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Planned Activities of the “Integrated Support Center for Nuclear Non-Proliferation and Nuclear Security”

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I. Background of the Establishment

Japan's National Statement at the Washington Nuclear Security Summit (Excerpts)

Ministry of Foreign Affairs of Japan,

http://www.mofa.go.jp/policy/un/disarmament/arms/nuclear_security/2010/national_statement.html

- Establishment of a regional support center for strengthening nuclear security for Asia
“Japan will this year establish a regional center for the strengthening of nuclear security, tentatively named the “Integrated Comprehensive Support Center for Nuclear Non-Proliferation and Nuclear Security for Asia” under the Japan Atomic Energy Agency (JAEA), with the aim of institutionalizing support for nuclear security on a permanent basis and contributing to strengthened nuclear security in Asia and other regions in line with opinions expressed at the aforementioned seminar in January.”



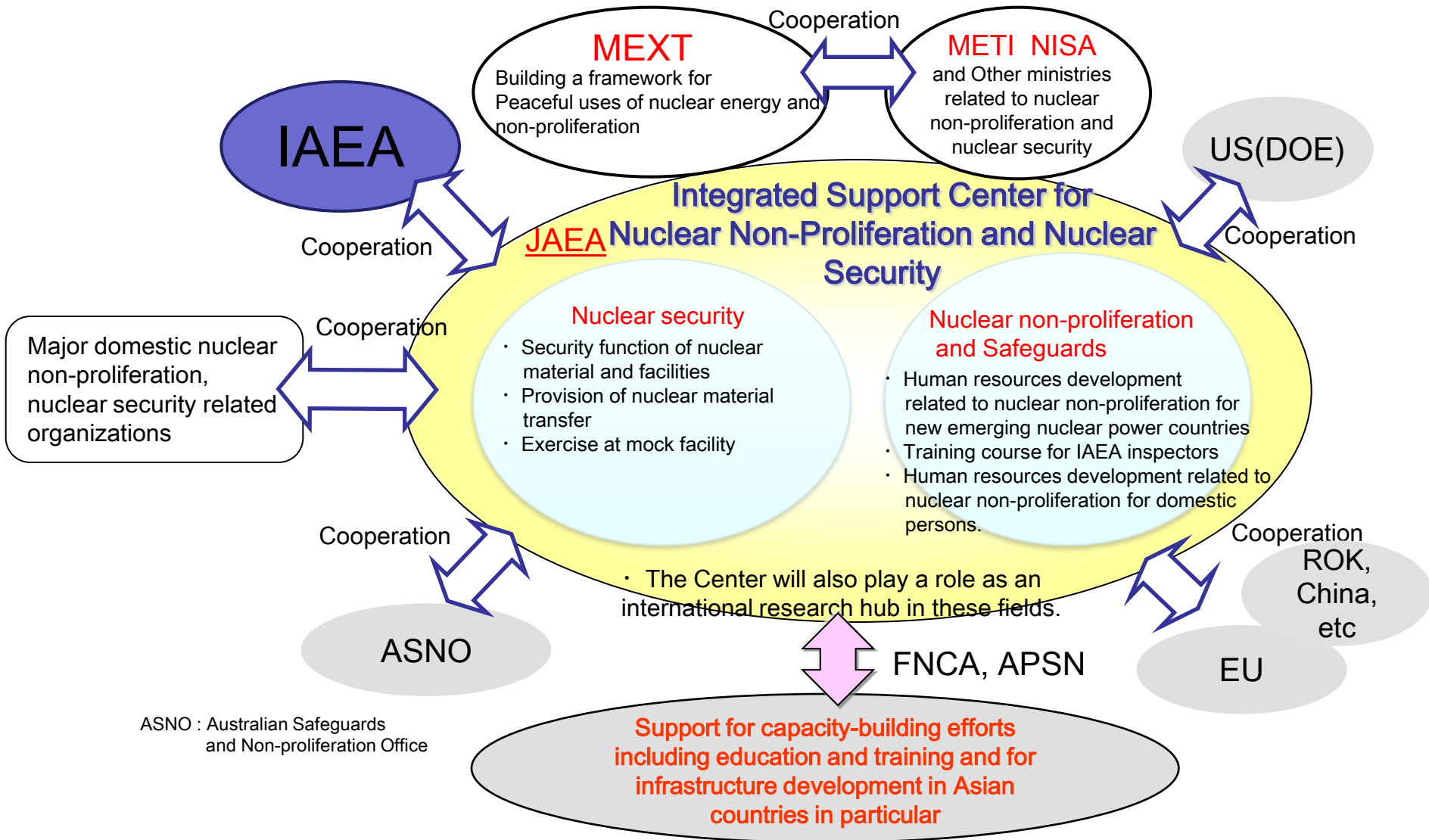
JAEA has established the “Integrated Support Center for Nuclear Nonproliferation and Nuclear Security” on December 27, 2010 at Tokai-mura.

Opening Ceremony

- ❑ Opening ceremony was held on 4th February 2011 at Tokai Ricotti where the Integrated Support Center was set up
- ❑ One hundred fifty participants attended the ceremony from MEXT, METI(NISA), Member of the Diet, IAEA, U.S., ROK(KINAC), Indonesia(BATAN), WINS, Delegation of the EU to Japan, Embassy of France, Embassy of U.A.E.
- ❑ Opening remarks made by **A. Suzuki, President of JAEA**, and congratulatory addresses were done by **R. Sasaki, vice minister of MEXT, S. Kondo, Chairman of Japan Atomic Energy Commission, Jill Cooley, IAEA**. M. Senzaki, Director of the integrated support center explained planned activities of the center.
- ❑ The ribbon cutting ceremony was lastly made by R. Sasaki, S. Kondo, M. Hashimoto, Governor of Ibaraki Prefecture, T. Murakami, Mayer of Tokai village, S. Naito, Deputy Director-General, METI (NISA), **Laura Holgate, NSC, U.S.A.**, Jill Cooley, A. Suzuki.



II. Outline of the Center



Lecturers will be invited from both domestic and foreign/international entities including the IAEA Mock physical protection facility and/or virtual reality systems will be built for training.

III. Vision of Center Activities

As the international foothold to promote nonproliferation and nuclear security, “Integrated Support Center for Nuclear Nonproliferation and Nuclear Security” will:

- contribute to fostering nuclear non-proliferation and nuclear security culture in Asia, and cultivate human resources who will take leadership roles in this field.
- contribute to global capacity building for nuclear non-proliferation and nuclear security and infrastructure development mainly in Asia through human resource development.
- make efforts towards balancing peaceful use of nuclear energy and ensuring nuclear non-proliferation and nuclear security, disseminating information to the international community and sharing the outcomes.

IV. Outline of Center Activities

Making use of Japan's knowledge and experiences in peaceful uses of nuclear energy, the Center will conduct following **three main activities to contribute to strengthening nuclear non-proliferation and security** mainly in Asian nuclear emerging countries.

1. Capacity building assistance through human resources development including training and education

The Center will provide know-how and disseminate information through lectures , exercise, workshop, e-learning system for their sustainable mid-term and long term activities for peaceful uses of nuclear energy. Through these activities the Center will also contribute to establish global human network in this field mainly in Asian region.

2. Assistance for infrastructure development

The Center will provide with technical assistance for their infrastructure development on physical protection system and SSAC. The center will also support infrastructure development including establishment of domestic legal frameworks and development of regulation/manuals based on international commitment.

3 . Developing technologies and providing support

The Center draws on extensive domestic research and development capabilities for nuclear material detection and measurement to provide technical support for building and strengthening nuclear security programs in other countries.

1. Summary of Capacity Building Assistance including Training and Education

(1) Training courses for nuclear security

① Expected participants

Officials/personnel from regulatory bodies, nuclear operators, radioactive material licensees, police and coast guard

② Program contents

- (1) Design and evaluation process for physical protection systems for facilities using nuclear and other radioactive materials
- (2) Design and evaluation process for physical protection systems for transport of nuclear and other radioactive material
- (3) Detection of and response to illegal acts related to nuclear and other radioactive material

(2) Training courses for safeguards and state system of accounting for and control of nuclear material

① Expected participants

Nuclear operators and government officials involved in state system of accounting for and control of nuclear material, etc.

② Program contents

- (1) IAEA safeguards
- (2) National system of safeguards
- (3) Material accounting system

(3) Training courses on the international nuclear non-proliferation framework

① Expected participants

Nuclear operators and government officials responsible for the development of domestic legislation in the fields of nuclear non-proliferation and nuclear security

② Program contents

- (1) History and international trend of peaceful uses of nuclear energy and nuclear non-proliferation
- (2) International framework of nuclear non-proliferation
- (3) Japan's efforts to ensure compatibility between peaceful uses of nuclear energy and nuclear non-proliferation

Action Plan for Human Resource Development (FY2011 plan)

	Nuclear Security Course	Safeguards/SSAC Course	International Framework of Nuclear Non-proliferation Course
Number of courses expected to be held in 2011 (Duration)	<p><u>International Training Course: Twice (1 ~ 2 weeks)</u> Held in Tokai, mainly for international participants</p> <p><u>Dispatching training Course: Once (2-3 days)</u> Sending experts to a specific country and held on site</p> <p><u>Domestic Training Course: Twice (few days-1 week)</u> Held for Japanese participants</p>	<p><u>International Training Course: Once (2 weeks)</u> Same as on the left</p> <p><u>Training Course for IAEA Inspector : Twice (1 week)</u> Held at Riccotti and Nuclear Fuel Cycle Engineering Laboratories (Under discussion with IAEA)</p> <p><u>Dispatching Training Course: Once (2-3 days)</u> Sending experts to a specific country and held on site</p>	<p><u>International Training Course: Once (1 week)</u> Same as on the left</p> <p><u>Dispatching Training Course: Four times (2-3 days)</u> Sending experts to a specific country and held on site</p>
Description of courses	<ul style="list-style-type: none"> International Training Course covers lectures at Riccotti, exercises using devices including intrusion detection equipment and exercises using mock-up facilities at Nuclear Science Research Institute. As to physical protection at nuclear power station, Nuclear and Industrial Safety Agency and JNES conduct a training containing experience and knowledge of Japan. This course is targeted for countries newly introducing nuclear power, including Viet Nam. Topics of Site Visit Training Course are focused on needs of intended participant countries. Domestic Training Course covers: seminars to explain revisions of documents including IAEA basic standards; in cooperation with WINS, workshops designed for domestic participants. 	<ul style="list-style-type: none"> International Training Course has been implemented since 1996. It covers lectures at Riccotti and exercises of nuclear material accounting at Nuclear Science Research Institute. Training Course for IAEA inspector is designed for IAEA inspectors in charge of nuclear fuel recycle laboratories. It includes exercise at Nuclear Fuel Cycle Engineering Research Institute. Site Visit Training Course covers specific topics considering the needs of the country to be visited, including support for preparation of ratification of Additional Protocol. 	<ul style="list-style-type: none"> International Training Course includes lectures at Riccotti and a site visit to a light water reactor. Site Visit Training Course covers seminars on international frameworks for nuclear non-proliferation or working-level meetings (support) on specific topics according to the needs in an intended participant country.

(4) Contribution to Mid-term and Long-term Nuclear Non-proliferation Security Education in Collaboration with Universities

- ① Mid-term and long-term human resource development collaborating with universities in educational and experimental fields, including postgraduate education and nuclear security R&D.**
 - short-term on the job training
 - mid-term stay for participation in technology R&D
 - long-term stay for the participation in technology R&D
- ② Lecturers will be invited from both domestic and foreign/international entities.**
- ③ Accept postgraduates as special research students. The Center will nurture these students as engineers or researchers through nuclear security and nuclear non-proliferation related research using JAEA facilities.**

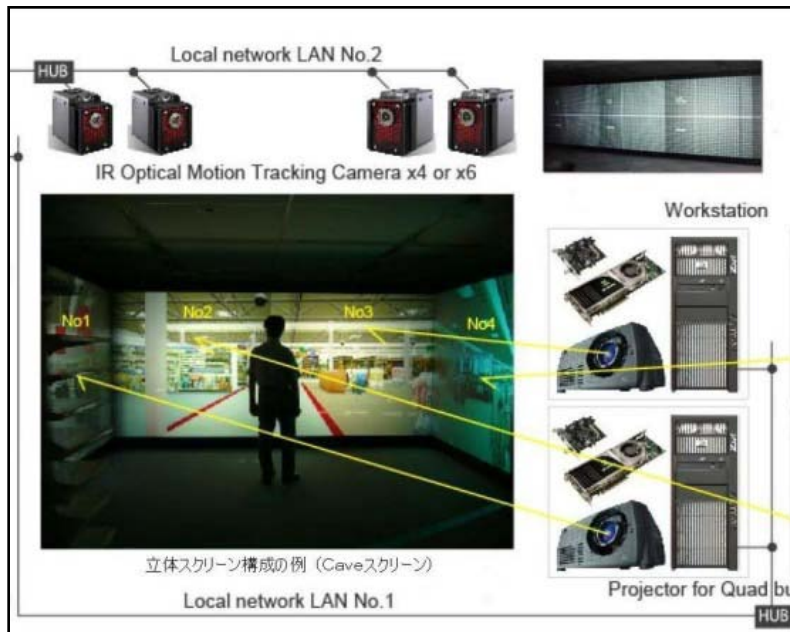
(5) Application of advanced technology and field experience to original human resource development

Virtual Reality (VR) System

- Setting up a virtual reality system that anticipate various situation, to learn protection measures that are needed for nuclear facilities
- Creating proper environment fitting for various situation that needs nuclear security measures and assistance needs (from beginners to practitioners)

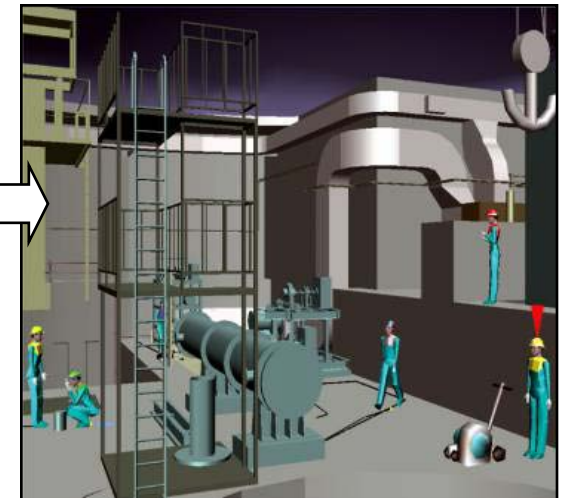
VR Training Images

① Security design of nuclear facilities and their surrounding areas, walk through training both within and without facilities.



② Exercise of equipment installation and lay out (Evaluation of sensor or camera lay out and its effect)

Function parts



③ Intrusion simulation Analysis of route of entry
Design of protected facilities
(Simulation of intrusion, detection· delay· response)

(6) Training Field of Physical Protection on Nuclear Materials and Facilities

By setting up real protection facilities and equipment such as security fence, sensors and monitors in training field, to hold effective protection practice based on actual experience

Perimeter Barriers

- Security fence (Double fence)
- Vehicle barrier
- Gate, etc.

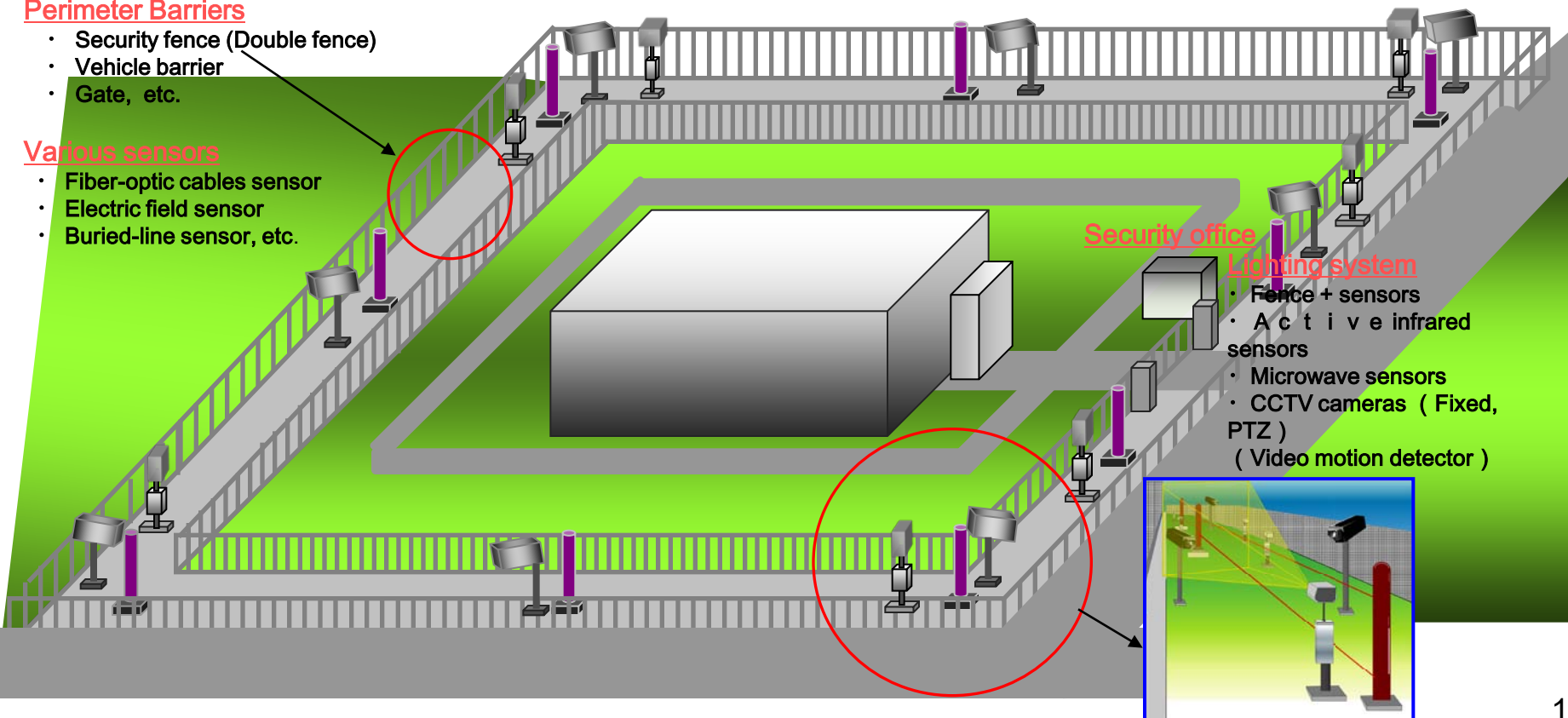
Various sensors

- Fiber-optic cables sensor
- Electric field sensor
- Buried-line sensor, etc.

Security office

Lighting system

- Fence + sensors
- Active infrared sensors
- Microwave sensors
- CCTV cameras (Fixed, PTZ)
(Video motion detector)



V. Domestic and International Cooperation

Nuclear non-proliferation and nuclear security cover a wide range of issues, so various organizations are required to be involved in the field.

(Development of Domestic Frameworks)

- Discussion on operation of the Center with relevant ministries and agencies
- Contribution to “Nuclear Energy Center Vision” in Tokai-mura for disseminating information related to nuclear non-proliferation and nuclear security
- Nuclear and Industrial Safety Agency (NISA) and Japan Nuclear Energy Safety Organization (JNES) will provide training as for physical protection at a nuclear power plant.
- Collaboration with relevant organizations including universities, JNES, Nuclear Material Control Center (NMCC) and electric power companies
- Budget request by relevant authorities including MEXT, NISA

(International Cooperation)

The Center should not be just an institution under Japan Atomic Energy Agency (JAEA), but be an accessible and valued international center with global recognition.

- Close coordination with IAEA
- Collaboration with DOE and EU
- Coordination with ROK, China, other states

