

**GOVERNMENT OF INDIA
EARTH SCIENCES
LOK SABHA**

UNSTARRED QUESTION NO:963
ANSWERED ON:16.07.2014
DATA ON SEISMIC ACTIVITIES
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Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government has collected data related to all the low intensity seismic activities during each of the last three year and the current year;
- (b) if so, the details of the earthquake zones which have been studied;
- (c) whether various Hydro Power Projects, dams and Atomic Energy Plants have been set up in the high intensity seismic zones;
- (d) if so, the details thereof, State-wise;
- (e) whether the Government has taken any steps to monitor the seismic movements at various such locations including where atomic energy plants have been set up; and
- (f) if so, the details thereof and if not, the reasons therefore?

Answer

MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTRY OF EARTH SCIENCES (DR. JITENDRA SINGH)

- (a) Yes Madam. Earth System Science Organisation- Indian Meteorological Department (ESSO-IMD) monitors earthquake activity on continuous basis through the National Seismological Network.
- (b) The seismic zoning map of India has been prepared by Bureau of Indian Standards IS 1893: 2002 which shows four seismic zones viz. Zone-II, Zone-III, Zone-IV and Zone-V is the most vulnerable zone. This seismic zoning map is periodically updated using newly acquired data.
- (c) Yes Madam.
- (d) Statewise list of completed Large Dams as per National Register of Large Dam (NRLD) maintained by Central Water Commission and additional information available on the basis of information furnished by the State Governments /Authorities is in Annexure.
- (e & f) Considering the global advancements in the Geo-Technical Engineering and developments in the design, research and construction of dams, India is capable of executing development projects including construction of dams, Nuclear Power Plants and Hydro Power Projects that would withstand a seismic jolt through adequate safety measures.

Due action/steps have been taken by the Government from time to time as per the recommendations of the Dam Safety Organisation of the Central Water Commission for seismic monitoring of reservoirs such as Koyna and Warna in Maharashtra; Nagarjuna Sagar and Srisailem in Andhra Pradesh and nuclear power sites of Nuclear Power Corporation of India Limited (NPCIL). A set of guidelines for inspection of dams following earthquakes have also been developed in respect of safe operation and maintenance of the existing dams/ reservoirs.

Details of safety requirements for Nuclear Power Plant (NPP) are specified in "code of practice on safety in nuclear power plant siting" and related "safety guides" evolved by the Atomic Energy Regulatory Board (AERB), which are always in a state of continuing review.

Following the Fukushima (Japan) incident, the Government has directed safety reviews of all Indian nuclear power plants in operation, and under construction. Accordingly, safety review of Indian nuclear power plants was carried out by task forces of Nuclear Power Corporation of India Limited together with the committee set up by the Atomic Energy Regulatory Board. These reviews have found that Indian reactors are safe and have sufficient margins and features in their design to withstand extreme natural events such as earthquakes and tsunamis.