

On Considering the Future Countermeasures in Response to the Effects of the Niigataken Chuetsu-Oki Earthquake on the Kashiwazaki-Kariwa Nuclear Power Plant

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Atomic Energy Commission

The Tokyo Electric Power Company's Kashiwazaki-Kariwa Nuclear Power Plant (Unit 1-7) experienced more significant vibration than that assumed in design, due to the Niigataken Chuetsu-Oki Earthquake that occurred on 16 July 2007. This resulted in successful operation of important safety-related functions that protect against the release of radioactivity from the reactors in the framework of defense-in-depth, ranging from the automatic shutdown function to the function to lead a reactor to safe and stable shutdown conditions. In addition, there seems to be no concern about influence on the external environment, although numbers of damage and troubles were caused throughout the power station.

While efforts have already been initiated under the Government by the Nuclear Safety Commission (NSC) and the Nuclear and Industrial Safety Agency (NISA), to analyze the effects of the earthquake on the power plant as well as the measures that were taken by utilities, and thereby to consider and discuss the future countermeasures, the Atomic Energy Commission (AEC), under these circumstances, believes that the following matters are important.

- (1) Utilities should achieve rapid and exact communication to the public when they announce new facts that are obtained with the progress of the site investigation. In addition, the NISA should evaluate the facts and announce the results in a way easily understood by the public. In light of the increasing attention on the present event in foreign countries, the NISA and utilities, according to their respective roles, should also provide adequate information for the international community without delay from the announcement in Japan.
- (2) The NISA should fully cooperate with the investigation that is performed by the International Atomic Energy Agency (IAEA), and subsequently make every effort to share knowledge and experience concerning the effects caused by the present earthquake with the international community, such as by hosting an international conference or other activities.
- (3) Utilities should perform verification of seismic safety of their facilities based on the new guideline for reviewing seismic design of nuclear power reactor facilities established by the Nuclear Safety Commission (back-check) as rapidly as possible, because people who live in areas surrounding the existing nuclear facilities have strong interests in the seismic safety of the facility concerned. In the process, utilities should make best efforts to tackle issues with a greater priority on those that may lead to information important to judge the safety, and to immediately announce the results. In addition, both the NSC and the NISA should confirm the validity of the back-check results, and give an adequate explanation to the public, especially to the local residents in the regions where nuclear facilities are located.
- (4) From the perspective of careful protection, it is important to study measures that should be taken by utilities to assure the safety of nuclear facilities, to share roles of hazard mitigation with the local communities and to promote the public relations activities, when tremendous seismic ground motion actually hits the nuclear facilities, and compile the study results as

an earthquake response manual and make it certainly functional by means of training, etc.

- (5) The AEC believes that both the NSC and the NISA should continuously pay attention to the operational experiences at home and abroad as well as the latest knowledge in various science fields, including seismology, nuclear engineering and industrial safety, and if they find any information that cannot be ignored, they should immediately reflect it in the regulation standards to reduce its negative influence, in order to avoid losing confidence in the safety regulation due to the late discovery of the influence. For this purpose, the NSC and the NISA should review the assurance of timely implementation of the above-mentioned responses, that is, the adequacy of the administrative risk management activities.
- (6) Since nuclear power generation is expected to contribute to the stable supply of electricity, utilities, from the viewpoint of ensuring stable supply, should continuously pay attention to the operational experiences at home and abroad as well as the latest scientific knowledge in order to minimize the possibility that the nuclear power generation is faced with an unexpected situation, and if they find any information that cannot be ignored, they should immediately conduct modifications and so forth of facilities and equipments to reduce its negative influence. For this purpose, utilities should achieve improvement in the management organization and the contents of periodic safety review in order to assure the timely implementation of the above-mentioned responses, that is, the business risk management activities, by taking into account that increases in the number of facilities of the same type and / or the degree of concentration of facilities will increase the influence on power supply stability due to the common cause failure.

The AEC believes that the considerations and discussions on these responses should be performed in a rapid and appropriate manner by the NSC, the NISA and utilities ensuring transparency, with the participation of specialists in various fields, by taking into consideration the diversity of opinions, and the content of discussions should be accordingly explained to the public. The AEC will express its opinion as needed in the future in light of the progress of the above discussions.