



एनपीसीआईएल
NPCIL

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ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
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(A Govt. of India Enterprise)

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नलिनीश नगाइच

उत्कृष्ट वैज्ञानिक एवं

अधिशासी निदेशक (सी पी एवं सी सी)

NALINISH NAGAICH

Outstanding Scientist &

Executive Director (CP & CC)

NPCIL/ED(CP&CC)/2013/M/55

April 05, 2013

Dear Shri Ghanekar,

Please refer your e-mail of April 04, 2013 addressed to Head, Public Awareness Division, Department of Atomic Energy regarding the seismic aspects of Jaitapur Site. The facts in this regard are as under:

- 1.0 As per the Atomic Energy Regulatory Board's Code of Practice on Safety in Nuclear Power Plant Siting, there should be no "Capable Fault" (defined as a fault which has a significant potential for relative displacement at or near the ground surface) within 5 km of the site. A lineament on the other hand is a linear feature in a landscape which could be an expression of an underlying geological structure. Thus, all lineaments need not be the faults. However, all the lineaments around nuclear power plant sites are checked to confirm whether they are faults or not and studied extensively to establish that there is no capable fault within 5 km of the site.
- 2.0 As far as Jaitapur site is concerned, a detailed geological study of the region surrounding the Jaitapur site had been carried out by Geological Survey of India (GSI) using the high resolution satellite imageries and field checking of the lineaments identified from imagery interpretation, earthquake & micro earthquake (MEQ) data and gravity anomaly maps. The past seismicity (historical as well as recorded earthquakes) observed in the region (data from Indian Meteorological Department (IMD), the Micro earthquake (MEQ) data

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from National Geophysical Research Institute (NGRI) & Maharashtra Engineering Research Institute (MERI) network and data from Koyna Bandhkam Authority available since 1970 have been considered for arriving at the seismicity around the Jaitapur (JNPP) site. The shallow seismic study carried out by National Institute of Ocean Technology (NIOT) at Jaitapur and deep offshore data from Oil and Natural Gas Corporation (ONGC) have also been considered for arriving at the seismicity at Jaitapur. **It has been established from these studies that there is no capable fault within 5 km of the plant site.**

2.1 The studies carried out at the Site Selection Stage are further extended and detailed studies are carried out by specialized organizations at the site evaluation stage.

As regards the lineaments mentioned in the e-mail, these have been studied and not found to be capable faults.

3.0 Detailed information about Jaitapur project has been put on NPCIL website and large amount of literature has been distributed about safety of nuclear power as a part of public outreach. **DAE / NPCIL have consistently maintained, based on the extensive scientific studies, that there is no capable fault within 5 km of the site, the Jaitapur site meets the criteria laid down by the AERB code and is safe at all forums including public hearings. A press release on seismic considerations of Jaitapur site was also issued by NPCIL on January 17, 2012 clarifying all issues raised in the press / media in this regard.**

Specific details of individual lineaments are not of relevance to safety as these have been established as not being capable faults. However, national experts from various national institutes viz. Geological Survey of India (GSI), National Geophysical Research Institute (NGRI), Institute of Seismological Research (ISR), National Institute of Ocean Technology (NIOT), Indian Institute of Technology (IIT), Bombay, Oil & Natural Gas Corporation (ONGC), Atomic Minerals Directorate of Exploration & Research (AMD) and also several experts who have vast knowledge & experience of field geology

discussed and reviewed the studies carried out by various national institutes/agencies specializing in seismo-tectonics, to suggest to NPCIL about the faults & their magnitude/ potential which need to be considered for design.

3.1 The experts on this subject have suggested that for Jaitapur site, there are three faults which are active and need to be considered for design of the nuclear power plant. These are Koyna-Warna fault which is at about 89 km, Chiplun fault at about 64 km and the West coast fault at about 56 km from Jaitapur site, which are to be considered for their maximum earthquake potential.

4.0 As far as design of nuclear power reactors to be set up at Jaitapur is concerned, they would be designed to withstand the peak ground acceleration arising out of the maximum earthquake potential at the site with conservative margins. The Design Basis ground motion design spectra is derived by maximizing the hazard at the site by considering the maximum earthquake potential of the faults at the minimum distance from the site as suggested by the experts.

The reactors at Jaitapur would thus be safe from earthquake considerations.

With Warm Regards,

Yours Truly,



(N.Nagaich)

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