

Minister in this country and putting the reins in the hands of the youths as far as our nation is concerned. So, we have begun well and I am sure we will formulate schemes for this year in such a way that youths will be encouraged in different walks of life and that they will be able to participate in all the national activities of progress and development.

With these words, I support this Motion of Thanks.

15.59 hrs.

DISCUSSION ON THE STATEMENT  
RE : TRAGIC LOSS OF HUMAN  
AND ANIMAL LIFE AT BHOPAL  
AS A RESULT OF LEAKAGE OF  
POISONOUS GAS FROM STORAGE  
TANKS OF THE UNION CARBIDE  
FACTORY THERE

[English]

PROF. MADHU DANDAVATE (Rajapur) : Mr. Chairman, I rise to initiate discussion under Rule 193 on the grim tragedy at Bhopal in which due to the impact of poisonous gas that was leaked out hundreds and hundreds of citizens died and more than that a number of citizens were crippled for all their life-time. Sir, when I learnt for the first time of the tragedy at Bhopal, where it was known that forty tonnes of deadly methyl isocyanate had actually leaked out and a large number of people died, permit me to say, that on a miniature scale it appeared to me the re-enactment of the experiment in Hiroshima and Nagasaki, when the atom bombs were dropped on these Island and a large number of people died and a number of them crippled.

16. hrs.

Sir, while we discuss this grim tragedy, I would like various aspects of this particular problem like the safety aspect, the technological aspects, the licensing policy regarding allowing such plants to be located in particular regions and areas and also the safety hazards and also the procedures to be followed by

certain institutions like the Director of Industrial Safety to be deeply gone into so that we can arrive at a correct assessment of the situation.

With all my respect for the hon. Minister for Petroleum and Chemicals I must say candidly that the statement that he has placed before the House is a scanty, cursory statement which gives no assessment of the entire colossal problem. It makes no reference to the hazards that were created, it makes no reference to the technological problems and difficulties that were encountered and above all, it does not make any reference to the bureaucratic bungling at every stage as far as this grim tragedy is concerned, and therefore, it will be my purpose to analyse all these aspects and put forward my analysis before the House, through you of course, Sir, so that the Minister while intervening in the debate or while replying to debate, will be able to bring out Government's analysis of the problems that I am posing before the House.

I would like to ask certain questions regarding the manner in which the tragedy at Bhopal occurred. On the fateful night of 2nd December 1984, spilling over into the next year, we found that there were certain leakages of poisonous gas. Originally it was estimated that more 3000 people died. The estimate may differ, but that shows the colossal tragedy that has been enacted. I would like to know from the hon. Minister what are the scientific reasons for this colossal tragedy, what were the technological inadequacies and what were the inadequacies of safety operations, and in the light of that he will have to re-analyse the problem and assess the situation.

Methyl isocyanate stored in liquid form under high pressure actually requires and actually maintains high pressure. It can get converted into gas at a temperature of 39.1°C. On that winter night, I do not think the temperature of the system was more than 12-14°C. If liquid is to be converted into gas, the temperature has to be raised to 39.1°C and it is my contention, unless the Minister denies with his explanation, that due to the internal constraints in the system the amount of heat that was developed was considerably high.

For instance, it is reliably learnt that as far as the entire system is concerned, due to certain technological failures water was allowed to leak into the system. Water reacted with MIC, i.e., Methyl Isocyanate, and as a result of this chemical reaction between these two entities, exothermic changes took place and the entire temperature of the system rose from 12 to 14°C to 100°C. 100°C would mean the boiling point of water and at that high temperature at 100°C pressure rose, considerable amount of heat was developed and as a result of that the entire bursting of the system took place and that resulted in a tragedy. That was enough to burst the safety valve connecting the tank and the chemical scrubber. Sir, I would like to raise certain technological questions and I am raising those questions not merely to deal with the problems of Bhopal but in order that any future tragedy, the Bhopal type, should be avoided and prevented. I am deliberately raising those questions. I would like to know from the hon. Minister, why it is that the gas was not neutralised by the chemical scrubber or was not burnt in the flare tower before being released causing grave damage to human life. Probably if the gas had been properly utilised for certain purpose or allowed to be neutralised by the chemical scrubber or burnt in the flare tower, the entire tragedy could have been avoided.

What is the reason why this particular precaution could not be taken up? Sir, I have with me a chart and diagram of the entire system and I find that the flare tower could not be used because the length of the pipe was corroded and that could not be replaced at all. Since the pipe was corroded completely, it could not work adequately and it was not properly replaced in time and as a result in the flare tower, you will find that this particular neutralisation did not take place.

16.06 hrs.

[Shrimati Basavarajewari *in the Chair*]

This is one of the inferences that a number of research scientists have drawn and I would like to know whether that

inference is correct. How is it that the personnel operating the plant did not expect the rise in the temperature? Anyone who is conversant with the simple knowledge of chemistry and who is conversant with the technological operations in this particular system should be able to know that if water is allowed to leak into the system and is allowed to mix up with the liquid MIC, it is very possible that the exothermic changes would take place, tremendous heat would be developed and under the stresses and strains of the increased, enhanced pressures and temperature, the entire system would collapse. Why was this not taken note of? Was the plant showing signs of fatigue and was it overlooked?

There is, Madam Chairman, an institution which has to take note of safety operations. For every State, if I mistake not, there is a Directorate of Industrial Safety. I am not sure whether at the Central level also, there is an organisation called the Directorate of Industrial Safety. But I definitely remember that at the State level, such organisation does exist and one of the responsibilities entrusted to the Directorate of Industrial Safety is, periodically they have to undertake inspection of these systems. They have to investigate the technology and try to find out whether there are any aberrations or whether there are any lacunae that are left out, whether there are any factors which are responsible for the lack of safety to the entire system under certain stresses and strains. Was that done or not?

While the trouble in the plant started at 10.30 p.m., I would like to know from the Minister whether it is a fact that the siren signal was not given till 2.15 a.m., the next day. Some papers have reported that the first signal was given at 1 a.m. Some of the persons who visited that plant said, after talking to the citizens affected, that the signal was given only at 2.15 a.m. Madam Chairman, here, I would like to point out to you that as far as this siren is concerned, there are two systems of sirens. One siren is that which goes in a continuous manner. That is supposed to be the siren giving warning about any accident

to the surrounding population in that particular area. And the second siren which is on the public address system internally, is only meant for the internal staff that is employed in that particular plant. I am told—and I have gone through a number of documents and I have gone through a number of press reports—which clearly indicate—that in the beginning, the general siren was given for the entire city and the environmental region. Then, it stopped and then the public address system actually given a siren only for the employees of that particular plant and no further signals or warnings were given so far as the citizens were concerned. This was a gross failure.

About the impact of gas, it reveals certain aspects in regard to which I would like to know in detail from the hon. Minister. Those of you who know the location of Bhopal know that there is an Upper Lake in Bhopal. Fortunately, that acted as a shield to protect, to some extent, the residents of New Bhopal city from the exposure to the lethal gas. Thanks to nature's beauty and surroundings because of this lake, it acted as a shield to protect a large population in that particular area of New Bhopal.

I would also like to know from the hon. Minister whether it is a fact that some of the research scientists after visiting the site of the accident had actually discovered, by inspecting the vegetation and trees in the vicinity of that plant, near the Carbide plant, that the leaves of the trees were affected and there was a change of colour. I would like to make a particular reference to an inference drawn by Prof. Dave, Dean of the School of Environmental Science, J.N.U., who has concluded that the change in colour for the vegetation is due to phosgene and not MIC. I would like to know from the hon. Minister what are the facts and whether any scientific investigations and researches have been conducted in this regard. It is not only the question of tragedy of Bhopal but we want to prevent such tragedies in the future also. Therefore, that particular aspect has got to be looked into.

I would also like to know from the hon. Minister what has been the long-term impact and influence on the surrounding

situation, whether the environmental effects are going to last for a long time and permanently leave certain sections of the population completely crippled.

I would also like to make, very briefly, a reference to the lapses on the part of the Government and lapses on the part of the management. When I refer to these lapses, I do not refer to the lapses in a spirit of fault-finding. If I refer to the bunglings and failures both of the management and also of the Government, I am only pointing them out to the House so that future tragedies can be avoided. The Union Government had completely concurred with the Task Force advice that this poisonous gas being extremely hazardous should not be stored but immediately utilised. Why was there a failure to do this? The Task Force had no illusions about this aspect and the Task Force set up by the Government had clearly stated that this poisonous gas should be fully utilised and in case there was an outlet, it should be neutralised. Why is it that this particular safety aspect was not kept in mind?

Unlike the practice in USA where also there is a Union Carbide plant and they have taken the precautions to see that the tank where the liquid gas and the final gas manufactured is kept completely underground in order to minimise the damage that can be done, I want to point out to you that, unfortunately, in the case of Bhopal plant a considerable portion of the tank was above ground. That was one of the reasons why this tremendous damage was done to the environment and to the citizens who had inhabited the surrounding localities of the plant.

THE MINISTER OF CHEMICALS AND FERTILIZERS AND INDUSTRY AND COMPANY AFFAIRS (SHRI VEERENRA PATIL): Sir, if the hon. Member yields, I would like to submit one thing because that will facilitate the discussion also.

The hon. Member is trying to give reasons, according to information that he got from the press and through the scientists, for the causes of this tragedy and leakage of the MIC gas. But I may submit

that all these matters that he has mentioned just now - are being inquired into by the Commission of Inquiry appointed by the State Government. One of the terms of reference is :

"The events and circumstances leading to the accident which occurred on the intervening night of 2nd and 3rd December in the pesticide plant of Union Carbide including the causes leading to the leakage of poisonous toxic gases and the large number of deaths and illness of residents of the surrounding area and the citizens of Bhopal."

"The adequacy or otherwise of safety measures and their proper implementation including the issue of negligence or culpability of the authorities of the factory and/or of the inspecting agencies, whether statutory or otherwise.....Recommendations in regard to measures for prevention of similar accidents in industries of this nature..."

The Government of Madhya Pradesh has recently appointed two technical experts to aid this Commission of Inquiry. This Commission of Inquiry is going into the issues of gas leakage, whether the MIC was stored properly or not and whether the tank was properly located or not.

When this matter is before the Commission of Inquiry and is *sub-judice*, I do not know whether any purpose would be served by discussing the details here.

**PROF. MADHU DANDAVATE :** I am rather surprised that this issue is raised at this particular point of time. To be frank with you, I have in fact expected that somebody would rise on a point of order and would say that since the Inquiry Commission is appointed according to the statement that has been made by the hon. Minister, at least the hon. Minister can concede to me this much.

I have carefully gone through every letter and comma of the statement made by the hon. Minister. I know this statement.

I am quoting the precedent in the past. You are coming to this House for the first time and, therefore, I would like to remind you of the precedents in the past in the House. You have also the precedents in your House over which you presided and you may confirm that on a number of occasions, even on matters in which Inquiry Commissions had been appointed, they have discussed in the past such matters. The only ruling of the Speaker was that without casting any aspersions on the Inquiry Commission, you can discuss and debate the problem in this House. The hon. Speaker even said once that even the information that is given on the floor of the House by hon. Members can be some source of information to the Commission of Inquiry. Therefore, discussion on this matter cannot be barred even if the Inquiry Commission has been appointed. I know full well that you have referred to the Inquiry Commission. That is why I am carefully dealing with the matter without casting any aspersions on the Inquiry Commission. I only want to contribute my own share because due to our parliamentary activities, we have no time to appear before the Commission. Therefore, I am also talking to the Inquiry Commission through you and through the hon. Minister. That is why I am trying to place before the House whatever information I have. I agree with the hon. Minister that without prejudice to the findings of the Commission, the Government has got the full authority to share the information that it has with the House. I am not violating the Rules of Procedure in any way. Nor do I allege that the hon. Minister would be violating the Rules of Procedure while replying. Therefore, let me continue my submission.

**MR. CHAIRMAN :** Please do not make aspersions on the Inquiry. You can continue. The hon. Minister has already referred to the terms of reference of the Inquiry Commission. The terms of reference include the safety measures and other things. You have given lot of information on these matters. Therefore, you can try to conclude as early as possible.

**PROF. MADHU DANDAVATE :** I anticipated your comments. I accept your

advice not to cast aspersions. I have not so far cast any aspersions. I would not cast aspersions against anybody, not even the Union Carbide. That has never been the style of my functioning in the House.

MR. CHAIRMAN : If you out short discussion, it would be more helpful.

PROF. MADHU DANDAVATE : I will be extremely brief. Only my length of brevity will be slightly long !

MR. CHAIRMAN : I hope you will be always brief.

PROF. MADHU DANDAVATE : Is it a fact that the maintenance of gas tanks, pressure gauges and safety valves was all unsatisfactory ? I would like to know this. If the matter is *sub judice*, the hon. Minister can go through the proceedings of the Lok Sabha for the last 15 years. These questions relating the problems which are pending before the Inquiry Commission have been asked in this House. If you would like to share the information with the House, you can share it. Otherwise, since the entire matter is pending, you can give your reply in one sentence.

MR. CHAIRMAN : All these things have been covered by the Inquiry Commission. Therefore, it is a matter of repetition.

PROF. MADHU DANDAVATE : The Speaker of this House in his wisdom and knowing full well that a Commission of Inquiry has been appointed has given the ruling to have this discussion under Rule 193. I hope the objection that the hon. Minister has raised here was anticipated already by the Speaker, I actually concede to him a lot of Parliamentary knowledge about the procedure and functioning of Commissions and since he in his wisdom has allowed this discussion, I may be allowed to make my submission. Of course, I will try to be very brief.

SHRI VEERENDRA PATIL : I did not object to the discussion. What I have submitted is that a Commission of Inquiry has been appointed precisely to go into

these matters, why this tragedy has occurred, how the MIC evaporated into the atmosphere, what was the defect, whether adequate safety measures were undertaken by the undertaking or not; all these matters are covered under the terms of reference, and the Commission is going into all these matters. They are being assisted by technicians, by scientists, and we are expecting a report from the Commission within the next two or three months. If you want to discuss all these things, if you want to impart your knowledge, I have absolutely no objection. You are at liberty to do.

PROF. MADHU DANDAVATE : I have no desire to exhibit my knowledge. I have come here as a people's representative to safeguard their rights and the situation in different parts of the country. Of course, I can go to a University and exhibit my knowledge. This is not the forum for it. I have neither the desire nor the arrogance to do it here. In fact, I am a very humble man who is not very knowledgeable. I am only trying to put forward whatever knowledge I have acquired by talking to various scientists.

MR. CHAIRMAN : The Minister only wanted to tell you that all these things have already been included in the terms of reference of the Inquiry Commission. Please continue and try to finish as early as possible.

PROF. MADHU DANDAVATE : I will continue. Unnecessarily, extraneous issues should not be brought in. If the hon. Minister's contention is correct, then, I think, the Speaker was wrong in allowing the discussion to take place. The Speaker knows that an Inquiry Commission has been appointed, and in spite of that he assured us in the Business Advisory Committee and also repeated that assurance on the floor of the House that he was allowing a full-fledged discussion. You check up the proceedings of the Lok Sabha. He has said that there would be a full-fledged discussion on the Bhopal tragedy. Therefore, I will continue.

SHRI VEERENDRA PATIL : You can go ahead. I have absolutely no objection.

PROF. MADHU DANDAVATE : The poisonous gas was allowed to escape. But let us not allow the discussion to escape consideration of the House. That is all I want to say.

I would like to point out to the hon. Minister that, even when he appears before the Commission or sends his officers to the Commission, I think, some of the points which we raise here might help him. That is why I am raising these questions here. Otherwise, I could have written an article on this.

One of the questions is that the pressure was raised tremendously. As far as the temperature is concerned, it went up to 100°C, and as far as pressure is concerned, that is, pound per square inch, it was developed to the extent of 55 pounds p.s.i. If that was the pressure developed, I would like to tell the House that the sudden increase in pressure and temperature could not have been without the knowledge of some of the technicians involved in that particular plant. Therefore, this question should be discussed with the technologists and also with the technical staff involved there : how is it that, when the temperature rose from 12°—14° to 100°C and when certain technological changes were taking place in the system, it never came to their knowledge, how is it that they did not anticipate these ? This aspect also has to be gone into.

One of the recommendations of the Task Force which was appointed by the Government was to ensure that the refrigeration system worked very well. How did this tragedy occur ? Because the temperature went up from 12°—14°C to 100°C. There is a built-in device in the system to prevent this rise in temperature; there is, therefore, the refrigeration system. Unfortunately, when the tragedy occurred, the refrigeration system was out of order, it was completely shut down, it was not commissioned. If only the refrigeration system had operated effectively, in that case the temperature would not have been allowed to rise, the pressure would not have been allowed to rise, the gas leakage would not have taken place, and the entire tragedy could have been averted. When small

leakages started in the entire system, they should have known ? Any competent technologist can take cognizance of the fact even when a very small amount of leakage takes place. There are gauges, very sensitive gauges. I have been a student of Science and Technology and I can assure you that whenever any leakage of gas takes place in a very big way, at the beginning itself gauges are able to record the leakage. Even a small leakage that has taken place ought to have been noted. I do not know why it was not done.

Now, I come to a very relevant aspect. Here you need not to refer to any Commission, here you need not refer to any evidence. It is a question that I am posing to the Government and for that an Inquiry Commission is not relevant. The task force appointed by the Government had already recommended to them where should be the location of this particular plant and their recommendations were two-fold. The task force had told the government that such a plant had safety hazards, leakage hazards and a lot of potential damage to the environment and it was necessary that either the location of such a plant as at Bhopal should be off-shore Island or in the alternative it should be on the sea-shore which is the least inhabited by human beings. These were the two aspects that were recommended. In spite of that I would like to know from the hon. Minister why in 1975 a clear licence and clearance were given to this plant. As far as the aspect of licence is concerned, it has nothing to do with the investigations. It has only to do something with the Government and therefore whatever the information is available, the hon. Minister should tell the House why in spite of the clear recommendations of the task force, the licence was issued to them.

Finally, I would like to pose certain questions to the Government. We do not depend on the Inquiry Commission as a necessary requirement. Why is it that even prior to the appointment of the Commission, Government on its own—with its own Department in cooperation with the representatives of the management did not arrive at an independent assessment of the entire situation, of the technological deficiencies, chemical changes that

have taken place and also the destruction that was caused? Why is it that no analysis of the causes was already formulated by the Government before even the appointment of the Inquiry Commission? Why is it that no correct estimate of the likely damage to the environment could be assessed? As far as this aspect is concerned, it is not to be referred to the Inquiry Commission. It has its own team of scientists, it has its own team of scientific experts and in collaboration with such a team of experts they could have worked out the estimates as to what is likely to be the damage of the effect on the environment. This has nothing to do with the Commission.

Thirdly, in all the statements that had been made so far by the Government and the statement that is made by the hon. Minister in this House, there is no indication of the future policy that will be pursued regarding the location of such hazardous project and also the licensing policy, the technological aspect, the scope and jurisdiction of the Directorate of Public Safety, Industrial Safety so that such hazardous condition can be avoided.

In the end, I may assure the hon. Minister that as far as this tragedy is concerned, we do not treat the tragedy as one of which we can take the political advantage because of the grim realities of the situation. We are only concerned with the representatives of the people that one miniature of Hiroshima and Nagasaki has been enacted in Bhopal. We do not want Bhopal to be re-enacted in different parts of the country. Therefore, I would request the hon. Minister that if he feels that certain aspects will embarrass his position vis-a-vis the Inquiry Commission, he may choose to be silent. But as far as other aspects are concerned, some of the aspects of licensing policy, some of the aspects of future technological developments are concerned, some of the aspects about the restrictions that you have placed on the multinationals whom you have allowed in this country are concerned, I would like to know whether you will impose certain policy and guidelines for the future so that there is no tragedy as had happened in Bhopal. I hope the hon.

Minister will give an assurance on these aspects that have been raised by me during the discussion. Thank you.

SHRI EDUARDO FALEIRO (Mormugao) : Mr. Chairman, one cannot minimise or qualify in any manner the tremendous proportions, the ghastly proportions of the Bhopal tragedy. It has been the greatest, the most enormous, the most horrifying industrial disaster anywhere any time in the history of the world. Without going into the details of what happened and without transgressing the jurisdiction of the Commission of Inquiry.....

PROF. MADHU DANDAVATE : With your permission, I would take one minute to pose a few questions to the hon. Minister. I hope, my friend, Shri. Faleiro also would not mind.

MR. CHAIRMAN : All right.

PROF. MADHU DANDAVATE : Madam, I would like to point out to the hon. Minister that there are complaints that the medical records of the victims, the various injuries that were caused, were not maintained, and as a result, doctors were not able to get full information. This is the complaint of many doctors. Then, the medical treatment was not adequate. The research activity has also not been adequately stepped up.

Then, I would give one concrete instance about the financial assistance. The victims who had lost everything and were injured had no means of income. You will be surprised to know that the financial assistance that was given to some of the affected people was in the form of crossed cheques. They say : "What can we do with the crossed cheques, because we do not have any bank account." Then, food-grains assistance was given to the extent of 12 kg. per unit. They had no money, so the assistance was given in terms of wheat. With this wheat, when they went to the grinding mill, the owner of the grinding mill asked for grinding charges, and those affected persons said : "We have lost everything and, therefore, we cannot pay you

even the grinding charges. Out of 12 kg. of wheat, take two kg. as our contribution in lieu of grinding charges, and the rest, that is, 10 kg. we will carry back to home." That is the tragedy.

I hope, the hon. Minister will look into all these problems and see that those who have know grinding charges to pay, will be given some help in some form.

I am thankful to Shri Faleiro as also to you, Madam for having allowed me to raise these questions.

**SHRI EDUARDO FALERO :** Madam, as I was submitting, this has been the greatest disaster in the history of industrial world and the questions which have been raised by the previous speaker with regard to compensation, and as to what is being done for the victims of the disaster, are questions which must be looked into with utmost sympathy by the Government. It is not merely the Government, but the main culprit for this disaster, the Union Carbide, that must pay full compensation to those affected, to the families of the deceased, to those who have been affected now and those who are likely to be effected, because the effect of the MIC gas will be felt not merely now, or in the near future, but it will be felt in the long run also. All these people must be taken care of, and provision must be made, not merely for those who have been affected now, but for those who are likely to be affected in the future.

If is good, and the House must commend the manner in which the Prime Minister, if I am not mistaken, on that black Monday, the 4th December, abandoned his election campaign and immediately flew to Bhopal for an on-the-spot study along with the Minister for Chemicals and Fertilizers.

We must commend the way in which the Government of Madhya Pradesh arrested the big boss of Union Carbide, Warren Anderson. By arresting him, a warning has been given to these multinationals that they will not be allowed to go scotfree, if they participate in death

and destruction of our people in this country.

**AN HON. MEMBER :** For how many hours was he arrested ?

**SHRI EDUARDO FALERO :** You know that arresting is in the power of the Government, but keeping the arrested person in custody is in the power of the court. But we shall not enter into that argument. The point I would like to make here without prejudice is that he was released on bail. I will be one with you in saying that it was very unfortunate that the Court had fixed a comparatively low bail, something amounting to hardly two thousand dollars. That was unfortunate. As I am submitting without going into what the Commission of Inquiry will do, there are some lessons that we can immediately draw, so that those thousands of innocent lives, those thousands of people who died shall not have died in vain.

The point that arises is the manner in which the multi-national corporations generally, and particularly in the field of pesticides industry operate in this country. I will just quote, Madam Chairman, what a report of the World Health Organisation has got to say on this. The WHO Report says, "Every minute of the day, on the average some one is poisoned by the pesticides in the third world, i.e. upto 500 thousand people every year, and death due to pesticides occurs about every one hour and forty five minutes, totalling at least 5,000 persons every year." The WHO report continues, "The Third World has emerged as a large market for pesticides and hazardous chemicals banned or phased out in the western countries. Formulation plants are mushrooming across Asia, mostly dealing in deadly items." India is producing BHC and DDT. I would like to know from the hon. Minister and this has not come within the purview of the Inquiry Commission, as to what is happening to the production of DDT in this country. Who is producing it? What safeguards are taken against the production of this very dangerous pesticide? Both DDT and BHC are banned or heavily restricted in the United States. And the report continues that approximately 30 per cent of

the United States' pesticides exports in 1976 were of products whose use was banned in the United States. It is not only the United States, but the European countries, the members of the European Economic Community of the Common Market, these countries where these pesticides and these drugs, are banned, they export the very same pesticides and drugs to Third World countries. These drugs are exported to countries like India and Malaysia, thereby causing so much death and destruction of human life and property.

Now, it is interesting to note that the Union Carbide which owns the Bhopal Plant has a similar plant in West Virginia. Though the plant is similar, when it comes to safeguards against any accident, the West Virginia Plant has certain safeguards which do not exist in the Bhopal Plant and this is one of the major reasons why this ghastly disaster took place. Madam Chairman, speaking to the Wall Street Journal, a Carbide spokesman has said that some types of safety related equipment used in this industry were not in place at the Indian plant. The Carbide spokesman said that the Company's West Virginia Plant uses a computerised early warning system to detect the build up of temperature or pressure in tanks that can make the liquid chemical to turn into a gas. Such a system has not been installed in the Indian plant. I would like to know from the hon. Minister whether it is correct and whether generally it is a fact that whilst we are obtaining transfer of technology from the Western countries, this infrastructural technology, this basic technology, this technology that goes to safeguard the plant against health hazards is not imported, either because we do not care to import this technology or because the transferring country is not prepared to give us this technology. Will the Minister in this context, give us an assurance that in future whenever there is transfer of industrial technology, the infrastructural technology dealing with safeguards against health hazards also be compulsorily imported and transferred to this country? Madam Chairman, this is not an isolated incident in the Bhopal plant.

MR. CHAIRMAN : Please try to conclude.

SHRI EDUARDO FALEIRO : I have just started. I would like to point out that the Bhopal incident in December 1984 was not first incident in that plant. There were six incidents earlier, and six of them had taken place in different places in the plant, and at least in one of them people had died. I would like to know from the Government whether inspections of plant and machinery were carried out after each of these incidents, faults were found in the working of the plant, whether the plant management was told to rectify these mistakes and whether, in spite of repeated warnings and adequate alert in these plants, the plant management failed to rectify them. In that case, I would like to know what was the responsibility apportioned to this management which failed to carry out the directives in the case of earlier accidents.

These things had happened in Bhopal. What happened in Bhopal now was an extreme situation, but such things have been happening in other parts of the country. We must admit here that due to lack of political and public consciousness of the dangers involved in such plants—danger to health etc., dangers due to lack of public consciousness about environmental problems, many of the safety measures which are required to be maintained in these plants are not observed. Is the Government aware that very often the bureaucrats, the people dealing with the licensing procedures are won over in some manner or the other; inducements are offered to bureaucrats and people above so that these safeguards are not complied with strictly?

I will not be surprised if, in the case of Union Carbide, trips had been given by that firm to people to see the West Virginia plant—with all expenses found. More often, something more substantial is given; and as a result, these environmental safeguards are not complied with. What is the Government going to do, to see that they adhere more rigidly to the requirements to guard against environmental pollution, and danger to the health of the people?

I will conclude by asking two questions : in view of what has happened in Bhopal, in view of the fact that the Government has shown the political will to tackle this issue on a war footing, what specific steps have Government taken to ensure greater coordination between the Ministries of Agriculture, Industry and Environment ? How is greater coordination going to be ensured ? What are the specific tasks to be performed by this coordination, and what is the time-frame within which all these reforms contemplated by the Government—which the Minister has mentioned in his statement—are going to take place ?

Secondly, the point has been raised here about the industrial location policy. The Bhopal plant has shown the dangers inherent in having this type of activity in a heavily populated locality. This plant was located near the railway station of Bhopal, in a densely populated area. Is it not a fact that in July 1984, i.e. six months back, an industrial location policy was framed by the then Minister for Environment of the Government of India, but the Ministry of Industry did not agree to it ? What is the position at present ? Is the Government going to announce this industrial location policy ? Has the Government finalized the industrial location policy in consultation with the Ministry of Industry ? In the industrial licensing policy, there is no specific provision which permits cancellation of an industrial licence for non-compliance with such safety requirements. If, for instance, environmental control measures are not complied with in a particular plant, there is no manner in which the industrial licence can be cancelled. Has the Government applied its mind to this point so that industrial licensing policy contemplates a provision for cancellation of industrial licences in cases such as Bhopal and other environmental accidents ? What is the time-limit and time-frame given to the State Governments so that they rationalise their factory enforcement machinery in order to strengthen environmental control measures as disclosed by him in his statement ? I would like the Minister to impress upon not only the departments of the Government of India but also the State Governments that

this type of environmental disaster—not only of Bhopal which I hope will never happen again either in this country or anywhere else in the world but also in other places—should not take place and the giant Corporations and the multinational is will not have henceforth any free hand that they have had so far. Will the Government and the Minister take the House into confidence and satisfy us as to what he intends to do within the established and limited time-frame ?

SHRI ERASU AYYAPU REDDY (Kurnool) : I want to know the interim relief that has been given to the victims ? I also want to know the type of legal aid that is being given to them for the purpose of filing a suit against the Corporation for the recovery of compensation ? I also want to know whether the State Government or the Central Government are taking any steps to have a negotiated settlement out of court with regard to compensation due to the victims. What are the preventive steps or is there any attempt to have preventive steps for the purpose of preventing poisonous industries which emits poisons which may not cause immediate death but which are certainly causing slow death to most of the citizens ? Are there any schemes for that ?

SHRIMATI GEETA MUKHERJEE (Panskura) : The Union Carbide India Limited has perpetrated genocide in Bhopal. I demand that the properties of the Union Carbide India Limited be immediately confiscated. I shall not repeat what has been said earlier by others. But I am sorry, I expected a very strong indictment of the Union Carbide by the Minister because of the genocide. The accident which had taken place is colossal, but earlier warnings were not heeded to. I want to draw the attention of the Union Carbide to their in house Magazine 'Hexagan' dated September-December 1980. Inside the cover, there is a cartoon. It says, "What steps would you take if MIC Lethal gas leaks out in the plant ?" This is being asked from the safety personnel of that company. It says, "Long one." That means the only step that they would take is a long step to run away. Here is a copy of that.

In the Vidhan Sabha of Madhya Pradesh, after minor accidents in 1982, several legislators including Shri Mahendra Karma, CPI had raised a question about the location. The reply of the then, Congress (I) Labour Minister, Mr. Tara Singh is : "Rs. 25 crores had been invested in that factory. It is not a piece of stone which I can pick up and place, at some other place." It is not only that, it is posing a big danger to Bhopal or there is such possibility.

Despite repeated minor incidents, of a very serious nature this was the attitude taken in the year 1982. So, I would like to point out that this genocide is a result of long standing crimes which have been perpetrated in that factory. I demand that the factory be forfeited, all its property be confiscated, including its research and RD Centre.

Now, I would like to point out that you have stated that 1,400 death have been registered. As I said, the other day, I had been to Bhopal on the 16th. I spent the whole day with the people there. This is a serious matter. They stated that all the people had fled away. They are now coming back. They told me that at least there were 5,000 deaths.

And about the relief that has been given, up to now I found that the Railway employees who are rather much more organised than any or those *jhuggi-jhonpri* people, even among them there were deaths of 41 employees and of 69 family members that is a total of 110 cases have been registered up to now, that is by 16th. Only 57 cases have got some compensation which is being offered by the Madhya Pradesh Government. So my point here is that it is all very inadequate and your figures are really not taking into account the fact that many people ran away and they are coming back now.

Now, a big problem is, at the moment the certificates that have been issued by the hospitals are no more mentioning that the deaths are due to the gas leakage, they are giving other ailments, like tuberculosis stomach ache or some others. There is a

grave danger, because they will not be in a position to claim any compensation on the basis of those certificates unless the death is due to the gas poisoning. So, that is a grave situation.

I met a number of people. And I asked them how they were feeling. They said, I am talking about the Railway porters. For example I will mention in Hindi :

[Translation]

"There is severe burning sensation in the chest. We cannot take anything even after four days, one feels nausea. We are unable to walk or to see."

[English]

All the organs are affected. That was the very serious impression from all sections, not only from these porters. I had been to the Railway colony, I had been to the other affected areas. There the women are not able to see properly. They say that they cannot even make *bedalis* because they are not able to see properly. Those who thought that they were completely cured earlier are being affected by newer and newer diseases.

Now, lot of discussion is going on about the people who have been affected by the gas poisoning especially, the poor people. I saw a woman who was pregnant during that gas tragedy. After a few days she gave birth to a child which was still-born all blue in colour. That blue colour would not have come but for the gas poisoning.

Now, a very serious problem is what is really going to happen to those who have been exposed to that hazard. They are not dead, but they will be living crows. What I say, I really shudder if that is the situation that is going to develop. What will happen after some time? As you very well know, Nagasaki and Hiroshima are being talked about, not without any reason, the reason is that this very lethal gas poisoning will create a similar situation.

MR. CHAIRMAN : Please address the Chair.

SHRIMATI GEETA MUKHERJEE :

I very much like to address you more than anybody else, because you will feel the pain of the people much more, I believe.

AN HON. MEMBER : Why ?

SHRIMATI GEETA MUKHERJEE :

Being a woman, naturally ! Without any aspersions on my male colleagues, they will feel equally, I hope.

I felt most distressed about its after effects. I asked the people there as to how they were feeling. They said :

[*Translation*]

Lot of medicines are available but they are not producing any effect.

[*English*]

They were getting lot of medicines, but those medicines were not producing any effect. This was their feeling. And this is the real state of affairs.

The Union Carbide has said that there is no cyanide poisoning. But there are competent authorities who are saying that it is there. I would request the Minister that the *post-mortem* reports of the victims be published. There was an Army man who died in the All India Institute of Medical Sciences here itself. In his *post-mortem* report, I have heard, cyanide poisoning has been found. In any case, this long-standing controversy that is going on will come in the way, as I believe, no indepth medical investigation has been done and no amount of pills will give them any relief. Therefore, I particularly draw the attention of the Minister towards this aspect.

About the question of warning, I would like to mention that day when this gas leaked it was 11 a.m. The Minister, in his statement, has said that the Government mobilised all vans, etc. What I have come to know is this. When this gas leakage started, there was no warning for a long time. Then there was just a siren. Siren goes on off and on in a factory. Neither from the side of Union Carbide nor from

the side of Madhya Pradesh Government was there a public address system at any point of time, as to what the people were supposed to do throughout the night and what they had to do. In fact, the first public address by the Madhya Pradesh Government was in the morning at 6 a.m. saying that now the gas had gone away and that all of them could go home. Then what happened and why so many deaths ? When the gas started coming from the station side towards the other locality, what happened was that people did not know what had happened. They started running towards the factory side. That running meant inhalation of tremendous amount of that poisonous gas, which caused so many deaths. Had there been any public address system in the beginning telling the people to do this and do that, then these people would not have run towards that factory. Not only in the matter of so many deaths but also in the matter of victims or its serious after effects, this failure to work at a proper time and manner was a very serious thing. I am really sorry to read in the hon. Minister's statement that the State Government authorities took immediate action to mobilise transport and medical personnel. This is not a fact.

Since, Madam, you will ask me to conclude quickly but since I had been there and people told me repeatedly to take their voice to Parliament, I feel duty bound to say these things.

About this question of particular effect on women and their progeny, they have particularly asked me to demand that this should be very seriously gone into. I request that this be done.

17 hrs.

Now, about the question of Union Carbide's behaviour, I have already shown you the cartoon. But that apart, I would like to ask certain things. I have read that Union Carbide is thinking of opening another factory over there to give employment to the people. Now people of Bhopal are really afraid at the name of the word 'multinational'. They say : nothing doing, Government must confiscate this property.

Not only that, they say Government should take money from them for erecting its own plant of a different nature which can be helpful in production without producing that kind of poisonous gas. They say this due to the situation that a very large number of population has really become physically ineffective. If you see them, you will find that they just cannot carry themselves. Lot of them are daily-waged labourers. They do not expect that in future they will be able to do that very hard labour. So, what is most important for the Government is to find a way to open a factory of the kind or to open industries of the kind which can give them light labour if you really want to save them. No heavy labour can be undergone by the afflicted people for a long time. I do not know whether this has been gone into.

Everybody is asking one thing as to what was happening in that Research and Development Wing. This question has arisen very pertinently because everybody has said that there was no question of so much MIC being stored when there were no safety arrangements for so much MIC. If that is so, I would like to know whether that R & D Centre was being used by this multinational company for some other testing of poisonous gas and using the population of Bhopal as guinea-pigs for preparing their own imperialist bosses for a chemical warfare on some other country like ours or on our own country? These are the questions which are afflicting the minds of the people of Bhopal whom, I am afraid, this statement hardly consoles.

[Translation]

**SHRI ARVIND NETAM (Kanker) :** Mr. Chairman, Sir, Bhopal gas tragedy has been the greatest accident of this century in our country in which hundreds of people have lost their lives. Union Carbide is a multinational company and, as you know, all the multinational companies have the same attitude—double standard for working in developed countries and developing countries. As a result of that double standard, such a major tragedy has taken place in Bhopal. This factory was established in 1969. If we look at its administration for the last two years, it appears that

Union Carbide wanted to run the factory with the minimum number of workmen. During the last two years this company had reduced the strength of important personnel; for instance where 11 operators were required the work was being got done through only 6 operators; where for maintenance work four persons were required, they were getting the work done through two persons, and the whole plant was being operated with the help of only 642, whereas there should have been 850 persons. In this way you will find that they had reduced the staff in almost all important departments on maintenance side and technical side, which shows that though the Plant was important one yet the management of Union Carbide did not operate it with the seriousness it deserved.

As hon. Member, Shri Eduardo Faleiro, had said that if one visited the plant at West Virginia and then visited the Plant at Bhopal, one would find a lot of difference in their maintenance and safety measures. It is the result of the carelessness prevalent there that hundreds of people have lost their lives and such a big accident has taken place.

I would like to point out here that the Trade Unions working there and particularly the Trade Unions affiliated with INTUC and *Bharatiya Mazdoor Sangh*, had submitted their suggestions regarding safety measures before the management a number of times. But the result of this suggestion was that two employees, who were connected with INTUC were dismissed and one employee connected with *Bharatiya Mazdoor Sangh* was also dismissed by framing false charges against them. It was not in their own interest but in the interest of safety measures that they had made the suggestions but the Management dismissed them by framing false charges against them. It has been the attitude of the Management and Administrators there to curb the trade unions. They used wrong methods to suppress them and dismissed the employees and terminated their services. The Management of Union Carbide used such tactics and it clearly shows that no attention was paid to the safety of the Plant and that of the employees.

There has been a talk of compensation here. I can say on behalf of Madhya Pradesh Government that the Chief Minister provided whatever prompt relief was possible in this major accident. Efforts were made to provide substantial relief by the Government and the Administration. Unfortunately, the accident took place at midnight. Had it happened during the day, to many lives might not have been loss. As the accident occurred at midnight, there was heavy loss of life and property. But arrangements for facilities such as medical, rehabilitation camps etc. were made by the Madhya Pradesh Government. Voluntary organisations also contributed in this regard and we are all grateful to them for their role. Our Prime Minister postponed his election programme and visited Bhopal on the 4th instant to make on the spot study of the situation. So, it can be said that everything possible was done by the Madhya Pradesh Government. Maybe there were some shortcomings but it was due to the fact that hundreds and thousands of people were affected. Sufficient medical aid for all of them was not available there and many hospitals were also not there. But even then all efforts were made. Temporary hospitals were set up in tents. Arrangements for rehabilitation were also made. In this way we can say that, keeping the circumstances in view the steps taken by the Administration deserve commendation.

I would like to draw the attention of Hon. Minister to one thing. The Railway staff deployed there, particularly the Station Superintendent, Shri Harish Dhurve saved the lives of thousands of people by sacrificing his own life and stopped many trains from reaching there. I would like to submit that some special relief should be provided for these families, either by the Madhya Pradesh Government or by the Ministry of Railways.

In the end, I would like to know some facts from the hon. Minister. As Mr. Faleiro has said, I also feel that recommendation made by the Department of Environment regarding policy on Industries allocation is quite appreciable. This

policy has been submitted to the Government of India and the Ministry of Industry by the Department of Environment. I would like that after this accident, that Policy should be given serious consideration and after consideration, our efforts should be that all the industries proposed to be set up, whether it is connected with Gas or any other industry, it should not be set up near residential areas. This should be kept in mind by the Government.

All of us know that the equipments given to the developing countries by all these multinational companies are outdated. I would like to know from the hon. Minister the number of such plants whose equipments have become outdated in western countries and are being used by multinational companies in this country. Have such companies taken any special steps for safety ?

Our Environment Experts have pointed out that we have three Acts in our country (1) Water (Prevention and Control of Pollution) Act 1974, (2) Air (Prevention and Control of Pollution) Act, 1981, (3) Insecticides Act, 1968 and after this accident there has arisen a necessity to make a number of amendments in these Acts, because there is no provision for punishment in all these Acts. I would like to request the hon. Minister to consult the Ministry of Law and make a provision for awarding punishment in these Acts so that existing laws in our country relating to Environment are properly enforced. Will the Minister take some steps in this regard ?

[English]

SHRI C.P. THAKUR (Patna) : Madam, Chairman, I feel privileged to speak on this very issue, but at the same time I would say that I never thought that I will start my talk on a very tragic issue like this and more so on the medical one on which I have been lecturing for the last 20 years.

All of you agree that the year 1984 was a year of crises for us and the nation had to face many sad events. We had not

yet recovered fully from the cruel assassination of our Beloved Prime Minister, when we had to face one of the greatest tragedies of this kind. Now, we must commend our Prime Minister, who rushed to that spot did everything for the victims and put the State Government on full alert for any remedial measures. But, certainly, as pointed out by many Members an indepth study and analysis of this tragedy will help us to chalk out a fool-proof preventive programme so that similar episode is not repeated in the future.

Now, all of you will agree that India is leading towards industrialisation. In this process of growth and industrialisation you have to deal with deadly poisons and chemicals. You cannot do away with that. But at the same time you have to be very cautious about formulating preventive devices.

Now a word about pesticides. They are a group of compounds which include insecticide, rodenticide, fungicides, herbicides and fumigants. Now, the medical aspect of this problem can arise either due to acute exposure as happened in Bhopal or due to chronic exposure. Now its acute exposure can cause severe eye irritation, conjunctivities leading to blindness. It may also cause skin irritation. The main effect, however, is on lungs. It causes damage to the vessels of the lungs causing death due to pulmonary oedema or chronic lung problem later. These exposures might cause lung cancer, (Carcinogenic), gene-disorders (Genemutation) and abnormality in unborn children (teratogenic). There is a chronic effect of pesticides that every day we are taking—pesticides in food, fruits, and vegetables. They are contaminated with pesticides.

Once we were studying the causes of poisoning in the Patna Medical College Hospital, and the House will be surprised to know that the commonest cause of poisoning was poisoning due to pesticides. Regarding the chemical aspect of it, this methyl isocyanate is produced by phosgene, a gas which itself is a poisonous gas, which reacts with methyl and the phosgene is produced by reacting carbon monoxide with toxic chlorine. The industry therefore

has to deal with many toxic and harmful agents. So, we have to be very careful about the formulation of the preventive programme of this industry.

A word about prevention. For such an industry two kinds of prevention should be thought of. One is prevention against recurrence of such accidents and secondly, in the medical parlance, there is a talk of disaster planning. Disaster planning is on how you can cope with the tragedy of high magnitude as has happened in Bhopal.

Regarding prevention of such tragedies, I may point out a few things for the House to consider. As pointed out by some of the hon. Members, it is alleged in the press—not in the national press, but in the international press—that most of the multinationals dump their outmoded technology in the developing countries and they also obstruct the developing countries in getting the latest technology. In that way, it harms the country in two ways—firstly, it does not allow the country to be upto date, and secondly, working with the obsolete technology, the chances of accidents are more.

Regarding the geographical location of the industry or any such dangerous industry for that matter, there have been a lot of recommendations made by many ecological committees. They should be taken into account.

Safety Engineering is not there in most of the developing countries. So, safety Engineering should be provided in the curriculum of the colleges. The Safety Department of the industry is always a small and uncared for Department of the industry. The people think that they are not in the general run; they are neglected. So, that should be given importance. The safety procedure should be mostly handled by the Science and Technology wing of the Government of India and there should be a periodical check of those industries.

Further, the credibility of any multinational company should not be judged on its financial standing alone, but it should be judged by its performance on safety front.

Regarding the multinationals one of the leading journals in America, Wall Street journal, said about the Union Carbide :

"It is an unwieldy giant run amuck, playing often into mindless new ventures."

There are reports that the Union Carbide has not taken due care in safety procedures in other developing countries like Indonesia. So, this also should be taken into account.

Advanced concepts like computerised multi-tier accident prevention signalling system must be provided in accident prone industries including in this industry.

The Ministry of Petroleum and Chemicals should also think of gearing up the Research and Development Wing to get the alternatives to pesticides. The UNESCO has suggested certain alternatives to the pesticides. After all, these pesticides are used only for high yielding varieties of crops and these crops are grown only by big farmers. So, for the overall increase of the agricultural output, you should take care of the marginal farmers and also help them. Then, the alternatives to the pesticides should be thought of and there should be a Research Department to think about the alternatives to such deadly pesticides.

Now, there is a Commission of Inquiry, no doubt. I do not want to dilate on it. I do not want to take the time of the House. But I would like to mention certain points which should be taken note of by the Commission :

- (a) whether the safety standards in India are identical to those in U.S.A.;
- (b) what caused the whole liquid to change into gas; and
- (c) what was the offending agent—phosgene or MIC

There was a controversy in the newspapers as to what was the offending agent.

A medical record of the persons who died should be maintained so that parameters like age, sex, economic conditions etc., making them more prone to lethal effects could be known. All the people in Bhopal exposed to the gas should be watched for 15 to 20 years for the development of any cancer, birth defects and neurological disorders etc. It should be done at the cost of the company. The ill effects of atomic explosion at Hiroshima and Nagasaki are still monitored.

A parliamentary Committee should be formed to study and suggest a comprehensive measures including legal ones as we see that we are still not sure what legal steps should be taken. So, comprehensive steps should be suggested to meet such a catastrophe.

THE MINISTER OF STATE IN THE MINISTRY OF PARLIMENTARY AFFAIRS (SHRI GHULAM NABI AZAD) : Madam Chairman, I would like to suggest that tomorrow we should dispense with Lunch Hour, if the House has no objection. (*Interruptions*). You can have your lunch but the House will continue to sit because some more discussion may take place as most of the Members of Parliament would like to speak on the Motion of Thanks on the President's Address.

MR. CHAIRMAN : I hope the House has agreed.

SHRIMATI GEETA MUKHERJEE (Panskura) : I hope our young Minister will treat us with Lunch in that case. That would be in the fitness of things.

SHRI GHULAM NABI AZAD : You are welcome for both Lunch and Dinner.

17.22 hours.

SHRI R.P. DAS (Krishnagar) : Madam Chairman, at the very beginning, I am sorry to point out that the hon. Minister has not mentioned anywhere about the role of the U.S. multi-national, Union Carbide, in his statement. Madam, you know this multi-national company should be held responsible for this chemical disaster and chemical holocaust.

Madam, Shrimati Geeta Mukherjee has rightly said that this company has committed a genocide on the people of Bhopal—on those who were living in the city of Bhopal, around the factory, Union Carbide plant. As far as we could gather, at least 90 per cent of the poor have been killed due to this holocaust. Madam, this multi-national, Union Carbide could not take the necessary safety measures. Due to failure of safety measures, near about 2500 people have so far been killed. At the same time, about 10,000 to 20,000 people have been affected by this disaster of the leakage of the MIC gas.

It was found during the investigation that this plant was manufacturing and storing phosgene gas also, along with MIC gas. The phosgene gas is banned for being stored in a plant. Since the First World War there is an international regulation by which the phosgene gas has been banned for storage. But phosgene gas was found stored in this plant. This shows that the management of this plant did not comply with the regulation that was imposed for the storage of such a deadly gas.

As a matter of fact, the Union Carbide had never abided by the rules and regulation imposed by the Government. The Government also could not muster courage to inquire into whether such rules and regulations were ever being implemented by the management of this plant. Therefore, we are of the opinion that this disaster is due to the inaction of the Government and also due to the failure of the safety system of the Union Carbide.

So far as the safety side is concerned, the Union Carbide, this multinational of the USA, has other pesticide plants in other parts of the world. It has a plant in Virginia itself, in USA, and that is the most sophisticated and upto-date plant. The safety measures have been made upto-date there. It is computerised also. But the safety-system of the Bhopal plant was neither sophisticated nor computerised. On the other hand, it has been gathered that this plant at Bhopal is second-hand plant. Most probably, it was outdated in USA. This plant was proposed to be set up in Canada. But Canada refused to

import the plant from USA because of its lack of proper safety system and it was not upto the standard that was desired in Canada. But that plant, a second-hand plant, could be easily exported to India and ultimately this plant was set up at Bhopal. Since this plant was not having sophisticated equipment, it should not have been allowed to manufacture MIC or phosphorous gas. The system was not at all up to date. It was neither sophisticated nor in any way modern. So, its licence for the production should have been withheld at the very outset. But that was not done because the Union Carbide or the big multi-nationals always could put some sort of pressure upon the under-developed countries, particularly countries like India and ultimately India was ready to accept such a plant without the modern system. This out-of-date system was responsible for this chemical disaster which killed thousands of people.

As far as the statement of the hon. Minister that about 1,70,000 persons are getting some sort of medical assistance from them the hospitals and dispensaries set up in Bhopal temporarily is concerned, I have to say that when lakhs of people are receiving treatment from these hospitals and dispensaries, you can very well imagine the magnitude of the disaster and the nature of medical aid being given by these hospitals and dispensaries.

This magnitude of disaster proves that the Government as well as working people should take proper care before such plants by multi-nationals are set up in our country. At the same time, the Government should take care about the other hazardous plants, particularly the chemical plants which, more or less, are responsible for pollution of water and air. They pollute the atmosphere in such a manner that some times lots of people fall a prey to the industrial waste discharged from these chemical factories. This particular Union Carbide has caused such a great tragedy at Bhopal, the magnitude of which can be compared to the disaster of Nagasaki and Hiroshima. This fact has already been pointed out by some of our Members. No other incident or occurrence of such a magnitude took

place anywhere else in the industrial world at any time.

As far back as 1975, Shri M.N. Bach, Administrative Officer of the Bhopal Municipal Corporation passed an Order and he asked the Government and also the management of the factory to shift the factory outside the boundary of the city. But that could not be carried out. On the other hand, the Administrative Officer was immediately transferred to some other place, and some of the people living around the factory were shifted outside the city boundary. Some time later, the people again somehow or the other started living in huts and shanties around the factory. This area was particularly affected by the disaster. Most of the people who fell victim to this disaster were the people living in those shanties; some people who were living in Jayaprakash Narayan Nagar were also affected; those who were living in or near the railway colony were also affected. This disaster is such that it will have its repercussions for a longer time. It may have a very adverse effect on the people, and this adverse effect might make the people permanently maimed and disabled. In his statement the Minister has stated :

“Persons affected by the gas suffered eye irritation, cough, breathlessness, nausea and choking sensation, etc.”

But by now it has been found that the victims are suffering from such other diseases as nervous breakdown; the brains of some of these victims have already been affected; we find that people are also suffering from trouble in the urinary system; their hearts also have been affected. So, it is not simply confined to skin irritation or breathlessness. It has done more harm or greater damage to other important organs of the human body. Therefore, Government have to take suitable steps so that such hazards can be averted and also necessary medical aid should be given to those who have been affected by the gas disaster.

Lastly, I would like to ask one or two

questions regarding setting up of Research and Development unit in the Union Carbide (India) Ltd. The Union Carbide (India) Ltd., over the last two or three years, has been, on economic grounds, retrenching or retiring some people. On other hand, the Research and Development Unit being upgraded with high-salaried persons; some Ph.D.s, some M.Sc.s, have been recruited for R & D Unit and it involved much more expenditure than what it incurred on account of the plant itself. Not only that, it was also found during investigation that an agreement has been reached between the Union Carbide (India) Ltd. and the Union Carbide in the USA that the data that will be found out in the R & D Unit of India will be passed on to the USA at a cost of three lakh U.S. dollars. This is a huge amount, no doubt, and this amount was spent on research and development work in a unit under the direct management of Union Carbide (India) Ltd. The research was mainly confined to the area of tropical pests and the research and development would cover the grey area between peaceful application and biological warfare. I would like to know from hon. Minister whether he would confirm the research work is being undertaken by this Unit and whether any data regarding the biological warfare system is being worked out in this unit.

As regards relief measures and compensation, the hon. Minister has stated that some relief measures have been taken by the State Government and the Union Government also and the relief is being provided to the victims of the gas tragedy. Some hon. Members have already pointed out that 12 Kgs. of wheat have been given to the victims, particularly to those who could not go for their duties. In this connection, I would like to draw the attention of the Government that a group of victims and their relatives sat on ‘dharna’ before the residence of the Chief Minister of Madhya Pradesh protesting against the inadequate supply of relief. I would like to know from the hon. Minister whether adequate relief would be provided to the victims particularly those who are not able to work for some time and also adequate compensation would be given to those injured in this tragedy.

[Translation]

SHRI DALBIR SINGH (Shahdol) :  
Madam Chairman, the whole House and the country is plunged in grief due to Bhopal MIC Gas Tragedy. We all share this sorrow. I would like to draw attention to two or three things. Mr. Dandavate pointed out that there was shortage of doctors and sufficient medicines were also not being supplied. In fact, according to my information, initially the doctors in Bhopal did not know the medicines and the treatment to be given to persons affected by MIC Gas. But a team of specialists went there from Delhi and suggested proper medicines and then these were given. It was also reported that keeping in view the large inflow of patients in hospitals, it became clear that doctors would have to be drafted from other places also. Action in this connection had been initiated during the night itself. Teams of doctors from other places also reached Bhopal in the forenoon of 3rd December. Patients were treated in 12 temporary dispensaries set up for the purpose and also in 21 hospitals and dispensaries of Bhopal. 700 doctors including 200 doctors from outside attended to the patients. I want to submit that Madhya Pradesh Government did provide assistance and the family of each deceased has been given a grant of Rs. 10,000/- and those who are in serious condition, they have been given Rs. 2000/- and ordinary patients under observation have been given Rs. 1000/- each. I would like to submit that if possible, more amount may be given.

I would like to submit another point. As Shri Netam has also said it was midnight and as the factory is situated in a thickly populated locality, the people did not know in which direction to escape from the gas. According to figures of graveyard as on 8.1.1985, 1408 persons had been buried, but what is the number of those who left Bhopal for other places and died there? I would request the hon. Minister to direct the Madhya Pradesh Government to conduct a survey to ascertain the number of patients who died outside Bhopal and what is being done in their case?

As far as legal aid is concerned, Justice Bhagwati visited the place. The Minister

of State for Law, Shri Bhardwaj also went there and according to my information it was announced on 7.12.84 that the gas-affected people would be given free legal aid under this scheme by relaxing the eligibility criteria. Some figures have also been given regarding the number of families surveyed so far. It has been stated that till now particulars of 1½ thousand families have been compiled and survey in respect of 60 thousand persons have been completed. The breakup of women, men and children has also been given in it. According to it, the 11,000 families covered by the survey consisted of 15,365 women, 21,760 men and 23,109 children. My submission is that no doubt the finding of this survey are with you, but a survey in respect of cases admitted in far-off hospitals should also be conducted, since people took whatever conveyance was available that fateful night to escape.

I do not agree with the view that sufficient medicines were not available, because seven camps were opened by the Madhya Pradesh Government. In fact three camps had to be closed as a result of decrease in the inflow of patients. Four camps are still working. I would submit that it is not a matter concerning a particular party. In this hour of great distress, it becomes our moral responsibility to help all the affected families wherever they may be. If there is need for their rehabilitation, we have to consider how it is to be done.

I am grateful to the Hon. Prime Minister that he cut short his Gujarat tour and went to Bhopal on 4th instant and visited the patients in hospitals and gave Rs. 40 lakhs from the Prime Minister's Relief Fund. He further sanctioned a sum of Rs. 55 lakhs. Thus, sufficient funds have been provided. The decision of Madhya Pradesh Government to provide legal aid and to meet the whole expenditure on legal proceedings, whether the case is filed in India or in America, is commendable.

I would only like to submit that figures from other places may also be collected as it has been done in the case of cremation grounds of Bhopal. I also want to mention that the Railway Station is very near the place of accident. On that fateful night,

Shri Harish Dhurve, Supat of the Railway Station asked his whole staff to go away. But as many important trains passed through Bhopal during the night, he stayed there and sent messages to all the places and halted the trains. He sacrificed his life discharging his duty and he was found dead with telephone in his hand. I, therefore, appeal to the Ministry of Railways to see that his family gets proper compensation. Just now an opposition member said that why the Madhya Pradesh Government or the Central Government did not take up the question of claiming compensation. This matter has been taken up. The Law Secretary and Attorney General of Madhya Pradesh have gone to U.S.A. to take legal advice as to whether the case should be filed there or in India. Whatever compensation is settled, that should be distributed equally according to rules.

With these words I resume my seat

**SHRI C. JANGA REDDY** (Hanamkonda) : Madam Chairman, it is a matter of great regret that on the fateful night of this incident in Bhopal, the Capital of Madhya Pradesh, the Collector and S.P. were not there at their houses. They ran away for fear of their lives. When water started trickling down the eyes of the people and they felt pain in their chest, they rang up the Collector and the S.P. The telephone bell kept ringing but there was nobody to pick-up the telephone. This showed that officials of the State Government ran away for fear of their lives.

This issue had been raised in the Madhya Pradesh Assembly earlier also. Workers of the Factory were killed on five occasions earlier also due to leakage of gas. In this connection, the labour Minister of the State had replied that all precautions had been taken to ensure that there was no such leakage in future. But what did the State Labour Ministry, Environment Department, and the Directorate do ? The State Government did not render assistance to the extent it should have provided. In 1975, the Municipal Commissioner of Bhopal had said that this company should be shifted from there

because it was situated in the midst of the town and there could be an accident any time due to leakage of gas. The only result was that he was transferred from there. This clearly shows that the Government of Madhya Pradesh never seriously considered the question of shifting the Factory out of the town.

Just now an hon. member said in the House that sufficient arrangements had been made there. I would like to ask if sufficient arrangements had been made then why this accident took place. The number of people killed there has not been determined. Many people are getting treatment in hospitals and dispensaries outside Bhopal. Therefore, I request that with the help of census...

**SHRI DALBIR SINGH** : I would like to say that those admitted outside Bhopal should also be covered by the survey.

**SHRI C. JANG AREDDY** : I would, therefore, like to say that the number of those killed is far in excess of the figure given by you. Many people are getting treatment in the hospitals in the neighbouring towns of Bhopal and their number has not been accounted for. That is why I am suggesting that if you check up with the Census then only the actual number of those killed can be ascertained. If Census figures of 1981 are compared with the population of Bhopal, we can find the correct figures.

Efforts are being made to retain the Factory there. Some of the State Ministers have stated in the State Assembly that they were prepared to relicence it. I would plead for immediate shifting of this Factory from there and it should be enquired as to how the licence to establish this factory in a populated area was issued. When Municipal Commissioner and other officers had recommended that this should be shifted from there, why it was allowed to be run there ? It should be looked into as to whether the Government of Madhya Pradesh is responsible for it or not. An Enquiry Commission has been set up to look into this incident.

It should be informed about the leakage of gas on six earlier occasions also. The extent of responsibility of the Union Carbide as well as the State Government should be fully investigated. The matter of relicensing the Factory and the indifferent attitude of the State Government should also be examined.  
[English]

**THE MINISTER OF CHEMICALS AND FERTILIZERS, AND INDUSTRY AND COMPANY AFFAIRS (SHRI VEERENDRA PATIL) :** Madam Chairman, several Members have participated in the discussion. In my statement which I had made the other day, I had said that this was the worst tragedy that occurred not only in Bhopal, not only in our country but also in the entire world.

It is not an exaggeration if I say that although in this unit some minor accidents had taken place in the past, nobody had anticipated that an accident of this dimension was going to occur. So far as Union Carbide is concerned, they started their activities in our country since 1967. First they started their activities in Trombay; then from Trombay they shifted their activities to Bhopal, and they made an application for a Letter of Intent for manufacturing MIC, and out of MIC the pesticide called carbaryl. A Letter of Intent was given in 1972, and in 1975 the Letter of Intent was converted into a licence. Since 1980, they have been manufacturing MIC, and also out of MIC they are manufacturing Carbaryl and other pesticides.

At this stage, I want to inform the august House that there is an impression in the minds of a few Members that these multi-nationals are manufacturing such hazardous chemicals only in developing countries. It is not so. Even in developed countries, hazardous...

**PROF. MADHU DANDAVATE :** They have done equal injustice to all countries.

18 hrs.

**SHRI VEERENDRA PATIL :** They have done equal injustice not only to all countries but also the countries from

where they emanate their activities. So, I was impressing upon the member that these hazardous chemicals or pesticides are not only being manufactured in developing countries but they are also being manufactured in developed countries. So far as the manufacture of MIC and out of MIC, carbaryl is concerned, it is being manufactured in America.

**MR. CHAIRMAN :** Since the time for this discussion is over, may I, with the permission of the House, extend the time by half an hour more ?

**SEVERAL HON. MEMBERS :** Yes.

**MR. CHAIRMAN :** So, the time for this discussion has been extended by half an hour more.

**SHRI VEERENDRA PATIL :** So, the MIC which they are manufacturing, they are supplying it to other countries including the developed countries like France, etc. Prof. Dandavate, while initiating the discussion, gave his version about the cases for this tragedy; he gave some details how the siren did not work for some time, how pressure was raised in the tank, how the temperature went upto 100 degrees, how the chemical reaction took place and all that. I do not want to give my reaction to all that the hon. member has said.

**PROF. MADHU DANDAVATE :** You can give chemical reaction.

**SHRI VEERENDRA PATIL :** I do not want to give any reaction at all because the commission of inquiry which has been constituted by the Government of Madhya Pradesh is going into all these matters, whether safety measures were properly taken, whether they were adequate, why there was leakage of gas which evaporated into the atmosphere, how the MIC liquid formed in the tank and how it became gas and how it escaped. So, all these matters are being enquired into by the commission of inquiry. One member wanted to know whether there was any time programme for this commission of inquiry to submit its report. I want to inform the House that while constituting this commission

of inquiry, it has been laid down in the Government Order itself that the commission shall complete the inquiry and shall submit its report by 15th March, 1985 to the State Government; that means in another two months the inquiry report is going to be available; and after getting that report and in the light of that report, whatever further action is necessary at the State level, at the Central level, will be taken.

Prof. Dandavate mentioned that the task force has said that such hazardous chemical units or hazardous industries should not be located in urban areas. I do not know what task force he is mentioning, but this industry was established in 1975; and at the time of converting the letter of intent into licence, CSIR was consulted, DGTD was consulted and the State Government was also consulted with regard to the location. After completing all these formalities, the letter of intent was given. With regard to location policy, I must say that there was no specific Central Government location policy in the year 1975 when the licence was given to this undertaking. The stipulation banning location of industrial units within the standard urban area or location near large metropolitan cities was enforced only from February 1978, in pursuance of the industrial policy formulated in December 1977. So, this location policy was formulated in December 1977 and it was enforced in February 1978 but the licence was given to this party in 1975.

PROF. N.G. RANGA : That was a pity.

SHRI VEERENDRA PATIL : Recently, in June 1984, the Department of Industrial Development issued new sitting guidelines for 18 categories of industries. Now it is extended to 20 categories of industries. This was issued in consultation with the Department of Environment and these guidelines incorporated specific approval for sitting by the concerned State authorities and approval of the State Pollution Board for the affluent treatment or pollution treatment facilities to be set up by the company.

PROF. MADHU DANDAVATE  
Hon. Minister, if you are yielding, for a second, do I take it that in so far as the task force is concerned there was no advice that this plant should be located either on a sea-shore where the human habitation is the lowest or it should be off the sea shore also? Was there no recommendation like that?

SHRI VEERENDRA PATIL : What I wanted to know from the hon. Member is about the task force, because we do not know about the task force, or the instructions issued to it. When was it constituted? We do not know anything about the task force in the absence of more details of it. I am mentioning that till December 1977 there was no specific industrial location policy. It was only in December 1977 that such a policy decision was taken and it was enforced in 1978. If the hon. Member gives me details about the task force which had been constituted, when it was constituted, when they issued the guidelines that these industries should be located only on the sea coast, I will be in a position to verify and furnish information to him. If he just mentions that a task force—because, there are many task forces which have been constituted at different levels—it becomes difficult for me to find out and verify.

PROF. MADHU DANDAVATE : All right, I will do that research.

SHRI VEERENDRA PATIL : Madam, about the medical facilities, hon. Member Mr. Dandavate feels that the medical facilities are not adequate. I may mention here that several hundreds of persons were rushed to hospitals, Doctors were rushed, not only from that State, but several (two hundred to three hundred) doctors went from Delhi which included experts. Experts from other places also went there. Even now thousands of people are getting treatment in different hospitals and the Government of Madhya Pradesh has made elaborate arrangements for giving treatment to the people suffering, and they have been spending lot of money on providing medical relief. If there is any shortfall in any area, the hon. Member can point

out to me and I will pass on that information and I will request the Madhya Pradesh Government to take adequate steps to ensure that adequate relief and medical facilities are provided to the people affected.

**PROF. MADHU DANDAVATE :** The affected people, in Hamidiya Hospital were not able to get the records or certificates. They were not available to the doctors. That is the complaint.

**SHRI VEERENDRA PATIL :** I will certainly verify this. I will find out from the officers of the Madhya Pradesh Government and I will issue necessary instructions to see that if there are any such lapses those loopholes should be plugged as early as possible.

Some hon. Members mentioned about the cheques which are given. When cheques were given, I asked the State Government officers and found that the cheques were immediately operated. A representative of the bank accompanied the officer who dispersed the *ex-gratia* amount as soon as the cheque is given to victim or to the relatives, they are encashable then and there itself because the officer of the bank accompanies the officer who issues the cheques. That arrangement has been made. If there is any lapse, I will ask the officers concerned to certainly look into this matter.

Some Members wanted to know the amount of relief that is provided to victims. So far as relief in cash is concerned, it is Rs. 10,000 per dead, Rs. 2000 for seriously injured and upto Rs. 1000 for minor injury. On this account, so far they have spent more than Rs. 1 crore. And the total number of beneficiaries is 14497 persons. So far as cash relief to the members of the family of the dead is concerned, it is still continuing. Wherever such cases are there, they are approaching the authorities and hrs they are getting the cash relief. This is an *ex-gratia* payment. The question of legal compensation is being separately dealt with by the Ministry of law.

Relief in kind is being given every month to 1.1 lakh families. The scale is : wheat 9 kg. per unit per month and rice

3 kg per unit per month; edible oil 500 millilitres per unit per month, sugar 500 grams per unit per month and milk 200 millilitres twice a day for children and lactated mothers. This is being given by the State Government in kind not only to everyone in the affected areas but also to slum-dwellers in non-affected areas. They are covering two-thirds of the town population by giving this relief. There is a relief committee constituted under the chairmanship of the Chief Minister for supervising the activities of providing relief to these victims. So far, more than Rs. 5 crores have been spent on providing relief in kind.

Mr. Falerio wanted to know the name of the company which is producing DDT and whether DDT is still being used in our country. DDT at present is being used primarily for malaria eradication programme. An expert committee in the Ministry of Agriculture is reviewing the question of phasing out some pesticides including DDT. DDT is being manufactured since fifties by HIL., which is a public sector undertaking, for malaria eradication programme mainly.

Hon. Member Mr. Ayyapu Reddy wanted to know about the compensation. As I have already said in my statement, a Cell has been constituted in the Law Ministry to examine this question and the hon. Members are aware of the fact that the Attorney General is already in United States and he is expected within a day or two. On his return, a final decision would be taken with regard to the compensation and with regard to suing the company. But I have got a note which has been prepared and given to me by the Law Ministry. I will read only one para so that hon. Members will know what is that which is being examined and what is the thinking of the Law Ministry with regard to this matter of claiming compensation :

“While the Government is considering various options available to it for obtaining adequate compensation for damage to itself as well as to the victims of the gas tragedy, one of the options is to file a suit

for damages. It is the tentative view of the Ministry of Law and Justice that Union Carbide Corporation can be sued in a *parens patriae* action by the Union of India as guardians and protectors of interests of its citizens. Group action by individuals also might proceed separately without prejudicing the *parens patriae* action by the Union of India."

This is the latest thinking of the Law Ministry. However, a final decision will be taken on return of the Attorney General from the United States and I hope a decision will be taken very shortly and necessary action to claim the damages or to sue the company would be taken as early as possible... (*Interruptions*).

PROF. N.G. RANGA : An agreement with them with regard to the compensation may also be negotiated instead going to the court which may take so much time.

SHRI VEERENDRA PATIL : Shri Ayyapu Reddy wanted to know whether Government is prepared for a settlement out of court. I can only say at this stage that so far as the compensation question is concerned, it is a legal question which is being examined by the Law Ministry. We will go according to the advice that we receive from the Law Ministry. The question whether a settlement is possible out of the court, I think, is a hypothetical question. I do not think we have received any such offer so far from the company. Therefore, it is difficult for me to say anything with regard to this suggestion that has been made by the hon. Member Shri Reddy. But I can only assure him that so far as the legal matter is concerned, so far as the question of suing the company and claiming compensation are concerned, we would go strictly by the advice of the Law Ministry which we receive from time to time.

Then, Mrs. Geeta Mukherjee wanted to know whether the factory and its properties are going to be confiscated. She suggested vehemently that all the property

of the Union Carbide should be confiscated. I can only inform the hon. Member that we have already received a request from the Chief Minister of Madhya Pradesh. He has made two suggestions: One suggestion is that the licence which has been given to the Union Carbide should be cancelled and the other suggestion is that the entire property that belongs to the Union Carbide in Bhopal should be taken over by the Government of India. These two suggestions are being examined and we will take a decision after the examination is completed. I quoted this because even the Chief Minister is of the opinion that Union Carbide should not be allowed either to continue or to have any other activity in his State, particularly in Bhopal. That is why he has made these suggestions and these suggestions are receiving our attention.

SHRIMATI GEETA MUKHERJEE : Confiscation is not just taken over. Are you thinking about compensation ?

SHRI VEERENDRA PATIL : Suing the company for claiming the damages, I think, will run into several times than what the property is worth now. So, that is not such an important matter.

SHRIMATI GEETA MUKHERJEE : That in any case they have to give.

SHRI VEERENDRA PATIL : As I said, this is the worst tragedy that has occurred. It has opened the eyes of the State Government, the eyes of the Central Government, it has opened the eyes of the countries where they have such units, who are also thinking of having adequate measures.

PROF. MADHU DANDAVATE : It has closed the eyes of many.

SHRI VEERENDRA PATIL : That is unfortunate. I have accepted that. After this accident, Government have taken several steps. I would like to explain in brief the important steps that have been taken.

Government have decided to set up a

Special Cell to make a detailed study of the practices in vogue in developed countries, for dealing with hazardous substances, and the institutional control in force, to ensure safety of men and environment. Based on these studies, it will be possible to make a detailed review of the existing systems and practices and identify the gaps in the prevailing legislative and institutional arrangements in our country. It has become necessary, because there is a feeling that the safety steps taken in developed countries are more fool-proof than the safety steps taken in the developing countries. Therefore, this Committee will go into that question. They are going to find out what are the safety steps taken in the developed countries. After getting the report, whatever further action is felt necessary will be taken.

With regard to the health of the people, how it is going to be affected, the long-term effect on the health of the people, because of gas or hazardous chemicals, Government is considering the setting up of a National Scientific and Medical Committee to study all the aspects arising out of the accident and to give an authoritative opinion about the likely after-effects and the appropriate steps that need to be taken on the medical and scientific aspects.

The Department of Environment is also taking steps. It has taken action to evolve steps for avoiding industrial accidents of this type in future, from the pollution control angle. In January 1985 the Central Pollution Control Board has constituted a Committee, with representatives of the Pollution Control Boards of five States. I will mention only the important terms of reference: to define hazardous chemicals precisely, to list the varieties of hazardous chemicals that are used as raw materials, intermediates and also final products, to identify those industries which are to be recognized as hazardous industries, to prepare a State-wise inventory of those units and also to cull out from that total inventory all those units which are located in crowded areas, then to examine the existing safety procedures and safety drills, along with

the contingency plans of those located in crowded areas, in case of such untoward happenings, as happened in the case of Bhopal.

The Ministry of Labour is also taking the necessary steps. As hon. Members are aware, although the licence was given by the Central Government, this is an industry which is located in a State, in Bhopal. So, the jurisdiction over this industry lies with the State Government, so far as the health and safety conditions of the labour are concerned. It is for the State Government to see that in the Factories Act sufficient provisions have been made for the safety and health of the workers and that they are enforced properly. The Ministry of Labour is considering amendments to the existing rules and regulations for the improvement of safety and health of the workers. The Director-General, Factory Advice Service and the Labour Institutes have been asked to make a detailed review of the provisions relating to the control and prevention of accidents and also occupational hazards in the context of the Bhopal accident. From the Labour Ministry the State Government have been asked to take special steps for augmenting the strength of the enforcement machinery to undertake joint inspection with the technical experts to see whether all the rules and regulations for the safety under the Factory Act, Acts on items like insecticides, boilers etc. are being properly implemented.

Then there is an impression that air and water and vegetables may not be free from contamination. The State Government had the city water supply tested on 3rd December itself and the report indicated that it was not contaminated. The tests were carried out regularly and intensify during operations when MIC was being neutralised. The tests of air and water samples were taken by a team of six scientists sent from the Department of Environment on 5th and 6th December and the fact of these being free from toxic chemicals was announced to the public. The Plant Protection Adviser to the Government of India had samples of plant foliage, including vegetables and food from the affected areas analysed with the help of

the local chemists at Bhopal and it was found that neither MIC nor hydrogen-cyanate were present in these. Accordingly the public were informed and they were asked to take sufficient precautions.

Lastly, I come to the point about the casualties because different sections have come forward with different versions saying that casualty is not less than 5,000 or is not less than 10,000 and some have even claimed that it is not less than 20,000. I have made very clear in my statement that according to the information the State Government has been able to collect so far, it is only 1,408. I have also made it clear that this is not the final figure.

**PROF. MADHU DANDAVATE :** Mr. Minister, I hope Centre and State have the same criteria about death.

**SHRI VEERENDRA PATIL :** There is no question about criteria. I am explaining the position. The source of this information is hospital mortuaries, cremation grounds and burial grounds. The casualty may be even more. So, whatever figure they have collected, they have notified this 1,408 in all their police stations, in all their municipal wards in Bhopal and they have publicised in the local papers that these lists are available in the wards and the police stations. People can go and verify. And if they feel that the list is not complete and more casualties are there, they can come forward. They have sought cooperation from the public and different institutions in this regard. In addition to that, the State Government has engaged the Tata Institute of Social Sciences along with a few other institutions of social work to do a house-to-house survey for assessing the casualties, details of those affected, consequent effect on the household on account of death or disablement, assistance, medical treatment received, rehabilitation required, damage to property and other related matters. This is a comprehensive survey that the Tata Institute of Social Sciences has undertaken and I understand that the report is going to be ready by the end of this month. In the light of the report, whatever further action is called for, the Government of Madhya Pradesh is prepared to take.

So, in brief I have explained the steps taken by the State Government and steps taken by the Central Government. I can only assure the hon. Member, although this is the worst tragedy, Government of India or the State Government is not under-estimating this tragedy.

**PROF. MADHU DANDAVATE :** Before you conclude, one question was left out. I had said it is customary for the Directorate of Industrial Safety to periodically undertake inspection of plants. Regarding industrial safety, I would like to know whether it was done in the case of this plant.

**SHRI VEERENDRA PATIL :** I do not know. Under the Factories Act, factory inspectors are there and DG is there. They make periodical inspections. I do not have that information ready with me. If the hon. Member is very particular about that information, I will collect it and pass on to him.

**SHRI R.P. DAS :** The Minister said that the State Government...

**SHRI VEERENDRA PATIL :** I have not finished. I am about to conclude.

**MR. CHAIRMAN :** He has not finished. He is about to conclude. Let him conclude.

**SHRI VEERENDRA PATIL :** Madam, I wanted to impress upon the hon. Members and through the Members the entire nation, that this is the worst tragedy which has opened the eyes of everybody. So, it is our duty and the duty of every authority to see that proper and necessary and effective steps are taken in order to avoid recurrence of such tragic accidents not only in our country, but in other countries also. Towards that end we have already initiated certain steps and we are very serious about it, we are not under-estimating this tragedy, we will take up this matter as a challenge and whatever adequate steps have to be taken in order to avoid such tragedies in future, the Government is willing to take or consider.

SHRI R.P. DAS : Regarding the relief, the Minister said that the State Government is introducing distribution of a ration of 9 kg wheat and 3 kg rice per unit. But in the Statement it is said that...

MR. CHAIRMAN : Nine plus three— it comes to 12 kgs.

SHRI VEERENDRA PATIL : It comes to 12 kg.

SHRI R.P. DAS : Twelve kg per unit family. He has said in his statement that 12 kg per unit will be given. But if it is per unit family, it is very meagre and very inadequate because you know per family means at least five persons. Five persons require at least 60 to 70 kg of ration every month. But he has said that only 12 kg ration of foodgrains will be given per family unit. If it is family unit, then it is meagre, and inadequate and they should be immediately distributed at least 60 to 70 kg per month per family.

SHRI VEERENDRA PATIL : I want to clarify that 12 kg per family unit means 12 kg per adult person per month.

SHRI V. SOBHANADREESWARA RAO (Vijaywada) : The hon. Minister told a number of times that this is the worst tragedy, known in the living memory, of its kind in our country. Will the Government in all seriousness consider a point of view that instead of allowing so much huge quantity of MIC to be kept in a storage tank, there may be a change in the manufacturing process so that it can be a continuous process of preparation of one tonne of MIC per hour, not allowing so much of huge quantity to be kept in the storage tank? Will the Government consider that point of view in all seriousness?

MR. CHAIRMAN : Let other Members also ask the questions. Then he will give a reply.

PROF. MADHU DANDAVATE : Let him reply to him.

(Interruptions)

MR. CHAIRMAN : All right, at his convenience.

SHRI VEERENDRA PATIL : I can only tell the hon. Member that the Union Carbide was manufacturing MIC and from MIC they were manufacturing carbonyl. So there were two processes. The hon. Member feels that instead of having two processes, why not have only one process.

SHRI V. SOBHANADREESWARA RAO : No, no. Not that way. Instead of allowing the MIC to be kept in that storage tank, 100 tonnes or 90 tonnes in huge quantity as a surplus, the manufacturing process can be changed so that it can be a continuous process.

SHRI VEERENDRA PATIL : That is what I am saying. Instead of having MIC and then converting MIC into carbonyl, he suggested that it should be a continuous process. Then the question of storing MIC does not arise. But I can only tell the hon. Member that this factory is completely closed. My impression is that the State Government is not prepared to allow any more these activities to be resumed. On the other hand, they do not want the activities of Union Carbide even if they want to have their activities diversified, even in the name of Carbide. They do not want their existence in Madhya Pradesh. Therefore, this question does not arise.

SHRIMATI GEETA MUKHERJEE :  
My point is :

- (a) whether what was happening in the Research and Development Wing of Union Carbide has been referred to the Commission of Inquiry;
- (b) Nowadays those hospitals are giving a certificate not mentioning that the death is due to gas poisoning. That will cause, later on, trouble while claiming compensation. I have raised this point already in my speech; and
- (c) whether the Government is thinking

of taking the gas affected people in the light work Industry.

**SHRI VEERENDRA PATIL :** So far as Research and Development Centre is concerned, I understand that this undertaking has got a Research and Development Centre at Bhopal. But in that Centre, they are carrying on the research activities including testing of pesticides and insecticides on pests/insects under tropical conditions. No collaboration with foreign company is allowed. So far as the terms of reference are concerned they do not include the R & D activities.

**SHRIMATI GEETA MUKHERJEE :** Madam Chairman, what about the other two things. The hospitals in Madhya Pradesh are not issuing a certificate stating that the death is due to gas poisoning.

**DR. SARADISH ROY (Bolapur) :** Madam Chairman, I want to know how many persons and animals have been invalidated due to this gas leakage. This is No.1.

Secondly, how has it affected animal life and vegetation life.

Thirdly, are the Air Pollution and Water Pollution Departments are active to prevent such incidents of gas pollution? If not, what are you doing for that?

**SHRI VEERENDRA PATIL :** So far as the effect of this gas on animals and others is concerned, that information is being collected by Tata Institute of Social Sciences. They are collecting all that information.

**DR. SARADISH ROY :** They said, so many animals died. Give us the figure.

**SHRI VEERENDRA PATIL :** The hon. Member wants to know the figure of animals died. I will collect and pass on the information.

**MR. CHAIRMAN :** The House stands adjourned to re-assemble tomorrow at 11.00 a.m.

18.38 hrs.

[*The Lok Sabha then adjourned till Eleven of the Clock on Tuesday January 22, 1985/Magha 2, 1906 (Saka).*]