

April 21, 2008

MEMORANDUM TO: Chairman Klein
Commissioner Jaczko
Commissioner Lyons
Commissioner Svinicki

FROM: Margaret Doane, Director */RA/*
Office of International Programs

SUBJECT: VISIT OF INDONESIAN PARLIAMENT MEMBERS,
APRIL 24, 2008

On April 24, 2008, members of Committee VII of the Parliament of the Republic of Indonesia will meet Commissioners Jaczko and Svinicki. The purpose of the visit is to gain knowledge about the U.S. regulation of nuclear power. Mr. Airlangga Hartarto, Chairman of Committee VII, will head the delegation of sixteen members and staff. He will be accompanied by Mr. Ahmad Farial, Vice Chairman of Committee VII, and Mr. I.B. Made (Sade) Bimantara of the Embassy of Indonesia.

The visit schedule, biographical information, delegation list, background, and country profile are in Enclosures 1-6.

By copy of this memorandum, SECY, OGC, EDO, OPA, NRR, NRO, RES, FSME, NMSS, and NSIR are also being advised of the Indonesian Delegation's meeting schedule.

Enclosures:

1. Visit Schedule
2. Biographical Information
3. Delegation List
4. Background
5. Country Profile
6. Suggested Talking Points

cc: SECY
OGC
EDO
OPA
NRR
NRO
RES
FSME
NMSS
NSIR

CONTACT: Cindy Rosales-Cooper, OIP
301-415-1168

Visit Schedule

Indonesian Parliament Delegation
Committee VII
Chairman Airlangga Hartarto

Thursday, April 24, 2008-04-18

| | |
|-------------|--|
| 2:45pm | Arrive One White Flint North Met by Cindy Rosales-Cooper |
| 3:00-4:00pm | Meeting with Commissioners Jaczko and Svinicki 18 th Floor Briefing Room, OWFN |
| 4:15pm | Depart NRC Headquarters |

Members of Committee VII will also have meetings with the following entities:

- Chalk Point Generating Power Station
- Rural Utilities Services
- Edison Electric Institute
- John Hopkins University
- Select Committee on Energy Independence and Global Warming
- Senate Committee on Environment and Public Works
- US-ASEAN Business Council
- National Association of Regulatory Utility Commissioners

Curriculum Vitae

Airlangga Hartarto (ă rr-l ă n-g ă h ă r -t ă r-tō) **Chairman, Committee VII** **Parliament of the Republic of Indonesia**

Education

- Mechanical Engineering University of Gadjah Mada, Indonesia
- AMP Wharton School, University of Pennsylvania, Philadelphia, USA
- Master of Management Technology (MMT)
Graduated from Melbourne Business School University of Melbourne - Australia
- Master of Business Administration (MBA)
Graduated from Monash University - Australia

Career

- 1987 – present : President Commissioner PT. Fajar Surya Wisesa Tbk. (Public Listed Company)
- 1999 – present : President Commissioner PT. Ciptadana Sekuritas. (Investment Bank)
- 2004 – present : Commissioner PT. Sorini Corporation Tbk. (Public Listed Company)
- Chairman of Environment, Energy, Mineral Resources, Research and Technology Parliament of Republic of Indonesia (Commission VII)

Experience

- Chairman of Indonesian Association of Issue (AEI) 2005-2008
- Chairman of Indonesian Institute of Engineering (PII) 2006-2009
- Vice Chairman Capital Market Committee of Indonesian Chamber of Commerce and Industry (KADIN Indonesia) 2006-2008
- Member of Board of Trustee, University of Gadjah Mada (UGM)

Symposium/Seminary

- ASEAN Engineering Honorary Fellow, conferred by Asean Federation of Engineering Organization at Myanmar.

Party

Golkar Party

Curriculum Vitae

Achmad Farial (ă h'- m ä d f ä h-re ä l)
Vice Chairman, Committee VIII
Parliament of the Republic of Indonesia

Education

Academy graduate

Career

Operational Director of *PT Mijahan Karya Utama*

Experience

Member of Indonesian Target Shooting and Hunting Organizations

Member of the House, 1999 – 2004

Party

United Development Party

Delegation Members

| <u>Name</u> | <u>Position</u> |
|--|--|
| Airlanga Hartarto | Chairman |
| Achmad Farihal | Vice Chairman |
| Kahar Muzakir | Member |
| Agusman Effendi | Member |
| Syamsul Bachri | Member |
| Jaka Aryadipa Singgih | Member |
| Bambang Wuryanto | Member |
| Idiel Suryadi | Member |
| Ichwan Ishak | Member |
| Fuad Anwar | Member |
| Ami Taher | Member |
| Nizar Dahlan | Member |
| Ade Daud Iswandi Naution | Member |
| Tunggul Sirait | Scientific Staff |
| Dewi Barliana | Administration Staff |
| Juhartono | Administration Staff |
| I.B. Made (Sade) Bimantara (s ā dāy bē-m ān-t ār ā) | Embassy of Indonesia, Washington, D.C. |

BACKGROUND

Committee VII

Committee VII of the Parliament of the Republic of Indonesia has oversight over the following Indonesian government agencies:

- Department of Energy and Minerals
- National Atomic Power Agency
- The Office of State Minister for Environment
- The Office of State Minister for Research and Technology
- Technological Assessment and Application Board
- National Research Council
- The Indonesian Science Institute
- Nuclear Power Controlling Board
- National Mapping and Survey Coordinating Board
- National Space and Aviation Institute
- Lower Level of Oil and Natural Gas Management Board
- Higher Level of Oil and Natural Gas Controlling Board

The Committee's primary purpose for visiting the U.S. is to gain further knowledge of the U.S.'s model for regulating electricity. The Committee Chairman, Mr. Hartarto, requested a meeting with the NRC to gain information of the oversight and regulation of nuclear power.

Indonesia and Nuclear Power

For the past 10 years, the Government of Indonesia has indicated to the international community its desire to have nuclear power as a major source of electricity. The necessary joint legislative and executive decision for nuclear power has not been made. In February 2004, the Indonesian Government signed a Memorandum of Understanding (MOU) with Korea's state-owned nuclear generating company (the Korea Hydro and Nuclear Power Company, KHNP), under which KHNP is to assist Indonesia in the development of a nuclear power plant over the next 12 years if Indonesia decides to pursue nuclear power. KHNP's assistance would include taking charge of human resources development, economic feasibility testing, acquisition of financing, and candidate site surveys. To date, nothing has been accomplished under the MOU.

In August 2007, a three member delegation from Indonesia's independent nuclear regulator BAPETEN, visited NRC to request assistance in the area of training for their staff in anticipation of a governmental decision to move forward with nuclear power. NRC staff agreed to further discuss training opportunities with BAPETEN once a decision had been made.



INDONESIA COUNTRY PROFILE

NUCLEAR PROGRAM

Nuclear Power

Indonesia has no nuclear power reactors. In May 1996, Indonesia completed the second and final part of a power reactor feasibility study begun in 1991. Then-Minister of State for Research and Technology (and later Indonesian President) B. J. Habibie had spearheaded Indonesia's plans to begin construction of its first nuclear power station in 1998 (either three 600 MWe or two 900 MWe nuclear power plants of advanced designs), with operation projected for 2004/2005. He considered nuclear power pivotal to achieving the national goal of industrialization. The selected site on the Muria Peninsula on the north coast of Java (the most densely populated island in the world in the fourth most populous country) was to host 12 LWRs by 2025. Westinghouse (AP-600), Nuclear Power International (the Siemens-Framatome consortium with its hybrid safety system), Mitsubishi (MS-600, under Westinghouse license), and AECL (CANDU PHWR) were considered the primary contenders for the contracts.

Plans to proceed were set back first by Indonesia's near economic collapse during the Asian crisis of 1997/98 and then by austerity measures imposed by the International Monetary Fund, subsequent political upheaval, opposition based on both economic and environmental grounds within and outside the Indonesian Government, and a severe shortage of trained and experienced manpower to operate and regulate a nuclear power program. Indonesia's energy planners are now looking to geothermal reserves to add the equivalent of 20,000 MW of baseload capacity over the next 12-15 years. On June 2, 2005, the Indonesian National Atomic Energy Agency (BATAN) proposed the construction of at least four 600- to 1000-MWe nuclear power plants, in order to supply almost 2% of the country's total electricity demand. Construction is expected to begin in the Java town of Jepra in the 2010 time frame, with operation by 2016.

In February 2004, the Indonesian Government signed a Memorandum of Understanding with Korea's state-owned nuclear generating company (the Korea Hydro and Nuclear Power Company, KHNP), under which KHNP is to assist Indonesia in the development of a nuclear power plant over the next 12 years (if that is the decision), including taking charge of human resources development, economic feasibility testing, acquisition of financing, and candidate site surveys. According to the announcement released by KHNP: "The agreement will help Indonesia start operation of its first nuclear power plant by 2016, drawing on Korea Hydro's experience and advanced technology."

Nuclear Fuel Cycle

Although it is the world's largest producer of natural gas, Indonesia is currently undertaking an ambitious nuclear power plant construction program to meet growing energy needs. The perceived goal of the program is to eventually build 12 nuclear power production facilities.

Fuel Fabrication

The BATAN Nuclear Minerals Development Centre began mining for uranium in the 1960's. Since 1988, exploratory work has been concentrated in the Kalan area, with a significant drilling program completed in 1992. Exploration work has continued, but operations have been limited since 1997 because of financial reasons. Two facilities, the Research Center for Nuclear Techniques in Bandung and the Centre for Exploration and Processing of Nuclear Materials, are able to process enough yellowcake to provide target fuel elements for Indonesia's research reactors. It remains unclear whether or not this facility can meet the processing needs for Indonesia's planned nuclear power reactors. Indonesia has no nuclear reprocessing facility at this time.

Waste Management

The activities of waste treatment, storage, and disposal studies are mainly carried out by BATAN. A DOE team supervised the first take-back of U.S.-origin spent fuel from Indonesia's research reactor program in March 2003. A second and larger take-back was completed in March 2004.

Regulatory Research

Indonesia has three research reactors in operation. They are 18, 26, and 40 years old, respectively.

(a) GA Siwabessy Reactor, a 30-MWt multipurpose pool-type reactor at the Puspitpek Science, Research, and Technology Center in Serpong, West Java [about 18 miles SW of Jakarta]. Its primary uses are radioisotope production for Indonesia and neighboring countries, neutron beam experiments to support research and development on material science, neutron activation analysis, and the doping of semiconductors for use in the fast growing Indonesian semiconductor manufacturing industry.

(b) Bandung Reactor, a 2-MWt (recently upgraded from 1-MWt) TRIGA MARK II at the Research Center for Nuclear Techniques in Bandung, West Java [about 112 miles SE of Jakarta]. Its primary uses are neutron beam experiments and radioisotope production back-up to the RSG-GAS.

(c) Kartini Reactor, a 0.25-MWt TRIGA MARK II at the Yogyakarta Research Center in Yogyakarta, East Java. Primary Uses: Training of university students and neutron activation analysis.

Other Facilities: Indonesia also has a reactor thermal-hydraulics loop, a water chemistry and corrosion loop, a radiation safety laboratory, and a radioactive waste treatment facility, all located at the Puspitpek Center.

Indonesia is a recipient country of the IAEA's Extrabudgetary Program (EBP) on the Safety of Nuclear Installations in the Southeast Asia, Pacific, and Far East Countries. Under this EBP, it received a pre-International Regulatory Review Team (IRRT) mission in 1999, which focused on Indonesia's regulatory practices for its existing research reactor program and any future nuclear power plant option that might be chosen, and an Integrated Safety Assessment of Research Reactors (INSARR) in 2000, which reviewed the safety of the Bandung power uprating. A follow-up mission in August 2001 reviewed the updated Safety Analysis Report of the Bandung research reactor and evaluated the changes which had been made at Bandung and the RSG-GAS to implement the IRRT recommendations. Indonesia has also hosted and participated in nuclear safety and regulatory training workshops.

Indonesia has been a participant in the Argonne National Laboratory's (ANL's) Reduced Enrichment for Research and Test Reactors (RERTR) program. Most recently, ANL has cooperated with BATAN on developing alternative targets and chemical processes to allow the use of LEU in the production of molybdenum-99 (Mo-99) for medical applications. From 2000-2002, they irradiated three series of LEU metal foil targets in the RSG-GAS research reactor at the Puspitpek Center. ANL and BATAN agreed to undertake additional work to optimize the process, but several years have elapsed since their last collaboration. In June 2004, the Department of Energy requested the U.S. Embassy in Jakarta to approach the Indonesians about resuming the cooperative target development effort. DOE awaits a formal response.

Nuclear Regulatory Structure

BAPETEN was officially established in May 1998 as a Non-Departmental Government Agency under the supervision and direct responsibility of the President. BAPETEN is charged with controlling the use of nuclear energy in Indonesia through regulation, licensing, and inspection, in accordance with the legal provisions. Formerly the Atomic Energy Control Board under BATAN (see item following), it is now Indonesia's independent nuclear safety regulator. BAPETEN is organized into two Directorates: (a) Nuclear Safety Assessment and (b) Licensing and Inspection, and two Offices: (a) Safeguards and (b) the Secretariat (i.e., general administration, finance, security, policy and

planning, and international cooperation). It also has an Advisory Committee that includes several foreign members.

BATAN was established in 1968 to promote and regulate the peaceful uses of nuclear energy through nuclear research and development, radioisotope applications, and regulatory controls. One of its former components, which exercised regulatory oversight of all nuclear facilities, materials, and equipment in the country, formed the cornerstone of BAPETEN. BATAN still serves as owner and operator of all of Indonesia's nuclear research facilities.

NON-PROLIFERATION

Indonesia is a party to the NPT and has IAEA safeguards in place under its Safeguards Agreement. The U.S.-Indonesia Agreement for Peaceful Nuclear Cooperation was just extended on February 20, 2004, effective for a 30-year period. A U.S.-Indonesia Nuclear Joint Committee was established in 1985 to encourage and oversee cooperation in peaceful uses of nuclear energy. It was supposed to meet annually in alternating capitals, but has not been convened in the past 10 years (because the pace of the Indonesian nuclear program did not live up to early expectations). The Department of State, DOE, and NRC were the standing U.S. representatives on the Committee.

PRIVATIZATION

Electricity demand increased at an average of 12.36 percent per year between 1984 and 1997. The economic crisis in Asia slowed but did not stop the growth. New projections show a 7 to 9 percent per year growth in demand over the next 10 years, primarily because of rapid industrialization.

In 2008, competition in the electricity market will begin, under the terms of a new electricity law approved in September 2002. That law requires an end to Indonesia Power Electric Company's (PLN) monopoly on electricity distribution within five years, after which private companies (both foreign and domestic) will be permitted to sell electricity directly to consumers, although they will need to use PLN's transmission network.

Indonesia's energy policy under former Presidents Habibie and Sukarno had called for it to export most of its substantial oil and gas deposits, in order to raise much-needed capital for national development programs. Those Governments had looked to nuclear power to fill much of Indonesia's short-term energy gap.

HUMAN RESOURCES

The Indonesian nuclear workforce is aging without a corresponding influx of appropriately qualified younger personnel to replace them. Complicating the circumstances is a current "zero-growth" policy imposed by the Indonesian government. Currently, BAPETEN has a full-time staff of about 200 employees.

RELATIONS WITH NRC

Provision of Safety Assistance

Indonesia is not a member of any of NRC's cooperative safety research projects.

Bilateral Arrangements and Agreements

NRC signed the first five-year "Arrangement for the Exchange of Technical Information and Cooperation in Nuclear Safety Matters" with BATAN in October 1992. The arrangement was most recently renewed in September 2003.

Bilateral Exchanges with NRC

A four person technical delegation from BAPETEN visited NRC headquarters from April 11-15, 2005 for discussions on a range of civilian nuclear power plant safety and security issues, including NRC regulations, rulemaking, regulatory processes for nuclear power plant licensing, inspection programs, spent fuel, waste management and international cooperation.

Commission Visits

Commissioner Remick, February 1992

Chairman Selin, August 1994

Chairman Jackson, April 1997

Foreign Assignees

NRC has hosted 9 Indonesian assignees, most recently in 1997.

NRC LICENSED EXPORTS

NRC has no active or pending license cases involving Indonesia.

NUCLEAR REGULATORY LIST OF PRINCIPALS

Nuclear Energy Regulatory Agency of Indonesia (BAPETEN)

Chairman: Mr. Sukarman AMINJOYO (replaced Prof. Dr. Azhar Djalois in April 2005).

Deputy for Nuclear Safety Assessment: Mr. As Natio LASMAN

Deputy for Licensing and Inspection: Mr. Suhartono ZAHIR

Director, Safeguards Center: Dr. Amin ZARKASI

Suggested Talking Points

- Note that NRC has had a bilateral technical information exchange arrangement with its Indonesian regulatory counterpart, BAPETEN (baa-peh-TEN) since 1992. Acknowledge the active cooperative program which NRC undertook with Indonesia in the 1990s: the first technical information exchange Arrangement signed, a library of fundamental nuclear safety documents provided, seven assignees placed within the NRC staff for one year of on-the-job training, and several short-term visits to NRC arranged for technical discussions, as well as three Commission visits to Indonesia.
- Note that, more recently, Chairman Klein has also had the opportunity to meet with Indonesian representatives at the annual International Atomic Energy Agency (IAEA) General Conference. If the documents are ready, the NRC and BAPETEN will renew the bilateral arrangement at the September 2008 General Conference.
- Note that NRC has known of Indonesian interest in developing nuclear power as part of their energy mix, and the efforts made by the Indonesian Government to prepare the legislative, regulatory and technical infrastructure needed for this goal. Inquire about the objectives of this Parliamentary visit to Washington in regard to those preparations.
- Discuss the NRC's current program to prepare for regulating the first new nuclear power plants since the 1970s. Discuss the regulatory infrastructure required, including updating the legislative and regulatory basis, financial and human resources, technical training, cooperation with countries that have regulated new build in the last decade, vendor inspections, spent fuel and waste storage decisions, and preparation for decommissioning.
- Note that, should Indonesia request assistance, the funding issue remains central to NRC's ability to work with the Indonesian regulator in most of the nuclear safety areas that BAPETEN has identified. Another key governing factor is that the knowledge and experience which NRC has to share are primarily with U.S.-origin reactor technology. Indicate that, within these parameters, NRC – cooperatively with the U.S. Government and the IAEA -- will do what it can to assist BAPETEN and the Indonesian Government to enhance the safety and security of nuclear materials and facilities in Indonesia.
- Inquire about the level of public confidence in, and public opposition to, Indonesia's nuclear program. What specific steps have been taken to educate the public on nuclear power?
- Ask about the state of emergency planning and response for Indonesia's nuclear activities.
- Inquire about general aspects of the ongoing program with the U.S. and the IAEA to upgrade physical security at Indonesia's three research reactors, as well as joint work to ensure regulatory safety and security controls over high-risk radioactive sources.

April 21, 2008

MEMORANDUM TO: Chairman Klein
Commissioner Jaczko
Commissioner Lyons
Commissioner Svinicki

FROM: Margaret Doane, Director **/RA/**
Office of International Programs

SUBJECT: VISIT OF INDONESIAN PARLIAMENT MEMBERS,
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|--------|-------------------|------------|----------------------|---------|
| NAME | C.Rosales-Cooper* | C Abrams* | S Moore (MDoane for) | M Doane |
| DATE | 4/18 /08 | 4/18/08 | 4/21/08 | 4/21/08 |

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