Future Vision "JAEA 2050 +" (1/3)

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"JAEA 2050 +" outlines Goals and Actions we should take."

1. Goals toward 2050 and beyond

- ☐ Contribution to the future society by bringing out the full potential of Nuclear Science and Technology(S&T)
 - ◆ Mitigate the risk of **global climate change**
 - **♦** Energy security
 - ◆ Realization of Ideal Future society
- ☐ "New Era Nuclear S&T" reflecting on the lessons learned from 1F accident
 - "New Era Nuclear S&T" means

new endeavor beyond the existing framework to achieve the following goals through the interaction with the society in terms of the contribution to the future society

- ✓ Development of Nuclear S&T systems that addresses "S+3E*"
- ✓ Creation of the innovations through synergies with other areas of S&T
- ◆ Tackle the challenges including Ethical, Legal and Social Issues (ELSI) associated with Nuclear S&T and present solutions

Overall Image

Challenges of climate change issue

Ensuring stable energy supply

Pursuit of the maximum potential of Nuclear S&T Collaboration through synergies with other area of S&T

Realization of the ideal future society

Utmost priority placed on safety
Addressing ELSI concerning nuclear energy
International cooperation and contribution
Contribution to regional development



Future Vision "JAEA 2050 +" (2/3)

2. Actions toward 2050 and beyond (1/2)

R&D that opens "New Era Nuclear S&T"

Establishing six research themes and promoting multidimensional R&D cross-sectionally and strategically

ATF cladding Research on safety enhancement following the 1F accident, etc.

Pursuit of safety

Quest for an nnovative reacto system

HTGR / FR

Conceptual study of various reactor systems. etc.

ADS

Management of radioactive materials

Decommissioning evolution

Visualization technology for radioactivity distribution

●R&D for more rational means of nuclear waste treatment and disposal, etc.

Development of sciences through Nuclear S&T

Utilization of

Nuclear Energy

 Development of the cutting-edge technologies for safe, fast and effective decommissioning, etc.

New material synthesis

Sophistication and spin-off

Creation of new knowledge

Research on wearable devices

using graphene sheet materials

- Novel material developmentExplosives detection system, etc.

- Research on health monitoring devices
- •Food research using quantum beams, etc.

[The figures : example of R&D]



Future Vision "JAEA 2050 +" (3/3)

2. Actions toward 2050 and beyond (2/2)

Efforts / challenges for sustainable utilization of Nuclear S&T

- ☐ Steadily tackling fuel cycle back-end through "Management of radioactive materials" and "Decommissioning evolution" to develop an R&D cycle for nuclear S&T
- ➤ Addressing "<u>nuclear legacy</u>" and creating new industrial fields through such efforts.
- ➤ <u>Tackling challenges to reduce environmental</u> burden

Realize sustainable Nuclear S&T that is trusted and accepted by the society

Establishing a sustainable cycle for R&D of Nuclear S&T

Efforts to address "nuclear legacy" Challenges to reduce environmental burden

International cooperation / International contribution and regional development

- ☐ Actively participating in R&D cooperation with advanced nuclear energy countries, contributing to international organizations and emerging nuclear energy countries as well as disseminating, and making outreach on the R&D results, etc.
- ☐ Contributing to strengthening the nuclear non-proliferation and nuclear security regime
- ☐ Contributing to regional development as a community member

Redefining the organizational concept and securing / training human resources

- ☐ Reorganizing JAEA to coordinate and collaborate with other sectors beyond the nuclear community and contribute to the future society
- ☐ Securing and training human resources from a wide range of fields