



East & Southeast Asia Programs

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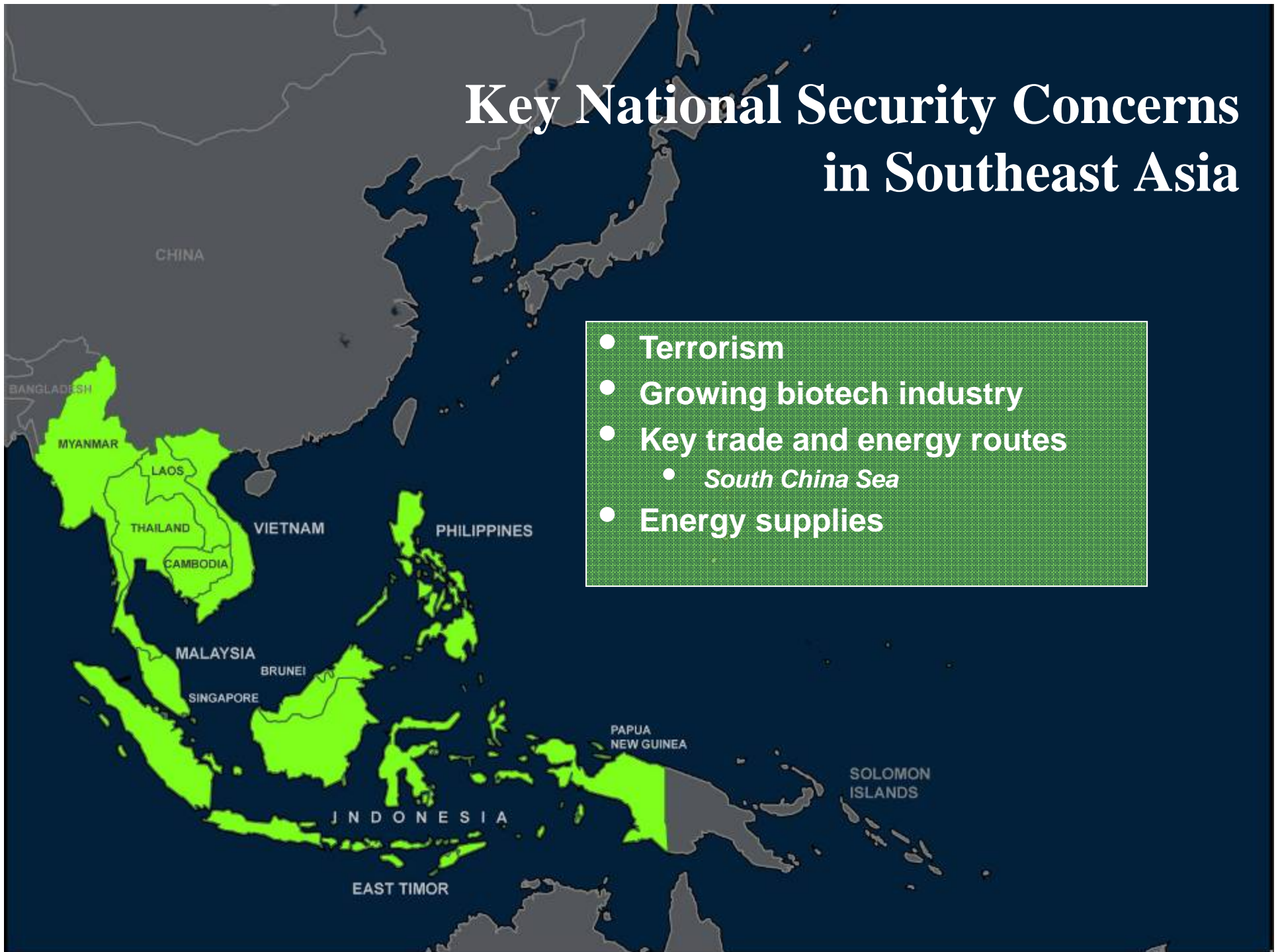
Key National Security Concerns in East Asia

- Democratic Peoples Republic of Korea (DPRK) nuclear program
- Growth in nuclear power and nuclear fuel cycle activities
- Tensions on Korean peninsula and across Taiwan strait
- China's emergence as economic and military power



Key National Security Concerns in Southeast Asia

- Terrorism
- Growing biotech industry
- Key trade and energy routes
 - *South China Sea*
- Energy supplies





Current Program Focus

- **Reduce proliferation risks of expanding civilian nuclear energy**
 - Confidence building
 - Transparency
 - Regional/Global fuel-cycle supply & demand
 - Nuclear waste management
- **Regional Cooperation on Peaceful Uses of Nuclear Technology**
 - Nuclear Energy & Nonproliferation workshops (NE&N)
 - East Asia Forum on Radioactive Waste Management (EAFORM)
- **US-China-Taiwan engagement**
 - Nuclear Materials Management
 - SNF storage & disposal, information management, technology demonstrations
 - Visiting Scholar Program
 - China-US PUNT (Peaceful Uses of Nuclear Technology)



- **Korea peninsula nuclear security**
 - Cooperative Agreements
 - KAERI, KRMC
- **Southeast Asia**
 - Infrastructure and Human-capacity building
 - CSCAP/WMD Expert Group



Program Objectives

Discourage the spread of enrichment and reprocessing technologies

Encourage advanced safeguards & physical protection

- technologies and approaches

Develop sustainable infrastructures that support nonproliferation objectives

Emphasize Regional Approaches

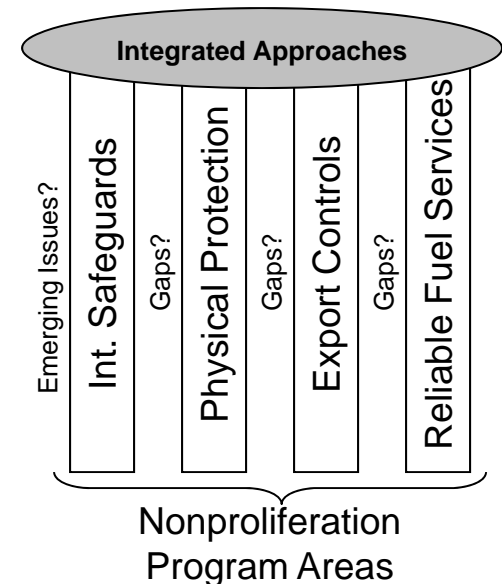
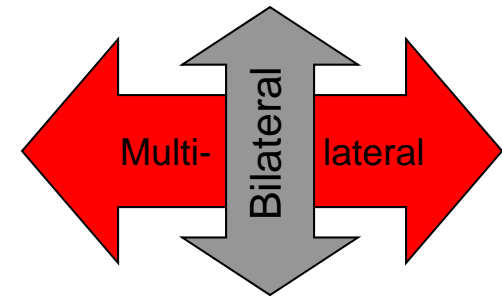
- Bi-lateral & multi-lateral

Promote Regional Leadership

Identify Gaps and Emerging Issues

Promote integrated, complementary approaches

- Leverage existing programs





Annual Nuclear Energy and Nonproliferation Workshop (NEN)



- Facilitates technical collaborations and information
 - Promotes bi- and multi-lateral cooperation to help implement nonproliferation objectives
 - Workshop sessions:
 - Safeguards
 - Physical protection
 - Fuel-cycle needs
 - Spent-fuel management
 - Infrastructure development
 - Multi-national approaches
-
- Held annually since 2005 in S. Korea
 - 7th workshop to be held in Amman, Jordan, Sept. 2011
 - First outside Korea
 - Participants from countries with or considering nuclear-energy programs.
 - Representative from national laboratories, universities, and other technical institutions



Taiwan Collaborations

SNF Dry Storage Information Management

- Dry Storage Facility at Chinshan NPP
 - Information & authentication and encryption

Spent Fuel Management Strategy Analysis Tool

- Develop Taiwan-specific analyses
 - Long-term planning: 50 – 100 years



Geological Repository Sciences

- Performance assessment

Technology Transfer for Radioactive Waste Disposal

- Facilitate communications between US and Taiwan Waste Facilities



Regional Conferences

Center for Security Cooperation in the Asia Pacific (CSCAP)

- WMD Expert Group
 - Biannual meetings
- Track-II
 - Input to ASEAN Regional Forum

East Asia Forum on Radioactive Waste Management (EAFORM)

- Biannual conferences



DRAFT

**Handbook on Preventing the Proliferation of
Weapons of Mass Destruction in the Asia-Pacific
Draft Copy**

Council for Security Cooperation in the Asia Pacific
WMD Study Group

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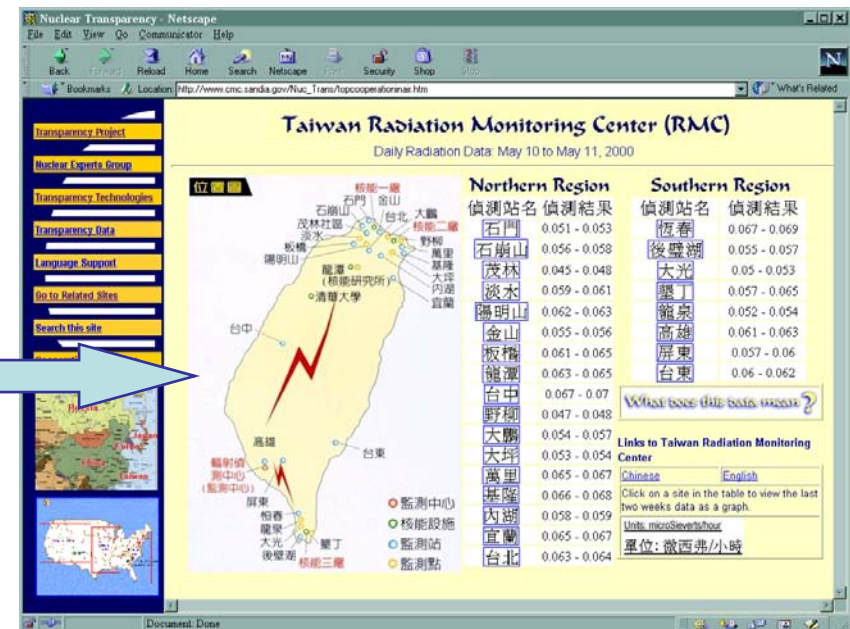
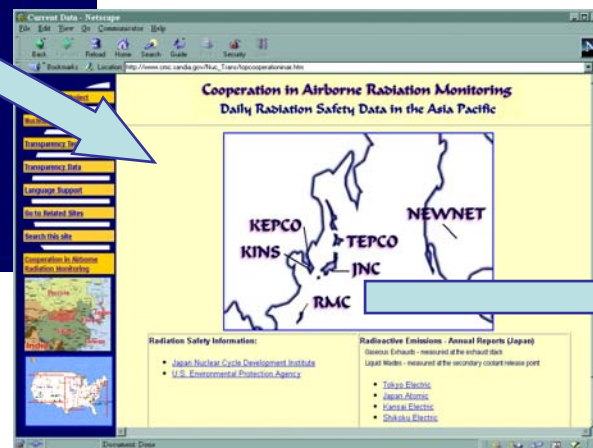
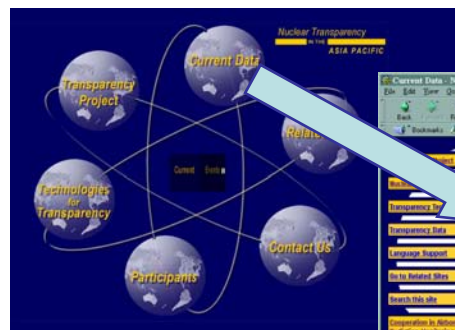
NE Asia Nuclear Transparency

Japan, China, Taiwan, Russia, and South Korea cooperate to increase transparency in radiological safety & nonproliferation

- Facilitated by Sandia through NucTrans website



Airborne radiation monitoring

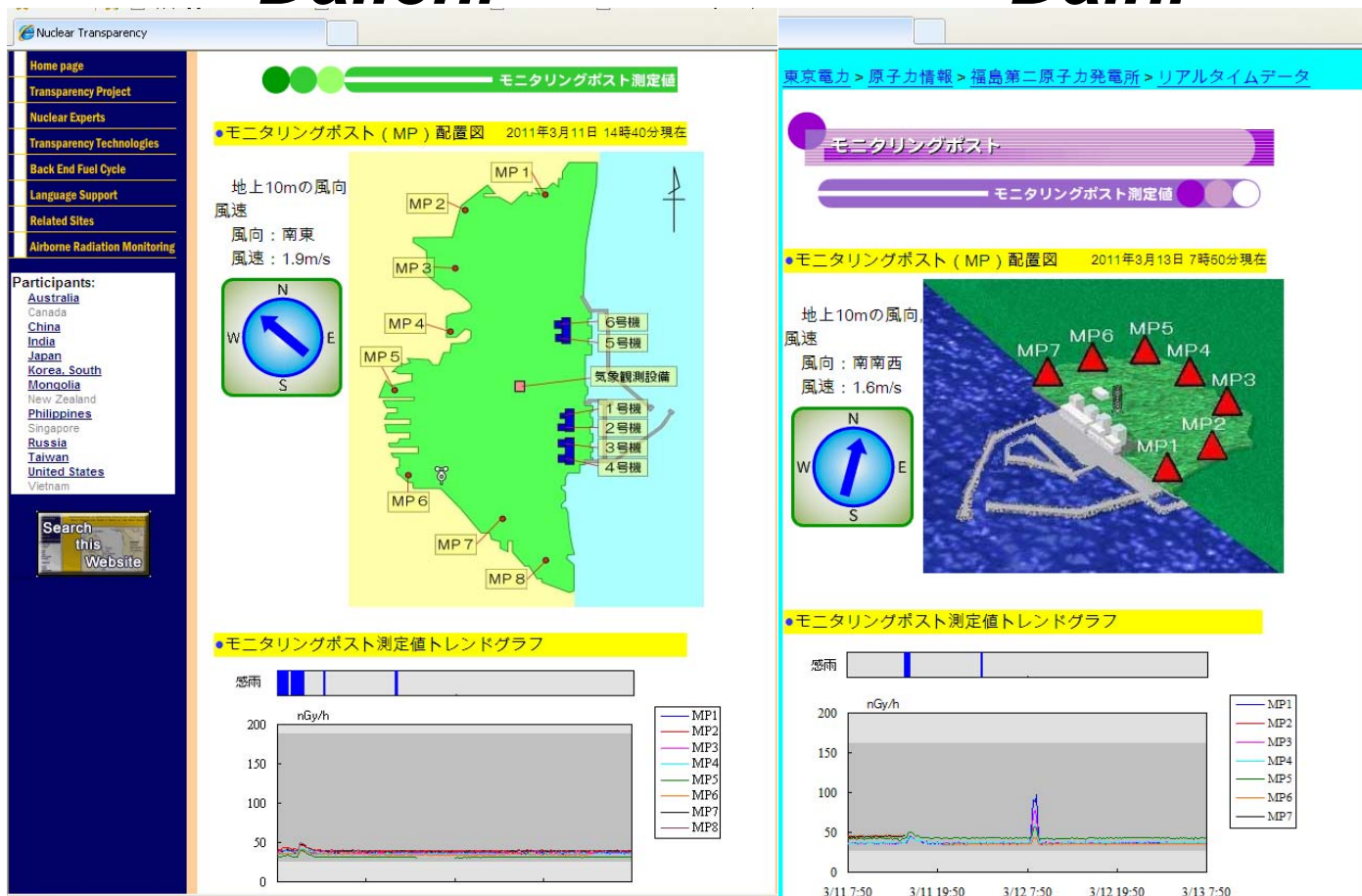


www.nuctrans.org



NucTrans Website

Fukushima (March 2011) *Daiichi* *Daini*



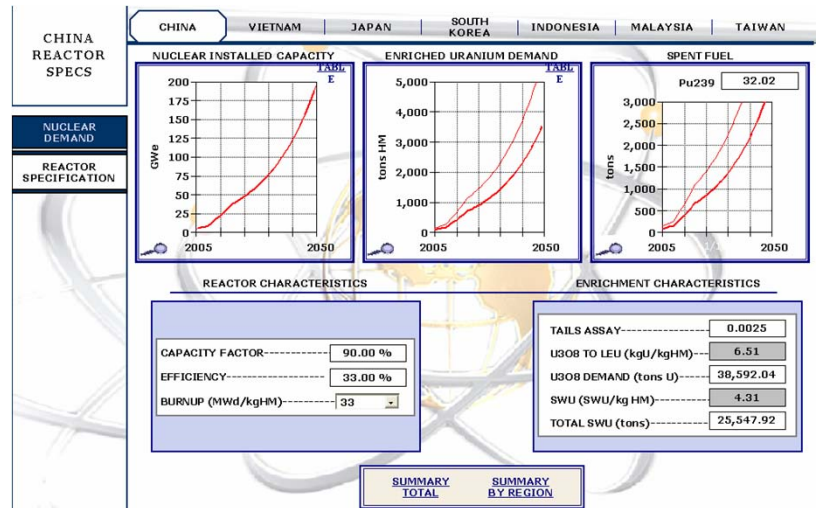
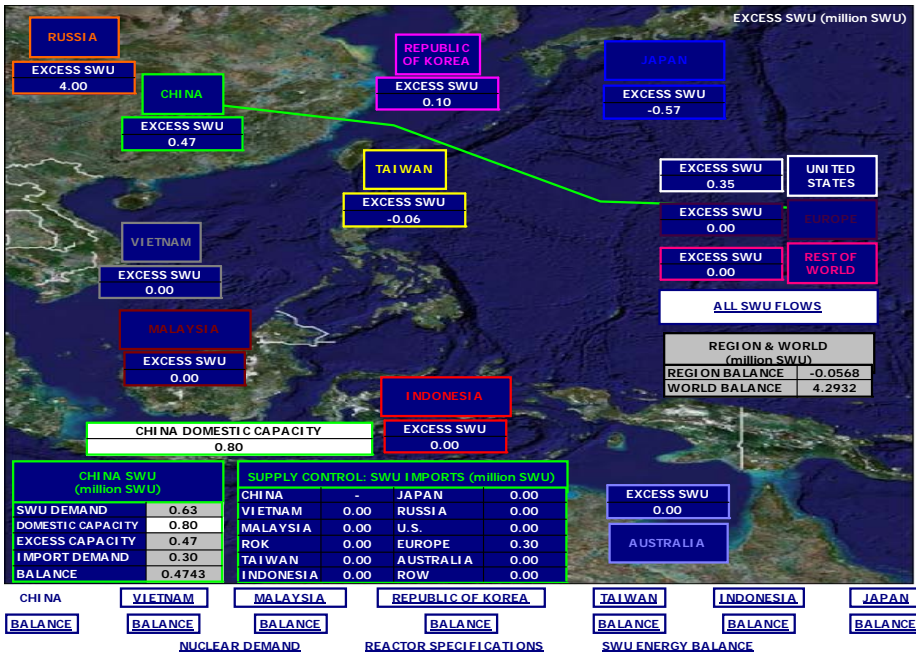


Summary

- **Technology cooperation can help enable international cooperation on regional security interests and concerns**
- **Promote cooperative, multinational approaches**
- **Addressing fuel-cycle supply & demand to help reduce proliferation risks**
- **Encourage cooperation on nuclear waste management strategies**

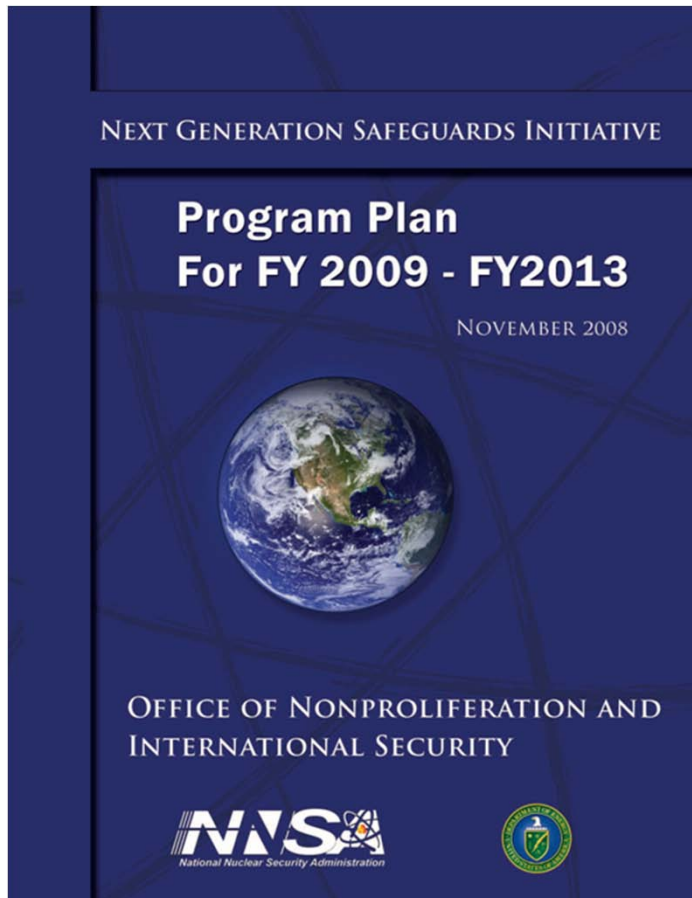
Additional Slides

- Facilitates discussions about future needs, planning, and alternative approaches





Next Generation Safeguards Initiative (NGSI)

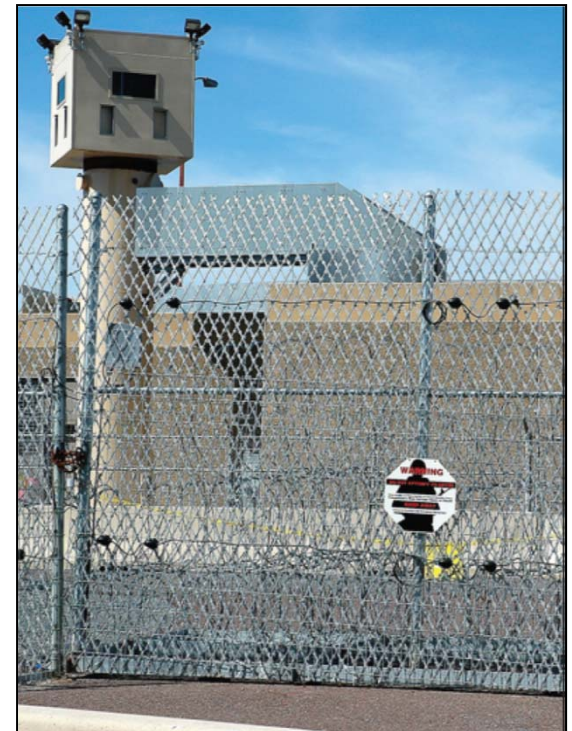


- Annual session at NEN workshops
- Develop and demonstrate advanced safeguards concepts and approaches
- Develop advanced safeguards technologies
 - Improve effectiveness & efficiency
 - Nuclear facilities and State level approaches
- Recruit and train young professionals
- Provide technical support to countries planning for civil nuclear power



Physical Protection

- International Instruments for Physical Protection Of Nuclear Material and Nuclear Facilities
 - Evaluation Requirements
- Performance-Based Physical Protection
 - Tools & Methodologies
 - Design and Evaluation
- Performance testing program
 - Purpose for and aspects of performance testing
- Design Basis Threat
 - Definition, Value, Examples
- Best practices
 - International experiences





Long-Term Spent-Fuel Storage



Cooperation on SNF Storage

- Long-term disposition strategies
 - Challenges include spent fuel take-back concepts
 - Extended, long-term interim storage
 - Transportation
- Proliferation of storage sites reduces security and transparency
- Spent-fuel storage is the *sine qua non* of fuel cycle service regimes
- Regional cooperation on technical facility issues can facilitate acceptance of future regional solutions

Technical Collaboration & Standards Development

- Safety
- Security
- Safeguards
- Transportation
- Transparency and environmental monitoring
- Fuel-acceptance criteria and materials characterization