

Four cases of interference by electric power industry in earthquake risk evaluation

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A fair procedure is a key for reliable risk evaluation of earthquakes and tsunamis to judge safety of design and operation of nuclear power plants (NPP). However, we have found, since 1997, 4 cases of unfair interference by an electric power industry in earthquake risk evaluation by governmental institutes or academic societies.

1. Interference in a guideline for tsunami disaster mitigation formulated by the Japanese Government (1997)

Ministries in charge of tsunami disaster mitigation formulated a guideline for tsunami disaster mitigation (the guideline) in 1997. It is stated in the guideline that tsunami assumed in the disaster mitigation planning should be made by taking into account not only a maximum experienced tsunami, but also a maximum tsunami supposed by latest seismological studies. Based on the guideline, the maximum tsunami is estimated to be 8.6m at the Fukushima Daiichi NPP, which are much greater than 3.5 m assumed by the Tokyo Electric Power Company (TEPCO). The Federation of Electric Power Companies of Japan (FEPC) tried to put pressure via the Agency of Natural Resources and Energy to the secretariat in charge of the guideline to modify the description on the maximum tsunami and stop the public announcement of the maximum tsunami to avoid "a social disorder."

2. Manipulation to reduce a safety factor for NPPs and ignore tsunami earthquakes from maximum tsunami estimation (2002)

In designing NPPs in 1990s and before, only maximum experienced tsunamis were taken into account. There was almost no margin of safety in NPPs to account for uncertainty in the tsunami estimation. To authorize the tsunami risk evaluation policy by the FEPC, the FEPC set up the Tsunami Evaluation subcommittee in the Japan Society of Civil Engineering in 1999. In 2002 the subcommittee published the Tsunami Assessment Method for Nuclear Power Plants in Japan, in which tsunami earthquakes are ignored and the safety factor is not introduced. More than a half of the subcommittee is from the nuclear power industry that covered all the expense of the subcommittee.

3. Interference in revision of the Regulatory Guide for Reviewing Seismic Design for Nuclear Power Facilities (Regulatory Guide) (2001-2006)

The Nuclear Safety Commission revised the Regulatory Guide in 2006. During the revision process, the FEPC supported specific committee members to speak for the nuclear power industry. An example is a manipulation on an evaluation period of active faults. There was an argument that it should be substantially extended to, e.g., 130,000 years. It is written in documents of the FEPC that "We will ask the cooperative members to propose an alternative proposal, as a counter to the proposal of 130,000 years. The alternative one should be operationally realistic, feasible, and less influential to present power plants."

4. Interference in the long-term evaluation of seismic activity (2011)

The Headquarters for Earthquake Research Promotion (HERP) had revised the long-term evaluation of seismic activity in the Japan Trench since 2009. The HERP showed the revised evaluation to the power industry before public announcement on March 3, 2011. The TEPCO requested the HERP to modify the revised evaluation so that repeating occurrence of the Jogan earthquakes is uncertain. The secretariat of the HERP met the request without consultation with committee members.

The risk evaluation process should be more transparent to get rid of the interference by the industry. Conflict of interest should also be clarified. When the TEPCO has a meeting with seismologists relevant to regulation of the NPPs, "technical instruction fee" has been paid for a long time. While the fund donation and cooperative research with the industry have been disclosed, more items such as payments for technical instruction, lecture, meal, travel are also to be disclosed. The transparency is necessary for Earth scientists to be trusted by society.