Actions to Promote Nuclear Energy Utilization for Addressing Sustainable Development of Global Community

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It is expected that nuclear energy will contribute significantly to foster economic growth, provide security and fuel diversity, and enhance environmental quality in many parts of the world in future, as a mainstay of electricity and heat generation technology. The degree of contribution nuclear energy will attain in future, however, will depend on the technical and managerial innovation to be introduced in the design and operation of nuclear energy systems, as there are competition for survival and choice among energy production technology from the viewpoint of safety, economy and sustainability that will become one of the essential characteristics for future energy supply technologies.

The AEC considers that it is the role of the government to facilitate the investment by nuclear energy business people into the creation of value where none existed before, starting from the radioactive waste disposal activities that coexist with activities for sustainable development of municipalities which accept the site for the disposal activity to the activities for innovation of nuclear energy technology and construction, operation and decommission processes that will bring about long term success – even survival, in nuclear energy business to contribute to the prosperity of mankind.

As for the technology innovation will result from patient and meticulous preparations, the AEC is recommending actions across three different time frames; short term, mid-term and long-term. The short term actions are those aiming to operate existing plants as efficiently as possible, making the plant availability as high as possible and the plant life as long as possible unremittingly paying close attention to details. The mid-term actions are those aiming to prepare innovative LWRs superior to the current designs, take into account revolutionary changes in science and technology on the horizon and the lessons learned from the operation of existing plants. The long-term actions are those aiming to develop new products and processes that make nuclear energy supply systems more sustainable, realizing (1) manageable nuclear waste, effective fuel utilization, and increased environmental benefits; (2) competitive economics; (3) enhanced safety and reliability performance consistent with the requirement of neighbor friendliness; and (4) sufficient security in terms of proliferation resistance and physical protection.