

CSCAP MEMORANDUM NO. 17

Promoting the Peaceful Use of Nuclear Energy



**A Memorandum from the
Council for Security Cooperation in the Asia Pacific (CSCAP)**

June 2011



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Introduction

Asia's large population and rapid economic growth have created a dramatic increase in demand for energy. Increasingly, nuclear power is seen as an attractive option for states that seek to increase electricity output. As a result, the majority of civilian nuclear power facilities under construction globally are now located in Asia and there are plans for many more in the coming decades. Many of these facilities will be built in countries with limited experience in dealing with the safety and security issues associated with nuclear technology. While not discouraging development of peaceful nuclear energy use, there is a need to ensure that nonproliferation commitments are upheld and strengthened to prevent the diversion or theft of materials and horizontal as well as vertical proliferation. The specific conclusions and recommendations in the action plan produced at the Nuclear Nonproliferation Treaty 2010 Review Conference provide a firm basis for striking the proper balance between peaceful use of nuclear technology, nonproliferation, and disarmament.

Each state in the Asia-Pacific should make efforts to develop and implement international safeguards along with safety and security measures in accordance with International Atomic Energy Agency (IAEA) standards. States should provide assistance to other governments in their commitment to peaceful use and nonproliferation compliance to ensure the benefits of nuclear technology are fully realized and the dangers minimized. The creation of a global infrastructure that is based on multilateral approaches to managing the nuclear fuel cycle and a proliferation-stable architecture is necessary as peaceful use of nuclear energy increases. In response to a growing need for civilian nuclear energy, and building upon recommendations of the CSCAP Study Group on Countering the Proliferation of Weapons of Mass Destruction in the Asia Pacific, this memorandum recommends specific measures involving regional cooperation, national legislation, verification and transparency, outreach and capacity building, and compliance with international regimes.

Recommendations for Promoting the Peaceful Use of Nuclear Energy

Considering resource requirements and constraints associated with the peaceful use of nuclear energy, it is important to rely and build on existing international and regional organizations and institutions rather than attempt to duplicate the requirements established by them. Accordingly, CSCAP offers the following recommendations in the interest of establishing a safe and secure framework to promote peaceful use of nuclear energy in the Asia-Pacific region:

Regional Cooperation

All ASEAN Regional Forum states should promote regional cooperation to enhance nuclear safeguards, safety, and security in the region through the following initiatives:

- Participate in the Asian Nuclear Safety Network to improve the safety of nuclear facilities.
- Promote civilian nuclear cooperation through the Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific.
- Promote regional information collection and dissemination capability with the goal of sharing expertise, training, and best practices for facility operations.
- Cooperate in promoting regional standardization and supporting the work of the UNSCR 1540 Committee.
- Promote development of an international fuel reserve center to ensure reliable access to nuclear fuel in a multilateral, economically viable, non-discriminatory, and transparent manner under the auspices of the IAEA.
- Promote the development of cooperative arrangements to store, treat and dispose of used fuel and low-level waste materials.
- Promote the establishment of a comprehensive monitoring and detection mechanism, a regional emergency response capability, and an enforcement mechanism to ensure transparency and compliance with IAEA and UN directives and resolutions related to nonproliferation of WMD.

- Collaborate in the development of more proliferation-resistant nuclear power reactors.
- Promote the establishment of a regional reprocessing and enrichment free zone.

National Legislation

National legislation covering all aspects of nuclear law, including safety, security, liability, nonproliferation, and other regulatory and commercial aspects must support the peaceful use of nuclear technology. Legislation should minimize legal impediments to the safe use of nuclear energy, encourage equitable compensation of nuclear damage resulting from an accident, and facilitate international trade in nuclear materials and equipment for peaceful purposes.

All states should ensure that a comprehensive legislative framework is established to provide legal authority for the establishment of a fully independent nuclear regulatory body. This body is critical to safeguarding and sustaining operational transparency to support the safe, secure, and efficient use of nuclear energy.

National legislation should:

- Establish a regulatory mechanism to ensure adequate licensing, inspection and enforcement.
- Set forth broad institutional responsibilities to ensure safe and secure use of nuclear technology and materials.
- Make provision for regulations and guidance documents that specify adequate controls for all nuclear and related material, equipment, and technology as well as adequate technical and human infrastructure in nuclear safety, radiological protection, and waste management.

Verification and Transparency

The IAEA has the authority under the Comprehensive Safeguards Agreement to verify the peaceful use of all nuclear material in NPT member states. However, the tools available under such an agreement are limited and should be supplemented with additional measures.

All states should consider the following such additional measures:

- Adopt the IAEA Additional Protocol to increase the effectiveness of the Comprehensive Safeguards Agreement.
- Establish a Nuclear Energy Program Implementation Organization or a similar body based on IAEA guidelines to ensure a comprehensive approach to nuclear power development is taken and complete operational transparency is maintained.
- Implement import and export control regulations for nuclear and nuclear-related equipment and technology similar to the Nuclear Suppliers Group Guidelines for Nuclear Transfers. CSCAP Memorandum No. 14, Guidelines for Managing Trade of Strategic Goods provides specific recommendations to help ensure an effective control regime is established.
- Take all possible practical steps to provide for adequate financing for the IAEA to ensure resources for technical cooperation, inspection, and enforcement activities are sufficient, assured, and predictable.

Outreach and Capacity Building

The IAEA is the world's focal point for building capacity, improving nuclear safety and security, and promoting scientific and technical cooperation in nuclear energy.

Countries with expertise in nuclear energy should help develop and implement regional and national strategies on nuclear energy to include areas such as resources, facility safety and security, and proliferation risks in accordance with relevant international agreements, including the Nuclear Nonproliferation Treaty.

Countries producing or contemplating the use of nuclear energy should:

- Promote capacity building through technical cooperation in emergency response to nuclear-related incidents, safety and security for waste management, and research partnerships to establish common evaluation and facility standards.
- Strengthen the IAEA Technical Cooperation program through assisting other states in the development of peaceful uses for nuclear energy;

- Promote human resources capacity development focusing on nuclear reactor operators and nuclear engineering and regional coordination of emergency responses to nuclear incidents.
- Promote development of human resources capacity, institutional capacity, and technical and managerial capabilities through technical, scientific cooperation via lab-to-lab and facility-to-facility exchanges, research and development, education and training in nuclear, radiation, transportation, and waste management safety, and nuclear security.
- Promote sharing and development of best practices in the areas of nuclear safety and security, including involvement of the nuclear industry and private sector as necessary.
- Support and promote the IAEA's International Low Enriched Uranium (LEU) Fuel Bank.

International Regime Compliance

All member states should consider signing or otherwise complying with enhanced nuclear safeguards, safety, and security as specified in the following documents, consistent with their international commitments and obligations:

- Nuclear Nonproliferation Treaty
- IAEA Comprehensive Safeguards and the Additional Protocol
- Global Initiative to Counter Nuclear Terrorism
- United Nations Security Council Resolution (UNSCR) 1540
- Convention on Nuclear Safety
- Convention on the Early Notification of a Nuclear Accident
- Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency
- Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

- IAEA Vienna Convention on Civil Liability for Nuclear Damage and its amendments
- IAEA Convention on Supplementary Compensation for Nuclear Damage
- Convention on the Physical Protection of Nuclear Material (CPPNM) and its amendment
- International Convention on the Suppression of Acts of Nuclear Terrorism

All states in a position to do so should make additional contributions to the International Atomic Energy Agency's Peaceful Uses Initiative.

All states should identify best practices for national implementation of UNSC Resolution 1540 and assist other countries to meet the highest international standards.

ABOUT CSCAP

CSCAP is a non-governmental (second track) process for dialogue on security issues in the Asia Pacific. Membership in CSCAP is on an institutional basis and consists of Member Committees. Current membership comprises Australia, Brunei Darussalam, Cambodia, Canada, China, India, Indonesia, Japan, the Democratic People's Republic of Korea, the Republic of Korea, Malaysia, Mongolia, New Zealand, the Philippines, Russia, Singapore, Thailand, Vietnam and the USA.

The functions of CSCAP are as follows:

- a. to provide an informal mechanism by which political and security issues can be discussed by scholars, officials, and others in their private capacities;
- b. to encourage the participants of such individuals from countries and territories in the Asia Pacific on the basis of the principle of inclusiveness;
- c. to organise various working groups to address security issues and challenges facing the region;
- d. to provide policy recommendations to various intergovernmental bodies on political-security issues;
- e. to convene regional and international meetings and other cooperative activities for the purpose of discussing political-security issues;
- f. to establish linkages with institutions and organisations in other parts of the world to exchange information, insights and experiences in the area of regional political-security cooperation; and
- g. to produce and disseminate publications relevant to the other purposes of the organisation.

Study groups are the primary mechanism for CSCAP activity. As of June 2011, there were eight CSCAP Study Groups. These are concerned with: (i) Countering the Proliferation of Weapons of Mass Destruction in the Asia Pacific; (ii) Export Controls; (iii) Significance of the Existence of Regional Transnational Crime Hubs to the Governments of the Asia Pacific Region; (iv) Multilateral Security Governance in Northeast Asia/North Pacific; (v) Naval Enhancement in the Asia Pacific; (vi) Responsibility to Protect; (vii) Water Resources Security; and (viii) Cyber Security.

This memorandum was produced by the CSCAP Study Group on Countering the Proliferation of Weapons of Mass Destruction in the Asia Pacific and was approved by the 35th CSCAP Steering Committee Meeting in Kuala Lumpur, Malaysia, on 2 June 2011.

Further information on CSCAP can be obtained from the CSCAP website at www.cscap.org or by contacting the CSCAP Secretariat:

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CSCAP Memoranda

CSCAP Memoranda are the outcome of the work of Study Groups approved by the Steering Committee and submitted for consideration by the ASEAN Regional Forum and other bodies.

- Memorandum No.16 - Safety and Security of Offshore Oil and Gas Installations
Author: Study Group on Safety and Security of Offshore Oil and Gas Installations
Date published: January 2011
- Memorandum No.15 - The Security Implications of Climate Change
Author: Study Group on the Security Implications of Climate Change
Date published: July 2010
- Memorandum No.14 - Guidelines for Managing Trade of Strategic Goods
Author: Export Controls Experts Group (XCXG)
Date published: March 2009
- Memorandum No.13 - Guidelines for Maritime Cooperation in Enclosed and Semi-Enclosed Seas and Similar Sea Areas of the Asia Pacific
Author: Study Group on Facilitating Maritime Security Cooperation in the Asia Pacific
Date published: June 2008
- Memorandum No.12 - Maritime Knowledge and Awareness: Basic Foundations of Maritime Security
Author: Study Group on Facilitating Maritime Security Cooperation in the Asia Pacific
Date published: December 2007
- Memorandum No.11 - Human Trafficking
Author: Study Group on Human Trafficking
Date published: June 2007
- Memorandum No.10 - Enhancing Efforts to Address the Factors Driving International Terrorism
Author: Study Group on Enhancing the Effectiveness of the Campaign Against International Terrorism with Specific Reference to the Asia Pacific Region
Date published: December 2005

- Memorandum No.9 - Trafficking of Firearms in the Asia Pacific Region
 Author: Working Group on Transnational Crime
 Date published: May 2004

- Memorandum No.8 - The Weakest Link? Seaborne Trade and the Maritime Regime in the Asia Pacific
 Author: Working Group on Maritime Cooperation
 Date published: April 2004

- Memorandum No.7 - The Relationship Between Terrorism and Transnational Crime
 Author: Working Group on Transnational Crime
 Date published: July 2003

- Memorandum No.6 - The Practice of the Law of the Sea in the Asia Pacific
 Author: Working Group on Maritime Cooperation
 Date published: December 2002

- Memorandum No.5 - Cooperation for Law and Order at Sea
 Author: Working Group on Maritime Cooperation
 Date published: February 2001

- Memorandum No.4 - Guidelines for Regional Maritime Cooperation
 Author: Working Group on Maritime Cooperation
 Date published: December 1997

- Memorandum No.3 - The Concepts of Comprehensive Security and Cooperative Security
 Author: Working Group on Comprehensive and Cooperative Security
 Date published: December 1995

- Memorandum No.2 - Asia Pacific Confidence and Security Building Measures
 Author: Working Group on Confidence and Security Building Measures
 Date published: June 1995

- Memorandum No.1 - The Security of the Asia Pacific Region
 Author: CSCAP
 Date published: April 1994