

(b) No

(c) Does not arise

Causes of Earthquake at Koyna-1967

1316 SHRI BIRENDER SINGH RAO
Will the Minister of IRRIGATION AND
POWER be pleased to state

(a) whether a meeting of scientists held recently in Paris auspices of UNESCO, has given contrary opinion to what had been stated earlier as regards the causes of earthquake which occurred at Koyna in 1967, and

(b) if so, whether any steps have been taken by the central Government to save the Koyna-Electric Project and the resultant disaster in case of an accident ?

THE DEPUTY MINISTER IN THE
MINISTRY OF IRRIGATION AND
POWER (SHRI B N KURFEL) (a) and
(b) Under the auspices of the UNESCO, a working group composed of the representative members of several international organisations, met in Paris in December, 1970 to study the seismic phenomena related to the filling of large reservoirs. Prof. Rothe, on behalf of the Working Group has requested for information from several countries including India.

The Committee of Experts composed of both foreign and India, appointed in association with the UNESCO in December 1967, concluded that the earthquake of December, 1967 was due to tectonic causes. The direction of maximum forces was close to the horizontal and it was therefore difficult to attribute the forces released, to the pressure of the water in the reservoir which should be vertical. A number of foreign scientists also have indicated that the vertical loading resulting from the filling of the Koyna reservoir cannot be the sole cause of the earthquake. They suggest that the tectonic strains stored in the rocks in the Koyna region were the sources of the energy released. In this context, it is to be noted that no earthquake occurred during the filling of Bhatnagar and Radhanagiri reservoir in the same basaltic terrain. The Bhakra dam is located in a seismically active zone but no activity has been noticed

after the filling of Govind Sagar. This and other data have led to the general view held by the majority of scientists that the reservoir at Koyna was not responsible for any major shock.

It is interesting to note that in 1969 UNESCO experts Prof. Auden and Prof. Gubim invited to give a report on the Seismicity of Western India, discussed the views of Prof. Rothe regarding the connection between the filling of the Koyna reservoir and the occurrence of earthquake at Koyna. They concluded that there is little connection between the filling of the Koyna reservoir and the occurrence of even the small shocks. They also observed that before making sensational deductions about the production of earth tremors by reservoir filling, more study is required.

While studies continue on the causes of the Koyna earthquake steps have been taken to ensure the safety of dam against similar future earthquakes. By way of immediate strengthening, the cracks in the dam caused by the December, 1967 earthquake, were grouted. The portion above the crack was tied to the lower portion of dam by prestressed anchoring. As a permanent measure the dam is being widened in the bottom upto a certain level and provided with buttresses, to a few feet below the top of the dam. Till the above work is completed, Maharashtra Government is not filling the reservoir above the spillway crest by way of precaution. The permanent additional work is expected to be completed by June 1972.

Blasting of Railway Tracks and Trains by Pakistani Saboteurs in Northern Regions of West Bengal and Assam

1317 SHRI S M BANERJEE Will
the Minister of RAILWAYS be pleased to state

(a) whether Pakistani saboteurs are regularly blasting the railway tracks and trains in the northern regions of West Bengal and Assam,

(b) if so, the steps taken by Government to counteract this, and

(c) whether army men have been posted to have a watch on these tracks ?

THE MINISTER OF RAILWAYS (SHRI K HANUMANTHAIYA) (a) 13 such accidents have occurred since June, 71

(b) and (c) The steps taken are

- 1 Security patrolling by the Police/Home Guards
- 2 Track patrolling by police/home guards/Village Defence Party members in conjunction with the railway gangmen,
- 3 Guarding of vital railway installations and important bridges by armed police and home guards,
- 4 Searchlight patrolling by 59 mount brigade,
- 5 Suspension of night running passenger trains in vulnerable sections,
- 6 Observation posts have been set up at important railway stations,
- 7 3-metre area on either side of the Railway track has been declared as protected area under the Assam Maintenance of Public Order Act 1947,
- 8 Imposition of punitive tax on two villages bordering East Pakistan territory,
- 9 Arousing consciousness amongst villagers adjacent to railway track against acts of sabotage by Pak agents,
- 10 Rewarding persons responsible for timely detect on of sabotage activities, and
- 11 Checking passenger's luggage in trams in vulnerable areas

Amendment of Constitution for seeking to change idea of compensation for properties acquired by Government

1318 **SHRI S M BANERJEE** Will the Minister of LAW AND JUSTICE be pleased to state

(a) whether the Law Commission has suggested minor changes in the Government proposal to amend the Constitution seeking to change the concept of compensation for properties acquired by Government,

(b) if so, what are those changes, and

(c) the reasons for making those changes ?

THE MINISTER OF STATE IN THE MINISTRY OF LAW AND JUSTICE (SHRI NITIRAJ SINGH CHAUDHARY)

(a) No change has been suggested by the Law Commission on the proposed amendment of the Constitution in so far as it seeks to change the concept of compensation

(b) and (c) Do not arise

नर्मदा घाटी परियोजना के अन्तर्गत प्रोजेक्ट

1319 **श्री भागीरथ भवर :** क्या सिंचाई और बिजुत मंत्री यह बताने की कृपा करेंगे कि

(क) नर्मदा घाटी परियोजना के अन्तर्गत कितने और कौन-कौन से प्रोजेक्ट आते हैं और उनमें से कितनों का पूर्ण रूप से सर्वे हो चुका है,

(ख) जिन प्रोजेक्टों का सर्वे हो चुका है क्या उनका प्लान इम्प्लीमेंट बन गया है और यदि हाँ, तो ऐसे प्रोजेक्टों की सख्या और नाम क्या , और

(ग) प्रत्येक प्रोजेक्ट से कितने एकड़ भूमि में सिंचाई होगी और कितनी-कितनी भूमि डूब जाने वाली है ?

सिंचाई और बिजुत मन्त्रालय में उपमन्त्री (श्री बैजनाथ कुरील) (क) से (ग) नर्मदा घाटी परियोजना नाम को कोई अकेली परियोजना नहीं है ।

मध्य प्रदेश के नर्मदा बेसिन में धौघार और डुकरी खेडा परियोजनाएँ पहले ही पूर्ण हो गई हैं । मध्य प्रदेश के नर्मदा बेसिन में तबा, बर्ना