December 14, 2000

MEMORANDUM TO: Chairman Meserve
Commissioner Dicus
Commissioner Diaz
Commissioner McGaffigan
Commissioner Merrifield

FROM: Janice Dunn Lee, Director ***/RA/***
Office of International Program

SUBJECT: VISIT OF DR. JOHN LOY, CEO, AUSTRALIA RADIATION PROTECTION AND NUCLEAR SAFETY AGENCY (ARPANSA), DECEMBER 20, 2000

The attached information supports the visit of Dr. John Loy, CEO, Australia Radiation Protection And Nuclear Safety Agency (ARPANSA), which is scheduled for Wednesday, December 20, 2000. Dr. Loy will be accompanied by Dr. Ronald Hutchings, Science Counselor, Embassy of Australia.

Dr. Loy will be visiting the United States as the head of ARPANSA. His last visit to the NRC was in April 1999 and at that time he was acting CEO. Commissioner McGaffigan was the only Commissioner available to meet with him at that time. During his visit to the United States, he also will be meeting with officials at the Department of Energy, the Environmental Protection Agency, and the Food and Drug Administration.

Before visiting the U.S., Dr. Loy will be attending the IAEA International Conference of National Regulatory Authorities with Competence in the Safety of Radiation Sources and the Security of Radioactive Materials in Buenos Aires, Argentina, the week of December 11 (also attended by Chairman Meserve and John Hickey, NMSS). On Monday, December 18, Dr. Loy will be in Canada for meetings with the Canadian Nuclear Safety Commission regarding the two Maple Research Reactors; on Tuesday, December 19, he will meet with MDS Nordion to discuss issues concerning isotope production processing.

By copy of this memorandum, SECY, OGC, EDO, NRR, and NMSS are being advised of the meeting arrangements.

Attachments:
1. Meeting Schedule
2. Biographical Data on Dr. John Loy
3. Background Papers on Australia and ARPANSA
4. Suggested Talking Points

cc: SECY OGC
EDO NRR
NMSS

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Attachment 1

VISIT TO NRC BY
DR. JOHN LOY, CEO
AUSTRALIAN RADIATION PROTECTION AND NUCLEAR SAFETY AGENCY (ARPANSA)
Wednesday, December 20, 2000

Schedule

9:30-11:00a.m. T-10C1	John Greeves, Director Division of Waste Management Office of Nuclear Materials Safety and Safeguards To discuss low-level waste repositories, intermediate level and high level waste, Yucca Mountain and spent fuel, planning for storage and disposal of long lived waste other than spent fuel.
11:15-12:00 O-4E2	Janice Dunn Lee, Director Office of International Programs To discuss International Cooperation
12:00-12:30	Chairman Meserve Courtesy visit
12:30-1:30	Luncheon hosted by Chairman
1:30-2:00	Commissioner Greta Dicus Courtesy visit
2:00-2:30	Commissioner Merrifield Courtesy visit
2:30-3:00	Commissioner McGaffigan Courtesy visit
3:00-3:45 O-17B4	William Travers Executive Director for Operations To discuss regulatory efficiency and effectiveness

Attachment 3

Australia

Background Information

Nuclear Power

Australia does not have any nuclear power plants, and none are planned; however, with 25% of the World's total uranium reserves, Australia is a significant producer and exporter of uranium, and, therefore, plays an important role in the international nuclear fuel market.

Nuclear Regulatory Structure

The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) was established in February 1999 to regulate and license the Commonwealth's nuclear and radiation activities. The new agency combined the resources and duties of the Australian Radiation Laboratory and the Nuclear Safety Bureau. Dr. John Loy is the Chief Executive Officer.

ARPANSA regulates the nuclear installations of the Australian Nuclear Science and Technology Organization (ANSTO) as well as radiation sources and large radiation facilities of other Commonwealth Agencies, such as the Department of Defense (DOD) and the Commonwealth Scientific and Industrial Research Organization (CSIRO). ARPANSA also provides research advice and services in radiation protection and nuclear safety for all of Australia.

Research Reactors

Australia currently has one operating research reactor, a 10 Mwt reactor, the HIFAR, located south of Sydney at the Lucas Heights Research Laboratory, and operated by the Australian Nuclear Science and Technology Organization (ANSTO). The HIFAR is used for radioisotope production, neutron beam experiments, silicon irradiation, and neutron activation analysis. The reactor is currently fueled with high-enriched uranium (HEU) (60% enriched) of United Kingdom and U.S. origin.

The HIFAR reactor, which started operation in 1958, is scheduled for decommissioning in 2005 and will be replaced by a 20 Mwt reactor to be built by INVAP, an Argentinian company. INVAP won out over competing proposals from France (Technicatome), Germany (Siemens), and Canada (AECL). No U.S. company submitted a proposal. The new replacement reactor is scheduled to start operation in 2005 and will be fueled with low-enriched uranium (less than 20% enriched).

Recent articles in the Sydney Morning Herald contained allegations regarding legal/regulatory issues unfavorable to INVAP. One allegation indicated that INVAP ran a series of illegal tests on Carem, a new prototype reactor, without the necessary government approval; another allegation indicated that INVAP had problems with the management of radioactive wastes. Australia's Minister for Industry, Science and Resources, Senator Nick Minchin, stated "These allegations in the Australian media today are based on a plethora of false information and inaccurate statements by anti-nuclear activists."

Daniel Hirsch, a U.S. citizen, has participated in official meetings in Australia on the proposed 20 Mwt reactor. The Australian Embassy requested and received information from the NRC outlining Mr. Hirsch's participation in NRC public meetings on research reactor siting issues, confirming that he had not served on an NRC advisory committee.

Waste Management Strategy

The Australian government is currently searching for a suitable site in South Australia for a national radioactive waste repository for low and short-lived intermediate level wastes arising from the medical, research and industrial use of radioactive materials in Australia. However, Pangea Resources, an international company, with offices in the U.S., has been pursuing also the creation of an international deep geological repository in Australia for the permanent disposal of the world's commercial spent nuclear fuel and high level waste. The Australian government strongly opposes the Pangea proposal and has stated that the government policy is not to accept waste from other countries and that there are no plans for Australia to store international nuclear waste.

ANSTO has developed a technique for binding high and intermediate-level nuclear waste in a ceramic medium, SYNROC, which is significantly more leach resistant than boro-silicate glass. ANSTO was awarded a contract with Lawrence Livermore National Laboratory for collaborative development of a SYNROC derivative, which has been selected by the DOE as its preferred option for the immobilization of surplus weapons plutonium. ANSTO is also engaged in discussions with companies in relation to remediation of wastes at the Hanford site.

Uranium Enrichment

The United States Enrichment Corporation (USEC) and SILEX Systems Limited (SSL), an Australian company, entered into a contract to develop and evaluate the commercial potential of a uranium enrichment process, called the SILEX process (Separation of Isotopes by Laser Excitation) which was invented by SSL. U.S.-Australian Agreements to permit the transfer of technology and restricted data are discussed below in more detail.

Non-Proliferation

Australia is a member of the International Atomic Energy Agency (IAEA) and became a party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) on January 23, 1973. The Australian Safeguards Agreement with the IAEA, pursuant to the NPT, entered into force on July 10, 1974. Australia signed and ratified the South Pacific Nuclear Free Zone Treaty (Treaty of Rarotonga) which prohibits the manufacture, production and acquisition of nuclear explosive devices, research and development relating to their manufacture or production, stationing of such devices in Australia, and testing of such devices. Australia was the first State to sign and bring into force the Additional Protocol to its IAEA Safeguards Agreement, providing for enhanced access and reporting to the IAEA. Uranium exported by Australia is used solely for electricity production. Strict safeguards clauses ensure that Australian uranium is not used for non-peaceful purposes.

U.S.-Australian Agreements

The U.S.-Australia Agreement for Peaceful Nuclear Cooperation was signed in 1979 and entered into force in 1981, will expire in 2011. The transfer of technology was authorized by the Department of Energy under its 10 CFR 810 regulations, and the U.S.-Australian Agreement for Cooperation Concerning Technology for the Separation of Isotopes of Uranium by Laser Excitation (SILEX Agreement) was approved by the President on October 25, 1999, signed by Australia on October 28, 1999, and entered into force May 24, 2000. This Agreement permits transfers of sensitive nuclear technology and Restricted Data to conduct the necessary R&D to determine whether the process is commercially viable.

Relations with the NRC

Dr. John Loy, Chief Executive Officer, ARPANSA, visited NRC on April 5, 1999.

Dr. John Carlson, Director General, Australian Safeguards and Non-Proliferation Office (ASNO), visited NRC on July 12, 2000, to discuss various topics including the replacement research reactor and the SILEX issues.

Officials from ASNO visit the NRC annually for safeguards discussions.

Scientists, waste management officials and research reactor personnel visit the NRC on a regular basis to discuss current issues.

Dr. Ron Hutchings, Counselor (Nuclear), Embassy of Australia, maintains a close working relationship with the Office of International Programs and NRR.

Commission Visits

Chairman Ivan Selin and Commissioner Gail de Planque attended the 9th Pacific Basin Nuclear Conference in Sydney in the Spring of 1994.

Chairman Shirley Ann Jackson visited several locations in Australia in 1997, including the Ranger Uranium Mine outside of Darwin, various Government agencies in Canberra, and ANSTO and the Nuclear Safety Bureau outside of Sydney.

Foreign Assignees

Daniel Westall, a health physicist at the Australian Nuclear Safety Bureau, had a one-year assignment at the NRC in 1994. During his assignment, Mr. Westall worked on safety reviews of U.S. research reactors, serving alongside experienced NRC technical personnel in the Office of Nuclear Reactor Regulation.

NRC Licensed Exports

In February 2000, the NRC issued a license authorizing the export of 33.50 kilograms of uranium, enriched to 9.938% uranium-235, for use in the SILEX experimentation. Two component export licenses were issued in September 2000 for export of equipment for the SILEX project.

Official Contacts:

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Attachment 4

SUGGESTED TALKING POINTS

- Dr. Loy was appointed to head ARPANSA in September 1998 (as Acting CEO) and his first task was to steer the Agency's legislation through the Parliament. The Act was passed in December 1998 and formally came into effect in February 1999. The newly-formed agency has the responsibility of regulating and licensing nuclear and radiation activities.

  – What is your perspective on the new organization and its role? Are you pleased with how the organization is working? Do you have the experienced staff and other resources necessary to carry out your responsibilities?

- The decision to replace the aged HIFAR 10 Mwt research reactor at Lucas Heights has been opposed in many quarters in Australia. The replacement reactor's siting (near Sydney), its cost and its programmatic justification have been criticized in the press and in the legislature.

  – Has ARPANSA been drawn into the debate about the new research reactor? Will you have public hearings or meetings as part of your licensing process?

  – Does your regulatory role extend to isotope production activities? Is Australia currently self-sufficient in the production of medical isotopes? Will this continue with the new reactor? Will the facility use LEU targets?

- Four suppliers qualified to bid on the reactor to replace HIFAR: Siemens (Germany); Framatome (France); AECL (Canada) and INVAP (Argentina). INVAP was awarded the contract.

  – Is there any continuing controversy about ANSTO awarding the research reactor supply contract to INVAP?

- Mr. Donald Macnab of ARPANSA participated in a KEDO safety meeting in New York earlier this month.

  – Is Australia especially interested and involved in reactor safety efforts in Asia, including the KEDO project? Do you have particular concerns about the KEDO project or other nuclear programs and projects in your region of the world?