

REGIONAL CO-OPERATIVE AGREEMENT
INTERNATIONAL ATOMIC ENERGY AGENCY



20th REGULAR MEETING OF
REPRESENTATIVES
OF RCA MEMBER STATES
TAUPO, NEW ZEALAND
30 MARCH- 3 APRIL 1998

REPORT

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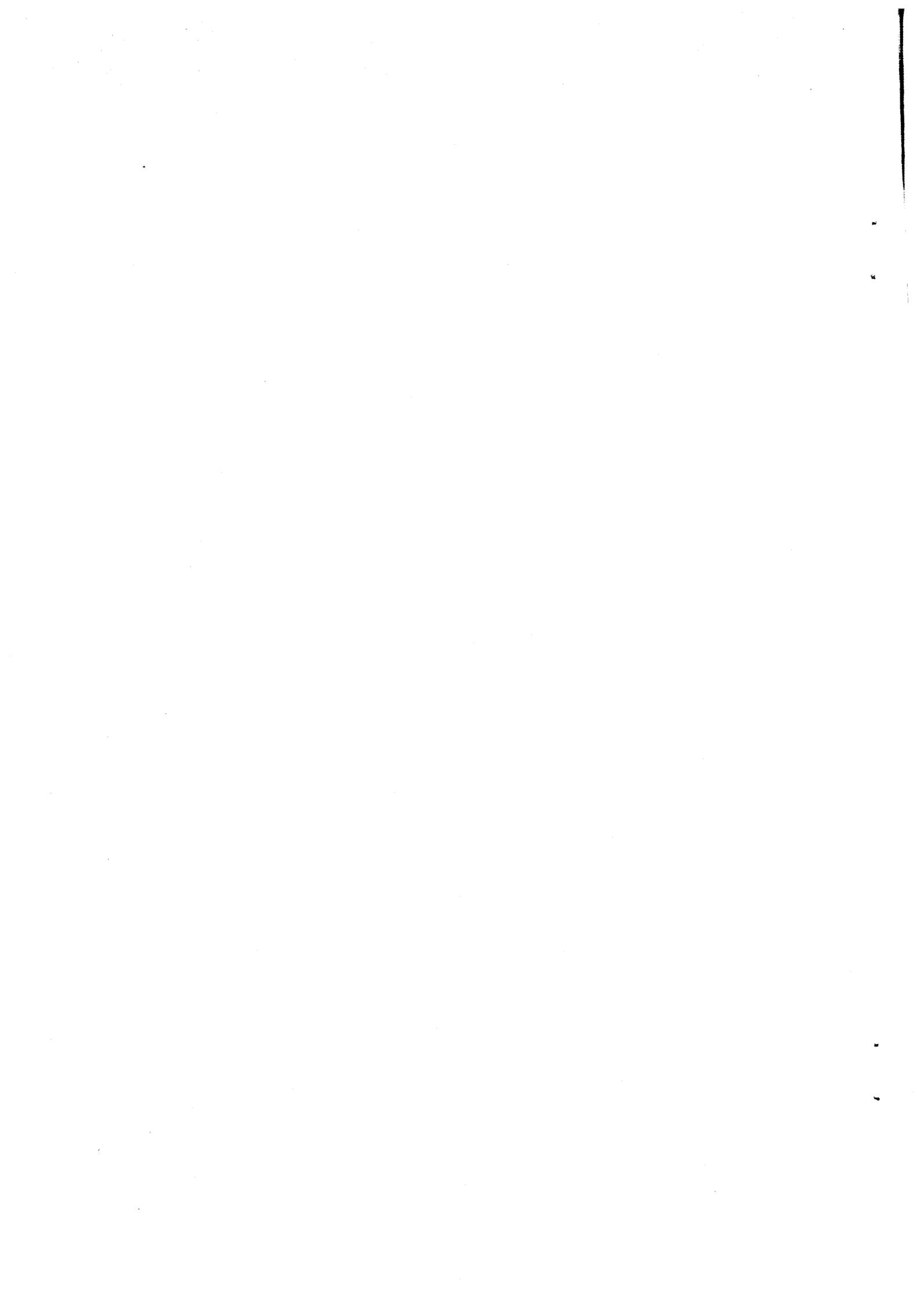


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Introduction

The 20th Regular Meeting of RCA Representatives was held from 30 March - 3 April 1998 at the Wairakei Resort Hotel, Taupo, New Zealand. A total of 37 participants were present, 25 from visiting RCA member States, 9 from New Zealand and 3 from the IAEA. The IAEA delegation was led by Mr A. El-Saiedi, Director, Technical Co-operation for Africa and for East Asia and the Pacific (TCPA). Other IAEA participants were Mr M.N. Razley, Section Head for East Asia and the Pacific (TCAPS), and Mr C.R. Aleta, the RCA Coordinator.

Mr J. Buwalda, Chief Executive of the Ministry of Research, Science and Technology represented his Minister at the Meeting and officiated at the Opening Session on behalf of the Government of New Zealand.

The host institute was the Institute of Geological and Nuclear Sciences (GNS) Ltd. The organizing committee comprised Dr. P.B. Roberts (Chairman), Dr. P.J.A. Englert, Dr. G. Wallace, Mr. D. Baker and Ms. F. Harrison.

Annex 1 provides details of the participants.

OPENING SESSION

Participants were welcomed to New Zealand on behalf of the host Institute by its Chief Executive, Dr A. West (Annex 2a). Dr West noted that the Institute of Geological and Nuclear Sciences was proud to have played a lead role in bringing New Zealand into membership of RCA. He acknowledged the support provided by the National Radiation Laboratory and the local branch of the Australasian Nuclear Medicine Society. Dr West drew attention to the fact that the Science and Technology sector throughout the region was subject to financial and management change. He expressed confidence that the RCA had the experience to get its management recipe right and requested that the Agency contribute actively to a process of renewal. He wished everyone a productive and successful meeting.

Dr P. Englert (Annex 2b) welcomed participants on behalf of the Organizing Committee and the Nuclear Sciences community in New Zealand. He said that the Nuclear Science Group has had the experience of engaging end-users in a two-way education programme. This process involved frustrations but was also one of new opportunities and challenges. Dr Englert welcomed the commitment of RCA to a more applications-driven approach and indicated New Zealand's support for such an approach, which was still based on a strong research and development programme. The technical tour was planned to show participants some applied projects working in an industrial situation. He looked forward to a meeting that would be the basis of another successful year for RCA.

The welcome address on behalf of the Agency was given by Mr. A. El-Saiedi, Director, TCPA, IAEA. He expressed the appreciation of the Agency to the Government of New Zealand and to the Institute of Geological and Nuclear Sciences for their agreement to host this important meeting and for the arrangements that had been put in place. Mr El-Saiedi also conveyed greetings to all the delegates on behalf of the Director-General, Mr. M. El-Baradei. Mr El-Saiedi highlighted the various events which have had a great impact on the RCA Programme in 1997, including the celebration of the 25th RCA Anniversary, the establishment of the comprehensive set of guidelines and operating rules for the RCA Programme, the termination of the successful UNDP/RCA/IAEA project on environmentally sustainable industrial development. He also traced the evolution of regional management of RCA and ownership of projects by Member States and cited the challenges facing Member States in days ahead. The full text of Mr. El-Saiedi's welcome address is at Annex 2c.

Participants were officially welcomed to New Zealand on behalf of the Government of New Zealand by Dr. J. Buwalda, Chief Executive of the Ministry of Research, Science and Technology. Dr. Buwalda (Annex 2d) conveyed the greetings of the Hon. Maurice Williamson, the Minister for Research, Science and Technology and expressed the Minister's regret at being unable to attend the meeting in person. Unfortunately the session coincided with a Cabinet meeting.

Dr Buwalda noted that science and technology played a crucial role in the economic growth of every country and in improving the health of their people and environment. He found it interesting that several of the points raised in the draft papers for the Future Vision and for the Management of RCA were similar to policies within New Zealand. These policies aimed at ensuring that society benefits from the investment made in science and technology.

Dr Buwalda commented that the variety of topics being researched and developed within the new Thematic Programmes emphasised the broad role that nuclear science has to play in the development of any modern society. He noted that about half the Member States contributed financially to RCA, including several developing countries. This was a clear signal to funding agencies, who have to consider many scientifically valid projects, that RCA projects are truly valued by the countries they aim to help.

Finally, Dr Buwalda hoped that all participants would see something of New Zealand beyond the meeting room. He extended to everyone the best wishes of the Government for a successful meeting and declared the meeting open.

1. FIRST ADMINISTRATIVE SESSION

Professor Saw Tin, the distinguished delegate from Myanmar took the interim chairmanship of the Meeting.

1.1 Election of Chairperson of the 20th Working Group Meeting

Professor Saw Tin noted it was usual for the Chairperson to come from the host country. He nominated Dr. P. A. J Englert and the nomination was seconded by Australia. Dr .P. A. J. Englert was unanimously elected Chairperson.

1.2 Short Remarks (outgoing Chairperson)

Professor Saw Tin said that it had been an honour for his country to host the previous meeting. He congratulated Dr Englert on his election.

1.3 Short Remarks (incoming Chairperson)

Dr Englert thanked the meeting for the confidence placed in him. He said that his remarks during the Opening Ceremony were sufficient introduction and he looked forward to helping the meeting to be successful with the cooperation of all participants.

1.4 Adoption of Agenda

The draft Agenda was considered and adopted with minor changes concerning the countries responsible for a few specific items. The modified Agenda is in Annex 3.¹

1.5 Designation of session chairpersons and rapporteurs

The Chairman presented a proposal from New Zealand for session Chairpersons and rapporteur. This was agreed unanimously. Annex 4 shows the complete list.

1.6 Presentation and Adoption of the Report of the 26th RCA General Conference Meeting

The RCA Coordinator (Mr Aleta) presented the draft report which had been circulated prior to the meeting, -and commented on by Member States.. The report was adopted without further comment.

1.7 Presentation of the draft 1997 RCA Annual Report

The Chairman invited Mr. Aleta to present the draft RCA Annual Report. Before making the presentation Mr. Aleta made a few remarks concerning his role as RCA Coordinator after being the National RCA Coordinator for many years thereby enabling him to see both sides of the RCA programme—from the country's and from the Agency's perspectives. He re-iterated the Agency's policy on seeing more problem-solving activities using the existing capacity in the region, mentioned the evolving new vision for the RCA and constraints in funding.

Mr. Aleta then proceeded with the presentation. of the draft Annual Report. The draft annual report is in three parts. Part 1 contains the overall highlights of the RCA Programme for 1997. Part 2 provides details of the technical aspects of the programme including a series of tables and an annex. Part 3 contains the reports from Member States concerning participation in activities and events.

Mr Aleta briefly described the present contents of each part, particularly the Tables attached to Part 2. Member States requested a number of clarifications and sought some further corrections to individual entries within the Tables. On Table 10 "RCA Regional Events for 1998" he informed the Meeting that this would require amendment following decisions taken in the Technical Sessions.

Australia cited a Working Paper on the format of the Annual Report that Australia had produced at the request of the General Conference meeting in 1997.

¹ The Agenda in Annex 3 reflects the names of Chairpersons.

Among some general points that were raised were:

- I) the importance of reflecting in-kind contributions of the individual Member State to the work of RCA
- ii) the need to reflect better in the Annual Report the benefits that flow from the Programme. This is particularly important if the Report is circulated outside the Agency and to the nuclear science community in Member States. The benefit and impact of projects that had been completed and closed should be emphasised.

The RCA Coordinator said that Part 3 was incomplete because many countries had not submitted their country reports. Member States were reminded that the idea of using a format for the country reporting had been agreed at the 26th General Conference Meeting; subsequently a format was developed and circulated by Australia. By providing the information requested in the format, it would be easier in future to make the Annual Report a document of value. Bangladesh, Pakistan and others thought a supplementary country statement would be useful.

After discussion the Meeting -

- accepted Part 1 of the draft Report
- noted Part 2 of the draft Report required correction as per an Errata sheet² to be provided by the RCA Coordinator, and amendment as per the comments of Member States and the approval of Regional Events for 1998 in the Technical Sessions
- requested all Member States to ensure that a country report in the agreed format was received by the RCA Office before 30 April 1998
- noted that Project Coordinators of Host Countries should complete and forward, within a reasonable specified period, a report in the agreed format on completed national activities
- requested the RCA Office to extract details of in-kind contributions from the country reports and to incorporate them into the Annual Report
- requested the RCA Office to circulate a revised draft Annual Report as soon as possible after receiving all country reports. The revised version would be considered at the next RCA General Conference Meeting.

1.7.1 Status of RCA Agreement

At the time of the meeting, Thailand was still processing its official notification to the Extension of the Agreement. All other Member States³ had signified acceptance of the Extension.

1.7.2 Projects to be Closed

Details of the closed/closing projects are found in Table 1 of the draft Annual Report. Mr

² The Errata sheet was circulated during the Meeting.

³ The signatories are: Australia, Bangladesh, China, India, Indonesia, Japan, Republic of Korea, Malaysia, Myanmar, Mongolia, New Zealand, Pakistan, Philippines, Singapore, Sri Lanka and Vietnam.

Razley (Section Head, East Asia and Pacific) outlined the closure process. The Meeting -

* noted that the following five projects were closed:

- RAS/5/021 "Increasing the Capabilities of Common Grain Legumes";
- RAS/6/016 "Use of Computers in Technetium-99 Imaging";
- RAS/8/065 "Marine Contaminant and Sediment Transport";
- RAS/8/071 "Isotopes and Radiation for Technology and Environmental Sustainable Development"; and
- RAS/8/073 "Measurement of Marine Contamination & Transport Phenomenon".

* noted that the following eleven projects were in the process of closure:

- RAS/0/013 "Energy and Nuclear Power Planning";
- RAS/0/015 "Development of TCDC in Asia and the Pacific";
- RAS/0/019 "Nuclear Information System";
- RAS/4/008 "Nuclear Instrument Maintenance";
- RAS/4/011 "Research Reactor Utilization";
- RAS/6/018 "Radioimmunoassay for Hepatitis B Diagnosis."
- RAS/6/022 "Strengthening Nuclear Medicine in RCA Member States";
- RAS/7/003 "Radiation Sterilisation of Tissue Grafts";
- RAS/8/068 "Isotopes and Radiation in Industry and the Environment";
- RAS/8/070 "Isotopes and Radiation Industry and Environment", and
- RAS/9/006 "Strengthening of Radiation Protection Infrastructures."

* requested that the impact report (or a suitable short version) for each closed project be prepared by the RCA Office and included in the Annual Report.

1.7.3 Issues Arising

Discussion of the draft Annual Report emphasised several points that required further discussion. These points included formats of country reports, reporting and implementing responsibilities, the harmonisation of TC-related procedures with those of other regional agreements, and procedures for inviting individuals to participate in RCA events. The Meeting decided to postpone further discussion to the 2nd Administrative Session.

1.8 RCA Activities and Budget for 1998

Mr Aleta briefly discussed the 1998 planned activities and budget. In 1998 there are a total of 16 projects, 12 of which were initiated in 1997 and 4 remaining projects carried over from previous years. The total programme cost for these projects was \$4.796 million and does not include the \$434,000 from Japanese contribution given in 1997 but to be used in 1998. He noted the need for correction and revision of the planned 1998 activities as the meeting progressed.

1.9 New Strategies in IAEA Technical Cooperation

- Mr El-Saiedi outlined the new strategy being adopted within the Department of Technical

Cooperation. He emphasized the Principle of Model Project Criteria in which projects and activities have to resolve a problem, must be within the national development programme, end-user oriented and using nuclear technology. Participants were invited to consider the implications of this strategy for the RCA Programme and to commence the 2nd Administrative Session with a discussion of the points raised.

FIRST TECHNICAL SESSION

RADIATION PROTECTION - RELATED PROJECTS (Chairman : Dr A.C. McEwan)

2.1 On-Going:

2.1.1 RAS/9/018 Radiation Protection Infrastructure (Phase III)

The session Chairman commented on the importance of radiation protection within RCA Programme. All 17 countries were participants. Five⁴ were participating in an interregional Model Project, also under IAEA TC Programme. It was also recalled that during the 26th RCA General Conference Meeting the Member States had decided to designate Radiation Protection as a Thematic Programme.

Australia, the lead country for this Thematic Programme, also emphasised the importance and background to the programme. Australia chaired the Coordination Group for RAS/9/018 and presented the outcomes of an EAGM held in Sri Lanka, 23-27 February 1998.

The new title of the programme was proposed to be changed to "Enhancement and Harmonisation of Radiation Protection". The EAGM was attended by Coordination Group members (Australia, India, Japan, Korea, Malaysia, Philippines, and the host country, (Sri Lanka). The purposes of the meeting were:

- i) to review and evaluate past activities in Phase 2 and proposed activities for 1998, 1999 and 2000
- ii) to ensure no overlap with the Interregional Model Project, UNDP or other related activities
- iii) to prioritize and assess activities for 1998-2000 using Model Project criteria.

Some highlights of 1997 accomplishments were:

- i) the results of the 2nd RCA Personal Dosimetry Intercomparison
- ii) publication of TECDOC 1005 on Reference Asian Man
- iii) the trials of the Distance Learning Materials for Radiation Protection
- iv) revision of the IAEA ENATOM following recommendations from RCA activities

Australia then presented the workplan for 1998 and tentative workplans for 1999 and 2000. In discussion, Japan asked to make a note on their contribution "to be determined". Thailand indicated it could not host the proposed activity in 1999 and Korea confirmed that US\$100,000 would be available for a project activity on environmental radiation monitoring; however, because of uncertain funding, this was requested by Korea to be deferred. The Philippines suggested that Member States should be provided with their present country profiles on radiation protection for updating. On the issue of NORM and

⁴ The five countries participating in the Interregional Model Project in Radiation Protection are Bangladesh, Sri Lanka, Mongolia, Myanmar and Vietnam.

TENORM⁵; Mr. Razley commented that only a few countries seem to have this problem.

In further discussion, it emerged that within this Thematic Programme no new activities were considered by its participants without prior consideration of a Co-ordination Group. Japan said that the Co-ordination Group concept was effective and recommended its use for other RCA programmes. Other projects should consider the value of a Newsletter and of upgrading to Model Project status. Japan also thanked Australia for their efforts; there was general agreement with this sentiment. The meeting -

- noted the report of the EAGM in Sri Lanka;
- endorsed the 1998 activities, agreed in principle with the changes mentioned above, and agreed to the production and agreement of prospectuses for remaining activities between the Agency and Co-ordinating Group;
- requested that the appropriate Tables in the Draft RCA Annual Report be amended to include all the 1998 activities agreed at the meeting.
- * requested Korea to put together a proposal on environmental radiation monitoring and send it to the Co-ordination Group.

2.2 New Proposals

None

2.3 Discussion

Within the discussion, a number of issues emerged that were of significance to all RCA activities.

Australia said the Co-ordination Group had noted several issues, including:

- (1) The need for more information on the process of transition of project management from the Agency to Member States
- (2) The need for a technical liaison officer in the Agency to provide a focal point for advice within all RAS/9/018 activities and Member States.

Other participants raised other issues, such as

- (3) whether the RCA should conduct activities which involve only a small sub-set of Member States (this would be affected by the priority accorded the activity)
- (4) the need to emphasise the "train the trainer" concept in training courses and workshops
- (5) the importance of involving National Project Co-ordinators in the choice of participants and the follow-up and impact assessment of the activities in each country
- (6) the relative importance of TC guidelines in formulating RCA projects.

⁵ NORM = normally occurring radioactive material; TENORM = technologically-enhanced naturally occurring radioactive materials; this topic was the subject of an Expert Advisory Group Meeting in Australia from 16-20 March 1998.

Mr. El-Saiedi said the Agency remained supportive and was moving to implement activities. However, the new strategy within TC was still being implemented. He explained the constraints on the travel budget and the time of Technical Officers. Finally, the Agency was committed to the concept, endorsed by the RCA itself, of regional ownership.

Mr. Razley also noted some practical issues. Specific information on objectives and target countries were needed for projects requiring Agency funding. Scheduling was a problem and the Agency had certain deadlines to meet, for example project proposals for 1999-2000 must be submitted by 31 May 1998. He suggested identifying who was responsible for drawing up a prospectus for an activity and when this would be done in relation to meeting the set deadlines.

Further discussion was postponed until the 2nd Administrative Session in items 3.1 and 3.2.

SECOND TECHNICAL SESSION

HEALTH - RELATED PROJECTS (Chairman : Mr. M. Rutland)

2.4 Thematic Programme on Health Care

At the invitation of the Chairman, Indonesia, the lead country for the Thematic Programme reviewed the development of the programme concept during 1996 and 1997. National Project Co-ordinators had now met in Mumbai, India on 16-20 March 1998, to produce detailed workplans for selected sub-projects. Four sub-projects had been identified at earlier meetings and were the main discussions at the Mumbai meeting, namely:

- i) myocardial perfusion scintigraphy
- ii) breast cancer/scintimammography
- iii) radioiodine therapy of thyroid cancer
- iv) microalbuminuria and diabetic nephropathy.

The report of the Agency's Technical Officer, would be circulated as soon as possible. The Chairperson thanked Indonesia. The Chairperson, a participant at the NCM, and the representative of India, which had hosted the meeting, also provided general background to the outcomes of the meeting.

In discussion, questions arose about possible overlaps with activities in regional programmes and in radiation protection. Indonesia noted that an objective of the meeting in Mumbai was to ensure that overlaps were minimised. There were different protection problems to be addressed for activities within Health Care (nuclear-medicine based) and Radiation Protection (radiotherapy based).

Indonesia said that it was not the purpose of the programme to include only work involving nuclear medicine. Indonesia also indicated willingness to act as the Lead Country for the on-going projects that could be incorporated within health care.

In the absence of the detailed workplan, the Meeting -

- * endorsed the general approach to follow the four specific projects listed above
- * requested the RCA office to distribute the report of the NCM in Mumbai as soon

as it is received

- * requested Member States to respond with comments to the RCA office by 30 April 1998
- * agreed to incorporate all nuclear medicine related projects within the Thematic Programme as soon as possible.
- * endorsed in principle the workplan outlined for 1999-2000 and especially a Regional Workshop to be followed by a Regional Training Course on blood flow.

2.5 On-Going: Thematic Programme on Health Care programme

Mr. Aleta summarized the on-going activities on health related projects identified in 2.5.1 to 2.5.3 below, using Table 10 of the draft report. Mr. El-Saiedi informed the meeting that further provision of expensive equipment such as radiotherapy hardware was not possible from Agency funds. General discussion on each activity followed.

2.5.1 RAS/6/027 Quality Assurance in Radiation Therapy

India said that its work on the supply of low cost brachytherapy devices was still an on-going development. Devices were not yet available. Eight countries had been supplied with software for the upgrading of gamma cameras. China offered further assistance on low cost brachytherapy. Japan referred to its offer at the 18th WGM in Beijing to have a small training programme on cobalt-60 brachytherapy. This proposal had to be delayed due to unforeseen circumstances. Mr. El-Saiedi indicated that the Agency was now ready to move forward on this proposal.

Mr. Razley referred to a comment in the draft Annual Report for this activity (p.29) that several participating countries lack a sufficient infrastructure (hardware) to carry out the intended QA activities. As further hardware would not be provided by the Agency, he asked how this programme could proceed. Several Member States responded that the planned training would be of benefit even with existing equipment. Increased use of TCDC was mentioned.

The Meeting -

- * agreed that there was a continuing need for improvement of QA systems.
- * agreed to reassess planned activities; Australia offered to lead the reassessment.
- * resolved to reassess the status of available hardware in countries wishing to avail themselves of the planned training and to adjust training mechanisms so that full benefit could be obtained from region-wide resources.

2.5.2 RAS/6/029 Improved Training for Nuclear Medicine Technicians

Mr. Aleta informed the meeting that the Distance Learning Materials for nuclear medicine technologists was available in CD form. A report of an expert visit to Bangladesh, India and Pakistan, was circulated. This showed that the Distance Learning Materials will be valuable to the region. Mr. Aleta, Australia, Vietnam and others mentioned the interest in

the package from countries outside the region and from AFRA and ARCAL. Translations had been made into another language.⁶ This all reflected the success of this project. As a result of the success, consideration of copyright issues would become necessary. Australia noted its continuing financial support for the project. The meeting -

- * noted the success of the project and endorsed the activities for 1998⁷.

2.5.3 RAS/7/008 QA in Radiation Sterilisation of Tissue Grafts

Singapore reported a commitment of 225,000 Singapore dollars to, and the opening of, the joint IAEA/National University of Singapore Regional Training Centre (RTC) for RCA. An Open Distance Learning (ODL) Diploma Course for Tissue Bank Operators (Technicians) was launched successfully on 3 November 1997 with 15 RCA participants, all completing their registration for the Diploma Course. The ODL modules package under this Project is being edited and produced in the RTC in multi-media, including written textbooks, video-tape illustration, slides and audio-tapes.

A Regional Workshop was planned for 27 April to 8 May 1998 and an Evaluation Workshop on 12-16 October 1998, both in Singapore.

Agency representatives informed the meeting of two developments. One, the number of nominations received for the planned Workshop in Singapore for 27 April to 8 May 1998 was insufficient to go forward with this activity. Two, questions had been raised by the concerned Technical Division of the Agency about some ethical considerations regarding the supply of tissue graft materials.

Singapore expressed its concern that it had been made aware of these developments only at the meeting. On the first point, the Agency representatives said that it was not too late to receive further nominations. A survey of the National Representatives present showed that the number of nominations for the Workshop⁸ would be sufficient.

On the second point, there was unanimous agreement that undesirable precedents could be set if ethical considerations on the policies of individual Member States were allowed to influence RCA programmes. Mr. El Saiedi informed the meeting that TC was already taking steps to resolve such matters at a higher level. Many countries spoke in support of the project and Mr. El Saiedi's consideration in these matters. Finally, the Meeting -

- * expressed its satisfaction with the progress being made to implement the decisions of the 19th Working Group Meeting to establish Centres of Excellence in Singapore and Thailand;
- * congratulated Singapore on its efforts and success in launching the Regional Training Centre;
- * endorsed the planned programme for 1998;
- * expressed support for further bilateral discussions between Singapore and the Agency for further clarifications, if needed.

⁶ This was translated into Chinese and there is interest in ARCAL in a Spanish translation.

⁷ This is subject to availability of Australian funding.

⁸ The workshop was held as scheduled.

2.6 New Proposals:

None

2.7 Discussion

In other discussion, Japan informed the meeting of progress in a Coordinated Research Programme on Standardisation of I-131 Therapy for Hypothyroidism. The next meeting was planned in 1999 in China. Australia sought clarification of the status of RAS/4/008, Maintenance of Nuclear Medicine Instruments. Mr. Aleta said it was to be closed but the Technical Officer proposed an extension for a further meeting of National Coordinators and distribution of additional software. Australia requested for a copy of the proposal.

THIRD TECHNICAL SESSION

AGRICULTURE - RELATED PROJECTS (Chairman : Dr .P. B. Roberts)

2.8 Thematic Programme in Agriculture

As the lead country for the Thematic Programme Area, China reported on a Project Formulation Meeting held in Beijing, China on 2-6 March 1998.

The PFM identified four proposals for consideration, in priority order:

- (i) enhancement of genetic diversity for improvement of food, oils and grain legume crops through mutation techniques combined with biotechnology
- (ii) commercialisation, regional trade and public acceptance of irradiated food
- (iii) use of nuclear techniques to improve animal productivity and reproductivity
- (iv) monitoring of pesticide and agrochemical residues in food and environment using chromatographic, isotopic and other rapid techniques.

Several Member States spoke positively about the need for RCA to re-build a strong programme in agriculture. However, the discussion revealed varying levels of support for individual proposals. There was comment about the extent to which other programmes contained similar work and concern that the planned programmes had taken these fully into account.

There was also comment on the high cost of the programme, especially as some elements involved long-term commitments. Mr. El-Saiedi said that the project proposals were much improved but still did not conform to the format required by the Agency. He noted that the proposals were still mainly research directed and it was difficult to gauge the intended target users.

Pakistan congratulated China on its efforts in this topic and there was general approval of this. In response to comments by Pakistan, Mr. El-Saiedi agreed that the RCA was free to make proposals in any form it wished and to seek funding from any source it wished. However, if Agency funding was sought, then Agency requirements would have to be met.

After further discussion, the Chairman requested China and Pakistan to convene a small

working party of interested representatives. Later, China introduced a statement from the Working Party and acknowledged the assistance of Pakistan. China again stressed that the four proposals were the consensus of experts from 10 Member States and requested favourable consideration of the proposals.

The Working Party advised that they had considered the funding problems and general advice received. They, therefore, proposed that two of the original work proposals should be supported: proposals (i) on mutation breeding , (iii), on animal productivity/reproductivity.

The Agency representatives again advised that the importance and value of the proposals was not questioned. However, the content and detail of the present proposals was an issue. Mr. Razley informed that there were 15 National Programmes on mutation breeding and 5 on animal health in the region. Indonesia agreed these issues had to be addressed and questioned what was the regional aspect of the proposal.

China said that related projects in the region had been taken into account; the activities were not just basic research and if funding was limited, the proposals could be adjusted.

Bangladesh supported only the original proposal (iv) on pesticides/agrochemical residues. Thailand also had this proposal as its first priority with mutation breeding second. Philippines noted its priority of food irradiation, original proposal (ii). Vietnam supported original proposals (iii) and (iv). India offered in-kind support.

There being no clear consensus on details, the Meeting -

- re-iterated its resolve to revitalise the Thematic Programme on Agriculture
- requested the Lead Country, in consultation with the Agency and National Project Coordinators to provide more detailed proposals in a form that the Agency could use to seek funding either within the Agency or outside
- noted the model for making a Project proposal available in Agency sponsored programmes on animal health in other regions.

2.9 On-Going:

2.9.1 RAS/0/022 Public Acceptance and Trade in Irradiated Food

Mr. Aleta said that this project was to be closed in 1997 but had one carry over activity in 1998. The final activity was planned as a Workshop on Harmonised Procedures and Regulations on Irradiated Food. This was to be hosted in Korea in April 1998; Korea said the sponsors were KAERI and Korea University. This activity was funded by RCA (Japanese funds) and the International Consultative Group on Food Irradiation. It was to be followed by a one-day National Seminar.

2.10 Discussions

None.

FOURTH TECHNICAL SESSION

UNDP / RCA / IAEA PROJECT (Chairman : Dr. G. Wallace)

2.11 Status of Project

Mr. Aleta was invited to provide an overview of the project. He cited the project number, the budget and areas covered and the project formulation meetings held. On the project numbers the overall project was numbered RAS/97/023 in the UNDP system. For accounting purposes the Agency used RAS/8/076 for Member States' contributions and RAS/8/080 for the UNDP funds.

On the budget and areas covered it was agreed during the 26th RCA General Conference meeting to have five sub-areas. On 17 November 1997 the UNDP agreed to three-year funding totalling US\$1.05M distributed to three out of five the sub-areas. Agency funding will amount to US\$1.2M approximately. Member States' funding amounts to Australia (AUS\$1.12M), Philippines (US\$50,000), Sri Lanka (US\$5,000) and the use of US\$50,000 from existing Japanese contributions. The contributions from Member States were targeted to specific areas⁹. The joint UNDP/RCA/IAEA Project is designed for 5 years.

In discussion, Mr. El-Saiedi said that the UNDP had indicated that they could be approached again this year for further funding if Member States showed commitment. Several countries expressed the hope that further funding would be sought in view of the evidence of the PFM's which showed strong Member States' commitment. The Clean Drinking Water sub-area was mentioned by several participants. Bangladesh indicated that arsenic in drinking water could be included as they were seeking World Bank support for such work.

2.12 Presentation of PFM's

Four Project Formulation Meetings had been held within the past month.

2.12.1 Access to Clean Drinking Water

The host country for the PFM, the Philippines, presented the meeting report. The Philippines noted that no UNDP funding was available for this sub-project. The PFM was attended by 9 Member States and recommended four components within the sub-project:

- i) investigation of groundwater resources with emphasis on studies of recharge and their vulnerability to pollution
- ii) measurement of siltation rates in water supply catchment dams
- iii) surface water - groundwater interaction with respect to contaminant migration
- iv) study on hydrodynamics of saline water intrusion.

The report provided details of the objectives, duration, workplan and budget proposed. In addition, tables of national facilities, manpower and financial resources available in the Member States attending the PFM were detailed, plus the inputs sought from the Agency.

The Chairman and many participants congratulated the Philippines on an excellent presentation and report. It indicated the importance of the subject to the region. Several countries which had not been represented at the meeting expressed their support for the

⁹ Australia's contribution will be for two(2) sub-areas : on Management of Marine Coastal Environment and Its Pollution and on Electronic Networking and Outreach. It will also support the continuation of activities under RAS6/029, on distance learning training in nuclear medicine; Philippines indicated its contribution should be towards the sub-area on access to clean drinking water.

project and their intention to study the report and consider how they might participate. A number of corrections and clarifications were pointed out from countries that participated in the PFM.

Mr. El Saiedi agreed the PFM was on the right track and would allow the Agency to discuss further funding with UNDP. However, for the Agency's purposes it required more specific detail, for example, in which specific area a sampling programme would be conducted, who would analyse the data and who were the end-users.

Several Member States questioned the need for further specifics and the Agency was requested to provide documentation about the details required. However, Indonesia expressed the view that PFMs needed to address the practical questions more thoroughly. The meeting discussed procedures to ensure the speedy, final approval of budgetary support for the sub-project. The Meeting -

- * endorsed the report, subject to minor additions and corrections, and supported the four components identified.
- * noted that further action was required ;
- * recommended that one Lead Country, through its National Sub-Project Coordinator, be identified to implement this process and to seek the assistance of a small Coordinating Group as required. It would normally be expected that the National Sub-Project Coordinator of the country hosting the PFM would act in this role. However, special circumstances may dictate the choice of another lead country.
- * requested all RCA National Representatives to instruct their National Sub-Project Coordinators to consult with the designated Lead Country and among themselves (including by electronic means) and with the Agency to provide a more detailed proposal by 20 May 1998 for consideration within the 31 May 1998 budgeting round of the Agency.
- * requested the Agency to designate a Technical Officer to act as a focal point within the Agency during the further formulation and implementation of the sub-project.

Finally, the Meeting -

- * invited the Philippines to act as the Lead Country for the sub-area on Clean Drinking Water. This role was accepted.

2.12.2 Management of the Marine Coastal Environment and its Pollution

The Philippines reported on a PFM for this sub-area held 23-26 February 1998 with 10 participating countries. The report contained similar details to the report of the PFM on Clean Drinking Water and had four components, namely

- (i) establishment of a database on marine radioactivity
- (ii) determination of levels, behaviour and fate of radioactive and non-radioactive pollutants in the environment through isotope or nuclear techniques
- (iii) application of nuclear and modelling techniques to sustainable development of the coastal zone
- (iv) application of nuclear techniques to address specific Red Tide (harmful Algal

bloom) concerns.

Funding was available from the UNDP for this project (US\$250,000 over three years), Australia (AUS\$500,000 over three years) for component (iii) and Philippines (US\$50,000 over three years) for component (iv) . In addition, substantial in-kind contributions were available.

In discussion, the Philippines was thanked for its efforts. Several countries not represented at the PFM signalled their intention to participate and contribute. A number of comments were made, including:

- a) there was an incorrect title for the report which suggested that the sub-project was the province of a few Member States
- b) the sub-project contained elements of problem-solving, but few elements of capacity building. Indonesia indicated this comment also applied to the report on Clean Drinking Water
- c) there was a possibility of overlap with other programmes of the Agency and other agencies operating in the region. However it was pointed out that the sub-project differed significantly from, for example, a programme of marine radioactivity sampling run through the Marine Environment Laboratory, Monaco, with Japanese support. The initial concepts were developed at a meeting at Monaco. With the likely involvement of the Monaco laboratory in assisting the project, the risk of overlap would be minimised and synergies with other outside programmes (e.g. the Regional Seas programme) explored.

The Meeting -

- * endorsed the report of the PFM, subject to amendment-based on comments received, and supported the four component areas.
- * requested further development as agreed above for Clean Drinking Water.
- * invited Australia and India jointly to act as the Lead Countries. Australia and India accepted this invitation.

2.12.3 Air Pollution Monitoring and Assessment

This PFM report was introduced by Malaysia, the host country for the meeting held 9-13 March 1998 with 12 Member States represented. The sub-area was supported by the UNDP to US\$500,000 over three years. Malaysia noted recent examples of air pollution problems in the region. Malaysia also presented a summary of the report which comprehensively provided the information required in the PFM report formats supplied by the Agency. This included an extensive listing of expected outputs.

Again discussion began with several countries thanking Malaysia and signalling their intention to study the report and to participate and contribute. Pakistan noted that a correction was necessary to its contribution as it was not possible to define it at this time. Mr El-Saiedi and Indonesia noted that both problem-solving and capacity-building were represented among the activities.

Several countries noted that the PFM had appointed long-term Regional Project

Coordinators¹⁰. Since several countries expressing interest were not a party to the discussions, such an appointment was thought to be premature. The Meeting -

- * endorsed the report of the PFM, subject to amendment based on comments received, and supported the four component areas.
- * requested further action as agreed above for Clean Drinking Water.
- * invited Singapore, to be the Lead Country, supported by Indonesia and China. This was agreed to by the Singapore Representative, subject to consultation with the National Project Coordinator of Singapore.

2.12.4 Electronic Networking and Outreach

Malaysia proceeded to elaborate on the PFM held 9-13 March 1998. Its report noted the absence of several Member States which had been active in earlier projects. Eleven Member States were represented at the meeting.

The report considered that Australia would play the role of Regional Resource Units (RRU) for the components involving distance learning. Several countries had asked to be considered as RRUs for other elements of the sub-project.

Malaysia noted the PFM report was very complete and that it recommended five components for the sub-project which was now entitled "Electronic Networking and Outreach to Strengthen Regional and Institutional Nuclear Information Exchange". The five components were -

- (i) establishment of an RCA Home Page
- (ii) establishment of National Home Pages for each Member State
- (iii) establishment of "on-line" cataloguing capability for those countries without these facilities
- (iv) regional implementation of Distance Learning Material for Radiation Protection Training
- (v) emergency preparedness training.

Funding was available from the UNDP (US\$300,000 over three years) and from Australia (AUS\$545,000 over three years) for components (iv) and (v) of the project.

Mr. El-Saiedi requested clarification on which activities would be charged to which of the three donors, UNDP, Australia and the Agency. The proposal concentrated on activities within Member States, touched on some aspects of specific technologies but did not address the role of the Agency in the information flow. There was a need to establish where servers were, and to address the issue of providing adequate hardware.

India agreed to take overall responsibility to complete the development for the Home Page. China agreed to provide support to RCA in further development of the Home Page, noting the experience China had gained through developing the preliminary work on the Home Page. Australia clarified, in response to a query from Japan, that the Distance Learning activities in the sub-project and in the Thematic Programme on Radiation Protection were the same and that there would be no overlap. Malaysia, in response to an

¹⁰ The proposal suggested two persons acting as the Regional Project Coordinator each acting for an 18 month-period

Agency question, pointed out that a Host Server in Malaysia would act as a link to the Asia Pacific Development Information Programme (APDIP). The meeting again thanked Malaysia. The meeting -

- * endorsed the report of the PFM, subject to amendment based on comments received, and supported the five component areas.
- * requested further action as agreed above for Clean Drinking Water.
- * invited Malaysia to act as the Lead Country. Malaysia agreed to act in this role.

2.12.5 Clean and Energy - Efficient Production Processes

This item was postponed to agenda item 2.16.

2.13 Discussion

In the above discussions a number of general issues emerged.

Mr. Razley outlined the procedure by which participants to PFMs were selected. All Member States had been invited to participate via providing notice of their intention to the Agency together with a completed questionnaire. A tight deadline for this was necessary to ensure recruitment procedures would permit PFMs to be completed prior to this New Zealand meeting. Many Member States did not meet these requirements. Japan requested that the Agency ensure that all documents and information about other regional programmes that relate to the topic of a PFM be made available to the PFM lead country. The meeting -

- * re-affirmed the right of any Member State to participate in any project provided it agreed to contribute within its means to effective implementation of the project.
- * acknowledged the difficulties imposed by a need to complete PFMs prior to the WGM and thanked the Agency for its help.
- * requested both Member States and the Agency to ensure that in future the procedures agreed and contained in the Guidelines and Operating Rules for the RCA programme be followed.
- * noted especially the requirement for PFM reports to be circulated two months prior to the Meeting of National Representatives.
- * agreed that all documents and information related to the topic of a PFM should be made available to the PFM lead country.

FIFTH TECHNICAL SESSION

INDUSTRY AND ENVIRONMENT - RELATED PROJECTS (Chairman: Dr. G. Wallace)

2.14 Thematic Programme in Industry and Environment

The Chairman requested Japan to review the report of the Project Formulation meeting held in Takasaki, Japan from 23-29 March 1998 with 12 countries represented.

As the Lead Country for this Thematic Programme, Japan had taken into account available resources and the fact that Japan had traditionally funded activities within the UNDP/RCA/IAEA project. It had been decided to discuss the following topics -

- i) Better management of environmental and industrial growth (RAS/8/076) with the sub-topics Water Treatment, Flue Gas Treatment and Municipal Sludge Treatment.
- ii) Applied Radiation Chemistry of Polymers (RAS/8/077), with the sub-topic of Polymer Processing
- iii) UNDP/RCA/IAEA project with the emphasis on the sub-area Clean and Energy-Efficient Production Processes and the sub-topic of Upgrading of Agro-wastes to Useful Products.

Although it was a part of the Thematic Programme, it was not possible to cover Non-Destructive Evaluation (NDE) within the meeting.

The PFM discussed a way of assessing priorities and then considered five specific proposals. The final recommendations reduced the proposals to two, namely

- (1) Upgrading of Cellulose Wastes to Useful Projects. It further recommended that this proposal should be incorporated as a CRP within the sub-area Clean and Efficient Production Processes of the new UNDP/RCA/IAEA project. Activities were proposed for 1998/99.
- (2) Radiation Processing of Chitin/Chitosan for Biomedical applications with activities scheduled for 1999-2000. Eleven Member States indicated an indication to participate.

Japan briefly described the environmental and other advantages of proposal (1) above. The importance of chitin as the second most abundant natural biopolymer was emphasised. There was great potential for its exploitation in many markets. Japan also detailed the national plans and proposed work plans and budgets discussed at the PFM

Further recommendations of the PFM included -

- organizing the thematic area more closely to the technology areas (radiation processing, tracer technology, nucleonic control systems, NDE and Nuclear Analytical Techniques)
- new prioritization system
- referral of proposals from Pakistan and Mongolia to IAEA/RCA for support
- a new RCA Cooperative project initiative
- use of fellowships
- data sharing
- intellectual property rights
- a core committee of Japan, Malaysia, Indonesia

- balancing country ownership with restraints imposed by Agency procedures.

In general discussion on the main recommendations of the two final proposals, the Philippines asked why the Chitin/Chitosan proposal could not be incorporated in RAS/0/077 which already contained work on biopolymers. Japan replied the proposal of Chitin/Chitosan was different. It was scheduled to provide a more focused result within two years; on-going funding was still under negotiation and it had funding indications from 11 Member States.

In response to Mr. Razley, Japan said that the CRP on Upgrading Cellulose Wastes required funding of US\$80,000 per year but that US\$30,000 would have to come from as-yet unidentified sources. If this did not become available then the scope of the CRP or the number of participants would need to be reduced. Japan noted that one reason for the recommendation that this CRP be incorporated within the UNDP project was an intention to seek further UNDP funds. Japan also stressed that its funding contributions were under review.

In discussion of the other recommendations of the PFM, Indonesia and New Zealand expressed disappointment that the proposal aimed to organise the Thematic Programme around technology areas. This was contrary to agreed RCA policy for applications-oriented programmes. Indonesia saw no "thread" across the proposal, with a mix of focus involving both technology and outcomes. There was also discussion that some of the radiation processing projects involved few countries. However, the final two projects recommended for support had indications of participation by many countries during the PFM.

Australia expressed reservations about the recommendations on a new concept of RCA Cooperative Projects and noted that definitions of these had been agreed already at the General Conference. Australia also thought more discussion was needed on the recommendation on intellectual property rights. The meeting also heard that CRP's were not funded through TC but were the responsibility of the Department of Research and Isotopes which was not present at this meeting.

At this point the Japanese delegation agreed to consider the points raised and to comment later in the meeting under meeting agenda item 2.16.

2.15 On-Going:

Mr. Aleta referring to Table 10 of the Draft Annual Report, announced the planned activities under RAS/8/076 "Better Management of the Environment and Industrial Growth", RAS/8/077 "Thematic Programme on Advanced Techniques for Industry" and RAS/8/078 "Nucleonic Control Systems and Traces in Industry." These were on-going since 1997. RAS/8/077 included NDT and Radiation Processing; in the case of the latter the activity included mainly a CRP using Japanese funds and which depended on future Japanese funds to be completed.

China referred to its earlier proposal for a Regional Workshop on Radiation Treatment of Drinking Water and Waste Water. This had been postponed but China hoped that this could go forward in 1998. In response to Mr Razley, China agreed that US\$50,000 of its contribution could be used for this purpose.

2.16 Discussions

- Japan thanked participants for their constructive comments on the report of the PFM on

the Thematic Programme on Industry. They did not insist on a separate project classification for the Chitin proposal; intellectual property questions would be referred to IAEA (legal section) and Japan would reconsider other recommendations as required.

The meeting identified confusion about the relationships, both technical and managerial, between activities within the Thematic Programme on Industry and the Environment and in the new Joint UNDP/RCA/IAEA project, particularly the sub-area Clean and Energy-Efficient Production Processes.

The meeting agreed with the principle that all work related to a Thematic Programme should be within the responsibility of the lead country and participating National Project Co-ordinators. However, at the present time it appeared necessary to split responsibilities provided all those responsible maintained good contact. For example, planning meetings could be held at the same time and place. After considerable discussions the Meeting -

* noted the report of the PFM on the Thematic Programme of Industry and Environment

* endorsed recommendations 3, 5, 7 and 10, thereby agreeing

(a) two new projects for submission: Upgrading of Cellulosic Wastes to useful products (1998/99) and Radiation Processing of Chitin/Chitosan for Biomedical Applications (1999-2000);

(b) the project on Upgrading of Cellulosic Wastes to be funded by Japan and incorporated within the sub-area Clean and Energy-Efficient Production Processes of the UNDP joint project. However, if this proved not possible, the meeting further resolved that this project should return to the Thematic Programme on Industry and Environment as an RCA project;

(c) that the interests of countries with limited infrastructure are best served through the attachment of IAEA Fellows attached to research groups actively involved in these projects;

(d) to a proposal to form a Core Committee comprising Japan, Malaysia and Indonesia for the Thematic Programme components.

* requested Japan to modify other recommendations of the PFM as necessary, taking account of comments at this meeting

* agreed that the topic of NDE should remain within the Thematic Programme and be further developed

* agreed, with appreciation, to the offer of India to assist in developing the NDE sub-project.

* requested that the Agency give urgent consideration to convene an Advisory Group to consider the overall policy directions and management of all the diverse elements of the "industrial" projects. Its purpose would be to guide future PFM and related exercises, promote the twin needs of activities related to problem-solving and capacity building and to integrate activities apparently driven by technology or by end-user needs.

The meeting then returned to agenda item 2.12.5, Clean and Energy-Efficient Production Processes. It was recognised that close links were necessary with the Thematic Programme on Industry and Environment. Further, the technologies and experts involved in upgrading cellulosic waste and in NCS are quite different and the linkage to the application of "cleaner industry" would require attention. Malaysia offered assistance in hosting a further PFM meeting. The meeting -

- * agreed that a Project Formulation on Clean and Energy Efficient Production Processes should be attempted that included the following topics -
 - (i) upgrading of cellulosic wastes (as noted above)
 - (ii) nucleonic control systems as a continuation of activities in RAS/8/078 which otherwise closes after 1998
 - (iii) any other relevant proposals from participating Member States.
- * invited New Zealand to be the overall Lead Country with assistance from Japan for (i) above and Thailand for (ii) above. This was agreed to by these Member States.

SIXTH TECHNICAL SESSION

ENERGY AND RESEARCH REACTOR - RELATED PROJECTS (Chairman : Dr P.B. Roberts)

2.17 Thematic Programme in Energy and Research Reactors

Korea was invited to overview this programme which comprises two components; one is entitled "Energy, Electricity and Nuclear Power Planning" and the other "Research Reactor Utilisation". Reports on both components were presented as -

1. Thematic Plan on Energy, Electricity and Nuclear Power Planning
2. Thematic Plan for Research Reactors in the Asia-Pacific Region

Thematic Plan on Energy, Electricity and Nuclear Power Planning

The NCM of the RCA Project RAS/0/023 on Energy, Electricity and Nuclear Power Planning had been held in Hanoi, Vietnam from 16-20 February 1998. The NCM included project RAS/0/021 (Nuclear Power Planning) in the RAS/0/023 project. The findings of the NCM in Hanoi were used as the basis of a Thematic Planning Meeting on Energy held 23-27 March 1998 at KAERI, Korea, in which ten representatives from nine countries participated. The objectives regarding the Energy component were as follows:

- (i) Discuss problems facing Member States in the region related to Energy, Electricity and Nuclear Power Planning (ENPP);
- (ii) Assess regional and national impact of activities organised to date under RAS/0/023;
- (iii) Develop a proposed project work plan detailing activities to be organised under RAS/0/023 in 1998, and
- (iv) Consider future needs in ENPP and, if necessary, prepare a project proposal for consideration in the 1999-2000 TC programming cycle.

The recommendations of the NCM were as follows:

Under RAS/0/023, to organise two Regional Training Courses (RTCs) in 1998:

1. RTC on Externalities Associated with Electricity Generation Concepts and Estimation, to be held in ROK¹¹, and
2. RTC on Economic Analyses of Nuclear Electricity Generation Costs and Comparison with other Energy Sources¹², to be held in the Philippines.

RTC Prospectuses and an Action Plan have been prepared.

During the PFM in Taejon, 23-27 March 1998, the project proposals¹³ "Comparative Assessment of Different Energy Options for Electricity Generation for 1999-2000" as extension of RAS/0/023 and "Nuclear Power Planning" as an extension of RAS/0/021 were endorsed. The cost for the six events for this project was estimated to be \$372,000. In addition, the following two events were also proposed for the 1999-2000 work plan at a cost of \$78,000:

1. Regional Workshop on Preparation of Bid documents and Evaluation of Bids to be held during 1999;
2. Regional Workshop on Regulatory Activities and siting to be held during 2000.

Korea presented a plan incorporating the above proposal for 1999-2000 as part of the Thematic Programme on Energy, Electricity and Nuclear Power Planning.

Thematic Plan on Research Reactor Utilisation.

Korea also reported on the Research Reactors Utilization component. A Project Formulation Meeting was held simultaneously with the Thematic Programme on Energy and was attended by 13 representatives from 11 countries. Its report "Improvement of Research Reactor Operation and Utilization" was circulated.

Problems with research reactors and their utilisation were identified as follows:

- lack of information exchange between research reactors personnel
- ageing of research reactors
- obsolescence of facilities and components
- lack of modern experimental facilities and instrumentation for their utilisation
- shortage of trained manpower
- limitation on utilisation due to design feature of the reactor or operating only one reactor
- extended reactor outages due to equipment/component break-downs.

Highest priority was given to lack of information exchange and the problem of ageing. The other problems are also important but the number of Member States where these are being experienced is relatively low.

The recommendations of the PFM were:

- a) organization of training courses, seminars and workshops enumerated in the next

¹¹ This is scheduled on 28 Sept-2 October 1998 in the Republic of Korea.

¹² This is scheduled on 5-9 October 1998 in Philippines.

¹³ Both these projects were developed in the NCM Meeting in Hanoi, 16-20 February 1998.

paragraph below

- b) organization of a CRP on the management of ageing research reactors
- c) starting the publication of a research reactor newsletter
- d) exchange visits of scientific and engineering personnel between research reactor centres
- e) formulation of task forces for attending to specific problems.

Three events were proposed in the 1999-2000 work plan at a cost of US\$910,000.

1. CRP on management of ageing research reactors
2. starting the publication of a research reactors newsletter
3. organisation of the following training courses/workshops
 - (i) safety in the operation of research reactors
 - (ii) calculations and experimental measurements of reactor physics and thermal hydraulics parameters for research reactors.

In discussion of the Research Reactor component, Pakistan said that more emphasis should be given to the utilization aspect. Thailand noted that it would like to actively participate in this project since a new reactor, with a 10MW capacity, is now under construction. Indonesia expressed concern about the maintenance of research reactors and hoped that this issue be harmoniously reviewed. The Philippines suggested that priority should be given to issues related to ageing research reactors as it has emerged as an urgent issue to be addressed by many countries in the region.

After considerable further discussion on the Energy component, the Meeting -

- * noted the thematic plans and agreed -
 - there was no need for an extension of RAS/0/023 since it is scheduled to finish in 1998 but can be continued under "Thematic Planning on Energy and Research Reactors".
 - to hold one regional Workshop on Regional Co-operation for Nuclear Power Planning with emphasis on Strategies for Localisation, Standardisation and Technology Transfer in Taejon, Korea, in November 1998¹⁴, utilizing the remaining funds (\$61,000) out of \$200,000 extra-budgetary contribution from Korea for 1995-1998 (RAS/0/021). After this workshop, RAS/0/021 would close.
 - to conduct a Regional Training Course on Economic Analysis of Nuclear Electricity Generation: Costs and Comparison with other Energy Sources (one week, 5-9 October 1998 in the Philippines, under RAS/0/023).
 - to conduct a Regional Training Course on Externalities Associated with Electricity Generation Concepts and Estimation (one week, September/October 1998, Korea, under RAS/0/023).
- * endorsed the basic planning for 1999-2000 and requested Korea to provide further details to allow proposals to proceed.

2.18 On-Going

¹⁴ This is scheduled for 23-27 Nov 1998 in the Republic of Korea.

Mr. Aleta reviewed the activities under RAS/0/021 "Nuclear Power Planning" and RAS/0/023 "Energy, Electricity and Nuclear Power Planning."

2.19 Discussions

None further.

SECOND ADMINISTRATIVE SESSION (Chairman: Dr Peter Englert)

The Session began with discussion of Mr. El-Saiedi's presentation under agenda item 1.9. At the request of Member States, Agency representatives compared administrative procedures in RCA, ARCAL, AFRA.

On management of funds, several representatives declared that it would be undesirable for available funding to drive the direction of programmes. Donor countries explained how their funding was obtained and that they had a responsibility to account for the outcomes to their governments. The Meeting -

- * agreed that programmes had to meet the criteria of scientific quality and regional needs first and then the practicalities of funding must be taken into consideration.

3.1 RCA Operational Guidelines

The RCA Coordinator drew attention to the Guidelines and Operating Rules for the RCA Programme which were adopted at the 1997 RCA General Conference Meeting. A number of detailed comments on this document were offered on paras 4.2(f) on use of standard format for reporting results of Project Committee Meetings (PCMs); 4.2(g) on chairing of these PCMs; 4.2(h) on the tasks of the Secretary to these PCMs, 5(b) on Co-ordinated Research Programme (CRP), 6(a) on the covering of all local costs by the host country and 6(c) on use of Agency funds for attendance of coordinators from more advanced countries. The Meeting -

- * agreed that a Task Group of Mr. Rolland (Australia) and Dr. de la Rosa (Philippines) should examine and collate the above comments for submission to the Agency.

3.2 RCA Regional Management

Australia—referred to the Working Paper on "RCA Regional Representation" and summarized the substantial changes which had already been made towards achieving enhanced regional management within the RCA framework. Australia referred to the series of recent thematic programme formulation meetings held by various RCA Member States without IAEA representation and the value of co-ordinating groups in each thematic area. The one remaining management issue concerned the proposal for an RCA regional representative. The Working Paper proposed that a Project Manager be appointed for the new UNDP/RCA/IAEA project on a two-year trial basis as an interim action towards a regional representative. Currently the RCA management was in a transition period, which causes difficulties.

Pakistan noted the need to define an RCA organisational structure under the new management arrangements and the need to develop an RCA manual of operating procedures. Pakistan considered that there was a need to clearly establish the benefits of a Project Manager for the new joint project in order to ensure the available funds were

optimised and to reduce the risk of co-ordination difficulties between the Project Manager and the RCA office in Vienna. Vietnam and India expressed similar reservations.

Indonesia and New Zealand agreed with the view expressed in the Working Paper that a substantial management commitment was required from Member States to ensure the joint project met its performance indicators and outputs. After further discussion, the Meeting -

- * noted its disposition to move towards the appointment of a Project Manager for the joint project on a two-year trial basis which will gain experience to assist in making a future decision on the regional RCA representative.
- * agreed that before a final decision is made on the appointment of a Project Manager for the joint project, a Task Group should examine the available funding options, the Manager's responsibilities including who he/she should report to, the legal status of the Manager, and the possibility of appointing the Manager on the basis of a secondment or cost-free basis.
- * agreed that the Task Group should consist of Mr. Rolland (Australia), Mr. Anand (India) and Dr. Kobayashi (Japan).

3.3 RCA Vision in Next 25 years

Indonesia presented the revised paper "RCA in the Next 25 Years" which took account of comments made by RCA National Coordinators on the draft presented at the RCA General Conference Meeting in October 1997. The paper was widely welcomed. The Philippines and China noted that the paper should be followed up by an Action Plan which should contain benchmarks to measure progress in implementation. The Meeting -

- * adopted the paper subject to incorporation of a number of detailed comments.

3.4 Development Finance

New Zealand outlined changes made to a draft paper as a result of comments from Mr. Qian (DDG, TC) and other Member States. Mr. Aleta noted Agency actions on the four recommendations as follows:

Recommendation 1: The RCA Coordinator sent letters to Member States on information on potential sources of development funds; To date nothing was received from Member States.

Recommendation 2: No actions to date on the recommendation to engage an expert in raising development finance as this will depend on the outcome of recommendation 3.

Recommendation 3: As recommended the Agency legal opinion was sought on the issues of financial liability, intellectual property and confidentiality. No comment received yet from legal section¹⁵

Recommendation 4: on RCA to continue to progress towards implementation of its future management plans, this is already ongoing.

In discussion it was agreed that the document outlined a way forward by which any Member State approaching an international agency for financial development support could enlist its membership of RCA in support of its request for financial support. The

¹⁵ Legal opinion was received recently from the Agency. And Member States will be informed.

Meeting -

- * endorsed the report.

3.5 TCDC Status

The RCA Co-ordinator outlined the responses made by the three Regional Agreements to the set of fifteen(15) recommendations for facilitating TCDC as endorsed at the 1996 RCA General Conference Meeting and also the additional six(6) recommendations arising from the Tripartite Meeting held on 19 September 1996. It was noted that a few recommendations being implemented included the adoption of model project concept and discipline in TCDC activities and the designation of a TCDC contact point within the region. The Meeting also noted that a number of recommendations remained to be pursued and the RCA Coordinator was encouraged to meet regularly with his counterparts in the other Regional Agreements to develop joint approaches to issues such as accounting of TCDC and disseminating information on TCDC outcomes. It was noted that the forms seeking input for Part 3 of the RCA Annual Report sought information on TCDC.

The assembly of data on regional experts, training centres and industrial expertise was seen as a priority. Indonesia said the information flow and consistency between RCA, AFRA and ARCAL must not distract from the main purpose which was *promotion* of TCDC. This was best done by advertising its successes and finding ways to facilitate more TCDC.

Bangladesh noted that much could be done by the provision of experts at reduced rates. It was requested that mechanisms be explored by which this process could be facilitated. The RCA National Representative is the competent authority for TCDC in each country. Bangladesh asked whether the use of low cost experts could be made easier if governments were informed about the mechanism being used through a letter under the authority of the RCA.

Pakistan said it could provide experts at low cost through bilateral agreements. Fellowships from developing countries had been accepted at reduced costs from IAEA. Pakistan was offering four fellowships at the Pakistan Institute of Engineering and Applied Sciences in nuclear medicine.

China urged that more use should be made of combining TCDC with ECDC. Combining both technical and economic cooperation would strengthen and increase opportunities for TCDC. India suggested that all National Coordinators should try to visit each other when on travel and hospitality can be extended by the country being visited. The Meeting -

- * agreed that it was desirable to have an effective Directory of Services available. The possibility of funding necessary action under RAS/0/025 should be explored. However, much could be done through the RCA Office now in hard copy and in future via the Home Page. Input from Member States was essential and the RCA Office should be informed of the contact point for TCDC in each country.
- * agreed, with thanks, that Malaysia would continue to act as the focal point for collecting TCDC information and collate information required for the RCA report to the Tripartite Meeting scheduled for September 1998.
- * agreed that the RCA Coordinator would write to RCA National Representatives seeking examples of TCDC activities.

Extra Agenda Item:

At this point the Chairman agreed to cover a number of administrative items that were outstanding and not on the itemised agenda:

- (1) a list of National Coordinators, to be called National Representatives, was circulated for correction. All coordinators and project coordinators were requested to supply to the RCA Office details of date of birth, full contact address and passport details.
- (2) it was agreed that the RCA National Representative is the primary interface with the Agency through the RCA Office
- (3) it was agreed that letters to invite governments to host activities could contain requests for individual activities or all annual activities as best suited to the internal requirements of each Member State
- (4) it was confirmed that Part 3 of the Annual Report was to be a report of activities carried out in or by each Member State in Table form. The Tables were to be completed as soon as possible following the end of each activity and forwarded to the RCA Office.

To avoid duplication, the Tables were to be considered as a basis for the Country Report for the draft Annual Report and would normally be completed by 31 December each year. Member States could add a supplementary statement on overall policy or management issues if they wished. At the RCA General Conference Meeting each country was expected to supply a Country Statement dealing with policy matters.

For administrative reasons the deadline for Country Reports for 1997 was 30 April 1998. Bangladesh requested a written request of what was required for the 1997 report.

3.6 Activities for 1999 - 2000

3.6.1 Inter-Regional/Regional/National

Mr. Razley presented an overview of the East Asia and Pacific Programme through to 2000. Important points included:

- i) the total programme for 1998 was about US\$17M of which 25% was for RCA activities, 70% National activities and 4% regional activities
- ii) for activities other than human resources, the priority setting was health, nuclear power and research, and food and agriculture. This was consistent with the RCA Vision
- iii) in 1998, the expert component increased but equipment decreased
- iv) already 70 events were planned, 35 for RCA with more to come for 1998
- v) within TCF, RCA programmes comprised 15% of the US\$12M budget
- vi) the 1997 Implementation Rate was only 50% for RCA (versus 68% overall programme)

- vii) after the earmarking of US\$2.2M for RCA in 1999-2000, only about US\$200,000 was available for new activities. For 1999/2000 RCA had 77% of future earmarking.

Finally, Mr. Razley requested to be informed of the interest of Member States to participate in two of six Inter-Regional Programmes that were still "to be decided" for 1999-2000. These were INT/5/144 "Saline Groundwater and Wastelands for Plant Production" and INT4/131 "Sustainable Technologies for Managing Radioactive Wastes." It was also noted that 91 requests for activities had been received, all in electronic form, which was a credit to the liaison officers in each country.

Pakistan questioned the value of the Implementation Rate and Indonesia said the important issue was the Impact Achievement rate. The Agency representatives acknowledged that 1997 was unusual for several reasons, including organisational changes within the Agency and delays in getting approval for UNDP projects which were a major financial element of the budget. It was expected that 1998 would return to a higher Implementation (now Financial Expenditure) Rate. Further discussion followed as reported in 3.6.3.

3.6.2 RCA Programme

Mr. Aleta referred to Table 1 "Status of Projects as of 31 December 1997," of the Draft 1997 Annual Report. Seven projects were to end in 1998¹⁶. He emphasised the work to be done to ensure that programmes were approved for 1999-2000.

Korea noted a Prospectus was available for an RTC on Low and Intermediate Level Waste from Non-Power Sources under RAS/4/016. It would be held at KAERI, Taejon, Korea from 26 October - 13 November 1998 through an extra-budgetary contribution from KOICA and an in-kind contribution from KAERI. Thailand mentioned its support for the RTC since both disposal and management of radioactive waste are essential to the Region and to public acceptance of peaceful nuclear technology. Mr El-Saiedi said several States were known not to have disposal facilities at present. Some clarification on the Prospectus was desirable.

China repeated its willingness to follow up its efforts to initiate the Home Page by assisting India in further development. China also questioned why no funding was available for its proposed Training Course on Waste Water if there was only an Implementation Rate of 50%.

Philippines requested the RCA Office to circulate a list of the 35 RCA events proposed for 1998, updated as necessary.

3.6.3 Discussions

The issues raised above caused Member States considerable concern. It was acknowledged that unless considerable effort was made, RCA activities after 1999-2000 would be severely curtailed through lack of approval within the Agency system. Further, there was a risk that money would be lost from RCA and the region unless implementable project proposals were available by 31 May 1998.

¹⁶ These are RAS/8/069, "Isotopes & Radiation in Industry and the Environment," RAS/0/021 "Nuclear Power Planning," RAS/0/022 "Public Acceptance and Trade in Irradiated Food," RAS/0/023 "Energy, Electricity and Nuclear Power Planning," RAS/0/024 "Project Formulation Meetings," RAS/7/008 "QA in Radiation Sterilization of Tissue Grafts," and RAS/8/078 "Nucleonics Control Systems and Tracers in Industry."

After extensive discussion the Meeting -

- * requested each RCA National Representative to take all urgent steps to assist in the submission of project proposals for 1999-2000 by 31 May 1998 (and preferably by 15 May 1998)
- * requested the designated Lead Countries (see below) to coordinate activities leading to (a) above. In so doing, they should identify the person responsible to the RCA Office
- * requested all countries participating in a project to identify their contact person to the Lead Country and offer all assistance
- * requested all Lead Countries to take account of the RCA Guidelines and Operating Procedures when formulating the project proposals
- * requested the Agency urgently to designate an officer to act as the Agency contact for each project and convey that information to all RCA National Representatives and Lead Country contacts.

In taking these decisions the meeting recognised the difficulty caused by the short time available. This applied particularly to projects/activities that had not held PFMs or NCMs. However, the alternative to implementing this resolve was a risk of substantial damage to the future of RCA Programme.

Finally, the meeting drew up a list of the Lead Countries for each on-going project as per Annex 5.

3.7 Venue for the Next Meeting of RCA National Representatives

Singapore informed the meeting of its offer to host the next Meeting of RCA National Representatives in the first half of 1999. This would be confirmed officially before the 1998 General Conference Meeting. Pakistan agreed to be considered as the alternate venue.

THIRD ADMINISTRATIVE SESSION (Chairman: Dr. P. A. J. Englert)

4.0 Presentation of the Draft Meeting Report

The Rapporteur, Dr. P. B. Roberts, presented the draft report. This was followed by extensive revision and discussion.

4.1 Other Matters

Japan noted that the Union of Myanmar had hosted its first RCA activity, an Expert Advisory Group Meeting. The meeting congratulated Myanmar on its fine achievement in hosting such a successful activity.

Mr Razley informed the meeting about the dates of the major RCA meetings for 1998 and 1999 through to 2001 and certain milestones to be observed such as deadline for submission of 2001/2002 project requests. He encouraged Lead Countries to continue working with other Member States to prepare proposals for the 2001/2002 cycle.

India proposed that the chairperson of the meeting of RCA National Representatives be the chairperson until the next meeting. Further, any matter requiring resolution that could not be resolved within the RCA Office should be referred to the chairperson. In discussion, the merits of the proposal were acknowledged. However, Australia and New Zealand considered that other options for the resolution of issues were available, (e.g. referral to the Project Committees for each activity area or the Task Group on the Guidelines and Operating Rules for RCA). Pakistan, Indonesia and Vietnam suggested more time was required to consider the proposal; no decision was taken.

CLOSING SESSION (Chairman : Dr. P. A. J.Englert)

5.1 Adoption of the Draft Report of the 19th Meeting of RCA Representatives.

The meeting -

- * agreed that participants would provide any further comments on the draft report within two weeks. The Rapporteur would then provide a revised version to the RCA Office for final editing, circulation to Member States, and consideration by the General Conference Meeting.

5.2 Closing Remarks

The meeting expressed its thanks to the new RCA Coordinator, Mr. Aleta, who had shown an appreciation of his role and an understanding of the change of focus of the RCA Office.

On behalf of the Agency, Mr. El-Saiedi expressed his thanks to the government of New Zealand, the host Institute, the Institute of Geological and Nuclear Sciences, and the Organising Committee for the efficient organisation of a meeting that was both productive and enjoyable. He said that the ownership of RCA programmes by Member States was clear. There was much to be done, but both Member States and the Agency had committed to achieve what had been agreed. He thanked all participants for their participation.

Several Member States also noted their appreciation of the work done by the Organising Committee and commented on the effective, efficient conduct of the meeting.

Finally, the chairman thanked all participants for their hard work. He congratulated everyone for the significant results and progress made. Personally, it had been an enjoyable experience to watch the RCA take important steps to secure its future. He wished everyone a safe journey home and closed the meeting.

ANNEXES

- Annex 1 :** List of Participants
- Annex 2 :** Opening Session Speeches
 - 2a :** Dr A. West
 - 2b :** Dr P. Englert
 - 2c :** Mr A. El-Saeidi
 - 2d :** Dr J. Buwalda
- Annex 3 :** Modified Agenda
- Annex 4 :** Session Chairpersons and Rapporteurs
- Annex 5:** Lead Countries for RCA Programmes

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ANNEX 2a

WELCOME SPEECH BY DR. A. WEST

Dr James Buwalda, representing the Minister of Research, Science and Technology, Mr El-Saeidi and his colleagues representing the International Atomic Energy Agency, distinguished delegates, ladies and gentlemen.

It gives me great pleasure on behalf of the Institute of Geological and Nuclear Sciences to welcome you to New Zealand and to Taupo. We are honoured that we have been entrusted with the organisation of this important meeting of RCA National Representatives.

Our Institute is proud to have played the major role in bringing New Zealand into membership of the RCA and to continue to be the lead agency for coordinating New Zealand's contribution. We have been greatly helped, however, by the support of the National Radiation Laboratory and the NZ Branch of the Australasian Society for Nuclear Medicine. Both organisations are represented at this meeting and have helped to widen the scope of New Zealand's contribution into areas such as radiation protection and human health. In addition the Ministry of Foreign Affairs and Trade has been supportive of our involvement in RCA.

The Institute of Geological and Nuclear Sciences (GNS) is a relatively new science organisation. It is a government-owned Research Organisation operating as a company under the Company's Act of NZ. It was created in July 1992 from divisions of the original NZ government science department, the Department of Scientific and Industrial Research or DSIR. It continues the mandate of DSIR to pursue excellence in its science for the benefit of New Zealand. Our mission is to 'make a difference' and to do this we have a strong emphasis on applied projects and technology transfer to national and international clients.

The Institute consolidated all the earth science expertise of DSIR and added to it the Institute of Nuclear Sciences. This was a recognition on the important contribution that nuclear science can make to the earth sciences. These contributions include assistance in the exploration, characterisation and management of geothermal, mineral, and oil and gas resources, and in hydrology, geochronology, volcanology and environmental geology.

However, this audience will be well aware that nuclear science has applications well beyond just the earth sciences. Together these areas can be classified as industrial development leading to economic growth; environmental management leading to the safe, sustainable exploitation of resources; and human health.

From the beginning the Institute was conscious of the need to maintain and nurture New Zealand's nuclear science capability, a capability which resides in a relatively small number of scientists with limited financial resources. One way to do this was to adopt a very outward-looking philosophy, to look beyond New Zealand for ways in which we could join with other nuclear science organisations; to collaborate - to help and be helped. When we sought to put this philosophy into practice, it was apparent that the RCA would be a highly appropriate mechanism.

- It is regionally focused among New Zealand's near neighbours.
- The projects undertaken cover a wide range of nuclear science applications - many of which fall within our priority areas.
- The scale of the projects undertaken is consistent with those that we are used to and can adequately resource.

Most important of all, however, was a requirement that we join an organisation that was highly active, effective and efficient. We became convinced that the RCA was such an organisation from the progress made since it was founded in 1972, its record in achieving its goals and its commitment to audit, review, modification and re-audit of its projects.

Last year RCA celebrated 25 years of achievement. Its contribution to the development of the region is such that you can be justifiably proud. However it is time to re-assess and move on to the next period of achievement; to ensure that the record of effectiveness and efficiency is maintained and expanded.

I am pleased to see from the agenda that you hope to finalise discussions on your Vision for the next 25 years and on your management and operating procedures. The environment in which science organisations operate is changing rapidly. In New Zealand over the last five years there have been significant changes in the way government funds science and in the outcomes it expects from its science providers. Similar changes are taking place in many countries, and the Asia-Pacific region is not immune to them. The probability is that the science and technology environment will be subject to further and accelerating change.

In addition the IAEA is also subject to change and to the financial pressures that all UN Agencies are experiencing. Therefore it is right for this meeting to seriously consider the future of the RCA not just as a series of individual projects, but as an organisation.

Cooperative arrangements such as RCA are relatively straight forward to run when funding is adequate and when they have the comfort of long periods of stability. The true test of these arrangements comes at times when funding is less secure and there is enforced change. We in New Zealand see this meeting taking place at such a time.

There are dangers to be overcome in the present environment, dangers of stagnation, reduced activity and ultimately of a lack of relevance to the region and people we serve. The dangers can be overcome and turned to new opportunities. But this will require a mix of imagination, flexibility, tolerance and, particularly, a commitment to respond to the changes.

I have no doubt from the record of the past 25 years that the RCA has all the ingredients to get its management recipe right, and to increase its effectiveness in delivering beneficial technologies to the region. I urge all delegates from Member States to contribute to a process of ensuring that the next 25 years is even more successful than the last. And to ask the IAEA, our partner in so much of our work and our long term supporter, to match our efforts and contribute actively to a process of renewal. I hope that this meeting makes a useful contribution to ensuring that RCA remains a vigorous and well-regarded contribution to the science & technology expertise of the region.

In conclusion, I would like to re-affirm the commitment of GNS to RCA and its goals. My staff will try to make your time here both enjoyable and effective. I wish you all a

successful and productive meeting.

ANNEX 2b

WELCOME SPEECH BY DR. P. ENGLERT

Mr Buwalda, Mr El-Saeidi, distinguished participants, ladies and gentlemen.

I'd like to add my welcome on behalf of the Nuclear Sciences Group to that of Dr West. If there is anything that I or my staff can do to make your visit more enjoyable or the meeting more effective, please let us know.

New Zealand attended its first RCA meeting exactly 3 years ago. Since then, staff of the Nuclear Sciences Group have participated in several projects, mainly within the Joint Project with the UNDP. We have learned much and I hope you feel that, in return, we have been able to make a significant contribution.

This audience knows very well that nuclear science has a broad range of potential applications. It is true that we should not push for an isotope technique to be used if a competing technology can do a better or cheaper job. But it is also true that many potential users of our techniques work on the basis that isotope methods should be used only when nothing else can be used.

Often less efficient or more expensive methods are used when a method based on well known radiation physics principles would be more elegant, sensitive and non-invasive. Of course, some of the most exciting opportunities for applied nuclear science are likely to be in using multiple techniques in combination, both non-nuclear and nuclear-based, to provide the optimum solution.

Government science policy in New Zealand has required all Crown Research Institutes such as GNS to approach most of their work from the perspective of R & D that is end-user driven and applications-oriented. We have had to engage in an education programme with our end-users. This education programme has been very much a two - way process. End-users have had to be accurately informed about what we can do to solve their problems. We have had to learn the hard reality that end-users are usually interested only in the minimal solution to their problem for the lowest possible price. At the same time we must ensure that our scientists feel they are working on worthwhile problems and maintaining their knowledge at the forefront of their field.

The process of engagement with end users remains full of frustrations; but it also comes with many new opportunities and challenges. When successful it moves the process of technology transfer to a higher and more effective and beneficial level.

Therefore it is of great interest to nuclear scientists in New Zealand to see that the RCA is committing itself to a more applications - driven approach; and to know that the Agency is actively encouraging such an approach. We would certainly like to assist in this process.

For these reasons we decided to hold this conference away from our laboratories. At our laboratories you would have seen our accelerators, mass spectrometers, processing laboratories and instrument shops. We would have enjoyed showing you the radiocarbon dating facility using Accelerator Mass Spectrometry; our leading edge work using AMS

for Be-10 measurements and biological tracers; and our work in geochronology, and in the use of isotopes in geothermal and environmental management.

However we have brought you to Taupo instead. Taupo is near the centre of important energy - based industries, particularly New Zealand's geothermal and hydro-electric power industry. It is also near major forests and is home to several Forest Product industries.

We plan to use our technical tour on Thursday to show you, very briefly, some of our applied projects working in their industrial setting. By a happy co-incidence the tour will also take us through some of the most scenic areas of the North Island of New Zealand.

I am looking forward to meeting you individually at our social functions. I hope that at the end of the week you will all feel the meeting has been successful and put in place the basis of another successful year for RCA.

20th REGULAR MEETING OF RCA REPRESENTATIVES
TAUPO CITY, NEW ZEALAND
30 MARCH TO 3 APRIL 1998

ADDRESS OF WELCOME:

by

ALI F. EL-SAIEDI,

Director, Division for Africa, and East Asia and the Pacific

Dr. Buwalda, Chief Executive, Ministry of Research, Science and Technology
Dr. West, Chief Executive, Institute of Geological And Nuclear Sciences
Dr. Englert, Group Manager, Nuclear Sciences (IGNS)
Distinguished Colleagues,

On behalf of the Director General, Dr. Mohamed Elbaradei It gives me great pleasure to welcome you to the 20th Regular Meeting of RCA Representatives.

The IAEA presents its compliments to the Government of New Zealand and expresses its' gratitude for agreeing to host this Meeting of RCA Representatives and for choosing this lovely town of Taupo as the place for the meeting. I recall that it was at the 17th RCA Working Group Meeting convened in Kuala Lumpur in 1995 that New Zealand, as the newest RCA Member State, was represented at its first RCA Working Group Meeting. Since then New Zealand has become an active and effective contributor as a member of the RCA family.

Distinguished Colleagues,

Nineteen ninety-seven witnessed a great number of events and constructive actions which have or will have a great impact on the RCA programme. I would like to briefly highlight these before going on to expand a little further on the more pressing or significant issues facing the RCA at this point in time.

- The RCA celebrated its 25th Anniversary with a series of activities both collectively and in your own countries. The Government of Myanmar arranged a memorable celebration and special exhibit during the last Regular Meeting of RCA Representatives.
- Furthermore, Japan funded a reception to celebrate RCA's Anniversary. This reception was attended by Representatives from RCA Member States, Missions in Vienna, Agency Staff and the UNDP. RCA was also represented at a celebration hosted by representatives of the three Regional Agreements (AFRA, ARCAL and RCA) to honour Dr. Hans Blix and to celebrate the Agency's 40th Anniversary.
- To commemorate the occasion, RCA Member States at their initiative and with the contributions of the Governments of Japan and of the Philippines a booklet

entitled "RCA: A Window to the Future" was published. This booklet highlighted the many accomplishments of RCA in its Member States.

- In 1997 we saw the establishment of the first comprehensive set of "Guidelines and Operating Rules for the RCA Programme. This was an evolutionary step reinforcing management and ownership of the Programme.
- During 1997, you worked together to cast your vision for the second 25 years of the RCA. This vision will provide the conceptual framework in which to define clear programming and policy objectives to accrue benefits to the countries you represent. I would like at this point to report that the recently appointed Director General, Dr. ElBaradei, gives great importance to the Regional Agreements and recognizes the leading role they play in meeting the strategic objectives of the Department of Technical Cooperation's Partner in Development approach.
- We also witnessed in 1997 the termination of the successful joint UNDP/RCA/IAEA project on environmentally sustainable industrial development and the birth of a new joint project dealing with a number of areas that address real concerns of RCA Member States such as air pollution, marine coastal contamination including the red tide phenomena and cleaner and more efficient industrial processes. In order to address these ecosystem realities, the new joint project will strengthen regional management and outreach through *inter alia* the use of Regional Resource Units and strengthened electronic networking.
- During 1997 the Agency got a new Director General and we had some changes which included the restructuring of the Department of Technical Cooperation. The Department is now structured to have Africa and East Asia and the Pacific in one Division incorporating both programming and implementation to streamline operations and better manage TC activities.
- Furthermore, in 1997 we saw a change of guard in RCA Coordinators at the Agency. For the first time this position is held by one of your colleagues from a developing country, Mr. Carlito Aleta, who had represented the Philippines as RCA National Coordinator for nearly eight (8) years.
- Unfortunately, 1997 was also a year which presented many challenges to the East Asia and Pacific Region with a great number of countries facing severe consequences of the economic crisis that rocked even the mighty tiger countries. To address these challenges national priorities have, naturally enough, been altered or re-prioritized. This new situation could be expected to place constraints which will affect you collectively as a regional undertaking. These constraints pose - and it would seem reasonable to predict, will continue to pose in the foreseeable future - considerable challenges that need to be taken seriously into consideration.
- The economic crisis was not the only destabilizing influence to hit the region. Sustainability of the Region's overall socio-economic growth has been negatively impacted by a series of severe natural and man-made disasters that included the devastating effects of El Niño and forest fires. If one learns well when one learns through hardship then the ingenuity of the RCA will be tested to its limits to address the transboundary implications of such disasters. Indeed, the relevance of the new Joint UNDP project could not be better highlighted than through this most unhappy series of setbacks to the region.

Distinguished Colleagues,

I now seek your indulgence to review developments of the past few years which have significantly impacted the evolution of the RCA and to reflect in more detail on some of the points highlighted above .

Management/Ownership

With a quarter of a century of experience behind it, the RCA is well placed to fully exploit regional capacity to solve common problems. Regional self-reliance is the litmus test to measure the effectiveness of RCA's network among its Member States. However, three years ago, the findings of the Mid-Term Review of the former Joint UNDP/RCA/IAEA project, RCA's flagship, concluded that there was little evidence of interaction between RCA's Member States outside of its exceedingly high number of formal meetings and training activities. This finding alerted both the Agency and RCA Member States to a perceived weakness in regional management in the programme.

The 18th RCA Working Group Meeting convened in Beijing in 1996 was a turning point for the RCA which saw a move to align programming imperatives and strategies to enhance ownership and visible impact through strengthened regional management. The question of "ownership" and "visible impact" are intrinsic to the Department of Technical Cooperation's endeavour - as spelled out in its strategy - to empower all its Member States as real partners in the development process.

RCA Member States subsequently developed and approved twelve recommendations made to RCA Member States and the Agency on management structure and operation of the RCA programme.

Based on these recommendations and the provisions of the RCA Agreement, a document on Guidelines and Operating Rules for the RCA Programme was developed and then approved at the General Conference Meeting of RCA Representatives, on October 1st, 1997. Also at this meeting Lead Countries/Focal Points were nominated for the already defined thematic areas in the RCA programme. In line with your recommendations on Management to have full control of the programme's content, the Agency did not send a representative to any of the Project Formulation Meetings convened throughout February and March of this year. The RCA programme for 1999-2000 therefore, will fully reflect RCA ownership of programme content and project development. To facilitate this exercise Member States were sent a final version of the Project Submission Form developed by the Agency's Secretariat reflecting comments received from its Member States. The proposals developed at these meetings are before you this week for consideration.

Distinguished Colleagues,

Joint UNDP/RCA/IAEA Projects

In reviewing the evolution of management of the RCA, the closing of the former Joint UNDP/RCA/IAEA project on environmentally sustainable industrial development is seen as a significant milestone. This project is illustrative of those types of projects used primarily to train human resources and to support the establishment and strengthening of institutions dealing with nuclear technologies. The mechanism to achieve this was mainly via a large number of training activities and meetings, the exchange of experiences and development of reference materials.

Member States, as a response to the concerns of the UNDP with respect to impact of the project, have been able to report success stories in attracting private or government sector investment in the application and commercialization of industrial technologies. Many of these successes are contained in Country Statements presented at the 26th General Conference Meeting of Representatives of RCA Member States in October 1997 and in the RCA booklet "A Window to the Future".

The new Joint project has therefore, been structured to have as a major objective to forge such technology partnerships with end users. In this respect I applaud RCA Member States' desire to position RCA to play a leading role in private sector outreach through *inter alia* the establishment of Regional Resource Units. However, I recognize the intensive upstream management planning and keen understanding of the evolution and trends of the market place which will be needed to actually have impact. In this endeavour effective networking and cost-sharing are paramount if RCA is to prove itself to be a viable alternative to established suppliers of services and goods. It is now well recognized that the end users of technology are the crucial last link in the chain that delivers the benefits of nuclear technology.

Distinguished Colleagues,

New Challenges faced by the region

I would now like to briefly comment on the issue of ownership and regional self-reliance from the point of view of financing. 1997 saw a time of uncertainty with respect to the level of extra-budgetary support from RCA's two major donor Member States which if not forthcoming would have led to a serious shortfall in funds to implement the RCA programme in 1998 and beyond. Coupled to this was the sudden collapse of financial markets in the Asia and Pacific region in 1997 and the resulting volatility in some national economies.

While RCA could in the past be justifiably proud of the increasing number and level of cash contributors from among its Member States, 1996 and 1997 saw appreciable reductions in such contributions both in the number of contributors and in the level of contributions. This and the new challenges being faced by the region underscore the urgent need to address the issue of continued extra-budgetary funding of RCA projects including Member States' contributions. There is an urgency to act on recommendations made within RCA's paper on Development Finance and develop mechanisms to access regional development funding sources. More than ever it would seem paramount to convince Governments of the relevance of the RCA's programmes to socio-economic development and national and regional development plans.

This is particularly important since it can be expected that the recent ecological disturbances caused by forest fires and the longer-term impact of El Niño on global weather patterns that much of the region's financial resources will be redirected to addressing fundamental issues such as food losses and associated health disorders. The RCA should define what role it can play in addressing those challenges which now stand high in priority on Government agendas - unless Government's are convinced of the cost-effectiveness and appropriateness of interventions using nuclear techniques over other conventional technologies there may be a backlash against the nuclear industry which is still unfortunately and erroneously seen as a high-tech, high-cost solution.

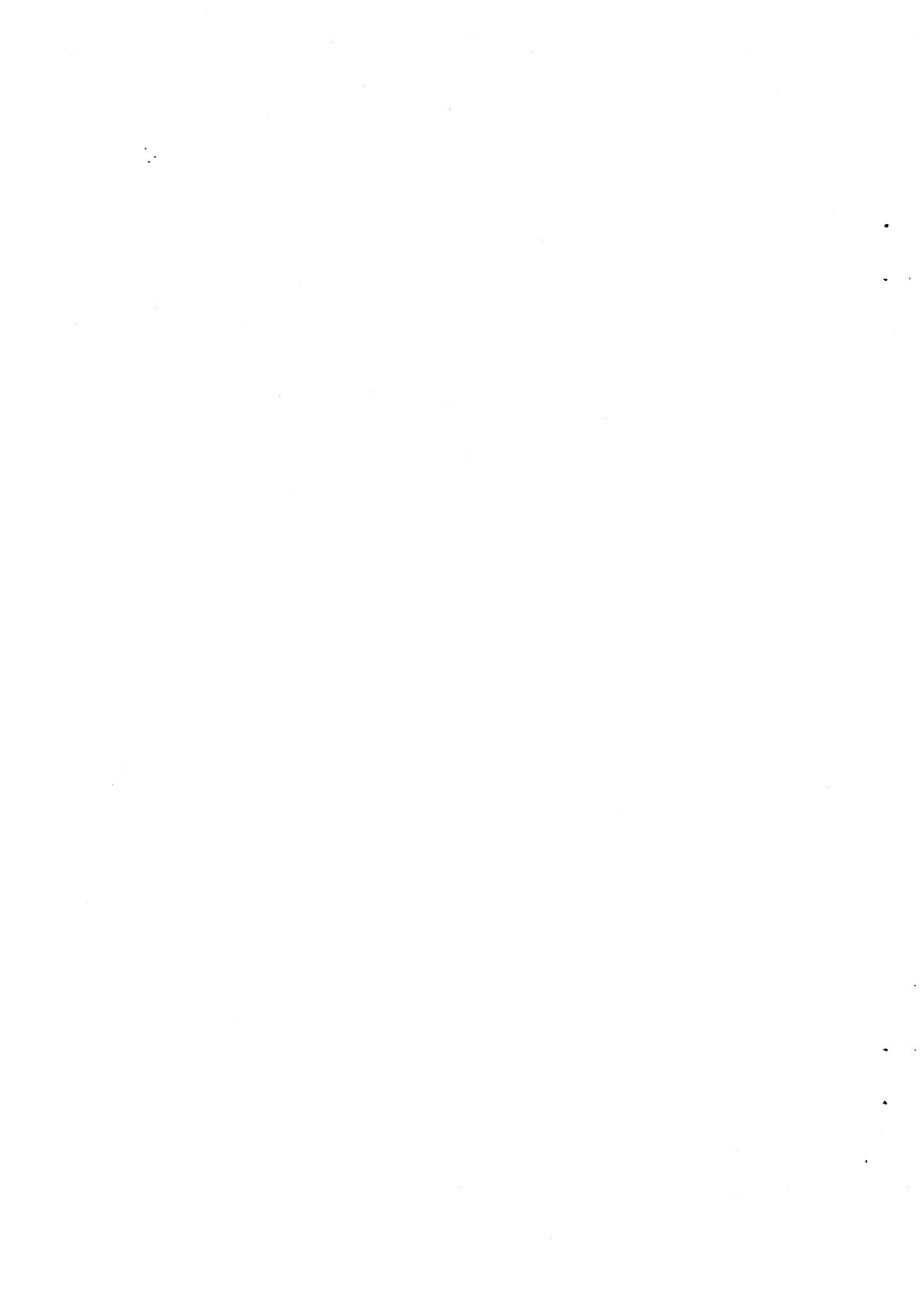
Distinguished Colleagues,

Issues to move forward

The last two years have seen many new programming and management initiatives being discussed by RCA Member States. The Agency has provided assistance in this process when requested and acknowledges that the process, though much slower than hoped for, has now started to show encouraging results. I would like to urge you when revisiting RCA's Operational Guidelines, Regional Management; the Vision in the Next 25 Years and Development Finance during the Administrative Session that consensus be reached to move forward to enable recommendations to be endorsed and implemented.

My team and I will work hand in hand with you to reach clear conclusions and develop practical project proposals. We will be at your disposal for the next five days both inside and outside this meeting room.

I wish you a successful meeting and enjoyable stay.
Thank you.



**ADDRESS BY DR JAMES BUWALDA TO THE OPENING SESSION,
20TH WORKING GROUP MEETING
OF THE REGIONAL COOPERATIVE AGREEMENT (RCA)
FOR ASIA - PACIFIC 30 MARCH - 3 APRIL 1998
WAIRAKEI RESORT, TAUPO, NEW ZEALAND**

Representatives of the International Atomic Energy Agency, Dr West and Dr Englert, distinguished delegates, ladies and gentlemen.

On behalf of the Government of New Zealand and the Minister of Research, Science and Technology, I have pleasure in welcoming you all, and especially our overseas guests to New Zealand and to Taupo. The Minister regrets that he is unable to attend the meeting personally but Mondays are scheduled for the regular Cabinet meeting in Wellington.

Although a small meeting, I am informed that the Working Group comprises leading scientists and administrators in the field of nuclear science and technology from 17 countries throughout Asia and the Pacific. They include countries with developed, developing and least developed status and their interests, priorities and skills are diverse.

However there can be little doubt that science and technology play a crucial role in the economic growth of every country and in improving the health of their people and environment.

I understand that this meeting hopes to finalise position papers on the future vision and management practices for RCA. Several of the points raised in those papers fit well with how New Zealand intends to benefit from the investment it makes in science and technology.

RCA will remain based on cooperation, promotion and coordination in research, development and training in nuclear science and technology. Scientists should always retain a focus on increasing and utilising their unique skills. Through the encouragement of greater interaction between institutes we get synergies which benefit us all.

However RCA does not intend to remain an organisation that is focused only on research within a nuclear science environment. RCA intends to become a respected Regional Resource working for the sustainable development of the region. The hope is that regional governments and agencies will automatically turn to RCA when there are problems to which nuclear science techniques can be usefully applied. This could be considered part of the move towards increasing the influence that scientists and engineers have in decision making within major industries and society, an influence that is already greater in many RCA Member States than is the situation in New Zealand at present.

The RCA also intends its activities to be based on applied projects that solve problems for end users. The projects will also be integrated into a few broad Thematic Programmes such as Health Care, Industrial Development, Food and Nutrition, Environmental Care and Energy Production. In New Zealand our science policy is geared to focus science on end user needs and broad government outcomes, or Themes.

One of the features of the CRI system is that each Institute is now free to form their own judgment on how best to maintain and promote the science areas within their portfolio. This includes how best to contribute to international science efforts. It is no coincidence

that it was not until 1994 that New Zealand joined the Regional Cooperative Agreement and that this was at the urging of a CRJ rather than a monolithic government science department.

I commend GNS for taking responsibility to actively promote international science collaboration within its overall science mission. I believe it is highly appropriate from a New Zealand perspective that GNS has identified, as a key component of its scientific strategy, partnership in an organisation that has as its focus economic and social development within the Asia-Pacific region.

The variety of topics being researched and developed within your new Thematic Programmes show that nuclear science has a broad role to play in the development of any modern society. This fact is not often appreciated by the general public, not least within New Zealand. The threat of nuclear weapons and the controversy about the risks of nuclear reactors have overshadowed the important role that other peaceful uses of nuclear science can play in industrial and social development. I believe it is through the work of organisations such as the RCA that the value of nuclear science can become better appreciated. It is therefore important that you take every opportunity to publicise your successes and to inform the public about the work that you are doing.

The problems of rapid population growth in the region are well - known. Industrial and economic growth are vital if we are to make improvements in the standard of living of the region's poor. It is right that several RCA activities are directed at better industrial and agricultural output and to improved standards of health care. However, the gains from growth will be short - lived unless they have a net positive impact on the environment. Therefore it is pleasing to note that RCA intends to apply nuclear techniques to the management of our water supplies, land use, air quality and marine environment.

The RCA has other features that indicate that you have recognised many of the important issues in science today. One is the role of women and it is good to see the Agreement's commitment to the issue of "Women in Development". Another is the direct financial support provided by many of the RCA member states. I understand about half the member states now contribute financially, including several developing countries. With so many scientifically valid international projects seeking support from funding agencies, this is a clear signal to politicians and financial institutions that here is a project which the participating countries truly value.

Distinguished delegates, ladies and gentlemen, I am sure that you have a busy schedule ahead of you. Nevertheless, I urge you to find some time to investigate a little of what New Zealand has to offer the visitor. We believe it offers much that is unique and fascinating.

I extend to you all the best wishes of the Government of New Zealand for a successful meeting. I declare the 20th Working Group Meeting of the Regional Cooperative Agreement for Asia and the Pacific open.

MODIFIED AGENDA

ANNEX 3

20TH REGULAR MEETING of RCA REPRESENTATIVES, 30 MARCH - 3 APRIL
1998

WAIRAKEI RESORT HOTEL
TAUPO, NEW ZEALAND

SCHEDULE OF ACTIVITIES

DATE	EVENTS
MONDAY, 30 MARCH	FIRST DAY
0830	OPENING CEREMONIES . <ul style="list-style-type: none"> a) Welcome Address, Dr. A. West, Chief Executive, Institute of Geological & Nuclear Sciences(IGNS) b) Welcome Address, Dr. P.J.A. Englert, Group Manager, Nuclear Sciences, IGNS c) Address by Representative of the International Atomic Energy Agency(IAEA), Dr. Ali F. El-Saiedi, Director, Division of Africa and East Asia and Pacific, Technical Cooperation Department. d) Address and Opening of Meeting by Dr. J. Buwalda, Chief Executive, Ministry of Research, Science and Technology
0930	MORNING BREAK; PHOTO SESSION
1015	PART 1: ADMINISTRATIVE SESSION with Interim Chairperson ,Myanmar(-Prof. Saw Tin) <ul style="list-style-type: none"> 1.1 ELECTION OF CHAIRPERSON 1.2 SHORT REMARKS -Prof. Saw Tin 1.3 SHORT REMARKS -Dr. P.J. Englert 1.4 ADOPTION OF THE AGENDA 1.5 DESIGNATION OF CHAIRPERSONS /RAPPORTEURS FOR EACH SESSION---Dr. P. J. Englert 1.6 PRESENTATION AND ADOPTION OF THE REPORT ON THE 26TH RCA GENERAL CONFERENCE, 1 OCTOBER 1997- 1.7 PRESENTATION OF RCA ANNUAL REPORT—RCA Coordinator <ul style="list-style-type: none"> 1.7.1 STATUS OF RCA AGREEMENT 1.7.2 PROJECTS TO BE CLOSED 1.7.3 ISSUES ARISING

1.8 RCA ACTIVITIES AND BUDGET FOR 1998—
- RCA Coordinator

1.9 NEW DIRECTIONS/POLICIES IN IAEA
TECHNICAL COOPERATION ASSISTANCE—
—————Dr. A.F. El-Saiedi

1115 AM

PART 2. FIRST TECHNICAL SESSION
(Chairman, Dr. A.C. McEwan)

2.1. ONGOING: Presented by Dr. Ron Cameron,
ANSTO

(1) RAS 9/018 "Radiation Protection
Infrastructure(Phase III)"

2.2 NEW PROPOSALS

2.3 DISCUSSIONS/DECISIONS

1300

LUNCH BREAK

1430

SECOND TECHNICAL SESSION: HEALTH-RELATED
PROJECTS.

(Chairman, Dr. M. Rutland)

2.4 ONGOING:

(1)RAS 6/027" Quality Assurance in
Radiation Therapy"

(2) RAS 6/029 "Improved Training for
Nuclear Medicine Technicians

(3) RAS 7/008" QA in Radiation
Sterilization of Tissue Grafts"

2.5 THEMATIC HEALTH CARE
PROGRAMME(Nuclear Medicine)
(RAS/6/028)—Presented by Prof Dr. A. Djalois,
Indonesia, Lead Country

2.6 NEW PROPOSALS

2.7 .DISCUSSIONS/DECISIONS

1630

AFTERNOON BREAK

1700

THIRD TECHNICAL SESSION: AGRICULTURE-
RELATED PROJECTS

(Chairman, Dr. P. B. Roberts)

2.8 ONGOING:

(1) RAS/0/022 "Public Acceptance and
Trade In Irradiated Food."

2.9 NEW : THEMATIC PROGRAMME IN

Mr. S. Nagayoshi , Japan, Lead Country: Japan

2.16. DISCUSSIONS/DECISIONS

1300 LUNCH BREAK/SHORT INDUSTRIAL TOUR
Geothermal Plant

1600

**SIXTH TECHNICAL SESSION: ENERGY AND
RESEARCH REACTOR-RELATED PROJECTS(
Chairman, Dr. P.B. Roberts)**

2.17. ONGOING:

(1) RAS 0/021" Nuclear Power Planning"

(2) RAS 0/023" Energy, Electricity and
Nuclear Power Planning"

**2.18. NEW "THEMATIC PROGRAMME IN
ENERGY AND RESEARCH REACTOR - Presented by
Dr. J. K. Chung, Korea, Lead Country**

2.17 DISCUSSIONS/DECISIONS

1800 END OF SECOND DAY

1930 OFFICIAL IAEA DINNER(Hosted by Mr. A. El-Saiedi)

WEDNESDAY, 1 APRIL THIRD DAY

**PART 3: SECOND ADMINISTRATIVE SESSION
(Chairman, Dr. P.J. Englert)**

8:30 AM

**3.1 RCA OPERATIONAL GUIDELINES:
STATUS Report by RCA Secretariat**

**3.2 RCA REGIONAL MANAGEMENT: Report by
Australia, Mr. John Rolland**

10 00

MORNING BREAK

10:30

**3.3 RCA VISION IN NEXT 25 YEARS --Report by
Indonesia, Prof. Dr. Djaloeis**

**3.4 DEVELOPMENT FINANCE--Report by New
Zealand, Dr. Peter Roberts**

1230 PM

LUNCH BREAK/SHORT INDUSTRIAL TOUR

**THIRD ADMINISTRATIVE SESSION
(Chairman, Dr. P.J. Englert)**

1530

3.5 TCDC --STATUS --Report by RCA Secretariat

3.6 ACTIVITIES FOR 1999-2000--Report by Dr. M.N. Razley on East Asia and Pacific Programme; report by RCA Coordinator on RCA Programme.

3.7 VENUE FOR NEXT RCA MEETING OF REPRESENTATIVES

1900 PM

END OF THIRD DAY

THURSDAY, 2 APRIL

FOURTH DAY

TECHNCAL VISITS
DISCUSSIONS
PREPARATIONS OF THE DRAFT REPORT

EVENING

CULTURAL EVENING & DINNER(Hosted by IGNS)

FRIDAY, 3 APRIL

FIFTH DAY

FOURTH ADMINISTRATIVE SESSION(Chairman, Dr. P.J. Englert)

0930

3.9 PRESENTATION OF DRAFT MEETING REPORT--Dr. P.B. Roberts, Chief Rapporteur

1000

MORNING BREAK

1030

4.0 OTHER MATTERS

1130

CLOSING CEREMONIES

1200

LUNCH BREAK

END OF MEETING

THROUGH OUT THE WEEK--AFTERNOON CONSULTATIONS ON NATIONAL TC PROGRAMMES --with Dr. M.N. Razley)



NOMINATIONS FOR CHAIRPERSONS AND RAPPORTEURS

Meeting Chairman: Dr Peter A J Englert

Dr Englert is the Group Manager of the Nuclear Sciences Group at the Institute of Geological and Nuclear Sciences. He has also been a member of the Radiation Protection Advisory Board. Educated in Germany, Dr Englert was Professor, Department of Chemistry, San Jose State University from 1986 - 95 and a member of the Board of Directors for the Institute of Radiation Sciences at that University. He is highly regarded in the fields of radiation chemistry and physics having been involved in several NASA teams concerned with nuclear analytical space probes. He is the author of about 80 refereed scientific publications and reports.

Administrative Sessions : Dr Peter Englert

Technical Sessions :

1. **Radiation Protection** : Dr A.C. McEwan. Dr McEwan is Scientific Director of the National Radiation Laboratory. The Laboratory has the responsibility for administering the Radiation Protection Act and Regulations. Dr McEwan is the RCA Project Coordinator for Radiation Protection Infrastructures and is well known as an expert at regional meetings.
2. **Health** : Mr M. Rutland. Mr Rutland is the Physician-in-Charge of Nuclear Medicine at Auckland Hospital. He is the present Chairman of the NZ Branch of the Australasian Society for Nuclear Medicine and is the past-President of that Society. Mr Rutland is the RCA Project Coordinator for the new Thematic Health Care Programme.
3. **Agriculture** : Dr P.B. Roberts. Dr Roberts is Assistant Group Manager at the Institute of Geological and Nuclear Sciences and leader of the Industrial Applications Section. He is the RCA National Coordinator and has been used as a consultant for RCA on the Joint UNDP / RCA / IAEA project and other management issues. He is also well known in the region as an expert on food irradiation and as the immediate past Chairman of the International Consultative Group on Food Irradiation.
- 4&5. **UNDP & Industry** : Dr G. Wallace. Dr Wallace is the Section Leader for Technical Research Services at the Institute of Geological and Nuclear Sciences. His scientific expertise includes accelerator physics and ion source development. More recently he has pioneered new techniques in non-invasive inspection methods and is involved in the commercialisation of this research. He is the RCA Project Coordinator for Nucleonic Control Systems and Tracers.
6. **Energy and Research Reactors** : Dr P.B. Roberts

Rapporteur : Dr P.B. Roberts assisted by Dr G. Wallace and Ms F. Harrison.

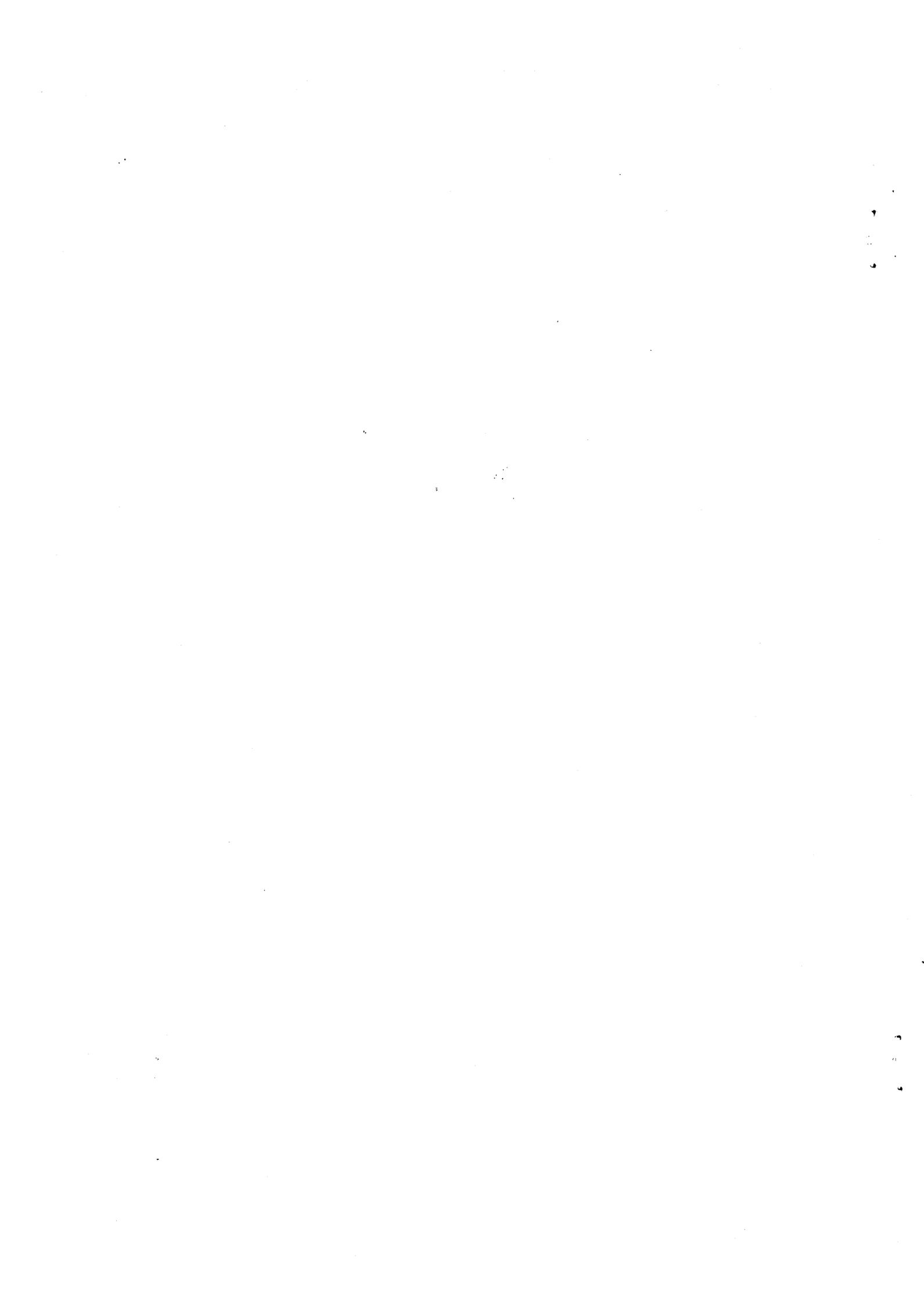


Table 1: Lead Countries for RCA Programme¹⁷

Project Number	Title	Lead Country
RAS/0/025	Development of TCDC in Asia-Pacific Countries	Malaysia
RAS/4/016	Preparation for LILW Disposal from Non-Power Sources	Korea ¹⁸
RAS/6/027	Quality Assurance in Radiotherapy	Australia
RAS/6/028	Thematic Programme on Health Care(Nuclear Medicine)	Indonesia
RAS/6/029	Improved Training for Nuclear Medicine Technicians	Australia
RAS/7/008	Quality Assurance in Radiation Sterilization of Tissue Grafts	Singapore
RAS/8/077	Thematic Programme on Advanced Techniques for Industry	Japan ¹⁹ assisted by India
RAS/8/078 ²⁰	Nucleonics Control Systems and Tracers in Industry	New Zealand assisted by Thailand
RAS/9/018	Radiation Protection Infrastructure(Phase III)	Australia
RAS/8/080 RAS/8/076 Joint UNDP/RCA/IAEA/UNDP Project	Better Management of the Environment, Natural Resources and Industrial Growth through Isotope and Radiation Technology a) Access to Clean Drinking Water b) Management of the Marine Coastal Environment and its Pollution c) Air Pollution and Its Trends d) Electronic Networking and Outreach e) Clean and Energy-Efficient Production Processes	a) Philippines b) Australia and India c) Singapore ²¹ supported by Indonesia and China d) Malaysia e) New Zealand supported by Japan ²² and Thailand
Thematic Areas	a) Agriculture b) Energy and Research Reactor c) Health d) Industry and Environment e) Radiation Protection	a) China b) Korea c) Indonesia d) Japan e) Australia

¹⁷No Lead Countries were designated in other ongoing projects: RAS/0/021 "Nuclear Power Planning" will be closed after an activity this year. RAS/0/023 "Energy, Electricity and Nuclear Power Planning" together with RAS/0/021 will be subsumed under the Thematic Area on Energy for 1999-2000. RAS/0/022 "Public Acceptance and Trade in Irradiated Food" has a carryover activity in 1998 but will be closed after this. RAS/024 "Project Formulation Meetings" is handled in the RCA Office.

¹⁸For implementation only of an activity in 1998.

¹⁹Japan is the Lead Country for the Thematic Programme on Industry excluding, in the interim, activities within the Joint UNDP/RCA/IAEA Project. India will assist especially in the area of NDE.

²⁰This project closes at the end of 1998. Lead countries will initiate project formulation for a continuation of NCS within the UNDP/RCA/IAEA project, sub-area Clean and Energy-Efficient Process.

²¹Subject to consultations with the Project Coordinator

²²The sub-area contains the Upgrading of Cellulosic Waste project led by Japan, an extension to Nucleonic Control Systems (part of RAS/8/078) led by Thailand, and any new proposals of Member States including an extension of NCS work.

