

FLOOD-CONTROL USE OF ATOMIC POWER

By Dr. B. R. Ambedkar

Recently we have heard and read a great deal about floods in India and the methods of flood control. As a member of the Viceroy's Executive Council, I happened to be in charge of Irrigation. I then established a Department called the Irrigation and Navigation Commission, which I believe has been renamed River Control Board, Central Water Power Commission and so on.

These organisations have made proposals for flood control which appear in the press from time to time. It was expected that some sure remedy would be found by these organisations. But we now find that whatever the proposals their implementation has failed completely to control the floods. It has also been reported from Shillong that it is difficult, almost impossible, even for engineers to say what steps can successfully control the Brahmaputra floods, and that an experimental bund was constructed at a cost of Rs. 14,00,000 and that it has been washed away in the floods.

Embankments

We also hear that Government has given up the new idea of controlling floods by damming the rivers, and has gone back to the antiquated idea of embankments and of invoking therewith mass help for the job.

In this connection I would like to draw the attention of the Government of India and of the engineers concerned in the matter to a proposal which has been put forth by an eminent engineer and which has been published in a Bombay contemporary September 10, 1954, under the heading *Atomic Science to the rescue* written by 'Observer.'

The proposal to which I wish to draw attention is a simple one, namely using atomic power for flood control. On reading the statement in the paper, "Observer", I was greatly attracted to it and made enquiry as to who the author of this proposal was, I learnt that he is one Mr. C.S. Pillai. I discovered that he has been in the

civil engineering profession for more than thirty years, and has already had some experience in such work. He says that till the development of atomic research to its present stage, the most common methods revolved round science of bunds, embankments or revetments. Recent advances in the science of river-training, however, have brought new knowledge and techniques which could be employed with some effect in controlling the rivers which bring so much misery year after year. He further asserts that 'these methods and techniques may be utilised as stop-gap measures. But for permanent remedies we must look elsewhere.'

I questioned him to explain to me his permanent plan of controlling river floods. I reproduce below that he told me :

"The development of atomic science brings the hope that there is a permanent way. The river of sorrow can be brought under control, tamed and trained as we desire and serve our purposes by the application of what is known as nuclear fission. The application of this method will be easily understood by those who have worked out Ohm's Law of saturation, current and disruptive discharge and consolidation over the trajectories caused by the action of neutrons."

"How does this Ohm's Law work and what is its relation to atomic science ?"

Neutrons

"Atomic physicists can answer this question more fully. It is possible to produce today torrents of neutrons by nuclear reactors. These torrents of neutrons can be made to penetrate easily the fathoms of river water to regulate the water levels as well as the catchment areas. Thereby the flood flow can be controlled and regulated so as to serve our needs in irrigation and power projects. The rest of the flood water can be instantly evaporated.

"It may be asked why neutrons are so effective as probes of matter. The answer is simple. Neutrons have no electric charge. Unaffected by the clouds of negative charge with which electrons surround the atomic nuclei Neutrons pass easily through the depths of water and dredge the silt and sand and even scrap the rock-beds to any desired depth and discharge the entire stuff either

on both banks of the river or into the sea, according to our will, in a matter of days, if not of hours. In the process the river-beds are simultaneously consolidated as also the river-banks on the lines of the trajectories.”

The problem of floods is a constantly recurring problem, and there cannot be a greater destructive force than this. In solving it Government should not depend solely upon the wisdom and scientific knowledge of their own officers.

It is their duty to welcome any suggestion coming from any quarter and examine it on its own merit. Safety lies in a multiplicity of proposals.”¹

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¹: The Times of India, dated January 18, 1955.