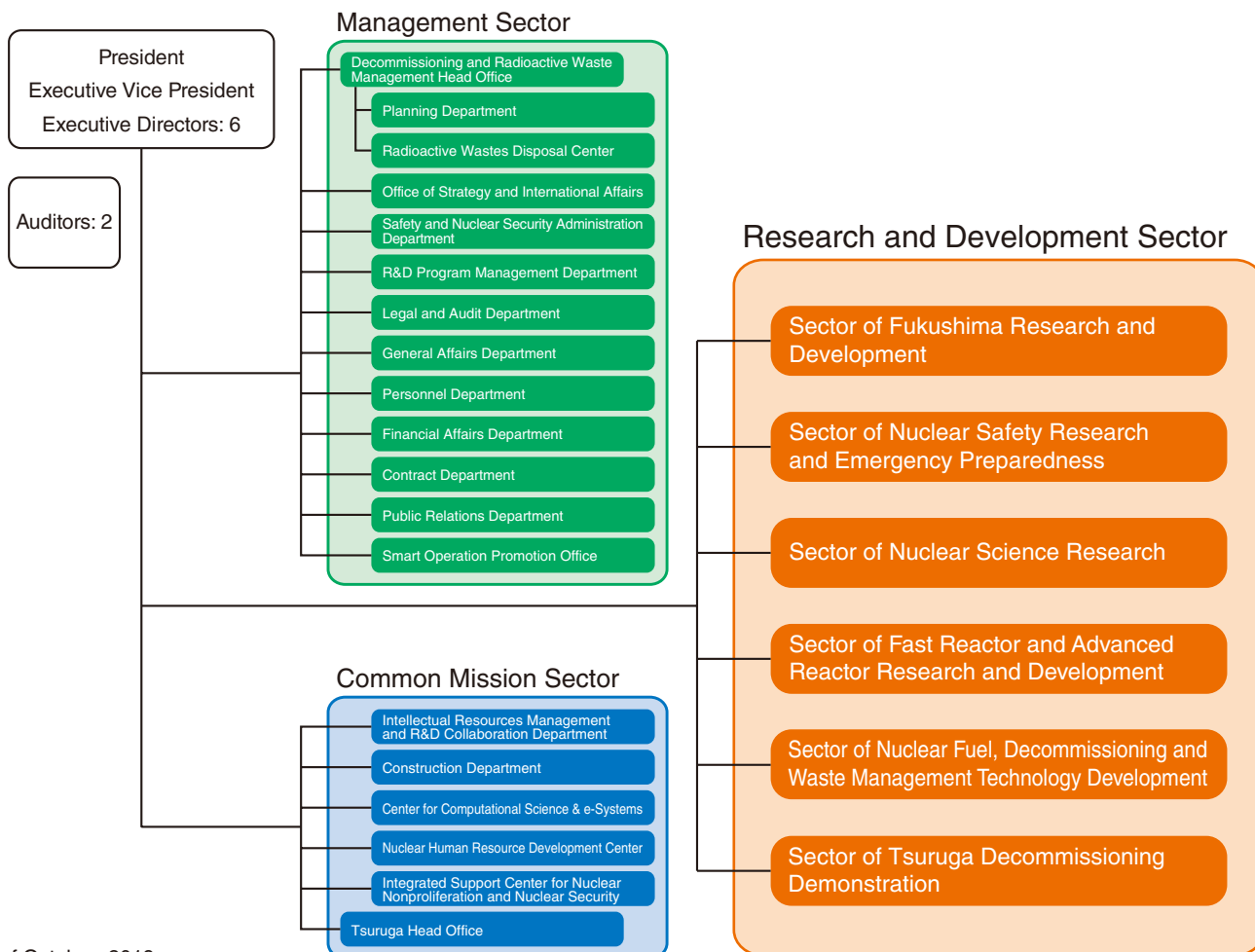


About This Publication and the JAEA Organizational Outline

This publication introduces the latest research and development (R&D) endeavors of JAEA in each field, with each chapter presenting the activities from one sector. The various R&D sectors discussed perform their activities through one or more R&D centers or institutes consisting of one or more sites. These centers and institutes are located throughout Japan, as shown on the map below. The following brief introduction outlines the research undertaken by each sector.

1. **The Sector of Fukushima Research and Development** is promoting R&D towards the decommissioning and the environmental restoration corresponding to the accident of the Fukushima Daiichi Nuclear Power Station (1F) of Tokyo Electric Power Company Holdings, Inc. (TEPCO). The Sector is also promoting the development of R&D infrastructure that is essential to the 1F decommissioning efforts.
2. **The Nuclear Safety Research Center in the Sector of Nuclear Safety Research and Emergency Preparedness** performs research into safety measures that support the national nuclear safety bodies that regulate nuclear power plants, nuclear fuel cycle facilities, and radioactive waste-disposal facilities. This work is conducted at the Nuclear Science Research Institute.
3. **The Advanced Science Research Center in the Sector of Nuclear Science Research** explores novel disciplines in advanced atomic energy sciences to develop theories and investigate novel phenomena, materials, and technologies. In particular, seven research themes have been organized under three divisions: advanced actinides science, advanced nuclear materials science, and advanced theoretical physics.
4. **The Nuclear Science and Engineering Center in the Sector of Nuclear Science Research** carries out fundamental research on various key technologies for the use of nuclear energy at the Nuclear Science Research Institute.
5. **The Materials Sciences Research Center in the Sector of Nuclear Science Research** is engaged in research using neutrons at the Nuclear Science Research Institute and the Japan Proton Accelerator Research Complex (J-PARC). Research using synchrotron radiation is performed at the Harima SR Radioisotope Laboratory.
6. **The Reactor Systems Design Department and the HTGR Research and Development Center in the Sector of Fast Reactor and Advanced Reactor Research and Development** further the development of High Temperature Gas-cooled Reactor (HTGR) technology, technology for hydrogen production through high-temperature water splitting, and technology for helium gas turbines at the Oarai Research and Development Institute.

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7. **The Reactor Systems Design Department, Fuel Cycle Design Department, Fast Reactor Cycle System Research and Development Center, and Tsuruga Comprehensive Research and Development Center in the Sector of Fast Reactor and Advanced Reactor Research and Development** are working toward the establishment of fast reactor (FR) cycles to address long-term energy security and global environmental issues. This includes enhancing the safety of the FR system at the Oarai Research and Development Institute, compiling the results on the Prototype Fast Breeder Reactor Monju (MONJU), attaining inspection and repair technologies for the FR system at the Tsuruga Comprehensive Research and Development Center, and manufacturing plutonium fuel and reprocessing spent FR fuel at the Nuclear Fuel Cycle Engineering Laboratories in cooperation with the Sector of Nuclear Fuel, Decommissioning and Waste Management Technology Development.
8. **The Sector of Nuclear Fuel, Decommissioning and Waste Management Technology Development** is developing technologies for the safe and rational decommissioning of nuclear power facilities as well as measures for processing and disposing of radioactive waste. Multidisciplinary R&D aimed at improving the reliability of the geological disposal of high-level radioactive waste in Japan is also performed. A particular focus is the establishment of techniques for investigating the deep geological environment at the Tono Geoscience Center and the Horonobe Underground Research Center. The focus at the Nuclear Fuel Cycle Engineering Laboratories is on improving the technologies for geological disposal facility design and safety assessment, and on developing nuclear fuel cycle technology for light water reactors (LWRs).
9. **The Center for Computational Science & e-Systems** aims to advance simulation technologies and fundamental technologies in computational science, as well as the operation and maintenance of computer systems and networks. These activities are mainly conducted at the Nuclear Science Research Institute and the Kashiwa Office.
10. **The Integrated Support Center for Nuclear Nonproliferation and Nuclear Security (ISCN)** plays an active role in technology development to support the activities of international organizations such as the International Atomic Energy Agency, and other countries to strengthen nuclear nonproliferation and nuclear security, activities to ensure transparency in nuclear material management and peaceful uses, and policy research. Moreover, the ISCN continues to support the human resources development activities of Asian countries. These efforts are carried out mainly at the Head Office and the Nuclear Science Research Institute.

R&D Institutes/Centers of JAEA

