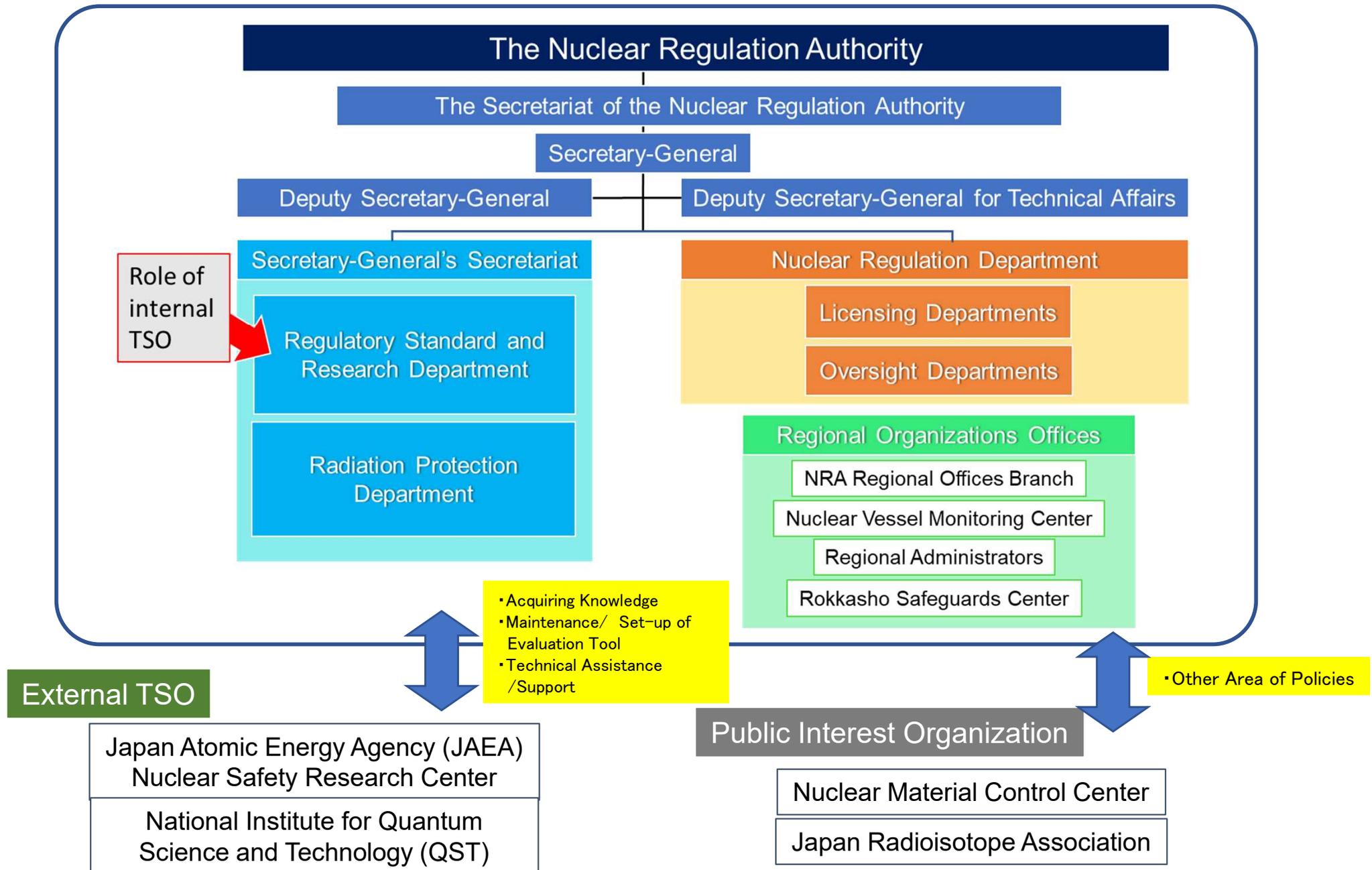


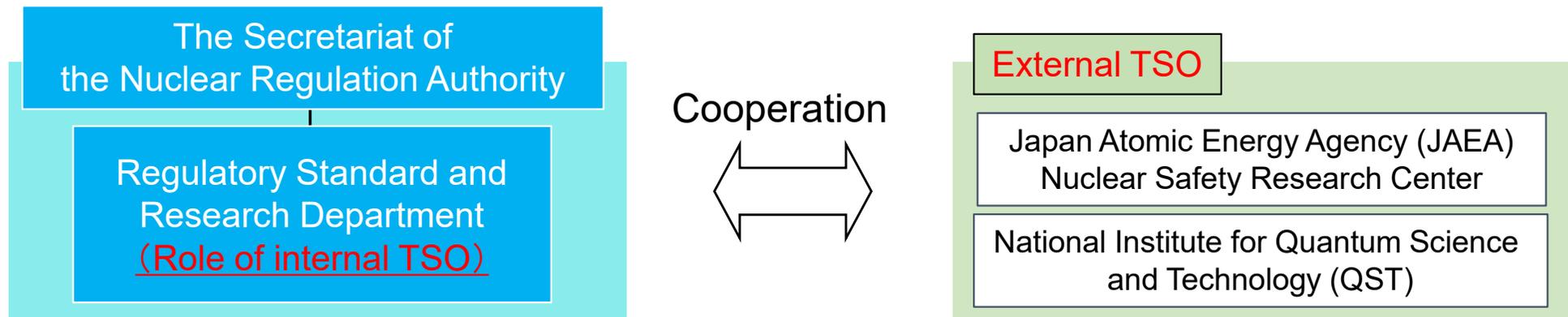
External Advisors Meeting 9 November 2023

Information Sheet

**Topic 1: Function and Relationships that Regulator
Expect for TSOs**

Technical Support System of the NRA





Internal TSO

How NRA come to have an Internal TSO

JNES, the former external TSO to NRA, was merged into NRA in March 2014.

Role

To support the Commission's independent decision-making based on the scientific and technical expertise, NRA is required to strengthen its scientific and technical performance and establish the firm technical basis. The regulatory research conducted according to the research program set in advance, is one of the best way to achieve it.

Objective

To develop and maintain the expertise and human resources, which enable to support the regulation, by collecting and acquiring the safety-significant information and developing methods including computer code analyses and monitoring techniques.

Internal TSO: Regulatory Standard and Research Department



NRA's regulatory research is conducted by four research groups consisting of about 160 staff including 140 researchers.

1. Research for reactor system safety

Fuel, material aging, fire, etc.

2. Research for radiation protection and radioactive waste management

Waste disposal, radioactive measurement, health risk, etc.

3. Research for severe accident

PRA including TH and HF, SA phenomena, radioactive material release, emergency response, etc.

4. Research for earthquake, tsunami and volcano

Evaluation methods of seismic motion and fault activity, and those for integrity of buildings and structures against natural phenomena

PRA: Probabilistic risk assessment , TH: Thermohydraulic, HF: Human factor,
SA: Severe accident

Research Topics with Particular Emphasis on:

- Level 1 PRA, Severe Accidents including Level 2 PRA, the Safety of Accident-Resistant Fuels
- Aging Deterioration of Equipment and Structures in Nuclear Power Plants
- Ensuring the Safety of Final Disposal, etc.



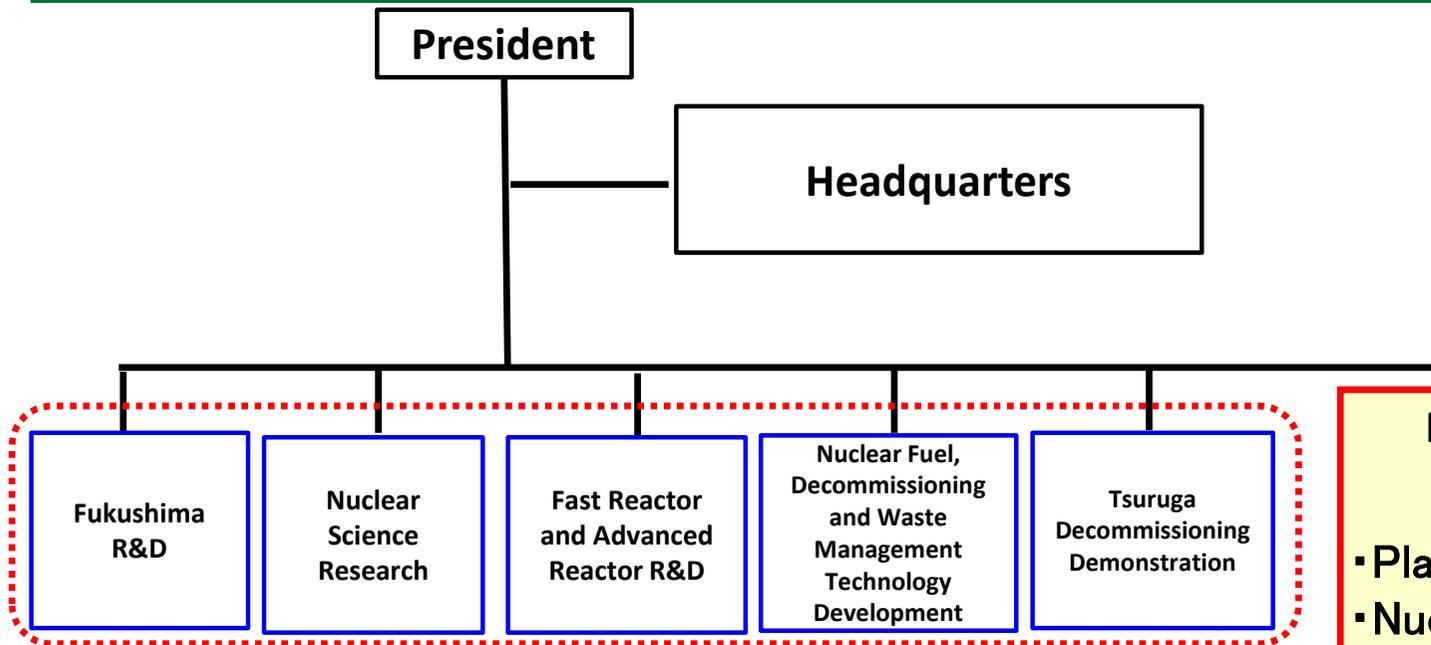
Role

- External TSO set the mid- / long- term research program and the annual research program which had been based on the NRA's mid- / long- term target and conducts research work according to the respective programs.
- Provide technical advice directly to the NRA
- One division of JAEA is an external TSO as described on the next page

Objective

- JAEA conducts the leading and advanced research in the field of nuclear reactor facility, fuel cycle facility, radioactive waste management and disposal, nuclear emergency and preparedness, etc.
- Internal and external TSOs conduct their research work by means of commissioned or cooperative projects
- QST conducts the radiological research in the field of radiation safety and protection, radiation exposure medical treatment, etc. including assessment to human being caused by low level but long-term radiation exposure.
- JAEA and QST secure and develop necessary human resources

JAEA Organizational Chart



JAEA has staff members of approximately 3000.

JAEA Research Areas Other than External TSO

(Excerpts from medium- to long-term plans on research topics of JAEA)

- Research on nuclear power systems in pursuit of greater safety and economic superiority
- Research and development related to high-temperature gas-cooled reactors
- Research and development related to fast reactors and nuclear fuel cycles
- Basic Nuclear Fundamental Research, Advanced Nuclear Science Research, Neutron Utilization Research, and Nuclear Computational Science Research
- R&D for decommissioning of the Fukushima Daiichi Nuclear Power Plant accident
- Research and development related to environmental restoration after the accident at TEPCO's Fukushima Daiichi Nuclear Power Station
- Research and development on the treatment of high-level radioactive waste
- Research and development of geological disposal of high-level radioactive waste, etc.

Nuclear Safety Research and Emergency Preparedness

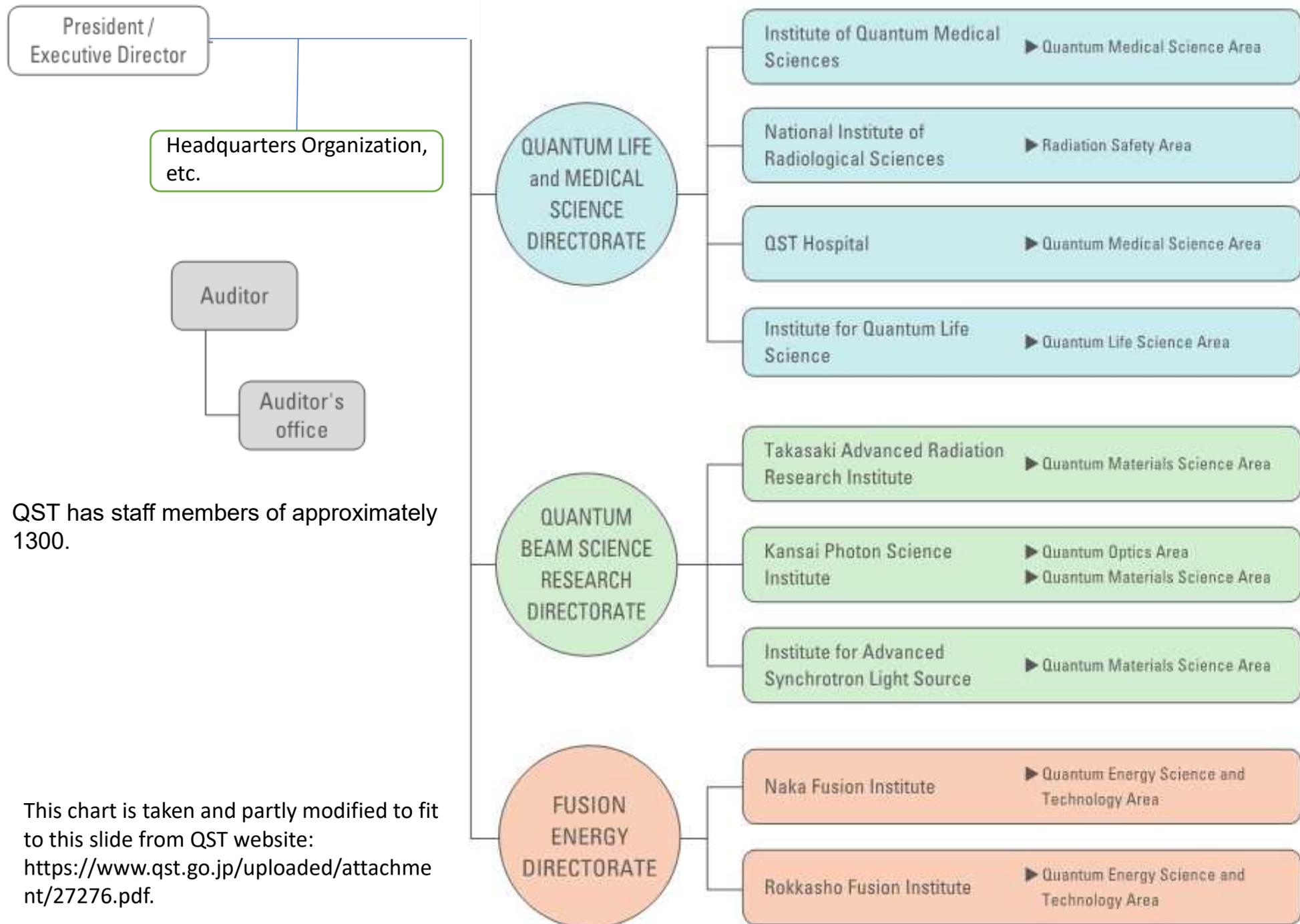
- Planning and Co-ordination Office
- Nuclear Safety Research Center
- Nuclear Emergency Assistance and Training Center

84 staff members (As of 1 April 2023)

Research Topics of External TSO

- Research on SA, fuel behavior, and thermohydraulic evaluation of nuclear reactor facilities in the event of an accident
- Research on material deterioration and structural soundness evaluation
- Research on SA Evaluation of Nuclear Fuel Cycle Facilities
- Research on Critical Safety Evaluation
- Research on radioactive waste disposal and decommissioning
- Research on Safeguards: Environmental Sample Analysis

QST Organizational Chart



QST has staff members of approximately 1300.

This chart is taken and partly modified to fit to this slide from QST website: <https://www.qst.go.jp/uploaded/attachment/27276.pdf>.