous progress in the field of tech-

[Shri Dharam Chander Prashant]

oology. For that we require atomic energy. Sir, as my worthy colleague, Mr. Sukul, (has said, atomic reactors are very few in number. Their number should be increased. I want that there should be one atomic reactor in every State, including one in the eastern hili States. Sir, the present Budget for this atomic power generation is not much to meet the needs of the hour. This should be increased so that we also become as rich in atomic energy as some other countries. Sir, we should not ignore the race that is going on in the field of atomic power. Our neighbouring country, Pakistan, as our colleagues mentioned, is making atomic bomb. Pakistan is making atom bomb though it is denying. Still, there is evidence that Pakistan is now capable of doing atomic test in a few months or a year or two. This .manufacture of atom bomb in Pakistan is a threat to India. Not only Pakistan, but what about the other countries also, Sir. When America bombed Nagasaki and Hiroshima in Japan, there was only one atomic power country in the world. Now the number came to five. Many fear that in the next five to ten years, the number of atomic power countries will be between 20 and 30. And there is no move to stop these nuclear tests in the world. Since 1951, America has done over 600 nuclear tests in its Nevada nuclear testing range. America is now expanding the field of its Nevada testing range and that will also cost thousands and thousands of dollars. A single nuclear test costs thousands and thousands of dollars. America may spend thousand or lakhs of dollars, I am not concerned with that. That is not the concern of our country. But if there is a threat of atomic bombs you can imagine how much destruction it will cause. As one scientist has said, if there is a Third World War fought with atomic wea. pons, then the fourth war will be fought only with stones and sticks and nothing else because everything else would have been destroyed. As is evident, Mahabharata was also a nuclear war.

Sir, there are many hazards of nuclear tests and I would urge the hon. Minister not to overlook those hazards. What are those hazards? They are radioactivity. This radioactivity spreads diseases like cancer, leukamia. So, we should not ignore these hazards and take proper action and see that no contamination takes place On the surface of the earth or in the atmosphere. This is also one of the aspects of radioactivity,

With these words, Sir, I conclude my speech with the request that when other countries also start manufacturing atomic bombs and the number becomes as against the present five, twenty or thirty, we should not ignore this issue, because our Prime Minister, Shri Rajiv Gandhi, while speaking on Pakistan's capability of manufactur, ing nuclear bomb, had said that we may have to revise our policy if Pakistan manufactures a bomb. That should also be our main demand.

SHRI GURUDAS DAS GUPTA (West Bengal): Sir, it is arare opportunity. It is a rare opportunity because seldom we get a chance to discuss atomic energy policy. Therefore, the introduction of an innocuous Bill concerning compensation in respect of acquisition gives us the opportunity to talk about atomic energy policy.

In another sense it is also a rare opportunity because we had the privilege of listening to a number of speeches from either side of the House arguing whether India should manufacture nuclear bomb as a counter-blast to the policy of Pakistan, and also we had the privilege of a discussion initiated by a number of Members' whether peaceful utilisation of atomic energy is too hazardous. Before going into that, Mr. Chairperson, Sir. I only wish that the passage of the Bill ultimately does inot land the Government ln a situation where long-drawn litigation takes place between the Central Government, on the one side, and other parties, including some of the State Governments, on the other. Therefore. the possibility of prolonging the litigation should be shortened as far as possible,

Now, on the question of use of atomic energy in our country, I should most respectfully submit. Mr. Chairperson, sir, that the discussion of hazards in the context of Chernobyl appears to me a little exaggerated. I do not say it is politically biased, but it is exaggerated because the accident

in Chernobyl is being referred to but the learned Members of the House had not referred to the accidents that had taken pace in America one year back and also in the U.K. Therefore, the question of accidents and the hazards involved, is not something unique with Chernobyl or with the Soviet Union. The question is whether it is too risky or whether enough precaution is there under scientific expen-nents so that we can carry it on with greater degree of security. It is also time for us to recall that the number of people who died as a result of Chernobyl accident was much less than the number of those who died as a result of the accident we had in Bhopal. There may be an argument that since there was a massive explosion or leakage of gas, therefore, why should India go in for production of chemicals or toxic materials? Accidents can always take place and these accidents canned be ruled out by any discovery of science. But it is most unscientific on the part of any person or any Government to exaggerate the consequences of accidents and refrain from making use of the latest, discoveries of science. Therefore, I believe that Government of lndia should, of course, utilise atomic energy for peaceful purposes, and that should be done with the greatest amount of safeguards and security. There can he no question of going back. Not only the Government of India should make more use of it, not only we want more atomic reactors, but I believe, the time has come for India to become self-reliant 01 the question of peaceful utilisation of atomic energy. Therefore, more use of atomic energy, self-reliance in the peaceful

of atomic energy, is the need of the honr. Of course, the question of safeguards is there. I also take this onportu-

to say that hazards are there, but atomic energy be used for peaceful pur— n puses with safeguards. After Bhopal accident, there have been a number of leakages; there was a leakage in the city of Calcutta Involving one multinational company. There was also a case of gas-It akage in the city of Delhi. Therefore, I call upon the Government and request the Government to ensure proper safeguards. These safeguards are not only missing in the chemical industry, but your enforcement machinery is to be to tackle the lapses, on the part of the big companies, including multinationals. There should be a guarantee that your enforcement machinery does not fall prey to bribery and money, and that the enforcement machinery really works. Therefore, there has to be safety enforcement machinery to safeguard not only in the case of atomic reactors but also in the case of other chemical industries where also there are similar hazards. Therefore, we want India to develop atomic energy; we want India to be self-reliant in the atomic energy utilisation and we want enough safeguards to be there.

I take this chance to express my criticism about the way in which our atomic plants at the mor ment in Tarapore, and in Kalappakam near Madras, are working. There have been a number of instances of shut-down and break-down. There have been cases of leakage. It is most unfortunate that we are at the threshold of entering into the era of atomic power generation with many breakdowns, which will not only bring a bad name to our country but that may put obstacles in our paths of going ahead with our plans. Therefore, there has to be greater caution On the part of the Government, I may also state here that my party is totally against manufacture of atomic bomb. It is being say that Pakistan is in possesion of atomic bomb. Maybe, it is so; maybe China or America is supplying them. It is quite true that Pakistan is manufacturing the bomb. But we should remember that the senseless rulers of Pakistan who are encaged in the production of atom bomb are not running a democratically-elected set-up. They are senseless military rulers, not enjoying the confidence of the people of Pakistan. Therefore, they can afford to be so mad. But the Government of India, democratically-elected Government of India, should take into the consideration the economic situation in the country. India cannot afford to enjoy the luxury of producing the atom bomb when majority of the people are living below the level of subsistence. Of course, comebody may ask; what is the protection? The protection against the atom bomb in the hands of Pakistan is

[Shri Gurudas Das Gupta]

our friendship treaty with the soviet Union. Instead of producing the atom bomb ourselves, we should rely on our friendship treat with tho Soviet Union. This is the biggest guarantee. This is the biggest protective umbrella against any possible threat from Pakistan, with the aid and assistance of the U.S.A. Therefore, instead of going in for the atom bomb as a counter-blast to Pakistan, let us strengthen our friendship with tho Soviet Union.

SHRI LAL K. ADVANI (Madhya Pradesh); If Soviet Russia is our protector, why have an army also?

SHRI GURUDAS DAS GUPTA; It is quite consistent with the policy of Mr. Advani's party that he can plead that India should go in for tho liquidation of the army. It is quite consistent. There are some people in our country who do not believe that Soviet Union is a real friend of India.

SHRI LAL K. ADVANI-. I believe that *(Interruptions)*

THE VICE-CHAIRMAN (SHRI PAWAN KUMAR BANSAL); Mr. Gupta, please come to the subject-matter of the Bill.

SHRI GURUDAS DAS GUPTA; I have to give my reply to the polemics of a senior Member. The point is, it is not a question of having an army or not. It is not a question of our country being at the mercy of the Soviet Union. It is not at all a question like that. We all want that India should be self-reliant. But the point is, whether the economic position of tho country can permit, whether the resources at our disposal are Sul-ficent to manufacture the atom bomb, when majority of the people are starving? This is the point. Thorefore, Sir, . . . *(Interruptions)* as I said, we do not want to be at the mercy of any country. We do not want to be at the mercy of anybody. The question is, whether we should manufacture the atom bomb and, at the. same time manufacture more poverty? The question is, whether we should simultaned sly manufacture the atom bomb and more poverty? This is tie point. The question is whether we should or should not value our friendship with the Soviet Union? It is, the Soviet Union which has always come to our help. We should see, in case of any emergency, in case of an impending attack by Pakistan, making use of the atom bomb, whether there is anybody who is our friend. There have been many occasions in the past when tho Soviet Union had come to the help of India in dealing with many a crisis. Let us remember the Soviet Union's aid at the time of tho Bangladesh war, when the Eighth Fleet of the U.S.A. came nearer to the Indian shores. Thorefore, Sir, it is not a question of manufacturing the atom bomb. It is a question of removing India's hunger. Of course, simultaneously, we should build up our own defence. But my point is, India cannot afford the luxury of going in for the atom bomb.

Before concluding, I would like to caution the Government that the po?icy of self-reliance in the case of the atomic energy industry is not being looked into properly by the Government. Thank you.

SHRI K. R. NARAYANAN; Mr. Vice-Chairman, Sir, T am grateful to the House for this very exhaustive debato and, I should say, for the support the House has given to the peaceful nuclear policy of India. Sir, this is, a Bill which is technical, very narrowly technical and, therefore, before I *go* into the general issues, raised by hon. Members, I would like to deal with the technical aspects of the amendments. As pointed out. it is, very simple and straightforward amendment. Almost all the Members have supported this amendment except for the puzzlement they have expressed in regard to the retrospective provision of the Bill covering 24 or 25 years. Therefore, I should explain this point because the rest of it seems to be non-controversial and not at all disputed.

The uranium plant mine in Bihar was originally with the Atomic Energy Department, an integral part of the department, and run and managed by the department itself. There was, thorefore, no legal or any other problem with regard to

the transfer of uranium concentrate to the Department. In 1967 the mine was converted into a Corporation, the Uranium Corporation of India Limited, and it became a public undertaking. Since then the Bihar Government began demanding the sales tax from the Uranium Corporation because they interpreted the Act for compulsory acquisition of uranium concentrate, no: as a transfer but as a sale. We were sure that this is not a correct legal interpretation. We have taken legal adivce and we are told that the inter-ition placed on these two clauses by the Bihar Government was not correct. There were detailed discussions, talks with the Bihar Government over a number of years, including in 1978, when the then Prime Minister wrote to the Bihar Chief Minister explaining that the compulsory acquisition was not sale but a transfer. he meantime, some case law also arose with regard to this. There was a Supreme Court case in which an opinion was ex-cl on another issue.

श्री कैलाश पति मिश्र (बिहार) : उपसभाध्यक्ष महोदय, मंत्री महोदय ने बताया कि बिहार सरकार ने जब आब-जेक्ट किया, तो उत्तर दिया गया कि यह ट्रांसफर करने वाली चीज है ।

मुझे मालूम है कि अभी तक केन्द्र सरकार ने बिहार को यह नहीं बताया कि हर वर्ष कितने रुपये का यूरेनियम केन्द्र सरकार वहां से एक्सपोर्ट करता है ।

क्या मंत्री महोदय अपने उत्तर में बताने की कृपा करेंगे कि उसके लिए बिहार सरकार को रायल्टी कितनी मिलती है ?

एक माननीय सदस्य : इसका इससे क्या संबंध है ?

SHRI K. R. NARAYANAN; Sir, there has been no ambiguity about it. Royalty is being given to the Bihar Government. The amount of royalty which was agreed to between the Department -of Atomic Energy and the Bihar Government, is still being given. Bihar Government is also imposing a cess on this. Bihar also gets a great deal of advantage in the form of employment. Nearly 3000 *people* are employed in this mine.

The question is not about royalty or about cess and other aspects, but it is the question whether the transfer of uranium concentrates and other materials from this Corporation is a sale or a mere transfer between the two agencies of the Government .

SHRI ATAL BIHARI VAJPAYEE (Madhya Pradesh); They also wanted to know about the total quantity transferred.

SHRHI K. R. NARAYANAN: Well, we know, the Government is not unaware, about float production there. In fact the Bihar Government is not unaware...

SHRI KAILASH PATI MISHRA: Bihar Government is still unaware of the fact.

SHRI K. R. NARAYANAN; Royalty is calculated on the basis of production and they have been receiving the royalty throughout these years. Therefore nothing been hidden.

As I said, there has been some case law also in which it has been pointed out that unless the possibility of what is called "assent"— mutual agreement— is completely excluded from this agreement, it is possible that this transfer could be interpreted or misconstrued as "sale". In order to avoid this misconstruing of this Act, we have brought this by the way of clarification. That is why I said that this is in the form of clarification, of straightening out a point which had *to* be straightened out in a legal sense and the retrospective nature was also required for this. We have consulted the legal opinion, and we have been told definitely ;hat there is nothing illegal; in fact it is perfectly to apply this amendment retorspec-tively. I want to assure the House that there are no hidden motivations or myitis reasons for this Bill or the retrospective application o£ it except to cover this possible contingency of having to pay sales tax in a case where sales tax really is not due and which was not the intention of the original Act.

Having explained, this I would like to deal with some of the major issues raised by the hon. Members. In fact, the discussion on this amendment has been used

[Shri K. R. Narayanan] quite rightly for a discussion on the status of our nuclear plants and also the nuclear policy that we are following. I have time to deal with some of the very major issues raised by the Members.

One of the major issues is that of safety and questions related to safety. The question of safety has become a very crucial, in fact a major issue, not only with regard to nuclear plants but also with regard to some of the more sophisticated technology-based industries that have come up. Members have said that it is true that we have taken every precaution, we have engineered into our nuclear reactors all possible kinds of devices to prevent radiation leaking out or accident, but still there is the unlikely contingency of an accident taking place. The debate in this country as well as in this House has been primarily focused on this unlikely contingency. I do not wish to minimise this danger because atomic power is a very dengerous sort of power and its main threat to the world is really not from the peaceful uses of it—for the generation of electric power—but its misuse for military and weapon purposes. Members have not mentioned this major aspect of nuclear power. The real danger lies there.

SHRIMATI RENUKA CHOWDHURY; I have asked particularly how our Government is viewing our neighbours like Pakistan and in view of that how we are planning to restate our nuclear policy.

SHRI K. R. NARAYANAN; Certainly you have asked on the defence side of it. but I was talking about the danger to the world as a whole, not on the defence question, posed by the Members by use of nuclear power for military purposes. To my mind that is a real danger, that is not an imaginery danger, because weapons are weapons, they are made for the intention of ultimate use unlike generation of electricity in nuclear reactors, which is made for the purpose of peaceful development. Now I think we *have* taken a very farsighted view of this question. I think honourable Members have heard the Prime Minister, a few weeks ago, saying that it is necessary that there should be an open debate, a public debate in, the country on this question of safety of nuclear power. Nothing could be more liberal-minded or more farseeing than the Prime Minister himself saying that it is necessary for this House and for the country to hare a debate on this question. Therefore, I also welcome the doubts, the constructive criticism and the precautionery warning's which the honourable Members have given on this issue. But let me say that the contingency of such an accident is very remote. In India itself, since 1969 when we installed the first nuclear power plant in India, there has not been a single case of fatality due to radiation in a nuclear plant. Also in the world as a whole, except for the Three Mile accident—which did not produce any fatality—and Chernobyl, there have been hardly any deaths or fatalities as a result of radiation or breakdown or fire in the nuclear plants. That does not mean that we should not look upon this as a possible danger, because if such a danger ever occurs it would be so catastrophic in its consequences. We have to think about it and we have to provide for measures to fight the consequences of such a catastrophe and also take measures to prevent such a catastrophe.

SHRIMATI RENUKA CHOWDHURY: Sir, I am sorry for interrupting, but I seek a clarification here. T disagree with his statement that there has been no fatality. If he equates death, mass death and mass annihilation to fatality, then we can say, yes, it has not happened. But there are repeated statements being made and there are organizations which are bringing forward cases of women who have been rendered sterile because of exposure to radiation. There are repeated cases of men susceptible to cancer because they have been exposed to radiation. There has been mutation in human genetics. We are bringing forward an entire strain of mutation into human beings which is going to-destroy them because we are not doing anything about checking these people who are exposed to this in multiplying hence-forth. So I don't think we can just say fatality. I want to emphasize that this is a vital point. You just can't say death is fatality. This is fatality because you are rendering human beings as sub-humans

und it is coming about because of all this. That is the imminent danger just now.

SHRI K. R. NARAYANAN: Actually, it is not only fatality. 1 am aware of these cases and these writings. But the specific which have come up before us, whether it is in Alwaye in the Indian Rare Earths factory or in Bihar with regard to the uranium mine itself. We have gone thoroughly into these. For example, it was said that in Jaduguda about five people died of cancer as a result of radiation. Now, during the last 20 years two people around Jaduguda died of lung cancer, two people of mouth cancer and one person of blood cancer—leukaemia. Now, this was in 20 years and we have gone into each case. The Health Physics Division of the Atomic Energy Establishment, together the local doctors, have gone into each case and found that these cases of cancer were not of those people who actually worked in the contaminable areas of the mine but outside.

There certainly has been crippling of People. I can offer you, if you go to the Connaught Place or anywhere also, you could see many of these cases. But nothing has been proved. Whether it is in Alwaye or elsewhere this has been gone into thoroughly. I am talking of evidence.

I saw the Environmental Group's statement the other day about radiation around the Rare Earths factory. This has been gone into thoroughly by the Nuclear Physics Division. A few people died of cancer, but they did not die of cancer as a result of radiation, we gather from the actual medical checks which were conducted.

. Th;re is a lot of loose falk about it. The atomic radiation level, in fact, in the atomic reactors is measurable, in all the atomic reactors the lewl of radiation around them or inside them is measurable. It is not 'above the safety level; it is much, much below, as a matter of fact But there are possibilities, no doubt. Mu-

result of overdose of atomic radiation. What I am saying is that 't has not just happened in India, with regard to the Indian Teactors.

And why it *has* not happened is first of all because of the safety measures engineered into the reactors themselves. I have this several times in the House. I do not know if I should repeat them. But I just want to compare with the Chernobyl. Mr. M.C. Bhandare read out the Soviet claim earlier that their reactor was 100 per cent safe, foolproof. But, as a matter of fact, this reactor in Chernobyl did not have any double containment as our reactors have. It was just placed in an ordinary industrial building. It did not have tne shut-down device, immediate shutdown device that we have. We have a redundancy, double shut-down devices now in most of our new reactors.

Apart from that it was not an ordinary accident. They were conducting an experiment, a special experiment. They were trying to see when there is a black-out of electricity, how this mechanism can function. So, they blacked out electricity and raised the level of temperature very high as an experiment. And because graphite and water came into contact with each other, it led to fire. So the Chernobyl accident was not an ordinary reactor accident. It was an accident which took place when they were conducting a special experiment which was outside the normal running of the reactor.

Even for these reasons, this does not excuse us to shut our eyes or to minimise the dangers inherent in nuclear energy. This is a real danger, and that is why Prime Minister himself has said that not only a debate but advance planning, advance preparation for such an unlikely contingency should be made in all our atomic energy establishments. He has asked the Chairman, Atomic Energy Commission. He has asked the Cabinet Secratary to coordinate such a study and to think of all possible kinds of dangers and how we can organise our resources, organise our ingenuity and take whatever precaution*; possible.

[Shri K. R. Narayanan]

I want to say that I am glad that all the Members supported our atomic Energy Programme, ln fact, they were enthusiastic about the idea of promoting nuclear energy for the generation of electricity. One Member has given figures to show how the world is going ahead in this. France has 'readied a stage when 65 to 70 per cent of the energy used in France comes from nuclear energy. There are other countries doing the same way. Are we to lag behind? Are we to intimidated because of this wreak danger—it is a contingency—and turn back from the generation of electric power using ...

SHRI JAGESH DESAI; Mr. Narayanan, if my memory does not fail, for 1986-87 Annual plan there is no provision for expansion or additional nuclear energy.

SHRl K. R. NARAYANAN: Well, I don't think this has been finalised yet.

So, let us put a question mark on that. I would like to look into it. 1 don't think the 'allocation has been finally made so far. So let us suspend judgement until that is made.

No doubt, we have a lot of coal and a tremendous amount of hydro-electric resources, but we have taken stock of all these and found that if we do not add nuclear power also today, we would not have sufficient power for the kind of eco-nomic, industrial and agricultural development that we visualise. Nuclear power is also needed. What we really have is not a frightening quantity of nuclear power. We have only 2.5 to 3 per cent; and by 2,000 A-D. when we have 10,000 MW of nuclear power, it would be only ten per cent of the electricity generated in the country. It is rather a meagre proportion to my mind considering our capabilities. In any case, as I pointed out in the other House the nuclear genie is out of the bot-We cannot put it back in the bottle. The world has accepted it. The great powers have accepted it for military purposes and others have accepted it for generating electricity. So, the real question before us is are we going to use it to the maximum ectent possible for peaceful pur. posees or are we to turn our back from it because we are afraid of some contingent, real danger. I think it would not be a farsiguted policy to turn back from it because nuclear energy not only gives us power, but if I may say so, it can make India a power—a peaceful power—devoting nuclear energy for our economic and social development. It is development of energy in a field which will enable us to climb the peak of technological development. It is not just one thing that is involved in nuclear energy. I think the magnitude of the achievements of our scientists, though they have been given compliments in this House, have not yet been fully recognised. In the manufacture and designing of nuclear reactors, heavy-water plants, reprocessing plants, fast breeder plants and in their efforts to move into another realm of working on fusion energy, our scientists hare been doing all this by themselves with very little outside help. The magnitude of this achievement is unparallelled in any other field of development in lndia. I think, therefore, the nuclear energy and its peaceful potentialities must be seen in perspective while fully safeguarding us and preparing against any danger that may crop up against health or safety of our people.

Some hon. Members have mentioned that there is no legal provision for health safeguards. The legal provision is embodied in the Atomic Energy Act which we are slightly amending today. This Act gives the Government a complete power to deal with the problems of health, radiation hazards and similar dangers inherent in the production of nuclear energy. It is on the basis of this authority given by the 1962 Act that a Health Physics Division, a Radiological Protection Division and a Safety Review Committee and Atomic Energy Regulatory Committee were set up in the Atomic Energy establishment. A!' these are more or less self-governing Bodies. These have been set up within the general ambit of the atomic energy establishment and they have deputed representatives to each reactor or plant where radio-'active material is prepared or produced for constantly checking, monitoring radiation levels and such other dangers

inherent in this thing. Now, I think for monitoring this, we need really experts. However, an independent Body or authority may be, they would not be able to really monitor a sophisticated operation like this. that is why these Bodies were created by this Act and this is how action has been taken by the atomic energy establishment in Bombay.

In fact, it is surprising that when you read the story of construction of atomic energy plant, we find that right from the beginning the founders were very conscious about health and safety aspects. They were completely aware of all these things. That is why we have in the pressurised heavy water reactors, the best safety systems embodied. In fact, this choice of the reactor has been made partly because of safety considerations. There is cooling and moderating arrangements, instead of raising the temperature to high, by the moderator and the coolant. This is a special feature for the pressurised heavy water reactor. The choice of the type of reactor itself was partly determined by the consideration of safety. But when I say all this, containment, concrete foundations, availability of water supplies in the neighbourhood in case of fire you have sources nearby,

I think it was Shrimati Renuka Chowdhury asked about environmental consideration and clearance. I may tell her that it is one of the first provisions before we erect a plant anywhere in India. Today the clearance is being given by the Ministry of Environment This is an essential thing. So before we erect 'any atomic reactor anywhere in India or choose the site for housing, the entire area has to be cleared environmentally.

Ultimately, I accept the suggestion made by her that the public must be educated. I think it is not only the general public, but also the educated have to be educated as far as nuclear energy is concerned. It is not enough to talk about benefits, but about the dangers involved. While we are more or ess mesmerised or frightened by what happened in Chernobyl, we should not minimise the immense benefits involved in nuclear energy development which are indispensable for our future welfare and for our future development.

SHRI NIRMAL CHATTERJEE: May I make one point? There is a public criticism for the overall secrecy that surrounds this tiling and makes the data not available to various science groups is re-ally what prevents that education. Would that overall secrecy broken and voluntary science groups De allowed to scrutinise all the measures that are adopted?

SHRI K. R. NARAYANAN: Well that question was raised in the House in the opposite way also that there is too much of secrecy with regard to atomic energy establishment. Let me deal with that question. Actually there is not to much secrecy at all- As you know the reports of the Atomic Energy Agency are placed before Parliament periodically and the budget is an open book. Anyone of us can visit the atomlc energy establishment and I have gone when I was not even an official of the Government. They never shut out any area for visit, because nothing secret is happening anywhere of that type. But our designs and some of the strategic materials, they are subjected to secrecy. Even ordinary industrial designs are subjected to secrecy not to talk of 'an atomic reactor.

We do not transfer atomic technology to other countries or to other people and this means secrecy in regard to safeguarding, that part of the design or technology. I think it is something which hon. Members and other people can understand.

Now, there is the question of Secrecy. I think at the height of the debate in the United States about the supply of enriched uranium to India, nobody had accused us of misuse. They even stopped the supply of enriched uranium to u, hut they never accused us or even suggested that we have given it to other people. So, we have been good in keeping secrecy ever from those who gave us the first nu clear reactor and we believe, it is impor tant to keep these things, ultimate things about our designs of our reactor, not and other designs, to ourselves rather that make it public property for the world as whole.

[Shri K. R. Narayanan]

Now, another Iine of criticism and I think that is also a very legitimate line is with regard to the actual functioning of the nuclear plants. Are they giving results? Are they producing electricity to the extent that we should have according to the investment we have put in? With regard to some of the nuclear plants, this is a very correct decision, specially, with regard to Rajasthan one. There is no doubt that it has been shut down for the last three years. This was shut down because the agonising part of this was that it was a prototype reactor which we got from Canada even before they had used and run the Plant in Canada itself. This was rather a bold risk we took because we wete very keen to get the know-how of nuclear technology, the technology of a reactor running and a reactor building. So, we have suffered a little but we have also made some profits out of the sales of electricity even from Rajasthan. My hon. friend, Mr. Jaswant Singh raised a few pointed questions about the future of Rajasthan one. Now, various possibilities are being discussed and they have been examined in depth by our scientists and technicians and I am told that maybe, before the end of this month or within a reasonable period, they would come to a definitive conclusion with regard to the possibility of either repairing this plant or doing something else with it. One of the I alternatives mentioned by Sh. Jaswant Singh is that of manufacturing and changing the end shield. I want to inform him that India has the technical capability of manufacturing the End Shield. in fact, not only have the capability but we have improved the design 'and made it mucin more cohesive by welding it into the main body of the plant. It is really a question *of* not capability, it is a question of the expensiveness. It is rather an expensive ontion and therefore they are trying whether the other options you mentioned, any one of them could be adopted before we adopt this very expensive option of manufacturing and changing the end shield itself. But the important thing is that we We the technological capability to do this It is not an aspiration but a proved capability.

Now, the level of functioning of the atomic reactors, except for the Tarapur 5 P.M. plant when the United States had denied for some time enriched uranium, has been satisfactory. I think electricity production was between 50 per cent and 65 per cent of the capacity and sometimes even more. I want to inform the House that the Madras Atomic Power Plant 1 which had been shut down for a few weeks, has started functioning from the 7 th of this month. It has been repaired. The leakage of heavy water has been stopped and the reactor is functioning again. Except for these few and the major failure—with regard to Rajasthan, and Tarapur which was not our failure but failure in international relations; and with regard to Tarapur, it is a question of the other party not carrying out their obligation— the, level of performance of our reactors has not only been satisfactory but in some cases and some periods it has gone up as much as to 75 to 80 per cent of the capacity. So in a field like this, a very difficult area, where very high technology is involved, where experimentation and trial and error are also involved—because our people had to try certain things out— it is astonishing how they have made so few mistakes of any consequence to the nation or the people in this difficult and advanced realm of technology.

Shri Jaswant Singh also mentioned about "Dhruva" and asked some poined questions as to what is happening in "Dhruva". "'Dhruva" is functioning again. In fact it is a research reactor. It is not primarily intended to produce power or isotopes. One of its major purposes is for us to learn new techniques of designing reactors. The other things are also done. It had some problem, vibration in the fuel system and that has been corrected. And here it is a question of the independence of our regulatory mechanism. You must have read that there are some differences of views between the Safety Review Committee and the Atomic Energy Regulatory Agency as to how it should be working, at what speed and what rate and all that. This shows that these are independent agencies which think independently and give their opinion. Now, after discussion with them, this vib-) ration has been corrected and "Dhruva"

which is one of the most highly sophisticated nuclear plants, devisee entirely by our scientists and technicians is functioning again. Whenever a shut-down took place, it was not really a shut-down except for the period of vibration; it was an ex-perimental shut-down because they were experimenting with different types of fuel —how it would be accepted, how it would function, how it would work u, the fuel channel and all that. So part of that socalled shut-down was really experimental shut-dawn. But the most important thing is that "Dhruva" is in good health and it is working again.

Many other points have been made, but , I think our Minister for Urban Development is probably...

AN HON. MEMBER: What about bomb;

SHRI K. R. NARAYANAN: Oh, bomb? Mr. Vice-Chairman I would not like to transgress into the enclosures of foreign policy or defence policy. Only I want to say one thing, and that is that our scientists and technologists have demonstrated the fact that they have the technology, that they have mastered the technology for making even a weapon. But we have abstained from doing so; we have almost passed an act of self-abnegation. Since 1974 to 1986, we have not used that particular technological capability. But the crucial fact is that our scientists have that capability. With these words I am once again asserting the determination of India^ our Government, to apply atomic energy for peaceful and constructive purposes for the development of our nation and for the welfare of the people. I want to thank nonourable Members for the very stimulating thought-provoking, speeches they have made this afternoon here. Thank you.

THE VICE-CHAIRMAN (SHRI PAWAN KUMAR BANSAL); The ques-tion is:

"That the Bill further to amend tha A:omic Energy Act, 1962, as passed by the Lok Sabha, be taken into consideration."

The motion was adopted.

THE VICE-CHAIRMAN: We shall now take up the clause-by-clause consideratioa of the Bill.

Clause's 2 and 3 *were added* to *tht Bill.*

Clauses 1 *the Enacting Formula and the Title were added to the Bill.*

SHRI K. R. NARAYANAN; Sir, I have the honour to move—

"That the Bill be passed."

The question was put and the motion was adopted.

THE DELHI APARTMENT OWNER-SHIP BILL, 1986—contd.

शहरी विकास मंत्री (श्रीमती मोहसिना किदवई) : श्रीमान, दिल्ली एपार्टमेंट ओनरशिप बिल, 1986 दो दिन पहले इस सदन में आया था। सबसे पहले तो उन मेम्बरान का शुक्रिया अदा करना चाहती हूं जिन्होंने इसे बिल को सपोर्ट दिया और तकरीबन जितने भी मेम्बरान उस दिन बोले सबने होल हार्टेडली इस बिल को सपोर्ट किया है, मैं उन सबकी आभारी और मशकूर हूं कि इन्होंने इस बहस में हिस्सा लिया।

उपसभाध्यक्ष महोदय, इस बिल का बहुत लिमिटेड परपज है। यह सिर्फ दिल्ली के लिए है और इसमें उस दिन जो बहस हुई वह दो हिस्सों में तकसीम हो गयी थी। पहले तो इसके बारे में कहना चाहूंगी कि यह बात बिल्कुल सही है कि मकानात की कमी है जबकि बहुत मकान बने हैं, बनाये जा रहे हैं, मुख्तलिफ किस्म की स्कीम चल रही है लेकिन फिर भी मकानों की दिक्कत अभी बनी हुई है। इसके बारे में में मेम्बरान ने अपनी तशवीश का इजहार किया और मैं समझती हूं कि इसके भी बहुत से करण हैं, सबको अच्छी तरह से मालूम है कि बढ़ती हुई आबादी और देहात की जो आबादी शहर की तरफ आ रही है इनकी वजह से अरबन हाउसिंग प्राब्लम हमारे सामने आ