

because recently the government have promulgated an Ordinance with a view to raise additional resources to the extent of about Rs. 550 crores in the name of giving help to the drought affected areas and the people. This is a normal and usual practice of the government which is highly reprehensible, and which cannot be supported through accepted Parliamentary channels.

Now, I would like to mention one important thing. The balance of payment position is likely to be very difficult; that has to be taken into consideration for the import bill on crude which may go up by Rs. 1500 crores during this year because of increase in the average world price of oil and the higher import of oil; that means from Rs. 2030 crores it may go upto Rs. 3450 crores. Similarly, the import of basic necessities like edible oil and food-grains will make an additional dent of another Rs. 400 crores. Even the Prime Minister has stated that as far as possible—the present rate of deficit will be contained; it will not be allowed to exceed; but, then, it is not at all possible; in any case, it is bound to increase by a few thousands of crores of rupees as per the present trend.

Whenever the foreign exchange reserves have declined by Rs. 760 crores or 10 per cent during the current financial year itself, the Reserve Bank of India has warned the government about the fast closing internal debat trap with grave consequences on the economic growth. Now this is the situation which the government has to tackle.

The deficit financing has come to stay, and indefinitely, incessantly, year after year, government has been—even though they are exercising constraint and restraint over the State Governments—resorting to increased deficit financing; and this is a recurring feature. Deficits have triggered off inflationary trend. The actual deficits turn out to be much larger than early budget estimate. The revised estimate has exceeded the original estimate as we could see. In the year 1986-87, as per budget estimate, the deficit was Rs. 3650 crores, but, ultimately it went upto Rs. 8255 crores; in the year 1985-86, it was

originally estimated that Rs. 3349 crores would be the deficit but the actual figure was Rs. 4937 crores; in the year 1987-88, it was Rs. 5688 crores; as I mentioned earlier, it would certainly exceed by a few thousands crores of rupees. In any case, the main point is this.

MR. DEPUTY SPEAKER : You can continue tomorrow, because now the House will take up Half-An-Hour Discussion.

Shri Virldhi Chander Jain.

HALF-AN-HOUR DISCUSSION

17.30 hrs.

[Translation]

Functioning of Kota Atomic Power Station

SHRI VIRLDHI CHANDER JAIN (Barmer) : Mr. Deputy Speaker, Sir, the first unit of Rajasthan Atomic Power Station was commissioned in 1973. Right from the beginning till today, the performance of that unit has been very poor. The performance was poor in the beginning and it continues to be so even now. I would like to know whether the condition of Kota Atomic Power Station was bad right from the time the unit was set up with Canadian collaboration? The same question was raised by us in 1981 too. In fact, it was myself who had initiated the half-an-hour discussion on it. That discussion led to an assurance on September 1981, that this unit of the Atomic Power Station would be repaired and set right. It was repaired and put into operation in 1982. But it could not work even for 2 hours a day and in March, 1982 it stopped working again. Later, in February 1985, this unit was started again. After 3 months, it developed leakages and new cracks for which 'end-shield' repairs were undertaken. It was re-commissioned on 1st August. From 1st August till today, it is supplying 100 megawatt of power whereas its generation capacity is 220 megawatt. I would like to know whether there will be an increase from the present output of 100 megawatt? It must increase from 100 to 150 or 180 megawatt because if it continues

[Shri Viridhi Chander Jain]

to operate at 100 megawatt capacity, it will not be profitable in commercial terms. In this context, please make it clear whether it can increase to 150 or 180 megawatt somehow or not? If it cannot be increased to 150 or 180 megawatt, why don't you close the first unit and take some steps because time and again the Atomic Power Station develops leakages and has to be repaired. It is not profitable and yet you are not closing it. Since the first phase is not working properly and generates only 100 megawatt of electricity, Rajasthan is affected from the point of view of supply of power. If the generation of power is low, it affects industrial production as well as agricultural output. Hence, we want that if the first unit of the Atomic Power Station generates less, or is closed, why can't the reserve power from Singrauli be supplied as compensation to meet the needs of Rajasthan?

The second unit of the Atomic Power Station is working well because it has been set up with modern technology. It is producing 70-75% of its installed capacity. A situation arose in August when it was closed and remained out of operation for 70 days. What are the reasons for it? I would like the hon. Minister to clarify why does it take 70 days for maintenance.

I have been informed that the main cooling system in its turbine generator has developed some defect. Is it a temporary defect or like the one in the first unit which cannot be rectified. Kindly enlighten us on this subject also.

Today we live in the nuclear age. We have planned to generate 10,000 megawatt of electricity by the year 2000. To achieve this target, we have planned to construct 4 Atomic Power Stations. Two of them are to be constructed at Rana Pratap Sagar and Kota. In this regard, I have come to know that these two Atomic Power Stations have been sanctioned. Therefore, I would like to know what has been the progress after getting the sanction. When will these Atomic Power Stations be ready? When will the work on the third and fourth units be completed so that Rajas-

than can avail of the benefits? Are these Atomic Power Stations being made indigenously or with Russian or any other country's collaboration? If the third and fourth units are completed soon, we can be assured of an improvement in Rajasthan's power situation. Viability of the Atomic Power Stations suffers as it takes as long as 10 years for their construction to complete. What is the target date for completing the 3rd and 4th unit of Atomic Power Station so as to make them viable? Cost of generation of electricity in atomic power station is the lowest, just 38 paise. I would like to know from the hon. Minister whether the target of generating 10,000 Megawatt of electricity from atomic power could be achieved by 2000 A.D.?

[English]

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE IN THE DEPARTMENTS OF OCEAN DEVELOPMENT, ATOMIC ENERGY, ELECTRONICS AND SPACE (SHRI K. R. NARAYANAN): I am glad that the hon. Member has again raised this question and I hope to give proper answer to the doubts he has in his mind.

I should, first of all, explain that RAPPI was not conceived as a commercial unit but as a prototype plant. If you look at the report of Mr. N. B. Prasad, the report itself says that it was thought of as a prototype and it should not be treated as a commercial unit. Why? Because this was one of the first plants of this technology established in the world. One was established in Canada. Simultaneously another plant of the same technology and same type was set up in Rajasthan. And some of the problems which arose in this plant were because the level of technology including materials, the kind of inspection, the kind of testing and fabrication which were available at that time, were not too advanced. In fact, right from the beginning, there was a problem with RAPPI and that is, what is called, dimensional tolerance in the end shield. This was treated through some sort of heat treatment. It was actually in this region that the leakage took place later. As you know,

the leakage was first chemically plugged and later on it was mechanically plugged. Then the crack took place at another place in the same region. I think, it goes to the credit of our atomic engineers that they were able to do this kind of repair often in service through remote control--- a technique which was not employed anywhere else in the world. Even though it is unfortunate that the plant did not function upto its full capacity and it had to be shut down for repairs, they have developed technique for dealing with this kind of problem.

The plant was derated to 100 MW. Because of this problem of crack occurring in the same region, they removed nine fuel bundles from that region so that the impact would not take place in that region. That is one of the technological reasons why the capacity has been reduced to 100 MW from 220 MW for which it was intended. It was expected that at this capacity it will run very successfully and smoothly. But naturally we have to observe the performance. And what we have to observe is whether such cracks will take place at other regions apart from this particular region where this heat treatment or rectification had been done at the beginning when the plant was established.

The hon. Member has asked whether the capacity could be raised. Our scientists have said that it is possible to raise the capacity to 140 MW with the same technology. But they do not want to take any risk. They would like to run it at this capacity and see whether any problem or any crack takes place. Since this is an atomic plant, we have to be exceedingly careful.

About the loss involved in this, of course, if the plant was in full stream it could have made profit. During the life of the plant the capital investment was Rs. 73 crores and it earned Rs. 100 crores from the sale of power. Therefore, it was not a dead loss in that sense. Certainly we lost in terms of interest rate which we could have got if the money was put in the bank or invested somewhere else. Within the last four months, it earned Rs.

7 crores when it had been working after the latest repairs. Apart from that, we have got very valuable technological experience, new type of experience in dealing with this kind of repair work in future for our atomic reactors, and, in fact, this experience has helped us in the construction and fabrication of other similar type of reactors because most of our reactors are of the same technology. Above all, it is giving some electricity to the Rajasthan grid. The two plants in Rajasthan plant contributes fifteen per cent of the electricity for Rajasthan State. The one which is not functioning fully is RAPPS I and even today it is contributing seven per cent of the electricity for the Rajasthan State. Therefore, we do not want to shut down this, we do not want to dismantle this because it is contributing something valuable. Even if you have money, you may not be able to get electricity and, therefore, to provide seven per cent of electricity to the Rajasthan grid is intrinsically an achievement. It is a question for the future whether it is going to be like this all the time or whether this reactor can be fully repaired and made to function at full capacity. Two committees have gone into it. The latest committee has reported, as a long-term solution to this problem, the changing of the end-shields. The technology for the making of end-shields has considerably improved since this plant was set up in the beginning. Using the same technology but improving it and correcting mistakes and using new materials, we have made end-shields for the RAPS-II, MAPPS-I & II and now for Narora. Therefore, if you change the end-shield, it should be possible to make the plant function fully. But we want to go into that after observing for a period of time the durability of the repairs which have already been conducted. If it is successful and if we can gradually raise the power load, may be we can save this money which would be about Rs 50 crores. The final solution really is putting new end-shield to this plant. This is the permanent solution. Therefore, if the present repairs that we have conducted fail, then we have this alternative of changing the end-shields by manufacturing them and installing them to this plant, and this would be really the long-term solution which is feasible accor-

[Shri K.R. Narayanan]

ding to the committees which have gone into that.

The hon. Member has mentioned about Rajasthan-II as to why it was shut down for seventy days. We were going to shut it down for the normal servicing and normal tending of the plant. About six to eight weeks is the normal period. Not only for atomic energy plants but even for thermal plants also such shut downs are necessary. It had also developed some problem with the pump and it would have taken about ten to twelve days for repairing it. Therefore, they utilised this outage for repairing the pump as well as for doing the annual servicing, and, therefore, it took another twelve days. That is why what should have probably taken 50 to 58 days, took 70 days. It was not because of any major defect. There was a very minor defect which was rectified and then period was utilised for the annual outage. Therefore, basically there is nothing wrong at all with the Rajasthan-II plant. In fact, it is working at 80 per cent capacity, as the hon. Member himself has mentioned. It is in good shape and there is no problem at all with Rajasthan-II plant at this time.

The hon. Member has mentioned about the new plant to be built at Ravatbhata. In Rajasthan, two more plants have been visualised and preliminary work is already going on; acquisition of sites, ordering of the basic equipments, all these are being done. With regard to the technology used it is not a collaboration technology. We are not collaborating with any other country in the construction of these plants. We are using our own technology and our own funds for erecting these plants. As regards number of years that might take in completing this plant because of standardisation particularly after Narora when various basic equipments have been standardised and our scientists and engineers have acquired more expertise during this period, we think that it will be possible to construct new nuclear plant within 8 or 8½ years. That is the latest position. I think these are the main questions raised by the hon. Member. He has also asked about the achievement of the target of

10,000 MW electricity generation that we have envisaged for our nuclear plants by the end of the century. We adhere to this schedule and we believe that by completing the new plants, a series of new plants and as a result of the newly established nuclear power corporation, which was established specifically for the purpose of fulfilling the target for 10,000 MW electricity generation, we hope and we believe that this projected target could be reached provided, of course, we can put sufficient funds into this effort. I want to assure the hon. Member that it would be a mistake to shut down RAPPSSI. It would be wiser to use it for some time at the reduced level of electricity generation so that Rajasthan has 7% of the electricity coming from the one single plant, and if it does not work, then we will try the long term solution, which has already been envisaged and worked out.

MR. DEPUTY SPEAKER : Mr. Harish Rawat—he is not here. Then Dr. Rajhans.

DR. G.S. RAJHANS (Jhanjharpur) : Sir, I shall be very brief. In fact, there is a very little to ask. The hon. Minister while referring to Canada said that identical equipments were used in Canada and India simultaneously. I think the Government is aware of the fact that more than 50% of power is generated in Canada through atomic energy power stations. In our country, why can't we do that? And if we have sufficient energy, the industrial pace of this country will change. Besides, it is mentioned in the reply that the power plant in Rajasthan is run for 162 days and the Government says it is quite satisfactory. I fail to understand how it could be quite satisfactory. Then in Canada, the power is very cheap. Why can't we have power at cheaper price instead of 38 paise per unit in India. Lastly, I have a small submission to make. For the last several years, the Central Government has been telling us that it would build up atomic power plant in Bihar. Sir, Bihar has a very rich deposit of uranium, which is the raw material for the generation of atomic power. Will the hon. Minister enlighten us when this atomic power plant be set up in Bihar?

DR. CHINTA MOHAN (Tirupati) : Sir, I congratulate the hon. Minister for taking various steps to increase nuclear power in our country. Here I do not want to go deep into the details, he has enlightened us with all the information that is available with him. Here, I would like to know how many nuclear power plants are there in our country, how much of nuclear power we are able to generate, how much is the expenditure involved, what is the basis of distribution of this nuclear power to various grids. Here, I would like to say that Andhra Pradesh is running short of power. Is there any possibility of giving nuclear power to Andhra Pradesh Electricity Board? Also, I would like to know one thing. Previously there was a proposal to start a nuclear power plant in Tirupati or Dharmapuri or Nagarjuna Sagar. Is there any such proposal in your mind?

SHRI MURLI DEORA (Bombay South) : Sir, the question is about Rajasthan. He is going to Andhra Pradesh.

(Interruptions)

MR. DEPUTY SPEAKER : Then I will ask him to go to Madras also.

SHRI MURLI DEORA : Thank God, you are in the Chair.

(Interruptions)

MR. DEPUTY SPEAKER : You are not satisfied because he has not mentioned Bombay.

DR. CHINTA MOHAN : Sir, we will be glad if you can start a nuclear power plant in Dharmapuri or Tirupati or Nagarjunasagar. I would like to know some information about this from the hon. Minister.

[Translation]

DR. CHANDRA SHEKHAR TRIPATHI (Khalilabad) : Mr. Deputy Speaker, Sir, the necessity and importance of electricity needs no emphasis. The entire development process is based on electricity and the techniques which the Government of India has adopted to

generate electricity from different sources are working satisfactorily. But I would like to ask a few questions from the hon. Minister about Rajasthan Atomic Power Station, which is the subject under discussion.

Firstly, a method called 'Fusion Process' has been developed in the world today for generation of electricity from Atomic Power at a cheap cost. By making use of this pollution free technology, electricity can be supplied to consumers at cheaper rates. Is the hon. Minister going to undertake modernisation Kalpakam, Narora and Rajasthan Atomic Power Stations in order to generate maximum electricity with minimum investment? Will such modernisation be effected in existing Atomic Power Stations?

Secondly, as stated by the hon. Minister, the second Unit of Rajasthan Atomic Power Station is working well and its capacity utilisation is as high as 75 per cent whereas the first Unit which was set up earlier is not generating even 20 per cent of its installed capacity. In this connection I would like to know from the hon. Minister as to after how many days of commissioning, the 'end shield' of the first unit had to be replaced? Was the first unit built below standard or obsolete and inferior quality machines and equipment were installed? If not, what are the reasons that of the two units one is working satisfactorily, while the other remains out of order most of the time? The second unit generates 4.5 lakh million units per day, but the hon. Minister has not stated in his reply as to how much is the generation in the first unit. In this connection, I would like to know from the hon. Minister as to how much generation is there in the first unit and how much is the cost of generation? At the sometime, I would like to know at what rate the electricity produced by the second unit at a cost of 38 paise per unit is being supplied to consumers by the State Electricity Board?

Besides, I would like to know the reason why the first unit is not working properly and what is the position of investment made therein? If this atomic reactor runs into severe losses, then you

[Dr. Chandra Shekhar Tripathi]

will levy taxes to improve its health. I want to have complete information on all these points from the hon. Minister.

With these words, I conclude.

18.00 hrs.

[English]

SHRI K. R. NARAYANAN : First of all, if I may talk about the extraneous issues about the power plants in other States which have been raised, I think, as you know, they do not come within the purview of the discussion. But I can only say that as regards future nuclear power plants, a site selection committee was appointed. That committee has made its report and that report is under the consideration of the Government and where exactly these plants will be located in future, whether Bihar, Andhra Pradesh or other States would be determined by the decision taken by the Government, which has not yet been taken.

With regard to Canada producing 50% of their electricity from nuclear plants, I think, it is a creditable thing and we are going to do 10% by 2,000 A.D. for India. Our very ambitious plan visualizes that by 2,000 A.D., 10,000 mega watt of electricity will be from nuclear sources. That would come to about 10% of total electricity produced in this country. Well, if we have the resources, there is no barrier to achieving this technologically, except availability of resources for this.

The hon. Member has mentioned why Rajasthan plant-II worked only for 162 days. This 162 days of uninterrupted running is an excellent record for any power plant, whether nuclear or thermal and, therefore, it is a creditable achievement.

The question of price also was raised. Atomic power is really cheaper than thermal power today, in many cases. The hon. Member, Shri V. C. Jain has mentioned that Rajasthan has to pay higher price for....

DR. CHINTA MOHAN : He has answered none of my questions. I asked, what is the expenditure involved, what is the basis of distribution of power. You are just evading it. What is the method of distribution. Is there any possibility of supplying nuclear power to Andhra Pradesh ?

SHRI K. R. NARAYANAN : I can give you the answer. It is not that I want to hide it. But it is not relevant to this discussion. I have got the figures here and I can give you. But I do not think it is relevant to the question as to in which State nuclear plants will be set up in future, how power would be distributed, whether Andhra Pradesh will get it etc. It is really a separate question. You please raise it separately.

Nuclear energy is really cheaper. 38 paise per unit is cheap. In fact, if the new Nuclear Power corporation want to make profits, it may probably increase the unit price, though not on par with other sources of energy. Though it is cheaper today it could be probably made cheaper in the future by further technological advances depending also, of course, on whether other things which go into the making of the nuclear plants will also become cheaper like steel and other materials. Therefore, one cannot predict anything at the moment about the future prices. But from the technology point of view, by sophistication and improvement of technology and standardisation particularly, we are establishing a trend towards cheaper nuclear electricity.

Shri Chandra Shekhar Tripathi has mentioned the same question whether atomic technology could not be made cheaper. I think, I will have to give the same answer.

DR. CHANDRA SHEKHAR TRIPATHI : I have specifically mentioned that a new system has been designed and developed overseas known as fusion process technique. By that, more electricity can be generated at cheaper cost. That was the question.

SHRI K. R. NARAYANAN : I know that in Europe, nuclear electricity has been made fairly cheaper than other sources. Now, whether we can adopt this particular process or not, I cannot say now. It is for our scientists and engineers. But there is no question of modernisation of technology in this Plant. Every plant which we are setting up is a more advanced plant, technologically. In fact, the great thing is that our own scientists and engineers have improved the technology almost year to year. We cannot depend on anybody else. Nobody else is prepared to give us this technology. Our own scientists and engineers have developed everything and new plants being set up are more modern than the earlier ones.

You are asking about fusion. As far as I know, the fusion technology has not been used anywhere so far. The whole world is doing research into fusion process. We also have at Indore a very sophisticated laboratory which is doing research and if we succeed, the world succeeds in getting the secret of electricity through fusion, then certainly the price will go down. Nobody in the world has succeeded so far. But we are working on this and probably we are on a par in research with other countries in this particular field.

The question has been asked whether RAPP has used below standard materials. As I explained earlier, it was not below standard according to the types of materials and technology and inspecting and fabrication techniques known to the world at that time, especially to Canada, because this was built with Canadian help and assistance. But one interesting thing is that Douglas Point Plant which Canada built at the same time, has been shut it down. But we have not shut down

RAPP-I. RAPP-I is still producing electricity of a considerable quantity, though not full capacity. This was because of the ingenuity of our engineers who could repair this defect and make it run. In Canada, they have shut it down and they have built other plants, nearby through improved technology of the same type. So, there is no question of sub-standard material or anything. There was some defect, as I pointed out, which was corrected. There is also a long-term solution for it which we will employ if necessary.

I think these are all the questions which have been asked and I do not want to take the time of the House any more. I am grateful to all the hon. Members who have made very valuable points.

There is no doubt that this is a problem reactor, because it was built as a prototype and as not a commercial unit but the important thing is that from this we learned new techniques and new technologies and built Rajasthan-II, MAPP-I, MAPP-II and Narora and we are going to build Kaiga and again Kakrapur and Rajasthan III and IV with improved technology. Rajasthan I was a kind of a Technological School, if I may say so, for all such developments. But it is more than a School today because it is generating electricity also.

MR. DEPUTY SPEAKER : The House stands adjourned to meet tomorrow at 11.00 A.M.

18.10 hrs.

The Lok Sabha then adjourned till Eleven of the Clock on Thursday, December 3, 1987/Agrahayana 12, 1909 (Saka).