

Review of the Settings of the RCA Programme Advisory Committee (RCAPAC)

Background

At the 42nd RCA GCM, the Meeting adopted the proposed Terms of Reference (ToRs) of the Monitoring Committee (MC) presented by MC Chair and decided to establish the RCA Programme Advisory Committee (RCAPAC). The Meeting agreed that the composition of the Committee would be decided at the 36th NRM. As agreed, the Chair of the MC circulated a Nomination Form to the National Representatives by 13th October 2013 and the submitted nominations of potential candidates to the RCA Chair by the 1st February 2014.

A summary of the nominations received may be found in Annex 1. The nominations received by the RCA Chair are circulated as in Annex 2 of this document for review and consideration of the National RCA Representatives.

Proposed action

The meeting may discuss the received nominations and decide on the composition of the Committee.

Annex 1

Summary of Nominations for the RCA Programme Advisory Committee

No.	Submitted Country	Nominee
1	New Zealand, (3-12-2013) Australia (4-12-2013)	Dr Frank Bruhn
2	Australia (4-12-2013)	Dr John Frederick Easey
3	Korea 28-1-2014	Mr Joon-Keuk CHUNG
4	Japan (30-1-2014)	Dr Takashi Nakano
5	Japan (30-1-2014)	Dr Tomoaki Tamaki
6	India (12-2-2014)	Dr POOKOT RAGHAVAN UNNI
7	Philippines (12-2-2014)	Dr Soledad S. Castañeda

Nominations for the RCA Programme Advisory Committee



Regional Cooperative Agreement

for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific

Application/Nomination for Membership in the Programme Advisory Committee of the Regional Cooperative Agreement (RCAPAC)

1. Personal data

Name:	Dr Frank Bruhn
Home Address:	37 Foothills Road, Austinmer, NSW 2515, Australia
Nationality	New Zealand, Germany
Email:	frankb@ainse.edu.au; bruhnf.ainse@gmail.com

2. Professional positions held

Starting with your present post, list in reverse order every appointment you have had in the past 25 years, including dates, type of business, and brief description of duties.

Since 06/2012	Managing Director AINSE Ltd. (Australian Institute of Nuclear Science and Engineering), Sydney, Australia. Key responsibilities: Develop and review effective strategies for continuing success and growth of the organisation. Build high quality working relationships with internal/external stakeholders at all levels; deliver stakeholder-focused solutions and services with the ability to influence; negotiate/liaise with senior executives; develop high quality verbal and written reports for presentation; manage the organisation's financial resources and staff capabilities; keep abreast of developments and trends in the nuclear and scientific fields.
09/2002 – 06/2012	Division Director – National Isotope Centre at GNS Science, Lower Hutt, New Zealand. Leader of New Zealand's premier centre for applied isotope research with 60 staff and an operating budget of more than NZ\$11 million. Member of the executive team of GNS Science: leadership for the strategic, scientific and structural development of the division; resource and site management; represent New Zealand in international fora and research alliances; German science coordinator for the Science Ministry; undertake personal scientific research and consultancy.
01/2002 – 08/2002	Section Manager – Isotope Applications at GNS Science.
02/1999 – 12/2001	Senior Scientist at the Leibniz Laboratory for Radiometric Dating and Isotope Research, Christian-Albrechts-University, Kiel, Germany, as leader of the AMS sample preparation laboratory and expert geologist: Supervision and development of innovative methods of sample preparation; organisation of AMS measurements; scientific reports; liaison with customers and scientific collaborators; own research projects; PhD supervision.

01/1997 – 01/1999	Research Fellow of the German Research Foundation (<i>Deutsche Forschungsgemeinschaft</i> – DFG) and Research Scientist at the Heavy Ion Analytical Facility, CSIRO Division of Exploration and Mining in North Ryde, Australia. Research project: Development and application of methodologies for <i>in-situ</i> analyses of stable and radiogenic isotopes in minerals and rocks using combined ion microprobe and accelerator mass spectrometry (AMS).
08/1995 – 12/1996	Postdoctoral Fellow with Prof. Dr. Ján Veizer, Department of Sedimentary Geology and Isotope Geochemistry, Ruhr-University Bochum. Scientific project: Trace element analyses using the Bochum proton microprobe for isotope stratigraphy and paleoceanographic studies, involving cathodoluminescence microscopy and spectroscopy.
06/1992 – 07/1995	Research assistant at the Department of Sedimentary Geology and Isotope Geochemistry, Ruhr-University Bochum (Prof. Dr. Veizer). Scientific project, funded by the DFG: Technical and methodical development of an <i>in-situ</i> trace element analytical capability using the Bochum proton microprobe and application in geological case studies.
11/1990 – 12/1991	Research Assistant at the Department of Sedimentary Geology and Isotope Geochemistry, Ruhr-University Bochum (Prof. Dr. Veizer). Scientific project: Isotopic and geochemical research within the framework of a nuclear waste storage programme (" <i>Schacht Konrad</i> "). Client: Federal Office for Radiation Protection (<i>Bundesamt für Strahlenschutz</i>).

3. Governance and policy activities

List memberships in professional societies and activities in civic, public or international affairs.

Membership in professional societies and activities in civic, public or international affairs:	
since 2013:	Member of the Australian Institute of Company Directors.
since 2012:	Chair of the Monitoring Committee for RCA Programme Development and RCA Programme Advisory Committee.
since 2012:	Member of the Advisory Board of the Australian Plasma Fusion Research Facility.
2005-2013:	Member and chair of several working groups and committees on development of strategic plans for the RCA and their implementation. Lead Country coordinator for RCA Project RAS5055 (Improving soil fertility, land productivity and mitigating land degradation). Convenor of the RCA Working Group on Review of RCA Project Design.
2007-2011:	German Science and Technology Coordinator under the bilateral Science and Technology Cooperation (STC) Agreement between New Zealand and Germany. Appointed by the New Zealand Minister of Research, Science and Technology and formally endorsed by the New Zealand Cabinet.

since 2006:	Member of the Ernst & Young Executive Programme Alumni Association. Successfully completed the Ernst & Young Executive Programme, led by members of the Faculty of The Darden School of Business. In 2006, The Financial Times rated the Executive Education open-enrolment program at the Darden School of Business number one in the world.
2006-2012:	Member of the Science Executive and Governance Board (until January 2009) of the Joint Antarctic Research Institute (JARI) between GNS Science, NIWA and Victoria University of Wellington.
2004-2012:	AINSE (Australian Institute of Nuclear Sciences and Engineering) Councillor for GNS Science. AINSE is a consortium of close to 50 Australasian universities and research institutions which facilitates access to the Australian nuclear research centre at ANSTO, Lucas Heights
2004:	Expert Advisor for the "International Investment Opportunities Fund", a joint venture of the New Zealand Foundation for Research, Science and Technology (FRST) and the Health Research Council of New Zealand (HRC).
2004-2005:	Founding member of the New Zealand Synchrotron Investor Sub-Group, to negotiate the NZ investment (>NZ\$10 million) in the Australian Synchrotron in Melbourne and develop the implementation plan.
2003-2012:	New Zealand IAEA-RCA Representative, appointed by the Ministry of Foreign Affairs and Trade (MFAT).
2002-2012:	Member of the Governance Board of the Alan MacDiarmid Institute for Advanced Materials and Nanotechnology. The Institute, with members from several NZ universities and research organisations, is New Zealand's "Centre of Research Excellence" in the area of materials sciences and nanotechnology.
Recruited to the following IAEA activities:	
September 2013:	General Conference of the Regional Cooperative Agreement (RCA): International Expert, Chair of RCA Monitoring Committee.
July 2013:	AEA/RCA Regional Training Course on the use of compound specific isotope analysis (CSIA) for the identification of hot spots of land degradation in the landscape. China: Lecturer and Lead Country Coordinator
February 2013	Regional Meeting on project design of RCA proposed concepts for TCP 2014-15, IAEA Vienna: Chair of RCA Monitoring Committee.
February 2013:	Meeting for dissemination of best practices, IAEA Vienna: international Expert.
August 2012:	First Coordination Meeting RAS5/055: Improving Soil Fertility, Land Productivity And Land Degradation Mitigation, Sri Lanka: Lead Country Coordinator
August 2012:	First Meeting Of The Monitoring Committee For RCA Programme Development, IAEA Vienna: Chair of RCA Monitoring Committee.

January 2012	Workshop on validation of the design and methodology of best practices, IAEA Vienna: International Expert
February 2011:	Meeting of The Project Lead Country Coordinators to design RCA projects for 2012/2013 TC Cycle, IAEA Vienna: Lead Country Coordinator
February 2010:	Working Group Meeting for development of RCA strategic priorities for 2012-2017, IAEA Vienna: International Expert
July 2009:	Meeting of the Working Group on extension of RCA Medium Term Strategy, IAEA Vienna: International Expert
July 2006:	Meeting of the Thematic Sector Lead Country Coordinators, IAEA Vienna: International Expert
August 2005:	Meeting of the Thematic Sector Lead Country Coordinators and Working Group for RCA Medium Term Strategy, IAEA Vienna: International Expert

4. Expertise and competencies

In no more than 1000 words, provide evidence of your demonstrated expertise and competencies in:

- *the logical framework approach to project design;*
- *the distinctive features of IAEA-TC requirements;*
- *RCA strategy and operation;*
- *project management, project review and assessment;*
- *technical expertise and experience in the nuclear area.*

Logical framework approach to project design and distinctive features of the IAEA-TC Requirements:

- Current Chair of the RCA Programme Advisory Committee (formerly known as RCA Monitoring Committee), providing advice to the National RCA Representatives on matters related to the planning, management and direction of the RCA Programme.
- As member and Chair of the RCA Monitoring Committee, provided advice to RCA Lead Country Coordinators on project design under the TC logical framework approach. In particular, this relates to project concepts and proposals of TC projects submitted to the IAEA under the auspices of the RCA.
- During RCA Programme Advisory Committee meetings and RCA Project Design meetings worked closely with IAEA staff from the TC Department's Quality Assurance Section, Project Management Officers in the Division of Asia and the Pacific, and Technical Officers from Technical Departments.
- Acted as international Expert for the design and methodology of Best Practices in the IAEA TC Department.
- Invited by Section Head, IAEA-TC Quality Assurance Section, to participate as expert in the quality review of all draft TC project documents for the 2014/15 cycle.

RCA strategy and operation:

- Involved in the IAEA's Technical Cooperation Programme and the RCA for more than a decade in roles covering a wide spectrum of strategic and operational aspects.

- RCA National Representative for New Zealand for more than nine years.
- Nominated by RCA National Representatives to be Member of several RCA Working Groups on RCA strategic priorities and medium-term strategy.
- Lead Country Coordinator for one RCA Project - RAS5055: Improving Soil Fertility, Land Productivity and Land Degradation Mitigation).
- Chair of RCA Programme Advisory Committee and RCA Monitoring Committee, providing advice to the National RCA Representatives on matters related to the planning, management and direction of the RCA Programme.
- Author of one successful 'Best Practice' submission by the RCA (Building the future on strong foundations: Evidence-based regional priorities for the RCA).

Project management, project review and assessment

- Currently Lead Country Coordinator of RCA Project RAS5055 "Improving soil fertility, land productivity, and soil degradation mitigation"
- Senior management positions in research and research funding organisations which includes the following key responsibilities:
 - Develop and continuously review effective strategies for the continuing success and growth of the organisation.
 - Build high quality working relationships with internal and external stakeholders at all levels.
 - Deliver stakeholder-focused solutions and services with the ability to influence, negotiate and liaise with senior executives, including developing high quality verbal and written reports for presentation.
 - Manage the organisation's financial resources and staff capabilities, as well as strategic, scientific and structural development.
 - Representation in international fora for nuclear sciences.
 - Coordinate bilateral science and technology cooperation with the Federal Republic of Germany on behalf of the New Zealand Government.
 - Management of technical and scientific collaboration programmes.

Technical Expertise and experience in the nuclear area:

- Paleoclimate Research/Climate Geology
 - Isotope and trace element techniques in paleoclimate reconstruction and to decipher interaction between geosphere, atmosphere and biosphere in global biogeochemical cycles.
- Radiocarbon and biogeochemistry
 - Earth systems research at the geosphere/biosphere/atmosphere interface. Terrestrial carbon dynamics derived from isotopic tracers (radiocarbon, stable isotopes).
 - Application of the AMS technique in the context of quaternary paleoclimatology, paleoceanography, archaeology and art history.
 - Correlation of climate archives, using cosmogenic isotopes as a tool for chronology and oceanography and weathering studies.
- Geochronology
 - Radiocarbon dating using AMS.
 - U-Th-Pb dating of zircons, monazites and hydrous minerals using AMS and ion microprobes (SIMS).
 - U-Th-Pb chemical dating of monazites and zircons using the proton microprobe

(PIXE).

- Isotope geochemistry
 - Use of stable ($\delta^{34}\text{S}$, $\delta^{18}\text{O}$, $\delta^{13}\text{C}$) and radiogenic ($^{87}\text{Sr}/^{86}\text{Sr}$) isotope systems in studies of global change, sedimentology and tectonics, biogeochemical cycles, to trace fluid sources and pathways, and application for issues related to nuclear waste storage.
 - AMS *in-situ* analysis of Pb and S isotopes in sulfides as tracers of ore forming processes and fluid sources.
- Technical
 - Instrumental and methodical aspects of *in-situ* accelerator techniques for trace element and isotope analyses (AMS, PIXE, SIMS).
 - Technical development of sample preparation for AMS analyses.
 - Development of methodologies for chemical extraction of conservation agents from art and archaeological objects.
- Trace element geochemistry
 - Microanalysis of trace elements (AMS, SIMS, PIXE) and their application in petrology, diagenetic and environmental studies.

5. Declaration

I certify that the above statements made by me in answer to the foregoing questions are true, complete and correct to the best of my knowledge and belief.

I am aware that a high level of competency in the English language, both written and spoken, is an essential qualification, since all verbal and written communications in the RCA are conducted in English. I confirm that I have the necessary high level competency in English to be able to undertake such tasks.

Further I am aware that the work of this Committee can require a significant time commitment, including the ability to provide timely responses. I can confirm that I am able to make myself available for such significant time commitments.

Date: 25 November 2013

Signature

Frank Bruhn

6. Recommendation from an RCA National Representative

I, being the National RCA Representative of Australia,
herewith nominate the applicant for membership in the RCAPAC.

Date 4 December
2013

Signature

Steve McIntosh

Full name

Steve McIntosh

Position

Manager, International & Government

Institute

ANSTO



Regional Cooperative Agreement

for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific

Application/Nomination for Membership in the Programme Advisory Committee of the Regional Cooperative Agreement (RCAPAC)

1. Personal data

Name: John Frederick Easey
Home Address: 7a Bunarba Road, GyMEA Bay, NSW 2227, Australia
Nationality: Australian
Email: john.easey@gmail.com

2. Professional positions held

Starting with your present post, list in reverse order every appointment you have had in the past 25 years, including dates, type of business, and brief description of duties.

Nov. 2011 - to present:

Private Consultant, ANSTO Honorary Fellow, Member of the GATRI Evaluation Team, Australian Nuclear Science and Technology Organisation (ANSTO).

DUTIES – Honary Fellow ANSTO

To utilise my experience, knowledge and expertise in a variety of areas to provide advice to ANSTO on specific areas of nuclear science and technology as well as matters related to the IAEA and its technical cooperation programme.

Apr. 2008 – October 2011:

Senior Adviser, International and Regional Liaison, Australian Nuclear Science and Technology Organisation (ANSTO) (Part-time employment).

Oct. 2006 – Dec. 1995:

Senior Principal Research Scientist / Senior Adviser, International and Regional Liaison, Australian Nuclear Science and Technology Organisation (ANSTO).

DUTIES - Senior Adviser, International & Regional Liaison

To demonstrate and utilise ANSTO's experience and expertise in nuclear science and technology to support Australia's domestic and international policy through the provision of:

- *the preparation of technical briefing materials for DFAT and other Departments concerning issues related to IAEA and other regional and bilateral nuclear cooperation arrangements;*
- *hosting appropriate IAEA and other regional and bilateral related events;*
- *placement for IAEA Fellows and Scientific Visitors in Australia; and,*
- *provision of suitably qualified ANSTO staff to provide specialist training and expert assignments in activities under the IAEA and other regional and bilateral programmes.*

To identify funding within AusAID, DFAT and other sources to support bilateral and regional nuclear cooperation activities and ensure that such Australian financial contributions are utilised in accordance with agreed plans.

To identify prospective bilateral and regional activities compatible with ANSTO's priorities and resources and to review ANSTO's on-going role in such activities to ensure that they remain consistent with these priorities.

To continually update knowledge and understanding of evolving regional trends, needs and expectations of both donors and recipients from technical cooperation and collaboration in nuclear science and technology and especially that being delivered under the IAEA TC, RCA and FNCA programmes.

To continually update knowledge and understanding of the techniques and procedures being applied by the IAEA to the projects for each new TC cycle and as well as the strategies and priorities being employed by IAEA TC Department in the delivery of the TC programme.

Aug. 1990 – Nov. 1995:

Director (Grade D1), RCA Coordinator, Department of Technical Cooperation, (IAEA).

DUTIES – RCA Coordinator

To provide clear and effective leadership and high level management of the complex and demanding multi-disciplinary RCA Programme.

To provide leadership in the strategic development of the RCA technical programme as well as its future management.

To improve the development processes for the RCA projects, increasing the quality of the designs and ensuring that the projects provide socio-economic impact as well as supporting sustainability.

To improve the management, implementation and evaluation of the RCA programme.

To increase the funding base for the RCA Programme, through additional footnote a/ contributions from donor countries and international organisations, as well as through securing increased contributions from the IAEA Technical Cooperation programme.

To collaborate and interact effectively with National RCA Representatives, senior management, technical and political figures and decision makers in RCA Member States and form strong networks with them.

To exhibit a high level of skill in dealing with politically sensitive issues.

To engage with non-RCA countries in the region and seek to enlarge membership of the RCA.

To implement the RCA programme effectively and efficiently.

Dec 1985 – Aug 1990:

Head, Radioisotope Research Section: Senior Principal Research Scientist, Australian Nuclear Science and Technology Organisation (ANSTO).

DUTIES - Head, Radioisotope Research Section

To be in charge of and broadly responsible for developing applications of radioisotopes and radiation to address the needs of industry and the environment in Australia and to identify applications that could be used for demonstrations and technology transfer in the Asia Pacific region, as part of regional nuclear cooperation activities.

The work programme had three main thrusts:

- to provide a service to assist national industries and agencies in the solution of operational problems;*
- to undertake research and development to produce new applications of radiation and radioisotopes and improved skills for addressing national problems; and,*
- to support of technology transfer activities in the Asia Pacific region under projects funded by the Australian Development Aid Agency, AusAID.*

In order to satisfy all the competitive requirements of all the stakeholders, careful planning and balance between the strategic and the operational requirements was required. In addition strong attention was needed in the areas of project planning, management of resources and technical cooperation.

3. Governance and policy activities

List memberships in professional societies and activities in civic, public or international affairs.

Professional Societies:

Past member: The Royal Society of Chemistry; and, the Royal Australian Chemical Institute.

Activities related to national, regional and international affairs:

Preparation of technical briefing materials for the Australian Department of Foreign Affairs and Trade (DFAT) and other Australian Federal Government Departments concerning issues related to IAEA and other regional and bilateral nuclear cooperation arrangements.

Participation in the Australian Delegation to the RCA National Representatives Meetings since 2000:

- Led Representation: 2002, 2003, 2004, 2005, 2010
- Delegate, 2006, 2007, 2008, 2009, 2010, 2011, 2013

Participation in the Australian Delegation to the FNCA Coordinators Meeting since 2000:

- Led Representation: 2002, 2003, 2004, 2005.

At various times a Member of Australian Committees for Collaboration on Science and Technology with China, Indonesia, Japan and the Republic of Korea.

IAEA Delegate to: High-level Meeting on Environmentally Sound and Stable Development in Asia and the Pacific; and, UNDP Regional Development Cooperation Meeting.

4. Expertise and competencies

In no more than 1000 words, provide evidence of your demonstrated expertise and competencies in:

- *the logical framework approach to project design;*

Passed IAEA "Basics of the Logical Framework Approach", 14 February 2013, score 100%.

Recruitment by IAEA as Project Design Consultant for the preparation of RCA project designs using the logical framework approach for:

- 2012/13 TC Cycle,
- 2009/11 TC Cycle,
- 2007/08 TC Cycle,
- 2005/06 TC Cycle

Recruitment by IAEA as Project Design Consultant for the preparation of Regional Europe project designs using the logical framework approach for 2012-13 TC Cycle.

- *the distinctive features of IAEA-TC requirements;*

Recruitment by IAEA for tasks involving knowledge about and competency in the application of IAEA-TC requirements:

- 2013, IAEA Consultant, Quality Review of the Project Design Proposals for 2014-15 TC Cycle.
- 2013, Member Monitoring Committee, Regional Meeting on Project Design of RCA Proposed Concepts for 2014-15 TC Cycle.

- 2012, Member Monitoring Committee Evaluation of 7 draft RCA Project Designs.
- 2012, Member Monitoring Committee Meeting on RCA Programme Development.
- 2012 & 2011, IAEA Consultant, Analysis of the Development of the RCA Projects for the 2012/2013 TC Cycle.
- 2010, IAEA Consultant, Analysis of Regional Europe Projects.
- 2004, IAEA, Consultant, Pre-project assessment 106 project concepts for Asia Pacific Region for 2005-2006 TC Cycle.
- 2003, IAEA Expert, TC Regional Workshop on Planning, Selection and Design of TC Projects.
- 2003, IAEA Consultant, Project Performance Reporting and Standards

- *RCA strategy and operation;*

Recruitment by the IAEA for tasks involving knowledge about RCA Strategy and Operations:

- 2011 Member of Working Group on the implementation of the RCA Strategic priorities.
- 2010, Member of Working Group comprising experts in RCA Thematic Areas and persons knowledgeable about RCA policy matters that recommended the RCA Regional Priorities for 2012-2017.
- 2009, IAEA Consultant, Preparation of RCA Regional Profile, analysing 119 RCA projects.
- 2008, Member Working Group on Enhancing TCDC in the RCA.

- *Project management, Project review and assessment;*

Recruitment by the IAEA for tasks involving knowledge about Project Review and Assessment:

2004, IAEA Project Consultant, Pre-project assessment 106 project concepts for Asia Pacific Region for 2005-2006 cycle.
 2001 (2 missions to Indonesia), IAEA Consultant, Reviewing Indonesia National TC Programme.
 2000, UNDP appointed Team Leader for 6 Country Review of the RCA Industrial Project.

- *Technical expertise and experience in the nuclear area.*

Established expertise in the area of applications of radioisotopes and radiation for the solution of problems in industry and the environment. 18 missions have been undertaken as an expert lecturer in these topics for IAEA Regional Training Courses.

Since 1980 88 missions have been carried out for the IAEA as an International Expert or a Meeting/Workshop participant.

Other examples of demonstrating technical expertise and experience in the nuclear area:

- 2014, Consultant to World Nuclear University (WNU), preparation of the curriculum for the 2014 Radiation Technology School.
- 2010 & 2012 Faculty Member & Lecturer WNU School Radiation Technology.

5. Declaration

I certify that the above statements made by me in answer to the foregoing questions are true, complete and correct to the best of my knowledge and belief.

I am aware that a high level of competency in the English language, both written and spoken, is an essential qualification, since all verbal and written communications in the RCA are conducted in English. I confirm that I have the necessary high level competency in English to be able to undertake such tasks.

Further I am aware that the work of this Committee can require a significant time commitment, including the ability to provide timely responses. I can confirm that am able to make myself available for such significant time commitments.

Date 1 November 2013 Signature



6. Recommendation from an RCA National Representative

I, being the National RCA Representative of Australia
herewith nominate the applicant for membership in the RCAPAC.

Date 4 December
2013

Signature



Full name

Steve McIntosh

Position

Manager, International & Government

Institute

ANSTO



Regional Cooperative Agreement

for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific

Application/Nomination for Membership in the Programme Advisory Committee of the Regional Cooperative Agreement (RCAPAC)

1. Personal data

Name: Joon-Keuk CHUNG
Home Address: 209-301, 185 Najeong-ro, Bundang-gu, Seongnam-si, Kyunggi-do, Korea
Nationality: Republic of Korea
Email: johnkchung@hanmail.net

2. Professional positions held

Starting with your present post, list in reverse order every appointment you have had in the past 25 years, including dates, type of business, and brief description of duties.

2008-present Special Adviser, RCA Regional Office located in the Republic of Korea
2001-2008 Programme Officer, RCA Regional Office located in the Republic of Korea
1980-2001 Adviser to the Delegation of the Republic of Korea to the IAEA General Conferences, Member of the Delegation of the Republic of Korea to the RCA National Representatives Meetings and the RCA Working Group Meetings, Member of the Delegation of the Republic of Korea to the FNCA meetings, IAEA Expert Missions in the Field of Nuclear Public Information to Thailand and Indonesia, Invited Speaker to the IAEA Public Information Seminars (to some 15 Member States), Advisory Committee Member to the IAEA DG in Waste Management, Advisory Committee Member to the IAEA DG in Gender Issues
1987-1988 Participation in the Nuclear Emergency Preparedness Project of the AECL
1973-2001 Director, Nuclear Public Information, KAERI (Korea Atomic Energy Research Institute); Manager, Project Administration, Nuclear Safety Centre, KAERI, Director, Project Management of Radwaste, KAERI

3. Governance and policy activities

List memberships in professional societies and activities in civic, public or international affairs.

Member, Korea Nuclear Society

4. Expertise and competencies

In no more than 1000 words, provide evidence of your demonstrated expertise and competencies in:

- the logical framework approach to project design;
- the distinctive features of IAEA-TC requirements;
- RCA strategy and operation;
- project management, project review and assessment;
- technical expertise and experience in the nuclear area.

As the leader of KAERI's nuclear international co-operation affairs since 1973 and as the programme officer of the RCA Regional Office (RCARO) since 2002, and through participating in various RCA activities such as the project formulation meetings, the project

review meetings, RCA strategy meetings, and so on, it is believed obtained a lot of expertise in project design and review and assessment.

5. Declaration

I certify that the above statements made by me in answer to the foregoing questions are true, complete and correct to the best of my knowledge and belief.

I am aware that a high level of competency in the English language, both written and spoken, is an essential qualification, since all verbal and written communications in the RCA are conducted in English. I confirm that I have the necessary high level competency in English to be able to undertake such tasks.

Further I am aware that the work of this Committee can require a significant time commitment, including the ability to provide timely responses. I can confirm that am able to make myself available for such significant time commitments.

Date 27 January 2014

Signature

John Chung

6. Recommendation from an RCA National Representative

I, being the National RCA Representative of Republic of Korea, herewith nominate the applicant for membership in the RCAPAC.

Date

Signature

Full name

Position

Institute

[Signature]
KIM DAE KI

Director

Ministry of Science, ICT and
Future Planning



Regional Cooperative Agreement

for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific

Application/Nomination for Membership in the Programme Advisory Committee of the Regional Cooperative Agreement (RCAPAC)

1. Personal data

Name:	Takashi Nakano
Home Address:	Renjaku-cho 41-2-1201, Takasaki, Gunma, 370-0826, JAPAN
Nationality:	Japanese
Email:	tnakano@gunma-u.ac.jp

2. Professional positions held

Starting with your present post, list in reverse order every appointment you have had in the past 25 years, including dates, type of business, and brief description of duties.

Apr 2009 - Present:	Director. Gunma University Heavy Ion Medical Research Center. Responsible for clinical and basic research in carbon ion radiotherapy.
Dec 2000 - Present:	Chairman and Professor. Department of Radiology and Radiation Oncology, School of Medicine, Gunma University.
Apr 1999 - Dec 2000:	Section Head of Imaging diagnosis, Chief of gynecological radiation oncology, Chief of carbon ion beam therapy for cervical cancer & ocular melanoma, Chief of education for radiological specialist. Division of Radiation Medicine, Heavy Ion Research Center, National Institute of Radiological Sciences (NIRS).
1992 - 1999:	Supervising Physician, Division of Radiation Medicine, Heavy Ion Research Center, NIRS.
June 1983 - 1992:	Staff Radiation Oncologist, Division of Hospital, NIRS. Working under Chairman Dr. H. Tsunemoto on High LET radiotherapy and proton beam therapy and under Vice Director Dr.T. Arai on Intracavitary radiation therapy for the uterine cervical cancer.
1983:	Assistant, Department of Radiology, Gunma University.

3. Governance and policy activities

List memberships in professional societies and activities in civic, public or international affairs.

2013 - Present:	Program Coordinator of Gunma University "Program for Cultivating Global Leaders in Heavy Ion Therapeutics and Engineering" (Program for Leading Graduate Schools sponsored by MEXT of Japan).
2011 - Present:	Executive Director , Japan Society of Clinical Oncology.
2010 - Present:	RCA Project Lead Country Coordinator of RAS/6/053.

2008 - Present:	Board Member, Japanese Society for Therapeutic Radiology and Oncology.
2006 - Present:	President, NPO "Japanese Organization for International Cooperation in Radiation Medicine".
2004 - Present:	Chairman, IAEA/RCA Japanese Advisory Board in Human Health Sector.
2002 - Present:	Editor of Austral-Asian Journal of Cancer.
2001 - Present:	Committee Member of Japan Society of Radiology.
1999 - Present:	Committee Member of Japanese Society of Therapeutic Radiology and Oncology.
1997 - Present:	Reviewer of Cancer (journal), Journal of Cancer Research Clinical Oncology.
2009:	Working Group Member for Development of RCA Strategic Priorities for 2012-2017 in Human Health Sector.
2007 - 2009:	RCA Project Lead Country Coordinator of RAS/6/048.
2004 - 2009:	Program Leader of 21st Century Center of Excellence Program in "Biomedical Research Using Accelerator Technology" sponsored by MEXT of Japan.
2005 - 2008:	RCA Project Lead Country Coordinator of RAS/6/040.
2003 - 2007:	RCA Thematic Sector Lead Country Coordinator in Human Health.
2001 - 2004:	RCA Project Coordinator of RAS/6/035.
1993 - 1998:	IAEA Scientific Staff of Coordinated Research Program (Radiation responsiveness criteria for treatment modality planning).

4. Expertise and competencies

In no more than 1000 words, provide evidence of your demonstrated expertise and competencies in:

- the logical framework approach to project design;
- the distinctive features of IAEA-TC requirements;
- RCA strategy and operation;
- project management, project review and assessment;
- technical expertise and experience in the nuclear area.

My expertise is in radiation oncology, especially radiation therapy and radiation biology research for uterine cervical cancer and particle radiation therapy, and my competency in clinical practice, research, education, administration can be evaluated by the information which I have provided in this previous sections.

In the RCA, I have been the PLCC of RAS/6/040, RAS/6/048, RAS/6/053, and RAS/6/072 and have an extensive experience with the logical framework approach in the project design and project management/review/assessment. I have also been a working group member for the development of RCA Strategic Priority 2012-17 and contributed to the establishment of the priorities for the Human Health Sector for 2012-17.

I believe that I would be able to contribute very much to the RCA by serving as a member of RCAPAC, and it would be an honour for me to be able to fulfil such duty.

5. Declaration

I certify that the above statements made by me in answer to the foregoing questions are true, complete and correct to the best of my knowledge and belief.

I am aware that a high level of competency in the English language, both written and spoken, is an essential qualification, since all verbal and written communications in the RCA are conducted in English. I confirm that I have the necessary high level competency in English to be able to undertake such tasks.

Further I am aware that the work of this Committee can require a significant time commitment, including the ability to provide timely responses. I can confirm that am able to make myself available for such significant time commitments.

Date

Signature

20 January, 2014

中野隆史
Nakano

6. Recommendation from an RCA National Representative

I, being the National RCA Representative of Japan,
herewith nominate the applicant for membership in the RCAPAC.

Date 28 January 2014 Signature

Kenichi Bessho

Full name Kenichi BESSHO

Position Director, International Nuclear Energy Cooperation Division
Disarmament, Non-Proliferation and Science Department

Institute Ministry of Foreign Affairs



Regional Cooperative Agreement

for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific

Application/Nomination for Membership in the Programme Advisory Committee of the Regional Cooperative Agreement (RCAPAC)

1. Personal data

Name:	Tomoaki Tamaki
Home Address:	Taguchi-machi 1205-36, Maebashi, Gunma, 371-0048 JAPAN
Nationality:	Japanese
Email:	tamakiti@gunma-u.ac.jp

2. Professional positions held

Starting with your present post, list in reverse order every appointment you have had in the past 25 years, including dates, type of business, and brief description of duties.

Oct 2011 - Present:	Assistant Professor , Department of Radiation Oncology Gunma University Graduate School of Medicine.
Sep 2010 - Sep 2011:	Consultant , Applied Radiation Biology and Radiotherapy, Division of Human Health, Department of Nuclear Sciences and Application, IAEA.
Apr 2008 - Aug 2010:	Assistant Professor , Heavy Ion Medical Research Center & Department of Radiation Oncology, Gunma University.
Apr 2006 - Mar 2008:	Medical Staff, Center for Charged Particle Therapy, National Institute of Radiological Sciences.
Apr 2005 - Mar 2006:	Medical Staff, Gunma University Hospital.
Apr 2003 - Mar 2005:	Clinical Resident in Radiation Oncology, Toranomon Hospital.

3. Governance and policy activities

List memberships in professional societies and activities in civic, public or international affairs.

Membership:
Japanese Society for Therapeutic Radiology and Oncology (JASTRO)
Japan Radiological Society
Japan Society of Clinical Oncology
Japan Society of Medical Physics (JSMP)
Positions (activities) in professional societies:
Member of JASTRO Education Committee
Member of JSMP International Committee
Activities in civic, public or international affairs:
2014 - Present: Alternate NPC , RAS/6/072.

2012 - Present:	Member , Secretariat for the Preparation Meetings for the Federation of Asian Federations of Radiation Oncology.
2010 - Present:	Member , IAEA Advisory Group on Increasing Access to Radiotherapy in Developing Countries (AGaRT, IAEA).
2006 - Present:	Board Member , NPO "Japanese Organization for International Cooperation in Radiation Medicine".
2004 - Present:	Member , IAEA/RCA Japanese Advisory Board in Human Health Sector.
2003 - Present:	Actively involved in the project planning, activities, review of RAS/6/040, RAS/6/048, RAS/6/053, RAS/6/062, and RAS/6/072.
2003 - Present:	Participated in RCA TSLCC meetings and RCA NRM meetings.
2012 - 2013:	NPC , RAS/6/066.
2010 - 2011:	Consultant , Applied Radiation Biology and Radiotherapy, Division of Human Health, Department of Nuclear Sciences and Application, IAEA.
2009:	Working Group Member for Development of RCA Strategic Priorities for 2012-2017 in Human Health Sector.

4. Expertise and competencies

In no more than 1000 words, provide evidence of your demonstrated expertise and competencies in:

- the logical framework approach to project design;
- the distinctive features of IAEA-TC requirements;
- RCA strategy and operation;
- project management, project review and assessment;
- technical expertise and experience in the nuclear area.

As a member of Department of Radiation Oncology, Gunma University, I am a professional medical doctor and assistant professor in radiation oncology; I am in a clinical practice of treating patients with various cancer type using radiation therapy and also teaches students in the M.D. program and Ph.D. program of Gunma University. Throughout my career, I have been involved with the IAEA/RCA activities through projects, RAS/6/040, RAS/6/048, RAS/6/053, RAS/6/062, and RAS/6/072 under Prof. Takashi Nakano. My involvement includes the planning of the RCA projects through logical framework approach, management, reporting, and review of activities through the IAEA TC mechanisms. These experiences have given me an extensive insight into the RCA activities and mechanisms.

I have also been a Working Group Member for Development of RCA Strategic Priorities for 2012-2017 in Human Health Sector and contributed to the preparation of the RCA Strategic Priorities.

As a technical expert, I have been involved with the other non-RCA IAEA activities such as serving as a member of the IAEA Advisory Group on Increasing Access to Radiotherapy in Developing Countries (AGaRT) and working as a consultant for one year in the Applied Radiation Biology and Radiotherapy Section of the IAEA. Through these experiences, I have become very familiar with the IAEA mechanisms of project planning and management.

I sincerely hope that I would be able to serve to the RCA as a member of RCAPAC.

5. Declaration

I certify that the above statements made by me in answer to the foregoing questions are true, complete and correct to the best of my knowledge and belief.

I am aware that a high level of competency in the English language, both written and spoken, is an essential qualification, since all verbal and written communications in the RCA are conducted in English. I confirm that I have the necessary high level competency in English to be able to undertake such tasks.

Further I am aware that the work of this Committee can require a significant time commitment, including the ability to provide timely responses. I can confirm that am able to make myself available for such significant time commitments.

Date

Signature

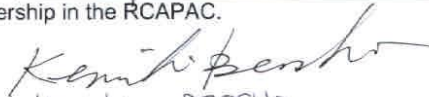
Jan 20, 2014



6. Recommendation from an RCA National Representative

I, being the National RCA Representative of Japan,
herewith nominate the applicant for membership in the RCAPAC.

Date 28 January 2014 Signature



Full name

Kenichi BESSHO

Position

Director, International Nuclear Energy Cooperation Division
Disarmament, Non-Proliferation and Science Department

Institute

Ministry of Foreign Affairs



Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific

Application/Nomination for Membership in the Programme Advisory Committee of the Regional Cooperative Agreement (RCAPAC)

1. Personal data

Name: Dr POOKOT RAGHAVAN UNNI
Home Address: 33, MUSSOORIE, ANUSHAKTI NAGR, MUMBAI 400 094. INDIA
Nationality: Indian
Email: prunni@barc.gov.in; unnipookot@gmail.com

2. Professional positions held

Starting with your present post, list in reverse order every appointment you have had in the past 25 years, including dates, type of business, and brief description of duties.

a.	Period of employment:	from January 2004 to date
	Exact title of post:	RCA Liaison Officer
	Name and address of employer:	Bhabha Atomic Research Centre
	Type of business:	Research and Development
	Number and kind of employees supervised	professional staff (1);
Description of duties:		
	1. As the National Liaison Officer and RCA Liaison Officer and part of Knowledge Management Group of BARC, my main responsibilities are to study, coordinate on matters pertaining to international, regional organizations and bilateral collaborations and evolve strategies for international interaction. This involves coordination with IAEA, UNGA, UNFCCC and Bilateral Cooperation with Vietnam, Bangladesh, and Sri Lanka etc.	
	2. As the focal point for the Agency's Technical Co-operation Programme in the country, along with the National Representative, responsible for the implementation of the Agency's various TC programmes in other member states by facilitating the release of expert services from India as well as facilitating fellowship/scientific visit training in India for member states candidates upon Agency's specific request. Actively involved in the drafting, finalization, execution and implementation of the document MoU between DAE and IAEA during 2006. IAEA sponsored fellowships/scientific visits under the Agency's TC programme are accepted in India	

as per the DAE-IAEA MoU. Fellowship coordination process includes identifying the right host institutes as per the Agency's request, establishing contacts with the host institute, planning the training programme in consultation with the institute, ensuring that the necessary government clearances are received in time and also regularly interacting with the Agency in the planning phase and finalize the programme. During the tenure of the fellowship training, interaction with the fellows and his training supervisor to ensure smooth progress of the training programme and subsequent to the completion of the training, collection of feedback response from the fellows as well as settlement of the training programme with the Agency are the responsibilities.

3. Regular liaisoning and interaction with the Counsellor, PMI, Vienna, various ministries in India and other government organizations, UN establishments such as UNDP etc. were carried out for the smooth implementation of various IAEA sponsored programmes in India.
4. Gained good knowledge in the functioning and implementation of IAEA TC programmes and also was an Expert Member of the Working Group constituted by IAEA for the extension of RCA Medium Term Strategy for 2011-2017, in July, 2009, Vienna. Well acquainted with the Agency's TC Project formulation procedures, the TC programme cycle management framework (PCMF) the Logical Frame Work Matrix (LFM) for the formulation of Projects, procedure for mid-term and final review of the project implementation by identifying the correct performance indicators etc. and familiar with the result based management principles for the formulation of new RCA projects based on the lessons learnt from the past and also involved in the preparation of the Regional Country Profile for RCA Projects introduced by the Agency in 2009.
5. Involved in the preparation of the Experts roster from India for the Agency to select the appropriate experts in various fields on Agency's mission to other member states. I could get a very good opportunity for getting fully familiarized the functioning of the Agency and regularly interact with the various departments in the Agency in connection with the implementation of different Agency programmes in India and in other member states. Involved in the co-ordination and management of IAEA sponsored CRP's. Ensured timely submission of new CRP proposals/renewal of existing contracts to the Agency and also assisted the agency in getting the progress reports on the ongoing CRP's.
6. As the National RCA Liaison Officer, I am responsible for the implementation of RCA Projects along with the RCA National Representative. Initiation of new RCA Projects in consultation with various

RCA stake holders in the country, seeking necessary government clearances and timely submission to the RCA Secretariat constitutes the Project upstream work. Selection and appointment of national project coordinators and national project team members for each RCA Project forms pre-implementation phase. Follow up interactions with end users to receive feedback response on concluded RCA projects to ascertain benefits derived and also to get future needs forms post-implementation phase. Web content management of the national RCA Web page and updating the contents, regular interaction with the RCA focal Person and RCA Secretariat etc. are also carried out. Back office preparations and inputs for participation in RCA NRM's and RCA- GC by collecting agenda documents and giving our responses/views on various listed agenda items were also carried out. Extended logistic support to the Agency in hosting of RCA events in the country by way of seeking necessary government approvals, facilitating visa requirements to the participants etc. and also ensured timely submission of nominations to the Agency for participation in RCA events held in other MS. Functioned as a member of the Experts Working Group for the extension of RCA Medium Term Strategy for the period 2011-2017 during 27-31, July, 2009 at Vienna.

7. Actively involved in the implementation of the Agency's PACT Programme in India. Involved in the finalization of the supply of Bhabhatron Unit to Vietnam and now to Sri Lanka and Namibia.
8. Actively coordinate Indo-Vietnam Technical co-operation Programme, Technical programmes conducted under Board of Research in Nuclear Science programmes with the public/private entrepreneurs, universities and other research institutions in the country. Also, involved in the implementation of Indo-German and Indo-French collaborative programmes in the fields of Science & Technology besides the coordination of other international collaborative works of Department's interest. I have coordinated and the visit of official delegation from IAEA consisting of Director, Technical co-operation, Asia – Pacific and the RCA Focal Person to India for further increasing the Agency's technical cooperation activities with India.

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b. Period of employment:	from August 1980 to January 2004
Exact title of post:	Scientific Officer
Name and address of employer:	Bhabha Atomic Research Centre, Trombay, Mumbai 400 085, INDIA
Type of business:	Research and Development;
Number and kind of employees supervised	6 technical staff; 4 professional,

Description of duties:

- I. Irradiation planning, Chemical processing, Purification and isolation of Radionuclides of medical importance. Some of the radionuclides handled includes ^{99}Mo for the preparation of $^{99}\text{Mo}/^{99\text{m}}\text{Tc}$ generator, ^{125}I , ^{131}I , ^{153}Sm , ^{166}Ho , ^{105}Rh , $^{186/188}\text{Re}$, ^{177}Lu etc.
- II. Development of Therapeutic Radiopharmaceuticals - based on the above radionuclides. Worked on the development of new EVRT agents using ^{166}Ho and ^{188}Re EC complexes. Also developed radiosynovectomy agents, ^{166}Ho -HA and ^{153}Sm -HA

Professional achievements

- Could successfully finalize a new procedure for the separation and purification of fission produced ^{99}Mo for the preparation of column generator.
- A new method for the radionuclide production and separation of ^{125}I implemented
- ^{105}Rh for the development of therapeutic radiopharmaceuticals was produced .
- Development of ^{188}W - ^{188}Re gel generator using low specific activity ^{188}W carried out.
- Development of a new class of ^{166}Ho -HA and ^{153}Sm – HA radiosynovectomy agent.
- Also involved in the development of new class of EVRT agents.
- Setting up of a full-fledged laboratory for the formulation of radiopharmaceuticals.
 - Worked as a faculty member giving lectures for medical doctors and para medical staff undergoing course on RIA diagnostic procedures leading to the award of certificate to participants and license to start RIA lab.

Membership in professional societies

I am actively involved in the following professional bodies involved in the promotion of peaceful applications of atomic energy for the benefit of mankind.

1. Life Member of Indian Institute of Chemical Engineers
2. Life Member of Indian Association of Nuclear chemists and Allied Scientists (IANCAS)
3. Life Member of Indian Nuclear society
- A. Life Member of National Association for Application of Radioisotopes & Radiation for Industry (NAARRI)
1. I have been interacting with the various departments of the Agency from the year 2003. This has enabled me to get familiarised with Agency's methods of functioning, procedures for Programme Development and Performance Assessment, interaction with Member States and understanding and appreciation of the 'One house concept' of the Agency. Besides the RCA Programme of the Agency, I am also coordinating with the various departments in India in connection with the implementation of various IAEA TC Programmes as well as the IAEA-WHO initiative PACT and provide all logistic support to ensure hassle free implementation of these programmes to meet the Agency's mandate. The nominee has demonstrated her technical expertise and experience in the nuclear area through the following:

- As senior Lecturer on isotope and nuclear analytical techniques for the Nuclear Training Center (continuing)

Publications of Dr P.R. Unni

A. International and referred Journals

1. Preparation, stability studies and pharmacological behavior of [^{186}Re]Re-HEDP
K.Kothari, M.R.A. Pillai, **P.R. Unni**, H.H. Shimpi, O.P.D. Noronha and A.M. Samuel
Appl.Radiat.Isot., 51-58, 1999.
2. Preparation of [^{186}Re]Re-DMSA and its biodistribution studies
K.Kothari, M.R.A. Pillai, **P.R. Unni**, H.H. Shimpi, O.P.D. Noronha and A.M. Samuel
Appl.Radiat.Isot., 51-58, 1999.
3. [$^{186}/^{188}\text{Re}$]Rhenium Ethylene Dicycysteine(Re-EC) : Preparation and evaluation for possible use in Endovascular brachytherapy
T.Das, S. Banerjee, G.Samuel, K.Kothari, **P.R. Unni**, H.D. Sharma, N.Ramamurthy and M.R.A. Pillai. Nucl.Med.Biol., 27, 189-197,2000
4. Preparation and pharmacological evaluation of a novel Tetraphosphonate ligand as a potential bone pain palliation agent.
K.Kothari, G.Samuel, S.Banerjee, **P.R. Unni**, H.D. Sharma, P.R.Chaudhari, T.P.Unnikrishnan and M.R.A. Pillai. Paper presented in the 47th Annual Conference of Society of Nuclear Medicine, St.Louis. J.Nucl.Med., 41, 5, May 2000.
5. [$^{186}/^{188}\text{Re}$] Rhenium ethylene di cysteine (Re-EC).Preparation and evaluation for possible use in endovascular brachytherapy
T.Das, S.Banerjee, K.Kothari, **P.R.Unni**, H.D.Sharma,N.Ramamoorthy and M.R.A. Pillai
Nucl,Med.Biol. 27 (2000) .189 –197
6. Potential ^{166}Ho Radiopharmaceuticals for Endovascular Radionuclide therapy(EVRT) I- [^{166}Ho]Holmium labelled Ethylene Dicycysteine
S.Chakraborty, **P.R.Unni**, S.Banerjee,G.Samuel,T.Das,H.D.Sharma,N.Ramamurthy and M.R.A. Pillai. Nucl.Med.Biol.28, (2001), 309-317
7. $^{99\text{m}}\text{Tc}$ and ^{186}Re complexes of tetraphosphonate ligands and their biodistribution pattern in animal models
S.Banerjee, G.Samuel. K.Kothari, **P.R. Unni**, H.D. Sharma and M.R.A.Pillai
Nucl.Med.Biol. 28(2001), 205-213
8. Potential ^{166}Ho Radiopharmaceuticals for Endovascular Radionuclide therapy (EVRT) II- Preparation and evaluation of [^{166}Ho] DTPA
M.A. Majali, S.K. Saxena, S.H.Joshi. **P.R. Unni** and N. Ramamoorthy
Nucl.Med.Comm. 22 (2001), 97-103
9. ^{177}Lu labelled polyaminophosphonates as potential agents for bone pain palliation
S.Chakraborty, T.Das, **P.R.Unni**, H.D.Sharma, G.Samuel, S.Banerjee, M.Venkatesh, N.Ramamoorthy and M.R.A.Pillai
Nucl.Med.Comm. 22,(2001), 97-107

10. Preparation and bioevaluation of ^{166}Ho labelled hydroxyapatite (HA) particles for radiosynovectomy
P.R. Unni, P.R. Chaudhari, M.Venkatesh, N.Ramamurthy and M.R.A. Pillai.
 Nucl.Med.Biol., 29 (2002). 199-209
11. ^{177}Lu labeled cyclic polyphosphonates as potential agents for bone pain palliation
 T.Das, S.Chakraborty, **P.R.Unni**, S.Banerjee, G.Samuel, H.D.Sarma, M.Venkatesh and M.R.A. Pillai
 App.Radn.Isotopes, 57, (2002), 177-184.
12. Feasibility study for the production of ^{175}Yb : A promising therapeutic radionuclide
 S.Chakraborty, **P.R. Unni**, M.Venkatesh and M.R.A. Pillai.
 Appl.Radn.Isotopes, 57, (2002), 295 – 301
13. Production and Radiochemical Separation of Rh-105 for radiopharmaceutical Applications
P.R. Unni, M.R.A. Pillai
 Radiochim.Acta, 90 (2002), 363 – 369
14. ^{186}Re -1,4,8,11-tetra aza cyclo tetradocyl-1,4,8,11tetra methylene phosphonic acid-A Novel agent for possible use in metastatic bone pain palliation.
 K.Kothari, G.Samuel, S.Banerjee, **P.R.Unni**, H.D.Sarma, P.R. Chaudhari, T.P.Unnikrishnan, M.R.A.Pillai
 Nucl.Med.Biol., 28, (2001), 709-717.
15. Dosimetric Evaluation of ^{175}Yb labeled Radiopharmaceutical for termination of Osseous metastases.
 Bobby Mathew, Pushparaja, H.D.Sarma, S.Chakraborty, **P.R. Unni**, T.Das, S.Banerjee, G.Samuel
 Radn.Protection & Environment, 25, 72-76, 2002
16. Beta particle dosimetry of ^{153}Sm radionuclide used in radiosynovectomy
 P.Tandon, G.J. shigwan, **P.R.Unni**, A.T.Soman, S.Chakraborty, M.Vijayam, B.C.Bhatt
 Ind.J.Med.Phy., 20, 3, (2001), 134-135.
17. Bioevaluation of ^{166}Ho -labelled Hydroxyapatite particles for radiosynovectomy
 P.R. Chaudhary, **P.R. Unni**, N.Ramamoorthy, M.R.A.Pillai and A.M. Samuel
 Ind.J.Nucl.Med., 15, 3, p. 126, 2000 (Abstract)
18. [^{166}Ho]Holmium labeled ethylene di cysteine. A potential radiopharmaceutical for endovascular radiation therapy
 S. Chakraborty, **P.R. Unni**, S. Banerjee, G.Samuel, T.Das, S.D.Sarma, Ramamoorthy and M.R.A. Pillai. Ind.J.Nucl.Med., 15, 3, p. 127, 2000 (Abstract)
19. ^{175}Yb : A potential radionuclide for therapeutic applications
 S.Chakraborty, **P.R. Unni**, K.C. Jagadeesan and M.R.A. Pillai. Ind.J.Nucl.Med., 15, 3, p. 127, 2000 (Abstract)
20. Preliminary report on clinical evaluation studies of ^{166}Ho -HA particles for radiosynovectomy
 S.V.Solav, **P.R. Unni**, S.Chakraborty, P.R. Chaudhary, I.Upadhyay, E. Vargheese, Y.Karunapriya, N. Ramamorthy and M.R.A. Pillai. Ind.J.Nucl.Med., 15, 3, p. 132, 2000 (Abstract)
21. Development of ^{105}Rh based ligands as potential therapeutic agents

P.R. Unni and M.R.A. Pillai

Paper presented at the 28th Annual Conference of the Society of Nuclear Medicine, India, Ind.J.Nucl.Med., 217,4, 1996 (Abstract)

22. Radiochemical studies for the preparation of $^{186/188}\text{Re}$ -DMSA

K.Kothari, **P.R.Unni** and M.R.A. Pillai

29th Annual Conference of the Society of Nuclear Medicine, India Chandigarh.
Ind.J.Nucl.Med., 12, 1997 (Abstract)

B. International Seminars, Conferences:

1. Studies on the decontamination of fission ^{99}Mo from ^{131}I using Chelex 100 chelating ion exchangers

N.D. Vaidya, **P.R. Unni**, A.R. Mathakar and M. Subramanian

Paper presented in the International Symposium on Radiochemistry and Radiation Chemistry, Mumbai, 1990

2. Production and Purification of ^{125}I from thermal neutron irradiated natural Xenon gas

P.V. Joshi, **P.R. Unni**, A.R. Mathakar and M.Subramanian

Paper presented in the IAEA International; Seminar on Enhanced utilisation of research Reactors, Mumbai, 11-15 March, 1996

3. Radiochemical studies and pharmacological behaviour of ^{186}Re complexes of phosphonate ligands

K.Kothari, S.Banerjee, G.Samuel, **P.R.Unni**, H.D.Sharma and M.R.A. Pillai

Presented in the Seminar on Therapeutic Applications of Radiopharmaceuticals, Hyderabad, IAEA-,SR-209, Book of extended synopsis, 166-167, 1999

4. ^{166}Ho -hydroxyapatite particles for Radiation Synovectomy

P.R. Unni and M.R.A. Pillai

Presented in the Seminar on Therapeutic Applications of Radiopharmaceuticals, Hyderabad, IAEA-,SR-209, Book of extended synopsis, 148-149, 1999

5. Production and radiochemical processing of therapeutic radionuclides

P.R. Unni, K.Kothari and M.R.A. Pillai

Presented in the Seminar on Therapeutic Applications of Radiopharmaceuticals, Hyderabad, IAEA-,SR-209, Book of extended synopsis, 30-31, 1999.

C. National Seminars, Conferences

1. Production and radiochemical separation of ^{105}Rh

P.R. Unni, A.R. Mathakar, M.Subramanian and M.R.A. Pillai

Nuclear & Radiochemistry Symposium, Kalpakkam, Preprint Volume 275-276, 1995

2. Development of radiation synovectomy agents

C.Usha, **P.R. Unni**, Meera Venkatesh and M.R.A. Pillai

Proc.Nucl.Radiochem.Symp., Mumbai (Editors: D.S.C. Purushotham, A.V.R. Reddy, G.A. Rama Rao, S.B. Manohar) 259- 260, 1999

3. Preparation of ^{166}Ho -chitosan – A potential agent for treatment of liver cancer

Usha Pandey, Archana Shukla, **P.R.Unni**, S.Chakraborty, M.Venkatesh, M.R.A. Pillai
Book on Nuclear and Radiochemistry Symposium Proceedings, 346-347, 2001.

4. ^{177}Lu labeled phosphonates: Possible agents for Bone Pain Palliation.

T.Das, S.Chakraborty, **P.R. Unni**, S.Banerjee, G.Samuel, M.R.A. Pillai

Book on Nuclear and Radiochemistry Symposium Proceedings, 352-353, 2001

D. IAEA TECDOC- Publications:

1. Preparation of ^{186}Re complexes of dimercaptosuccinic acid and ethylidene di phosphonate

K.Kothari, M.R.A. Pillai, **P.R. Unni**, A.R. Mathakar, H.H. Shimpi, O.P.D. Noronha, A.M Samuel.

In Modern Trends in Radiopharmaceuticals for Diagnosis and Therapy TECDOC-1029,

IAEA, 539-555, 1998

2. Development of radioactively labeled cancer seeking biomolecules for targeted therapy.

M.R.A.Pillai, M. Venkatesh, S.Banerjee, G.Samuel, K.Kothari, A.Dash, **P.R.Unni**, A. Korde,

K.Bapat, U. Pandey, T.Das, S.Chakraborty, A.Mukherjee, H.D.Sarma

Labeling techniques of biomolecules for targeted therapy, IAEA TECDOC- 1359, 107-122

E. Internal Publications

1. ^{166}Ho -HA : A new radiopharmaceuticals for the treatment of Arthritis

P.R. Unni, S.Chakraborty, P.R. Chaudhari, S.V. Solav, M.Venkatesh, N.Ramamurthy and

M.R.A. Pillai. B.A.R.C. News Letter 208, May 2001.

2. The Genesis of RCA

K.Raghuraman, **P.R.Unni**, S.P.Patil

Nuclear India, September, 2007

F. Dessertaions:

1. **Recovery of White Liquor in a KRAFT Paper Mill**

Thesis submitted as part of the Associate Member of Indian Institute of Chemical Engineers curriculam.

2. **Production & radiochemical separation of medically important reactor produced radioisotopes**

Thesis submitted as part of the M.Sc course from University of Mumbai.

3. **Preparation and processing of some of the medically important radioisotopes and characterization of their complexes**

Thesis submitted for the award of Ph.D Degree from University of Mumbai

2. Declaration

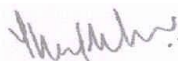
I certify that the above statements made by me in answer to the foregoing questions are true, complete and correct to the best of my knowledge and belief.

I am aware that a high level of competency in the English language, both written and spoken, is an essential qualification, since all verbal and written communications in the RCA are conducted in English. I confirm that I have the necessary high level competency in English to be able to undertake such tasks.

Further I am aware that the work of this Committee can require a significant time commitment, including the ability to provide timely responses. I can confirm that am able to make myself available for such significant time commitments.

Date 02 February 2014

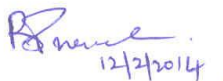
Signature



3. Recommendation from an RCA National Representative

I, being the National RCA Representative of India herewith nominate the applicant for membership in the RCAPAC.

Date: 12 February 2014 Signature


12/2/2014

Full name BODDAPATI PURNIAH, Ph.D
Position Head, International Collaboration and Planning Division &
RCA National Representative
Institute Nuclear Controls & Planning Wing,
Department of Atomic Energy
Government of India



Regional Cooperative Agreement

for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific

Application/Nomination for Membership in the Programme Advisory Committee of the Regional Cooperative Agreement (RCAPAC)

3. Personal data

Name: Soledad S. Castañeda
Home Address: Lot 16, Mt. Fuji St., Cresta Verde Subdivision, Novaliches, Quezon City, PHI
Nationality: Filipino
Email: sscastaneda@pnri.dost.gov.ph

4. Professional positions held

Starting with your present post, list in reverse order every appointment you have had in the past 25 years, including dates, type of business, and brief description of duties.

a.	Period of employment:	from November 2010 to date
	Exact title of post:	Chief Science Research Specialist
	Name and address of employer:	Philippine Nuclear Research Institute
	Type of business:	Research and Development
	Number and kind of employees supervised	Supervisors (6); professional Research staff (45); non-professional staff (8)
	Description of duties: <ul style="list-style-type: none">Plans, directs, and coordinates the R and D programs and activities of the Institute and assumes direct responsibility for the operation of the Atomic Research Division.Participates with higher level authorities in laying down policies and programs for technological R and D including cooperative researches in nuclear energy with cooperating agencies and institutionsLeads and Conducts independent research in the field of nuclear and isotope application in environmental management and protection and prescribes guidelines/research procedures and or methods to be followed in the attainment of defined scientific and technological objectives of the Institute	
b.	Period of employment:	from May 2009 to October 2009
	Exact title of post:	Supervising Science Research Specialist
	Name and address of employer:	Philippine Nuclear Research Institute, Commonwealth Ave., Diliman, Quezon City
	Type of business:	Research and Development; services
	Number and kind of employees supervised	9 technical staff; 6 professional, 2 sub-professional
	Description of duties: <ul style="list-style-type: none">Provides direction and implementing details of plans and programs of the Analytical Measurements Research SectionInitiate research projects and evaluates proposals by scientific staffPerform the more complex research tasks , validate, analyze, and interpret data	

		<ul style="list-style-type: none"> • Prepare technical reports and evaluate those prepared by lower level specialists • Management of the analytical services laboratory
c.	Period of employment:	from February 1999 to April 2009
	Exact title of post:	Senior Science Research Specialist
	Name and address of employer:	Philippine Nuclear Research Institute, Commonwealth Ave. Diliman, Quezon City, Philippines
	Type of business:	Research and analytical services
	Number and kind of employees supervised by you:	10 technical staff
	Description of duties: <ul style="list-style-type: none"> • Assist the supervisor in Planning, programming, and implementation of the procedures development and technical services programs in the Section .•Exercises immediate supervision over the conduct of analytical procedures development and measurements being carried out by the researchers and technical staff •Conducts independent research in the field of analytical chemistry and nuclear techniques application • Directs the implementation of national projects on applications of isotope techniques in water resources management. •Initiates and evaluates research projects suggested by the technical research staff •Trains lower level researchers and review technical reports prepared by them •Prepares scientific/technical reports and other information relevant to the activities of the research group. 	
d.	Period of employment:	from August 1984 to January 1991
	Exact title of post:	Science Research Specialist II
	Name and address of employer:	Philippine Nuclear Research Institute, Commonwealth Ave. Diliman, Quezon City, Philippines
	Type of business:	Research and analytical service
	Number and kind of employees supervised	4; lower level research specialists, technicians
	Description of duties: Performs more difficult routine chemical analysis Prepares service analysis reports Conducts research and development on specific projects of the unit and prepares technical reports.	
e.	Period of employment:	from May 1980 to August 1982
	Exact title of post:	Science Research Specialist 1
	Name and address of employer:	Philippine Nuclear Research Institute, Commonwealth Ave. Diliman, Quezon City, Philippines
	Type of business:	Research and analytical service
	Number and kind of employees supervised :	2 technicians
	Description of duties: Performs routine chemical analysis Prepares service analysis reports Conducts research and development activities on specific projects and process data Assists in administrative work of the Section.	

5. Governance and policy activities

B. Membership in professional societies

Member, Association of Analytical Chemists
Member, Association of Philippine Regulatory Boards
Regular Member, National Science Research Council
Member, Integrated Chemists of the Philippine
Member, American Geophysical Union

C. Special Appointments

1.	from January 2004 to present
Period of employment:	
Exact title of post:	Member of the Board of Chemistry
Name and address of employer:	Professional Regulation Commission, P. Paredes St. Sampaloc, Manila
Type of business:	Regulation
Description of duties: The Board of Chemistry is a quasi-judicial body responsible for the regulation of the practice of the chemistry position in the country. As a member of the Board, prepares and administers the Chemists licensure examination; issues, suspends and revokes certificates of registration for the practice of Chemistry in the Philippines; studies the condition affecting the practice of chemistry in all parts of the country, as well as courses in chemistry leading to Baccalaureate degrees; makes recommendations to the Commissioner of Professional Regulatory Commission for appropriate action to improve the ethical and educational standards in the practice of chemistry in the Philippines.	
2.	from January 2012 to present
Period of employment:	
Exact title of post:	Member of the Technical Committee for Chemistry
Name and address of employer:	Commission on Higher Education
Type of business:	Regulation
Description of duties: Assist in conceptualizing, reviewing policies, standards and guidelines for the Chemistry program in the country; render expertise in monitoring and evaluation of the Chemistry program; evaluate project proposals related to the Chemistry program	
D. Related Functions	
1. Chair, PNRI Fees and Charges Committee (2004-2011)	
3. Radiation Health and Safety Officer for Analytical Research Section (2006 – 2010)	
4. Member, PNRI Technical Paper Review Committee, (2011- present)	
5. Member, PNRI Promotion and Selection Board (2011-present)	
6. Member, PNRI Bids and Award Committee (2012-August 2013)	
7. Vice-Chair, PNRI Bids and Award Committee (Sept 2013-present)	
8. Member, Technical Working Group for formulating guidelines for accreditation of water testing laboratories , August 2006-December 2006	
9. Member, DOH TWG for drafting the Philippine National Standards for Drinking Water (PNSDW 2007).	
10. Member, TWG for the IAEA Water Availability Enhancement Project (IWAVE) 2009 –present.	
11. Permanent representative of the Department of Science and Technology to the DOH TWG for the Institutionalization of the Philippine Water Safety Plan. January 2013.	

6. Expertise and competencies

2. The nominee has been a proponent and the main counterpart of IAEA Technical Cooperation projects since the year 2001. The approval and implementation of these national projects provide evidence of her knowledge of the logical framework approach to project design the distinctive features of IAEA-TC requirements. Among these are the following:
 - IAEA Technical Cooperation Project (TC PHI 8022) “Isotope Techniques Application for Improved Water Resources Management and Protection” Main Counterpart (2000- 2002)
 - IAEA Technical Cooperation Project (TC PHI 8025) “Isotope Techniques Application for Improved Water Resources Management and Protection; 2nd Phase” Main Counterpart (2005- 2007). To provide the national counterpart funding for the implementation of the TC project, she proposed and got approval for locally funded project under the DOST-GIA program “Isotope and Nuclear techniques application in water management and protection” (2007-2009). Through these initiatives the Environmental isotope Center of PNRI was established.
3. The nominee has been the National Project Coordinator for the following IAEA/RCA Projects
 - IAEA/RCA project RAS 8014 “Access to Clean Drinking Water” (1999 -2002) At the same time, the Regional Lead Country Coordinator
 - IAEA/RCA project RAS 8097 “Isotope Techniques Application in Groundwater Contamination Studies in Industrialized and Urbanized Areas” (2002-2006)
 - IAEA/RCA project RAS 08 104/RAS08108 “Assessment of Trends in Freshwater Quality Using Environmental Isotopes and Chemical Techniques for Improved Resource Management. (2007-2011)
 - IAEA/RCA project RAS 07022 “Applying Isotope Techniques to Investigate Groundwater Dynamics and Recharge Rate for Sustainable Groundwater Resource Management. (2012- present)
4. As Chief Investigator for the following Research/Technical Contracts:
 - IAEA Research Contract 16655, “Development of the Philippines Hydrological Gap Plan”, December 2010- December 2011
 - IAEA Research Contract 17220, “Application of Isotope Hydrology Techniques by the Philippine Nuclear Research Institute in Water Resources Regions 2 and 10 in Support of the Groundwater Resource and Vulnerability Assessment Project of the Department of Environment and Natural Resources” March – December 2013.

In the implementation of the national activities of these regional projects, the nominee has successfully engaged the end-user agencies into active participation in the project which has led to improved awareness of the unique application of nuclear techniques to water resources investigations. To date, the national agencies concerned with the regulation and management of water resources in the country are working closely with the PNRI towards the integration of isotope techniques in the national assessment of water resources.

5. The nominee has demonstrated her technical expertise and experience in the nuclear area through the following:
 - As senior Lecturer on isotope and nuclear analytical techniques for the Nuclear Training Center (continuing)
 - **Thesis Advisorship**
 1. Einstein Yu, B.S. Chemistry, University of Sto. Tomas, 2nd SEM SY 1995-1996. “Determination of Polycyclic Aromatic Hydrocarbons in Metro Manila Air Particulates by HPLC with Fluorescence Detector”
 2. Samsudin Tahir, Willie Roque, Bonifacio Aridion, Jr., and Ruel Gardon, Polytechnique University of the Philippines, BS Chemistry, 2nd sem SY 2002-2003. “Determination of water quality of groundwater in selected Payatas residential areas using Ion-Selective Electrode and Atomic Absorption Spectroscopy”
 3. Limela Pael and Joel Dela Peña, Technological University of the Philippines, BS

Environmental Science, 2nd Sem SY 2008-2009 "Assessment of surface water and groundwater quality in Marikina City"

4. Raquel Balisi, Jeremy Cruz, and Jennelyn Magtaka, Polytechnique University of the Philippines, BS Physics, 2nd Sem SY 2008-2009, "Occurrence level of gross alpha beta radiation in water using liquid scintillation counting"

5. Charles Darwin Racadio, Institute of Environmental Science, University of the Philippines, Diliman. MS Program, SY 2012. "Isotopes and Geochemical Techniques in evaluating the vulnerability to contamination of groundwater resources in Cagayan De Oro, Philippines"

- **Scientific Publications**

1. "Carbon -14 Determination in Soil by Dry Combustion and Liquid Scintillation Counting", S. S. Castañeda, C. C. Cruz, F. L. Santos, *Phil Nuclear Journal*, Vol 7 (1990).
2. "Radiotracer Technique to Predict Irritation Potentials of Soaps", S. S. Castañeda, T. Y. Garcia, and F. L. Santos. *PNRI-D (IN) 9007* (1990).
3. Determination of Sr-90 in Crude Coconut Oil by Measurement of Cerenkov Radiation." *F. L. Santos, S. S. Castañeda, and L. V. Esguerra, The Nucleus, Vol. 29 (1991).*
4. "Wood Polymer Composites from Philippine Tree Plantation Species by Radiation Polymerization. I. Uptake and Irradiation Parameters"; A. M. Dela Rosa, S. S. Castañeda and P.N. Real, L.P. Sta. Ana, A. P. Mosteiro, E. Bauza, and J. P. Carandang, *Philippine Nuclear Journal*, Vol 10 (1993).
5. "The Formation of Oxo-and Hydroxy-Fatty Acids in Heated Fat Oils". D.P. Schwartz, A. H. Rady, and S. S. Castañeda., *Journal of American Oil Chemists Society*, Vol 71, (1994).
6. "Determination of Polycyclic Aromatic Hydrocarbons in Metro Manila Air Particulates by HPLC with Fluorescence Detector"; C.R. Matias, E. Yu, and F. L. Santos. *KIMIKA*, Vol 12, 1996.
7. "Simultaneous Determination of Lead, Zinc, and Cadmium in Metro Manila Air Particulates by Anodic Stripping Voltammetry"; S. S. Castañeda. *Master's Thesis in Chemistry, February 1999.*
8. "Application of Isotope and Chemical Techniques in the Study of the Davao City Groundwater Resource"; S. S. Castañeda, A. Ramos, L. Fernandez, L. Ascaño, L. Africa-del Castillo, E. Conjares, H. Maspiñas, E. Calonzo, J. Diaz, and E. Regalado. *Final Project Report. FIL GB 656.R34.A6. 2002. Philippine Nuclear Research Institute*
9. "Environmental Isotope Techniques and Modeling Approaches for Improved water Resources

Management". S. S. Castañeda. *Technical Proceedings of the XIII 13th IWA-ASPAC Regional Conference and Exhibition. Philippine Waterworks Association (PWWA). October 2003*

10. "Isotope and Chemical techniques in assessing groundwater contamination from Metro Manila landfill" S. S. Castañeda, R. J. Sugang, R. V. Almoneda, L Fernandez, Iblan C. *International Symposium on Advances in Isotope Hydrology and its Role in Sustainable Water Resources Management (HIS-20070 Book of Abstracts*
11. "Stable Isotopes as Potential Tracers for Assessing Groundwater Contamination from the Montalban Landfill". S. S. Castañeda, R. J. Sugang, R. V. Almoneda, L Fernandez, Iblan C. *Proceedings of the International Conference on Hydrology and Water Resources management for Hazard Reduction and Sustainable Development (HRSD-2007). IHP technical Document in Hydrology No. 7, UNESCO Office, Jakarta 2007*
12. "Age determination techniques for improved management of groundwater resources" S. S. Castañeda. *Proceedings of the PWWA 16th International Conference and Exhibition(Philwater 2008). Philippine Waterworks Association, Inc. Katipunan Road., Balara 1108, Quezon City Philippines, 2008.*
13. "Dynamic modeling of pollutant transport from landfill leachate along affected surface water. S. S. Castañeda. *Proceedings of the PWWA 18th International Conference and Exhibition (Philwater 2010). Philippine Waterworks Association, Inc. Katipunan Road., Balara 1108, Quezon City Philippines, 2010.*
14. Low-level Tritium Measurement in Freshwater Sources in the Philippines Using Electrolytic Enrichment and Liquid Scintillation Spectrometry. Mendoza, Norman DS. Sugang, Raymond J. Castañeda, Soledad S. *Philippine Nuclear Journal, Vol. 15, 2010.*
15. "Environmental isotopes and major ions for tracing leachate contamination from a municipal landfill in Metro Manila, Philippines". S.S. Castañeda, R.J. Sugang, R.V. Almoneda, N.D.S. Mendoza, C.P.C. David. *J of Environmental Radioactivity, 110 (2012) 30-37.*
16. "Assessing the Fate and Transport of Landfill Leachate Contaminants in the Surface Water and Groundwater in Rodriguez, Rizal, Philippines". S. S. Castañeda, *Doctoral Dissertation, Institute of Environmental Science, College of Science, UP Diliman, April 2012.*

- **Education**

Ph.D. Environmental Science, University of the Philippines, April 2012; *Specialization-Chemical hydrogeology, Environmental chemistry*

MS Environmental Science, University of the Philippines, April 2007 MS. Chemistry, University of the Philippines, April 1999 *Specialization- Analytical Chemistry*

B.S. Chemistry, University of the Philippines, April 1977

5. Declaration

I certify that the above statements made by me in answer to the foregoing questions are true, complete and correct to the best of my knowledge and belief.

I am aware that a high level of competency in the English language, both written and spoken, is an essential qualification, since all verbal and written communications in the RCA are conducted in English. I confirm that I have the necessary high level competency in English to be able to undertake such tasks.

Further I am aware that the work of this Committee can require a significant time commitment, including the ability to provide timely responses. I can confirm that am able to make myself available for such significant time commitments.

Date 27 January 2014

Signature



6. Recommendation from an RCA National Representative

I, being the National RCA Representative of the Philippines, herewith nominate the applicant for membership in the RCAPAC.

Date: 27 January 2014

Signature



Full name ALUMANDA M. DELA ROSA, Ph.D

Position Director

Institute Philippine Nuclear Research Institute