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*Development of an Information Sharing Framework:
Efforts at Nonproliferation Transparency in the Asia Pacific*

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Outline

- **Introduction to regional nonproliferation transparency project**
 - Purpose
 - Partners

- **History of SNL cooperation in Asia Pacific**
 - Action Sheet (AS) 12 and AS65
 - Japan Action Sheets Related to Transparency
 - Nuclear Energy and Nonproliferation Workshops

- **Nonproliferation Transparency**
 - Why Important?
 - Stakeholders

- **Current U.S.-ROK- Japan Multilateral Cooperation**
 - AS26 and Project Action Sheet (PAS)16: An Information-Sharing Framework
 - Status
 - Next Steps

- **Conclusion**

Introduction:

Regional Nonproliferation Transparency Project

Purpose:

- Provide additional assurances about peaceful use of nuclear energy.
- Increase understanding and cooperation among neighbors through transparently sharing nonproliferation- and safeguards-relevant information between IAEA member states in the Asia Pacific.
- Strengthen relationships between nonproliferation organizations.
- Complement and reinforce IAEA safeguards regime.

Introduction:

Regional Nonproliferation Transparency Project



Partners:

- Korea Atomic Energy Research Institute (KAERI)
- Korea Institute for Nonproliferation and Control (KINAC)
- Japan Atomic Energy Agency (JAEA)
- Sandia National Laboratories (SNL)
- Korean Ministry of Education, Science and Technology (MEST)
- Japan Ministry of Education, Culture, Sports, Science and Technology (MEXT)
- U.S. Department of Energy, National Nuclear Security Administration (NNSA)

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History of cooperation in Asia Pacific:

Republic of Korea



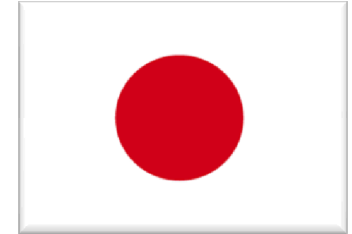
Republic of Korea

- 2003 - 2009: Action Sheet (AS) 12 (ROK-US)

Development of Regional Collaboration, Transparency and Secure Data Communications for Nuclear Nonproliferation and Transparency

- Cooperative arrangement: DOE and Korean Ministry of Science and Technology (MEST)
 - Develop a program of regional collaboration
 - Evaluate effectiveness of regional collaborations and transparency
 - Evaluate effectiveness of relevant technologies used for regional collaboration and transparency
- AS12 Accomplishments:
 - Successful Remote data sharing between KINAC, KAERI Advanced Spent Fuel Conditioning Process Facility (ACPF), and SNL via VPN
 - KINAC and KAERI participation in 3 transparency workshops (2003-2009).
 - 1st Joint Technical Meeting on Regional Cooperative Nuclear Nonproliferation Transparency – Daejeon, Korea, 2009

History of cooperation in Asia Pacific: Japan



Japan

- 2004-2010: Action Sheet (AS) 65 (Japan-US)

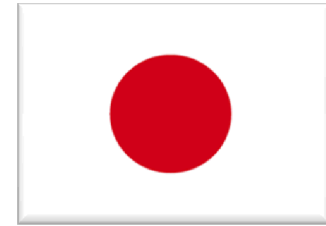
Development of Regional Collaboration, Transparency and Secure Data Communications for Nuclear Nonproliferation and Transparency

- Cooperative arrangement: DOE and Japan Nuclear Cycle Development Institute (JNC)
- Develop a program of regional collaboration
- Investigate, demonstrate and implement secure data communications technologies
- Evaluate effectiveness of regional collaboration and transparency program
- AS65 Accomplishments:
 - Successful Remote data sharing between between Experimental Fast Reactor 'Joyo' and SNL (VPN)
 - JAEA participation in/host of 3 transparency workshops (2003-2011).

Japan Action Sheets Related to Transparency

AS#	Title	Dates	Partners
AS-20	Remote Monitoring System for Nonproliferation Transparency (Phase 1)	1995-1996	PNC/SNL
AS-21	Joint Research on Transparency	1996-1997	PNC/LANL
AS-33	Joyo Remote Monitoring System for Nonproliferation (Phase 2)	1998-1999	JNC/SNL
AS-46	Application of Joyo Remote Monitoring System to Nuclear Nonproliferation and Transparency (Phase 3)	2000-2002	JNC/SNL
AS-49	Cooperation in Nuclear Transparency (Phase 1)	2000-2003	JNC/SNL (CSCAP)
AS-54	A Virtual Private Network	2002-2005	JNC/SNL
AS-60	Cooperation in Nuclear Transparency (Phase 2)	2003-2005	JNC/SNL (CSCAP)
AS-65	Development of Regional Collaboration, Transparency and Secure Data Communication for Nuclear Nonproliferation and Transparency	2004-2010	JNC/SNL
PAS-16	An Information-Sharing Framework for Regional Nonproliferation Cooperation	2011-present	JAEA/SNL

2005-2009: Nuclear Energy and Nonproliferation Workshops



- Objectives:
- Provide forum for nuclear energy/nonproliferation experts from East Asia to share information about:
 - Nuclear power utilization and expansion plans
 - Development of technical collaborations
- Identify, develop and demonstrate tools for collecting, managing, and providing nuclear process data to **increase confidence** in safeguards conclusions, reduce operational impact, and **provide transparency**.



Vietnam



Indonesia



Thailand



Malaysia

2005-2009: Nuclear Energy and Nonproliferation Workshops

Workshop #	Presentation/Session Title	Location	Date	Host	Speaker
1	Lessons and Perspectives of Nuclear Transparency in Korea	Seoul, Republic of Korea	August 2005	Korean Nuclear Society, Sandia National Laboratories (SNL)	H S Kwon, MOFAT
1	Transparency and Security of on-Site Interim Dry Storage	Seoul, Republic of Korea	August 2005	Korean Nuclear Society, SNL	Bob Huelskamp, SNL
3	Advanced Process and Facility Monitoring for Strengthened Safeguards, Transparency and Other Applications (Session I)	Daejeon, Republic of Korea	August 2007	Korea Atomic Energy Research Institute (KAERI), SNL	
3	Transparency and Openness	Daejeon, Republic of Korea	August 2007	KAERI, SNL	Stephen Bayer, ASNO
4	Safeguards and Transparency, Session II	Pusan, Republic of Korea	August 2008	KAERI, SNL	
4	Safeguards for the Advanced Conditioning Process Facility	Pusan, Republic of Korea	August 2008	KAERI, SNL	Ho Dong Kim, KAERI

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Nonproliferation Transparency: Why Important?

- Confidence building measure
 - Helps build and maintain trust
 - Provides additional assurance
 - Builds relationships
 - Complements IAEA compliance-based safeguards regime
- Opens a window for other States to clearly see neighboring States' activities/capabilities



Stakeholders

Track I: Int'l Orgs/Gov't	State	Track II: NGOs, Academia	State/Region
Ministry of Education, Culture, Sports, Science and Technology (MEXT)	Japan	Japan Atomic Energy Agency (JAEA)	Japan
Japan Ministry of Foreign Affairs (MOFA)	Japan	Korea Atomic Energy Research Institute (KAERI)	Republic of Korea (ROK)
Ministry of Education, Science and Technology (MEST)	Republic of Korea (ROK)	Korea Institute for Nuclear Nonproliferation and Control (KINAC)	Republic of Korea (ROK)
Korean Ministry of Foreign Affairs and Trade (MOFAT)	Republic of Korea (ROK)	Academia	All
U.S. Department of Energy, National Nuclear Security Administration (DOE/NNSA)	United States	Sandia National Laboratories (SNL)	United States
U.S. Department of State	United States	Asia Pacific Safeguards Network (APSN)	Asia Pacific Region
International Atomic Energy Agency (IAEA)	Austria	Council on Security Cooperation in the Asia Pacific (CSCAP)	Asia Pacific Region

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Project Action Sheet 16 (PAS16) and Action Sheet 26 (AS26) – 2011 - present

- Project Action Sheet 16 (PAS16) and Action Sheet (AS26) seek to design a system that enables the direct, transparent sharing of nonproliferation- and safeguards-relevant information between the Korea Institute for Nonproliferation and Control (KINAC), the Korea Atomic Energy Research Institute (KAERI), the Japan Atomic Energy Agency (JAEA), and SNL.

Purpose of Framework:

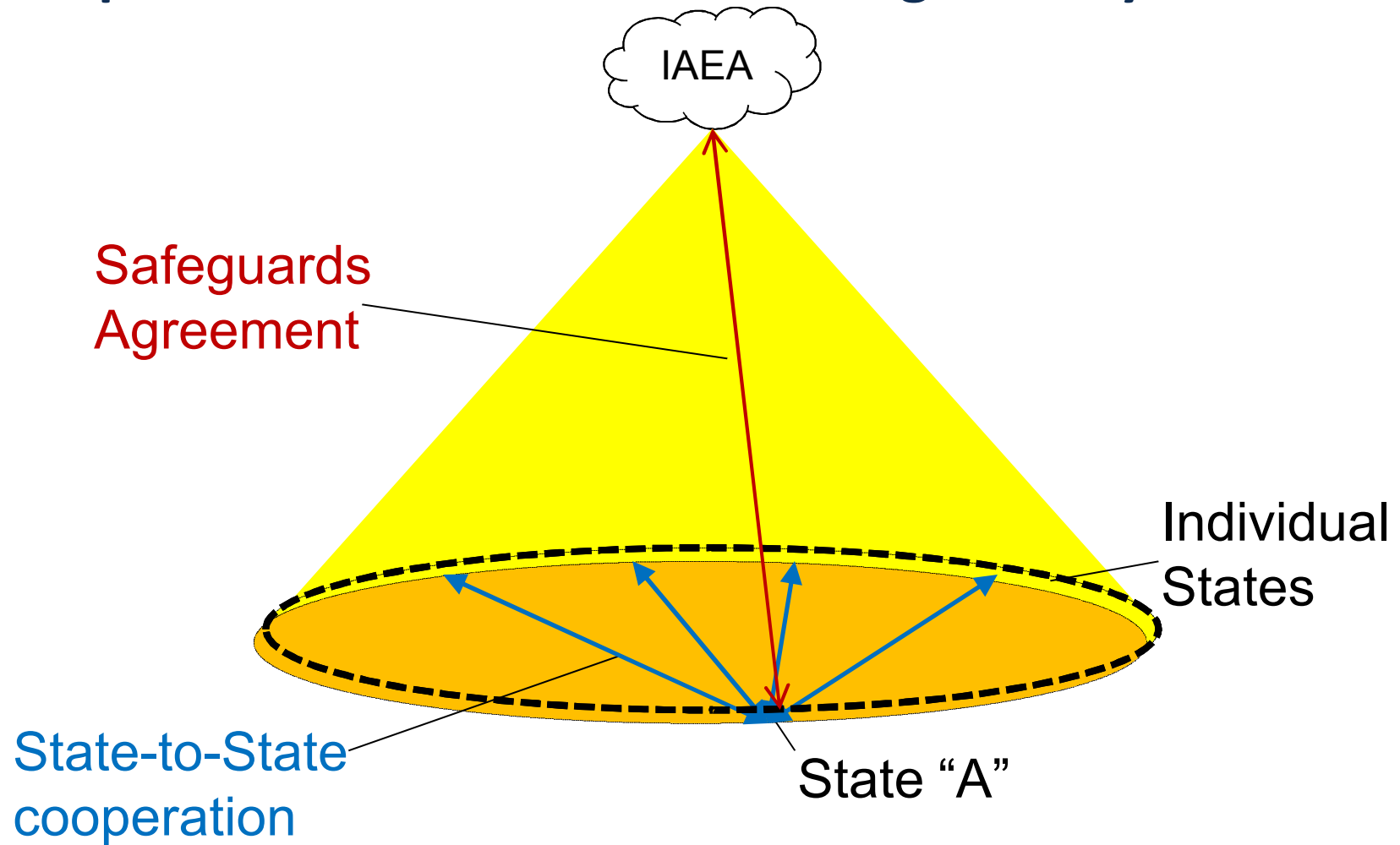
- Build regional confidence and relationships.
- Accommodate a variety of scenarios such as document sharing, safeguards R&D, remote monitoring, training, measurements, or other nonproliferation-related topics.
- Serve as model for transparency in other areas, i.e. nuclear security, physical protection.

SAND: 2012



14th ROK-US PCG, October, 2011,
Seoul, Republic of Korea

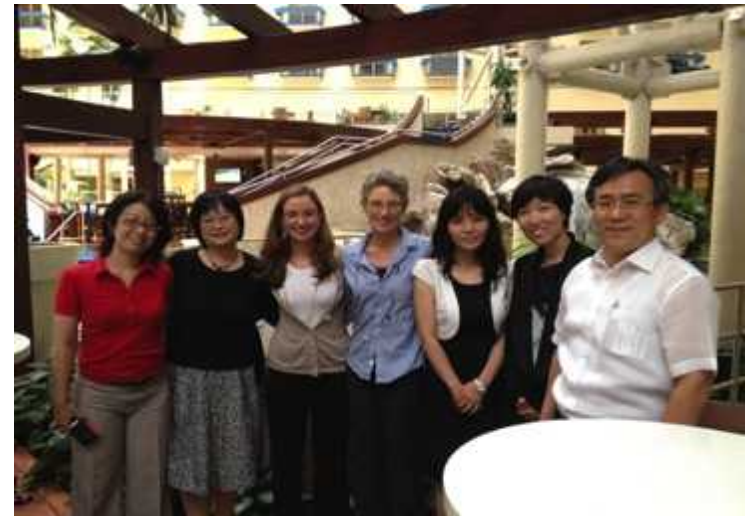
Direct state-to-state and regional cooperation can complement the international safeguards system



Credit: Wan Ki Yoon, KINAC, Transparency Workshop, February 2008, Tokyo Japan

AS26/PAS16 Status

- Workshop: December 2011 (Tokai, Japan)
- Joint papers/presentations on transparency – 53rd INMM, July 2012, Orlando, FL
- Content Management System (CMS)
 - Internal
 - Share documents and schedules
 - Coordinate tasks and events
- Survey
 - Gather stakeholder needs
 - Develop requirements



AS26/PAS16 Coordination Meeting, 53rd INMM Conference
Orlando, Florida, July 2012
(JAEA, SNL, KINAC, KAERI)

AS26/PAS16 CMS

- Purpose:
 - Provide web-based communication/coordination tool
 - Resource for sharing:
 - Open source documents, papers, tasks, deadlines, workshop schedules
 - Logistics, upcoming meetings, photos



SAND: 2012



2012 INMM coordination meeting: KAERI, KINAC, JAEA, SNL

Next Steps...



- Requirements
- Follow-on workshop – November 2012, ROK
- Clarify types of information to share
- Continue monthly conference calls between SNL, JAEA, KINAC/KAERI and DOE/NNSA
- Hold final demo (late summer/early fall 2013)

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Conclusion

- Nearly **two decades** of nuclear nonproliferation transparency efforts in the Asia Pacific (1995 – present)
- Japan and Republic of Korea – leaders in the region
- Focus:
 - Regional collaboration
 - Build confidence about peaceful nuclear energy programs
 - Strengthen relationships between nonproliferation organizations
 - Understand challenges faced by neighboring partners
- Current effort
 - AS26/PAS16 – develop information sharing framework to share nonproliferation- and safeguards-relevant information multilaterally
 - Complement IAEA safeguards

QUESTIONS?