

from the administration of the Union Territory and give the available information to him.

SHRI NIREN GHOSH : Sir, I seek your protection. I put a question regarding the compensation to be paid to them. I asked whether those who have been uprooted from their soil and those who have lost their property and other things have been paid compensation.

SHRI UMASHANKAR DIKSHIT : Sir, he is talking about compensation and other things. But this question does not talk about the uprooted villagers and other such things. This question relates to properties, houses, etc. belonging to the State Government and to the private parties which were under the occupation of the security forces and this question does not talk about the villagers being put together or of payment of compensation. That question does not really concern us and I need notice to get the information on the specific points raised.

SHRI BRAHMANANDA PANDA : Sir, I am on *i*. point of order.

MR. DEPUTY CHAIRMAN : What is the point of order ?

SHRI BRAHMANANDA PANDA : Sir, my friend said that some villagers in these areas have been displaced and he compared the place where they have been put together to the concentration camps...

SHRI NIREN GHOSH : Let him refute it... (Interruptions)... Let him refute it.

SHRI BRAHMANANDA PANDA : Sir, he has said that it is reported like that and he says that they have been kept in concentration camps as in South Vietnam and, Sir, he has not gone there. I would like the Home Minister to contradict it.

SHRI NIREN GHOSH : Let him refute it.

SHRI UMASHANKAR DIKSHIT : Sir, I would like to say a word. Sir, we have never heard of any concentration camp having been attempted up to this time. We never heard this either from the Members of Parliament or directly from the Mizoram Government any such complaints.

SHRI SHOWALESS SHILLA : Sir, already years have elapsed and the rent is yet to be finalised. The honourable Minister assured just now that it will be done as quickly as possible. Can the honourable Minister tell us how soon will that "as quickly as possible" be ?

SHRI UMASHANKAR DIKSHIT : Sir, I am sorry, I may not be able to give a specific date. But I do assure the House that we shall try and settle this matter at a very early date. We do realise that considerable time has elapsed through the usual red tape.

MR. DEPUTY CHAIRMAN : All right. Next question.

**परमाणु बिजली के उत्पादन की लागत**

\* 787. श्री कल्पनाथ :  
श्री जगदीश जोशी :  
श्री गुणानंद ठाकुर :  
श्री कमलनाथ झा :  
श्री नत्सी सिंह :

क्या परमाणु ऊर्जा मंत्री यह बताने की कृपा करेंगे कि :

(क) क्या परमाणु बिजली की उत्पादन लागत कोयले से उत्पन्न की जाने वाली तापीय बिजली की लागत से अधिक है ; और

(ख) यदि हां, तो परमाणु ऊर्जा के साथ हाइड्रोजन ऊर्जा के विकास और प्रयोग में क्या कठिनाइयाँ हैं ?

**::: | Production Cost of Atomic Power**

\*787. SHRI KALP NATH :

SHRI JAGDISH JOSHI : SHRI  
GUNANAND THAKUR : SHRI  
KAMAL NATH JHA : SHRI  
NATSHT SINGH :

Will the Minister of ATOMIC ENERGY be pleased to state :

†The question was actually asked on the floor of the House by Shri Kalp Nath. \$[ ] English translation.

(a) whether the production cost of atomic power is more than that of the thermal power ; and

(b) if so, what are the difficulties faced in developing and using Hydrogenic energy along with the atomic energy ?

THE MINISTER OF IRRIGATION AND POWER ASSISTING THE PRIME MINISTER IN PARLIAMENTARY WORK RELATING TO ATOMIC ENERGY (SHRI K.C. PANT) : (a) and (b) A statement is laid on the Table of the House.

#### Statement

(a) Atomic Power from atomic power stations located at places far removed from coalfields tends to be cheaper than the cost of thermal power. This fact has been brought out in detail in the Profile for Atomic Energy and Space Research for the Decade 1970-80, copies of which are available in the Parliament Library.

(b) The use of hydrogen as a fuel would have importance essentially as a means of storing and transporting energy. The development of hydrogen as fuel would assume importance when storage or transportation of energy from conventional sources becomes a problem. It will be necessary to examine the commercial viability of the proposition after studies are made for developing devices for burning hydrogen and conversion into hydrogenic energy. The use of hydrogen as a fuel is envisaged as a possible development among other things, when man's energy requirements would be met by solar energy. Once these parameters are established, power stations including atomic power stations could be operated at the rated capacity and the excess electricity could be used to produce hydrogen as a fuel.]

†[सिंचाई और विद्युत् मंत्री जो परमाणु ऊर्जा विभाग से सम्बन्धित संसदीय कार्य में प्रधान मंत्री की सहायता करते हैं (श्री के० सी० पन्त) : (क) और (ख) एक विवरण सदन के पटल पर प्रस्तुत है।

tl ] Hindi translation.

#### विवरण

(क) कोयले की खानों से ज्यादा दूर स्थित परमाणु विजली-घरों में पैदा हुई परमाणु विजली तापीय विजली से सस्ती पड़ती है। इस तथ्य पर, 1970-80 के दस वर्षों के परमाणु ऊर्जा एवं अन्तरिक्ष अनुसंधान सम्बन्धी रूपरेखा में; जिसकी प्रतियां सदन के पुस्तकालय में उपलब्ध हैं, विस्तार से प्रकाश डाला गया है।

(ख) हाइड्रोजन को ईंधन के रूप में प्रयोग में लाने का महत्व निश्चित रूप से तब होगा जब इसे ऊर्जा को संग्रहीत करने एवं एक स्थान से दूसरे स्थान पर ले जाने के माध्यम के रूप में प्रयुक्त किया जाये। जब परम्परागत स्रोतों से प्राप्त हुई ऊर्जा को संग्रहीत करना अथवा एक स्थान से दूसरे स्थान तक ले जाना एक समस्या का रूप धारण कर लेगा तब ईंधन के रूप में हाइड्रोजन का विकास करने का महत्व बढ़ जायेगा। हाइड्रोजन को जलाने तथा उसे हाइड्रोजन ऊर्जा में बदलने के तरीकों का विकास करने के बारे में अध्ययन किये जाने के बाद, इस परिकल्पना

की वाणिज्यिक उपयोगिता की जांच करना भी आवश्यक होगा। ऐसा सम्भव है कि जिस समय मनुष्य की ऊर्जा सम्बन्धी आवश्यकताओं की पूर्ति सौर्य ऊर्जा से की जाने लगेगी, उस समय अन्य चीजों के साथ-साथ, हाइड्रोजन को भी ईंधन के रूप में प्रयोग में लाया जायेगा। उपर्युक्त प्राप्ति के एक बार स्थिर हो जाने पर, ऐसा सम्भव हो सकेगा कि परमाणु बिजलीघरों सहित सभी बिजलीघरों को उनकी पूरी क्षमता के साथ चलाया जाये तथा उनसे मिलने वाली फालतू बिजली का प्रयोग हाइड्रोजन का उत्पादन ईंधन के रूप में करने के लिए किया जाये।]

SHRT KALP NATH : Sir, I would like to know what the actual relative cost of production of hydel and thermal power is, whether it is cheaper or costlier or, whether the Tarapur Power Station has been closed down and whether it is due to the wrong technical collaboration. I would also like to know whether these defects have been removed in the Rana Pratap Sagar Plant and the plant in U.P.

SHRI K. C. PANT : Sir, the Tarapur Power Station is not closed down and it is functioning. Both the units are functioning now and wherever defects have come to our notice, naturally, the attempt is, in subsequent plants, to see that those defects do not creep in.

So far as the relative costs are concerned, they depend on the particular location of the plant and on the costs at a given point of time. There are the capital cost, the operating cost and the plant factor. Now, generally speaking, (the capital cost per KW of installed capacity of nuclear power stations being built up today is higher than the capital cost of thermal power stations. But regarding fuelling the cost is a little lower. The plant factor is expected to be higher...

श्री जगदीश जोशी : क्या माननीय मंत्री जी यह बतलाने की कृपा करेंगे कि जो सवाल पूछा गया था उसका साफ उत्तर नहीं आया। सवाल यह था।

"If so, what are the difficulties faced in developing and using Hydrogenic energy along with the atomic energy."

यह जो हाइड्रोजन इनर्जी है उसको विकसित करने में या उसके टैकनीक को विकसित करने में हमारे सामने क्या अड़चनें हैं? माननीय मंत्री जी ने जो उत्तर दिया है उसमें उन्होंने यह कहा कि यह देखना होगा लेकिन मैं यह जानना चाहता हूँ कि इस समय इसको विकसित करने में क्या अड़चनें पड़ रही हैं और इसको विकसित क्यों नहीं किया जा रहा है?

श्री के० सी० पन्त : उपसभापति जी, अब जो देखना है, जो लिखा गया है, वह इसीलिए लिखा गया है कि इन सब चीजों पर गौर किये बिना इसमें प्रगति नहीं हो सकती है। कर्मशियल वाइविलिटी की बात लिखी है और भी इसमें मुद्दे लिखे हैं। जो मुख्य बात माननीय सदस्य को समझनी है वह यह है कि हाइड्रोजन इनर्जी कोई प्राइम सोर्स आफ इनर्जी नहीं है। जैसा कि कोयला और तेल है, इसको हम इस्तेमाल कर

सकते हैं—या न्यूक्लियर फ्यूज है—बिना इनर्जी के यूज किये। लेकिन हाइड्रोजन पैदा करने के लिए तो इनर्जी चाहिए और उसके बाद उसकी टैक्नीक को सुलझाने के लिए जो डिवाइसेज चाहिए उसमें काफी सौफिस्टिकेशन की जरूरत होती है। अगर सोलर इनर्जी का इस्तेमाल किया जाय या ऐसी इनर्जी का इस्तेमाल किया जाय जिसमें सरप्लस इनर्जी बचती हो, तो उसको इस्तेमाल करके हाइड्रोजन पैदा किया जा सकता है और इससे इलक्ट्रॉनिक सिस्टम को फायदा हो सकता है। इन सारी चीजों का अध्ययन करने के बाद ही किसी अंतिम फैसले पर पहुंच सकते हैं।

**श्री गुणानंद ठाकुर :** उपसभापति जी, यह जो एटोमिक प्लान्ट देश में लगाये गये है चाहे ट्राम्बे में हो, तारापुर में हो, राणाप्रताप सागर में हो, जहां कहीं भी हो, लेकिन यह देखने की बात है कि हिन्दुस्तान का जो सब से बड़ा आबादी वाला क्षेत्र है—नार्थ ईस्ट इंडिया—यानी हरियाणा और पंजाब से लेकर बिहार, बंगाल, यू० पी० और आसाम तक, कहीं भी कोई भी एटोमिक प्लान्ट नहीं बिठलाया गया है।

**एक माननीय सदस्य :** बुलन्दशहर में बन रहा है।

**श्री सुब्रमण्यम् स्वामी :** अगले चुनाव में चार और हो जायेंगे।

**श्री गुणानंद ठाकुर :** तो खासकर बिहार से तो इस बारे में मांग आई है और बिहार सरकार ने और वहां की विधान सभा ने सर्वसम्मति से एक प्रस्ताव पास करके केन्द्रीय सरकार के

पास भेजा है कि वहां पर एक एटोमिक प्लान्ट बिठलाया जाय। तो ऐसी स्थिति में जब कि बिहार और बंगाल में जहां कि कोयले की बहुतायत है, तो इस तेल के संकट को दूर करने के लिए वहां पर थर्मल प्लान्ट या एटोमिक प्लान्ट की बहुत आवश्यकता है। तो ऐसी परिस्थिति में हम आप से यह मांग करेंगे कि नार्थ ईस्ट इंडिया में और विशेषकर बिहार में आप क्या एटोमिक प्लान्ट लगाने की बात सोच रहे हैं?

**श्री के० सी० पन्त :** उपसभापति जी, सवाल पूछते समय माननीय सदस्य स्वयं ही इस नतीजा पर पहुंच गये है कि जहां पर कोयले की बहुतायत है वहां पर थर्मल स्टेशन विकसित हो सकते हैं। इस तरह से वह जो इस नतीजे पर पहुंचे है, वह नही नतीजे पर पहुंचे हैं।

**श्री नत्थी सिंह :** श्रीमन्, मंत्री जी ने कहा कि परम्परागत स्रोतों से प्राप्त हुई ऊर्जा को संग्रहीत करने अथवा एक स्थान से दूसरे स्थान तक ले जाने में अभी तक समस्या का रूप धारण नहीं किया है और इसलिए हाइड्रोजन को जलाने तथा उसे ऊर्जा में बदलने के तरीके का अभी तक विस्तृत अध्ययन नहीं कराया गया है। क्या आप इसका समस्या का रूप धारण करने से पहले विस्तृत अध्ययन कराने की आवश्यकता समझते हैं?

**श्री के० सी० पन्त :** अध्ययन तो हम कर रहे हैं। जिन देशों में इस पर विशेष ध्यान दिया जा रहा है, विशेषकर अमरीका में इस बात का अध्ययन किया जा रहा है, कि जहां गैस पाइप लाइन

के जरिए दूर ले जाते हैं, गैस की जगह हाइड्रोजन ले जायें। जैसा मैंने कहा, यह प्राइमरी सोर्स आफ इनर्जी नहीं है। अभी तो हमारे पास कोयला है, हाइड्रो-इलेक्ट्रिक इनर्जी का हमने पूरा इस्तेमाल भी नहीं किया है, नार्थ-ईस्ट इंडिया में तेल है, गुजरात में तेल है उसके बाद नान-ट्रेडीशनल सोर्सज में यह भी है, उसमें सोलर इनर्जी भी है, उसमें विन्ड है, उसमें जियो-थर्मल इनर्जी भी है। इन सारे सोर्सज आफ इनर्जी के साथ हाइड्रोजन का पोटेंशियल भी है लेकिन वह अभी भविष्य में है। उसका अध्ययन सारी दुनिया में हो रहा है।

SHRI SUBRAMANIAN SWAMY : Sir, I would like first to raise a point of order.

MR. DEPUTY CHAIRMAN : No, first you put a question; there is no point of order.

SHRI SUBRAMANIAN SWAMY : The question is if I am not able to comprehend the English statement and the Hindi statement, what shall I do? Do I first seek a clarification or ask a question? For example, in the second line, the answer says "tends to be cheaper". What does the word "tends" mean? I am not able to comprehend.

MR. DEPUTY CHAIRMAN : "tends to be" is very clear.

SHRI SUBRAMANIAN SWAMY : So I will ask my question. I would like to know from the Minister is it not a fact that according to Dr. Bhabha, by 1975-76 India should have 3,000 megawatts of electric power to make it economical? And then Dr. Sarabhai's profile for atomic energy—which was more Sarabhai's profile than Atomic energy's profile—reduced it to 1,000 megawatts by 1975-76. Now, according to Atomic Energy's programme, only at the end of the Fifth Plan, that is, 1978-79, this 1,000 megawatt estimate is likely to be achieved. Is it not

a fact that there has been a gradual scaling down of the capacity for electric power generation using nuclear energy in the last 10 years since Dr. Bhabha's death?

SHRI K. C. PANT : I seek your protection, Sir. The question is whether the production cost of atomic power is more than that of the thermal power, and if so, what are the difficulties faced in developing and using Hydro-genic energy along with the atomic energy. How does it arise from that?

SHRI SUBRAMANIAN SWAMY : To make the production cost economical, Dr. Bhabha said that India must have 3,000 megawatts by 1975-76. Now this scale is being considerably reduced. The Minister does not know that scale of production and the cost of production are intimately related. Is it possible to...

MR. DEPUTY CHAIRMAN : He wants notice for it.

SHRI SUBRAMANIAN SWAMY : I would like to have your ruling, Sir, about it.

MR. DEPUTY CHAIRMAN : There is no question of ruling. Yes, Dr. Chakrabarti.

SHRI SUBRAMANIAN SWAMY : The scale of production and cost of production are intimately connected.

SHRI A. G. KULKARNI : Even a small child knows it.

DR. R. K. CHAKRABARTI : Sir, in part (a) of the statement, it says: "Atomic Power from atomic power stations located at places far removed from coalfields tends to be cheaper than the cost of thermal power." May I know from the hon. Minister whether it is not a fact that the A.E.C. about a few years ago suggested that if the nuclear power station is located 700 kilometers beyond the centre of coalfield, then only it can become viable? But in recent years, they have come down from 700 KM to 500 KM. May I know from the hon. Minister what has made them to change their mind and also in view of the fact that the coal prices are increasing day by day and according to our calculations we are definite and we are very sure that any nuclear plant

will be viable if it is situated just beyond 300 KM and not 500 KM, what are the reasons and why have they come down from 700 KM to 500 KM ? In view of the coal price rise, will the hon. Minister think that 300 KM is a reasonable limit beyond which any nuclear plant may be established ?

SHRI K. C. PANT : Sir, earlier it was 800 and not 700 KMs. And it is true that in answer to a recent question, I said that this would now be a breakeven radius of 500 KMs. And the main reason for that is the increased cost of fuel and transport taken. But the capital costs are of 1972. Therefore, there was a difference. And, probably, if all these capital costs are taken into consideration, it will be for slightly above 500 KMs. But, if the freight costs go up and the fuel prices go up, naturally, the thermal plant costs will go up. The nuclear fuel involved costs lower in operational costs than in the thermal plant. And the other technological factors have to be taken into account. The nuclear equipment prices are going up adding to their costs. Talking of the distance of about 300 KMs, at a site about 300 KMs from the coal-field, the cost of thermal power is about 11-8 paise per k.w.h. while the nuclear power is 14-7 paise per k.w.h. according to a recent study. It is fortunate that I happened to have got the exact figure that the hon. Member wanted.

SHRI KRISHAN KANT : May I know from the Minister on the basis of what he has said whether the Government will take a policy decision that the nuclear power plant should always be away from the coalfields so that other parts of India, being neglected so far will gain ? May I know in this respect as to what is the progress of the Narora power plant is ? I think Mr. Subramanian Swamy is suffering from a mania. Does he not agree with this that the whole method of elections and people's participation in this is very much required and the pressures have to be built up for developmental activities in different parts of the country? And if any action is taken to set up plants for meeting wishing of the electorate, there is nothing wrong about it. So, it is only a reflection of the diseased mind. Sir, may I know from

the hon. Minister whether he will say that in the Fifth Plan, no cuts will be made in spite of the difficult financial situation in the country as far as power production by atomic energy is concerned ?

SHRI SUBRAMANIAN SWAMY : Sir, on a point of personal explanation. I did not disapprove of setting up of atomic power plants during elections. I have said, only during elections does the Government set up atomic energy plants and so, before there has been another election, another plant will be set up.

SHRI K. C. PANT : Sir, I have said earlier that it is an important consideration which has come in the way of setting up a nuclear power station in the coal-belt is the fact that there are other regions in the country where coal has to be transported over a long distance. One does not rule out this possibility for the future. But all factors will have to be taken into account. And this is certainly a very important factor.

So far as financial allocation for different sectors is concerned, it will certainly be our attempt to see that the atomic energy programme goes through without suffering any cut. But since the same attempt is being made by other Departments also, the outcome is in the hands of the Planning Commission.

DR. K. MATHEW KURIAN : Sir, I would like to know from the Minister whether it is a fact that many scientists and technologists working in the atomic power plants have complained that our collaborators, mainly the United States of America and Canada, have supplied sub-standard material to us and as a result, we had cracks in Tarapur and various types of technical and other problems leading to higher cost. Is it a fact that the so-called collaborators from the USA and Canada have been cheating this country in terms of collaboration agreements and that we have landed up in serious technical and other problems leading to higher costs. I would also like to know whether it is true that Indian engineers have also made this complaint and that Indian engineers are terribly unsatisfied with the performance of the collaboration agreements.

SHRI K. C. PANT : Sir, the cost of generation of power from Tarapur comes to about 5-1 paise per unit. And against that, it would be about 9-2 paise in Rajasthan and Madras and it will be above 12 paise in Narora. So, this is cheap; than the others. For this simple reason, that is also an earlier station. Now this plant functioning for some time and according to comparisons made by technical people this compares with the plants of the same kind which are being worked elsewhere. It is working more or less in the same manner. Difficulties are encountered and some design defects have also been encountered but the foreign collaborators have been always willing to help in removing those defects. So, there is no question of expressions like 'cheating' and so on. As a matter of fact, there has been co-operation. . .

DR. K. MATHEW KURIAN : Is it true that the Indian scientists have suggested differently, that they have expressed dissatisfaction over these collaborators...

MR. DEPUTY CHAIRMAN : Mr. Kurian, let him complete. He is still on his legs.

SHRI K. C. PANT : I have said, sometimes certain design aspects have been discussed, we have made some changes also and there are differences. Many technical people have honest differences...

(Interruption!;)

MR. DEPUTY CHAIRMAN : Dr. Kurian, he is answering your question.

SHRI K. C. PANT : I have, answered the question. There is no question of cheating. There is collaboration and wherever there are engineering faults there is further collaboration to remove those faults.

#### **Promotion of Scheduled Castes/Tribes personnel as Section Officers**

\*788. SHRI MAHAPATRO :

SHRI N. H. KUMBHARE :

†The question was actually asked in the floor of the House by Shri N. H. Kumbhare.

Will the PRIME MINISTER be pleased to state :

(a) whether the Secretariat Service (Third Amendment) Rule, 1972, has stipulated the condition of 22 years' continuous service in the grade of Assistant for promotion as Section Officer :

(b) if so, whether this provision has deprived the Scheduled Castes and Scheduled Tribes personnel of having their reserve quota of vacancies filled from amongst them; and

(c) whether Government propose to relax the condition to facilitate the deserving candidates to fill up all the reserved vacancies?

THE MINISTER OF STATE IN THE MINISTRY OF HOME AFFAIRS AND THE DEPARTMENT OF PERSONNEL (SHRI RAM NIWAS MIRDHA) : (a) Yes, Sir. A special quota of 33 1/3% has been provided in the promotion vacancies in the Section Officers' grade for those officials who have put in more than 22 years' service in the Assistants' grade but who could not get promotion earlier because of re-organization of the Central Secretariat Service and the rules of seniority adopted.

(b) Promotions of Assistants with not less than 22 years of service to the Grade of Section Officer are being made on the basis of merit against the quota, earmarked for this category since 1970. Reservations for Scheduled Caste/Scheduled Tribe candidates were introduced in such promotions only from 20th July, 1974, as per general orders issued by Government. All the Scheduled Caste/Scheduled Tribe candidates who satisfy the eligibility conditions and are within the field of consideration will be duly considered in these promotions also against the quota reserved for them.

(c) Does not arise.

SHRI N. H. KUMBHARE : Sir, it has been our impression that the right of the Scheduled Castes and Scheduled Tribes in the Services is denied to them by some device or other. Now, here my first question would be: What is the rationale in fixing such a long period of 22 years before an Assistant