

(c) Investigations on Bargi Project were suspended in December 1950 due to financial stringency and have not been resumed so far. However, hydro-logical observations are being continued. Investigations on Tawa and Tunasa Projects have almost been completed. Designs, estimates and reports of these projects are under preparation.

PROF. G. RANGA: How much were these investigations expected to cost and how much was already spent, and for the lack of how much have they suspended these investigations?

SHRI J. S. L. HATHI: Perhaps the question refers to the project which was suspended. That project costs about Rs. 7,22,000.

PROF. G. RANGA: How much was already spent on it?

SHRI J. S. L. HATHI: I would like to have notice.

PROF. G. RANGA: Is any effort made to get a comprehensive view of all the various projects that can be developed under the Narmada Valley so that there could be no conflict between one State and another?

SHRI J. S. L. HATHI: Yes; investigations are made in Broach and Baroda side also. Some are completed and when the remaining ones are also completed there will be an overall picture before us.

AMOUNT PAID TO U.S. BUREAU OF RECLAMATION

*504. SHRI S. MAHANTY: Will the Minister for IRRIGATION AND POWER be pleased to state:

(a) the total amount paid by Government to the Bureau of Reclamation of the United States Department of the Interior, since December 28, 1950, under Article II of the Agreement for Scientific and Technical Engineering Services between the Government of India and the Government of the 1 United States of America.

(b) the total number of cases referred to the Bureau so far; and

(c) whether Government will lay a statement on the Table of the Council giving an indication or description of the cases under reference?

THE DEPUTY MINISTER FOR PLANNING & IRRIGATION AND POWER (SHRI J. S. L. HATHI) : (a) A sum of \$ 104,025 to cover the estimated cost of the studies for the designs and hydraulic experiments in connection with Bhakra Dam has been placed at the disposal of the Department of States, U.S.A., on the authorisation of the Government of Punjab (I).

(b) One.

(c) A statement is laid on the Table of the Council.

STATEMENT

Cases referred to the United States Bureau of Reclamation

Only one case has so far been referred to the United States Bureau of Reclamation by the Government of India through the Central Water and Power Commission under Article II of the Agreement for Scientific and Technical Engineering Services. This was a case of the Government of Punjab (I) and pertains to the studies on the design of the dam and hydraulic experiments of Bhakra to improve the design of spillway. The United States Bureau of Reclamation was requested in January 1952 to undertake the undermentioned stress studies and hydraulic laboratory studies relating to the layout in which the power house was located outside of the dam: —

(A) *Stress Studies*

(i) Preliminary design studies to determine whether the present design of the dam could be reduced;

(ii) one complete trial load twisf analysis for tentative design ol, the dam;

- (iii) one complete trial load analysis for redesign of the dam if results determined from analysis made under (ii) show that additional savings can be made in concrete yardage.

KB) Contributory work required to that performed under (A) above

- (i) Dams (Structural);
 (ii) Structural and Architectural;
 (iii) Mechanical;
 <iv) Hydraulic Machinery;
 (v) Estimates and Analysis.

<C) Hydraulic Laboratory Studies

- (i) Construction of sectional model and its hydraulic studies;
 <ii) Construction of overall model of spillway and surrounding topography and hydraulic studies;
 (iii) Model of tunnel spillway and hydraulic studies.

SHRI S. MAHANTY: May I know when Mr. Slocum, the American Chief Engineer assumed charge of the Bhakra Dam Project? These project studies relate to the Bhakra Dam.

SHRI J. S. L. HATHI: I think he was put in charge of it either at the beginning of 1952 or end of 1951, I don't remember exactly

SHRI S. MAHANTY: Am I to understand that these project studies were referred to the Federal Bureau of Reclamation in America for giving a finding when Mr. Slocum was available here?

SHRI J. S. L. HATHI: Yes. The position is this. Mr. Slocum was available when this reference was made to the Bureau. But the question is, this involves experimenting and research in a large well-equipped laboratory and they have to be conducted by a number of persons. It cannot be done by a single individual or even by four or five persons. Unless

we have got a well-equipped laboratory it cannot be done. It involves scientific tests and all that. Therefore it was necessary to refer the matter to them.

SHRI S. MAHANTY: But that is not my question. My question is this. I want to know if this problem was beyond the capacity of Mr. Slocum so that it had to be referred to the Federal Reclamation Bureau in America? And if it was referred to them, was it at the instance of Mr. Slocum or at the instance of the Central Water & Power Commission?

SHRI J. S. L. HATHI: The question of the hon. Member is whether this was beyond the capacity of Mr. Slocum. The fact is that it was beyond the capacity of Mr. Slocum because it involves the carrying out of a number of experiments in a well-equipped laboratory and this Mr. Slocum could not do here without the assistance of such a laboratory. This was the decision taken by the Bhakra Control Board, on the advice of the technical people.

SHRI S. MAHANTY: Have the Government of India deputed any Indian engineers to America to assist in the solution of this problem and in the carrying out of these studies?

SHRI J. S. L. HATHI: Not for the purpose of these experiments. They have sent some engineers to the Bureau for other studies.

SHRI S. MAHANTY: What I want to know is whether any Indian engineer or engineers have been sent to the Federal Reclamation Bureau of America to assist in the solution of this particular problem, as stipulated in the Agreement under reference.

SHRI J. S. L. HATHI: No, not in connection with this experiment.

SHRI S. MAHANTY: In connection with what experiment have they gone there?

SHRI J. S. L. HATHI: In connection with the general construction of dams*, engineers have been sent.

SHRI S. MAHANTY: Sir, I have one or two more questions to ask. I find from article 4 of the Operational Agreement that it is a business proposition. We have to place some money at the disposal of the Federal Bureau of Reclamation in America and they have to give certain advice but is it stipulated anywhere under this agreement that the United States Government reserve the sole right to give such advice as they think desirable?

SHRI J. S. L. HATHI: No, it is not a question of reserving any sole right. It is an experiment to be performed and the results to be communicated.

SHRI S. MAHANTY: Sir, I invite the attention of the hon. Minister to article 4 of the Agreement wherein it has been clearly stated that the United States Government reserve the sole right of giving such advice as they think desirable and in this connection I want to know whether the hon. Minister maintains that such organisations are not available elsewhere, say, in France, Italy or the U.K. so that we had the necessity to go to America on such a humiliating term?

SHRI J. S. L. HATHI: I think this is one of the best laboratories and institutions. There is no aversion to Italy, France, Spain or any other country but, on merits, this was found to be the best.

(Several hon. Members stood up.) MR.

CHAIRMAN: Order, order.

SHRI S. MAHANTY: Sir, I want to know

MR. CHAIRMAN: Mr. Mahanty, an agreement was concluded and that agreement includes this clause.

SHRI C. G. K. REDDY: The question is.....

MR. CHAIRMAN: The question is that it is concluded.

SHRI C. G. K. REDDY: The question is why the sole right should have been given to the U.S.A. Government for giving us exclusive advice.

PROF. G. RANGA: Giving or not to give.

SHRI S. MAHANTY: In this connection, we find that there are many French, Italian and U.K. firms who had experience in the field of dam construction and who offered their services for the Damodar Valley Project. Therefore, it cannot be maintained

MR. CHAIRMAN: It is not a question; it is a long speech.

SHRI B. C. GHOSE: May I put the question?

SHRI S. MAHANTY: It is a hypothesis to maintain that the Government considers the U.S.A. as the best experienced in the field.

SHRI JAWAHARLAL NEHRU: May I answer, Sir?

MR. CHAIRMAN: Yes.

SHRI JAWAHARLAL NEHRU: There are only very few countries in the world with long rivers requiring high dams. Among them is the U.S.A. and the U.S.S.R. Other countries have large number of engineers, highly qualified engineers but with no experience of this particular kind of high dams. Therefore, it was that the American engineers were sent for to build the high dams in the U.S.S.R. to begin with. In the whole of Europe, barring the Danube there are no such rivers and no such experience has been gained by them.

(Several hon. Members stood up.) MR.

CHAIRMAN: One at a time.

SHRI S. MAHANTY: Is it a fact that one French firm and another U.K. firm submitted tenders for constructions in Damodar Valley Project?

MR. CHAIRMAN: Yes, Mr. Mahanty, they might have volunteered but the experience in the construction of these large dams where large rivers are, is to be found only in America and even

the U.S.S.R. had to consult the American engineers when they had to build large dams.

(Several hon. Members interrupted.)

MR. CHAIRMAN: No more questions. We have had enough.

(Shri S. Mahanty stood up.)

MR. CHAIRMAN: No, sit down, Mr. Mahanty. Next question.

TRACTORS PURCHASED FOR HIRAKUD DAM

*505. SHRI B. RATH: Will the Minister for IRRIGATION AND POWER be pleased to state:

(a) the total number of tractors in the possession of the dam construction sections at Hirakud up to the end of 1st March 1952;

(b) the number and type of the tractors which were purchased during the year 1952-53;

(c) the sources from which these tractors were obtained;

(d) the price that was paid for each of these tractors; and

(e) the companies from which they were obtained?

THE DEPUTY MINISTER FOR PLANNING & IRRIGATION AND POWER (SHRI J. S. L. HATHI): (a) 97.

(b) 36.

(c) to (e). A statement giving the particulars required is placed on the Table of the House. [See Appendix IV, Annexure No. 124.]

SHRI B. RATH: What is the total amount of work that was done by the 97 tractors in connection with the Hirakud Dam Project?

SHRI J. S. L. HATHI: Sir, I will require notice to ascertain the total amount of work done by the tractors.

DIWAN CHAMAN LALL: How far is the hon. Minister capable of judging the total amount of work done by a tractor?

MR. CHAIRMAN: Go on Mr. Rath. The Minister says that he wants notice for that question.

SHRI B. RATH: What was the reason for the purchase of 36 tractors in the year 1952-53?

SHRI J. S. L. HATHI: Because they were required for the purpose.

MR. CHAIRMAN: 'Because they were required for the purpose'.

SHRI B. RATH: Is it in connection with the construction of the right side dam that they found it necessary to buy this and, what is the total amount of work that has been done during this year?

SHRI J. S. L. HATHI: As I said, Sir, I will have to find out the actual work done with a tractor and I will have to total it up.

SHRI B. RATH: I refer to the Budget and the Progress Report of the Hirakud Dam. Is it a fact that these tractors were purchased and that they did absolutely no work on the right side during the year for which they were purchased?

SHRI J. S. L. HATHI: They might have done some work somewhere else; I do not know.

SHRI B. RATH: But these were exclusively purchased for the right side dam.

SHRI J. S. L. HATHI: Maybe, Sir; with the addition of these works, they might have been required but before the work commenced they might have worked somewhere else.

SHRI B. RATH: Sir, is it a fact that most of the work was being done by manual labour through contractors?

SHRI J. S. L. HATHI: Not most, but work was done by contractors also.

SHRI B. RATH: To what extent the tractors did the work and to what extent the contractors did the work?

SHRI J. S. L. HATHI: That is no* possible for me to reply off-hand.