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**Applications Using High Flux LCS gamma-ray Beams: Nuclear Security and Contributions to Fukushima**  
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Nuclear nonproliferation and security are an important issue for the peaceful use of nuclear energy. Many countries now collaborate together for preventing serious accidents from nuclear terrorism. Detection of hidden long-lived radioisotopes and fissionable nuclides in a non-destructive manner is useful for nuclear safeguards and management of nuclear wastes as well as nuclear security. After introducing the present situation concerning the nuclear nonproliferation and security in Japan, we plan to show the present activities of JAEA to detect the hidden nuclear materials by means of the nuclear resonance fluorescence with energy-tunable, monochromatic gamma-rays generated by Laser Compton Scattering (LCS) with an electron beam. The energy recovery linac (ERL) machine is now under development with the KEK-JAEA collaboration for realizing the new generation of gamma-ray sources. The detection technologies of nuclear materials are currently developed using the existing electron beam facilities at Duke University and at NewSubaru. These developments in Japan will contribute to the nuclear security program in Japan and to the assay of melted nuclear fuels in the Fukushima Daiichi nuclear power plants.