MEETING REPORT

International Nuclear Desalination Advisory Group (INDAG) (Second Term)

held at the IAEA Headquarters, VIC, Vienna
16 to 18 July 2001

CONTENTS

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A. General

The first meeting of the second term (fifth in the series) of the International Nuclear Desalination Advisory Group (INDAG) was held from 16 to 18 July 2001 at the VIC, Vienna. The meeting was attended by 13 members and 3 observers (from Pakistan and Russian Federation). Members of Israel and Morocco excused themselves. Mr. Nisan of the Commissariat a l'Énergie Atomique of France served as the Chairperson upon appointment of DDG-NE.

Mr. Juhn, Director of the Division of Nuclear Power, opened the meeting by briefing on the relevant progress and development in the Agency's activities in the field of nuclear desalination. Concerning the specific expectations from this meeting, Mr. Juhn stressed the importance of deliberating how early deployment of nuclear desalination could be facilitated.

The meeting provided a forum for the exchange of information on the progress of national programmes in this field. INDAG also reviewed and assessed ongoing IAEA activities in the relevant field and future activities being proposed by the Secretariat for the year 2002/2003. INDAG further discussed possible activities, which could be considered in the next programme and budget cycle for 2004/2005 and beyond.

B. Recent Developments in National Programmes

All participants updated status and prospects of programmes on nuclear desalination in their respective countries". Pakistan presented an overview of national activities for the first time at the INDAG. Copies of presentation materials are available in the office of Mr. T. Konishi (Room A2563).

Argentina

The country's financial crisis jeopardises the initiation of construction of the CAREM reactor. Comisión Nacional de Energía Atómica (CNEA) has reformulated short-term goals of the project in order to assure that the project does not recede, and postponed the construction till the financial crisis is over.

The reformulated short-term goals are:

- To issue a new Preliminary Safety Analysis Report, conforming to the design improvements consolidated during the last two years.
- To complete the environmental assessment and site study currently ongoing.

A fruitful and successful collaboration is underway with other participants of the Coordinated Research Programme (CRP) on "Optimisation of the coupling nuclear reactors and desalination systems". This was confirmed in the Consultancy Meeting in December 2000 in Bariloche and has allowed upgrading our modelling tool, DESNU spreadsheet for the analytical evaluation of coupling.

The ongoing programmes of the Agency on nuclear desalination have had an important impact on our activities in the field: e.g. they have allowed us to review our approach to potential SMR and desalination end-users, by sharing the discussions of their specific needs and requirements. This has taken place both through formal basis at various IAEA technical meetings, and informal interchange of information at various contacts.

We have extended collaboration beyond IAEA meetings, and we received colleagues from several countries of the nuclear desalination community (e.g. Indonesia, Korea, Egypt) for technical interchange. We received important support or inputs on desalination technologies and water resources analysis, allowing us to complement our field of expertise and reach relevant contributions to nuclear desalination. These inputs were relevant for our work on safety aspects (IDA Conference at San Diego, 1999) and for our approach to CRP on "Optimisation of the coupling nuclear reactors and desalination systems".

Canada

Significant progress has been made in Canada since the last INDAG meeting in the areas of technology development, experimental validation, and international cooperation.

Technology development activities have included both performance modelling and economic modelling. In the area of performance modelling, a study was carried out to evaluate the use of waste heat from the moderator cooling system in the coupling between the CANDESAL reverse osmosis system and the CANDU reactor. The increased preheat results in significant additional economic benefit. In the area of economic modelling, changes were made to the Agency's DEEP code to allow it to represent RO feedwater at temperatures above ambient seawater temperature and to incorporate improved membrane performance characteristics. The modified code, DEEP-PH, was used to carry out a comparative economic analysis that showed essentially identical results to those from DEEP for stand-alone and contiguous plants, but gave significantly reduced water costs when the RO feedwater temperature was raised above the ambient seawater temperature.

The CANDESAL "Reverse Osmosis Advanced Technology Seawater Desalination Demonstration" experimental validation project has reached completion of the first phase of testing. Construction and functional testing of the rig was completed early in 2001 and experimental data was obtained in June 2001. The objective of the experiment is to validate our expectations of membrane performance improvements as temperature and pressure are increased, and to thereby provide investor/customer confidence in the technology. The experimental results were very positive, as they indicate that the analytical modelling is conservative, and that the extent of performance improvement at the higher temperature conditions is likely to be even greater than previously expected.

In the area of international cooperation Canada has over the past year, formalized cooperation with the Russian Federation to design, construct and operate a floating nuclear desalination system based on their KLT-40 reactor technology and the Canadian advanced RO desalination technology and has entered into the EURODESAL consortium as a full partner along with 6 EU industrial and R&D organizations and universities to provide the advanced RO technology for the project. Canada has also cooperated with Egypt in the training of an engineer from the Nuclear Power Plants Authority under the sponsorship of an IAEA fellowship.

China

The programme of SMR development relevant to nuclear seawater desalination is being implemented. A new project of 2 units of NHR-200 (200 MWth) for district heating in Shenyang city proposed by the Shenyang Municipal Government has been approved by the State Development Planning Commission. The site assessment and technical and economic feasibility study are being carried out.

The Yantai Municipal Government and the Tsinghua University have initiated a joint project of Yantai Nuclear Seawater Desalination Plant using an NHR-200 coupled with the vertical tube (VT)-MED process. The agreement was signed to carry out a joint pre-feasibility study by the Yantai Municipal and the Tsinghua University. The production capacity of the plant in the project is 160 000 m^3/d.

A test facility of the VT-MED process with 5 effects is installed in the Institute of Nuclear Energy Technology of Tsinghua University. This facility is designed to test and validate the hydraulic and thermal behaviour and chemical treatment for the VT-MED process, which could be applied to the Yantai Nuclear Seawater Desalination Project.

Egypt

The current activities of Nuclear Power Plants Authority (NPPA) include the following:

- Carry out a number of integrated studies to provide the decision makers with detailed information regarding the viability of nuclear energy for seawater desalination and electricity generation and the available options;
- Establish the necessary infrastructures at the El-Dabaa site; and
- To develop the human resources.

With this respect, NPPA cooperates with the Agency in the following Technical Cooperation (TC) or CRP projects:

- Comparative assessment of strategies and options for electricity generation in Egypt up to 2020. The study objective is to determine the optimal electricity generation mix up to 2020, including a nuclear option.
- A feasibility study of nuclear energy to produce potable water and generate electricity at El-Dabaa. The study is almost completed.

- An experimental facility is under construction to investigate the effect of feedwater pre-heating on the performance of RO membranes.
- Develop a simulator of a nuclear desalination plant.

NPPA is working to complete these TC projects and other activities in cooperation with and under the technical support of the IAEA, and to be ready for the starting of the Egyptian nuclear programme.

France

The EURODESAL project regroups a consortium of EU and Canadian Industrial and R&D organizations. It was officially launched in February 2001. This project is motivated by the expected acute shortage of water in many south European countries including Greece, Italy, Portugal, Spain and the islands of Cyprus and Malta. Seawater desalination is proposed as an attractive application of innovative nuclear reactors, currently under development in the EU and the USA (e.g. the GT-MHR and the AP-600).

Major objectives of the EURODESAL Project are:

- Coherent demonstration of the technical feasibility of desalination using selected concepts (GT-MHR, AP-600 and the PWR-900 MWe, as a reference base case) and desalination processes (MED, RO, RO with preheating).
- Objective assessment of the competitiveness of nuclear desalination as compared to desalination by fossil and renewable energy based systems.
- Detailed safety analysis of the integrated systems in incidental and accidental situations.

The project comprises of 4 technical work packages (WPs):

- WP-1: Coupling schemes and system optimisation.
- WP-2: Identification of specific safety problems of integrated nuclear desalination systems and their analyses.
- WP-3: Selection and assessment of best available fossil and renewable energy based systems.
- WP-4: Economic and sustainability assessment of selected nuclear, fossil and renewable energy based systems.

Although the project started only 6 months ago (February, 2001), considerable progress has been made, especially in work packages 1 and 4. These have led to two international patents.

IAEA's impact on the project was the use of IAEA Tecdocs in the initial stages of project-proposal. Furthermore, continued improvements of the project work plan were made possible through discussions in INDAG and other IAEA fora.

Detailed specifications of a pilot plant project, EURODESAL DEMO, will be proposed to the EU in the context of its 6th Framework Programme, beginning next year.

India

India is setting up a 6300 m^3/d combined MSF-RO Nuclear Desalination Demonstration Plant (NDDP) connected to the two 170 MWe PHWR units at Kalpakkam. Civil and electrical works have been almost completed. The tenders for all the major equipment of this plant have been released and are under various stages of fabrication and procurement. Different alternatives for seawater intake system were looked into. Bathymetric analysis for independent seawater intake was carried out. It was finalized to take seawater from the outfall of the process water heat exchanger of the power station, which has less biofouling potential. Steam system was also finalized and routing through the power station was decided. Tenders for the seawater intake and outfall system and steam system have been released. Installation work at NDDP site is progressing well.

Useful design data is expected from this plant on the coupling of a PHWR with a hybrid desalination plant. The RO part of the NDDP is expected to be commissioned in March 2002. The MSF part is expected to be commissioned in December 2002. India will share operation and maintenance experience of the NDDP with Member States when the plant is commissioned.

India has an active programme to study the possible use of waste heat from a heavy water research reactor and PHWR by coupling low temperature evaporation (LTE) desalination systems for seawater desalination. A small plant earlier established in the Desalination Division, BARC, is shifted to the CIRUS research reactor for coupling. The plant is expected to be commissioned in December 2001. The data from this pilot plant will be useful for design of a larger desalination plant at a PHWR for the production of process water.

In the CRP on "Optimization of coupling of nuclear reactor and desalination systems" India is focusing on working together with other participants on common aspects related to the performance evaluation of desalination systems and different types of SMRs for coupling.

Japan

A sub-committee has been established in the Science Council of Japan to discuss the food shortage issue in the world. Recognizing serious water shortage for irrigation, the necessity of seawater desalination was confirmed and current desalination technologies are being reviewed to tackle this problem. From the viewpoint of required power, stability of energy supply and environmental aspects, nuclear energy has been selected as a feasible option, compared with other renewable energy sources such as solar or wind energy. The report is now being finalized.

Two small nuclear reactor concepts, a natural circulation BWR by Toshiba and a re-usable small PWR by Mitsubishi/CRIEPI are being evaluated for the application to nuclear desalination. A new coupling concept is proposed using a steam driven pump for the RO process.

Advanced RO systems are proposed. They have a 60% recovery ratio by a single stage (Toyobo, 6.5 MPa → 8.4 MPa) or a two-stage process (Toray, 6.0 and 9.0 MPa and Nitto Denko). These systems have an excellent advantage to reduce the energy consumption at the normal seawater temperature compared with conventional systems.

A new RO plant with the capacity of 40 000 m^3/d is now under construction to supply drinking water at Fukuoka-shi of Kyushu island. The plant plans to apply an advanced RO technology process (a single stage, Toyobo), including an advanced treatment technology and a high recovery ratio of around 60%. It will provide useful design and operational information.

Korea Rep. of

Since 1991, Korea Atomic Energy Research Institute (KAERI) has developed the conceptual and the basic design of SMART. In order to make a decision on the SMART development programme after the completion of the basic design in March 2002, a feasibility study on SMART construction was carried out. In this feasibility study, the technical soundness and the economical competitiveness of SMART were envisaged. Based on the technical and economical evaluation of SMART, it was recommended that the basic design of SMART should be completed in March 2002 by producing all design documents, and the design and construction of SMART pilot plant should be launched in the following year. Industries will play a major role in performing design, design verification tests, component manufacturing, licensing, and the construction of the SMART pilot plant.

Inputs from IAEA programmes are: use of DEEP code for economic evaluation of the nuclear desalination plant with SMART, participation in the CRP on “Optimization of the coupling nuclear reactors and desalination systems” and fora for technical information exchange. The development of an integrated SMART and desalination system is one of major elements of Korean contribution to the IAEA Interregional TC project (INT/4/134).

Libya

Working groups formed at Tajoura Nuclear Research Centre (TNRC) are assessing a potential nuclear desalination integrated plant in Libya and evaluating its economics compared with conventional ones. The group carrying out the thermal analysis studies on desalination system for feasible coulping scheme with reactor system has recently joined the CRP on “Optimization of the coupling nuclear reactors and desalination systems”. Another group is willing to participate in the new CRP on “Economic research on, an assessment of, selected nuclear desalination projects and case studies”.

TecDocs, Technical Report Series and other publications of the Agency are being used as guidelines and have facilitated and assisted in performing the related works in the field of nuclear desalination. DEEP has also been used for economic evaluation and will be used to assess economic competitiveness of nuclear desalination in Libya.

Pakistan

Pakistan Atomic Energy Commission (PAEC) has initiated its own modest programme to gain experience and more confidence in design, installation and operation of nuclear desalination facilities. A small RO desalination plant of 2x227 m^3/d has been installed at the 137 MWe Karachi Nuclear Power Plant (KANUPP) and is in satisfactory operation since February 2000.

PAEC is continuing its efforts for setting up a nuclear desalination demonstration plant, up to 4500 m^3/d, to be connected to KANUPP. In parallel with this activity, PAEC is planning to carry out a feasibility/engineering study for a dual purpose NPP (300-600 MWe) to meet the growing needs of freshwater and power in the Karachi metropolitan area.

Pakistan has extended requests of the provision of technical assistance under the IAEA interregional TC project (INT/4/134) and aims at availing this opportunity to benefit in terms of training and transfer of technology. Pakistan as a technology seeker would like to participate in various programmes in Member States that are open for international co-operation, and participate in CRPs. Use of technical documents, design information and economic evaluation computer code (DEEP) are of great help in carrying out nuclear desalination related activities.

Russian Federation

The project "Utilization of Small Sized Nuclear Reactors as an Energy Source for Nuclear Desalination Complexes: Optimization of Coupling Design, Performance and Economic Characteristics" was initiated in 1998. The purpose of the project is to study the technical and economic effectiveness of the use of Russian small nuclear reactors and desalination units as constituents of nuclear desalination complexes. As power sources, KLT-40C, NIKA, SWBR-75 and RUTA small power reactors are considered.

Various coupling schemes of nuclear reactors and desalination systems have been developed. Design, technical and cost characteristics of nuclear desalination plants have been assessed. Technical decisions are optimized with due regard to the results of technical and economic estimates made using DEEP 2.0.

These activities form the basis for participating in the Agency's CRP on "Optimization of Coupling of Nuclear Reactors and Desalination Plants" and the new proposed CRP on "Economic Research on, and Assessment of, Selected Nuclear Desalination Projects and Case Studies" for useful information exchange with other participants.

An important element of the future work is to be the joint Russia-Canada project of a floating nuclear desalination complex on the basis of the Floating Power Unit with KLT-40C reactor plants and an optimized Canadian floating desalination plant with reverse osmosis desalination modules. Now the Floating Power Unit project development is coming to the end, and construction of a pilot plant at the shipyard in Severodvinsk, Arkhangelsk Region, is planned for 2005-2006.

Saudi Arabia

Twenty-five desalination plants are operating in Saudi Arabia producing 1.9 million m^3/d of desalted water and 4 GWe of electricity. Four additional desalination plants with a total production capacity of 900 000 m^3/d are under construction. For the time being, nuclear desalination plants are not included in national programs for water desalination although nuclear desalination technology remains attractive and promising technology. For Saudi Arabia being number one oil producing export country worldwide may delay the use or implementation of nuclear option in desalination at least in the near future.

The Kingdom of Saudi Arabia has a long experience in the desalination field especially by MSF. This technology has reached a high degree of reliability and safety. For the time being Saudi Arabia depends mostly in fresh water production on conventional desalination plants. However, oil, used for conventional power plants, is not a renewable source of energy. Nuclear desalination is attractive and can be cost effective comparing to other energy sources.

Tunisia

Six engineers were trained through the Agency tools (workshops and training) on DEEP utilization, user requirements and desalination technologies till 2000. Under the Agency's Interregional TC project (INT/4/134) Tunisia received two expert missions from the Agency to define the terms of reference of a pre-feasibility study on a nuclear desalination plant with specific site conditions. Tunisia authorities expressed a very big interest for the project and recommended a site (located in the south the of the country) to locate the potential nuclear desalination unit.

A project team was organized to manage the study by representatives from the nuclear authority (CNSTN), the Electricity Authority (STEG), the Water Authority (SONEDE) and the Ministry of Water Resources. Preparation of collaboration with CEA, France is in progress, for a site-specific study on nuclear desalination.

United States of America

Although the US has large indigenous resources of potable water, there are areas of the country where shortages exist (e.g., California and Florida). Indeed, the US is the second largest user of desalination technology in the world behind Saudi Arabia. All desalination applications in the U.S. currently utilize conventional technologies; no use of nuclear desalination is currently under active consideration. Suppliers of nuclear desalination technologies are available upon request.

The U.S. government currently does not directly support research related to nuclear desalination. Given this fact, coupled with renewed interest in nuclear power as a coherent component of the national energy policy, the time is appropriate to consider nuclear desalination technology as a mechanism for meeting multiple needs (i.e., electricity production and potable water) in areas where both needs exist simultaneously. In the U.S. and the worldwide community in general, there is new interest in developing advanced and innovative reactor designs for electricity generation as well as nuclear desalination and district heating, while achieving improved economics, proliferation resistance, passive safety, and waste minimization. The U.S. Department of Energy's Generation IV program is currently evaluating various reactor and fuel cycle technologies, with a view toward stimulating international cooperation on a number of reactor concepts for deployment by the year 2030. The Generation IV effort may thus also provide new impetus to nuclear desalination-related research in the U.S.

U.S. supports the IAEA nuclear desalination activities and funded the program for obtaining the services of a US expert on desalination from March 2001.

C. Progress Review of Nuclear Desalination Activities

INDAG reviewed the progress of the Agency's nuclear desalination activities implemented since the last INDAG meeting in April 2000. Following activities were specifically reported to INDAG:

- SMR Seminar held in May 2001;
- International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO);
- Planned Symposium on "Advances in Nuclear Desalination" in 2002;
- Economic Assessment Studies including the new CRP on "Economic Research on, and Assessment of, Selected Nuclear Desalination Projects and Case Studies";
- DEEP users Group;
- Relevant Safety Studies;
- TECDOC on Non-electrical Applications Market Potential;
- Extended PRIS for Heat Applications;
- Nuclear Power Programme Planning

D. Review of Planned Activities for 2002/2003

INDAG reviewed planned activities for 2002/2003. Following are recommendations for selected activities.

- Develop and maintain DEEP (2001/Task-4, 2002/Activity 1): Programme to be defined.
- Provide direct assistance to Member States for special cases of DEEP applications upon request (2001/Task-5, 2002/Activity 2): Conduct as planned.
- Co-ordinate a CRP (1998-2003) on Optimization of the coupling of nuclear

reactors and desalination systems (2001/Task-2, 2002/Activity 4): Continue as planned. Interim status should be reported to INDAG2002.

- Prepare a Technical Document and co-ordinate a CRP (2001-2006) on "Economic research and assessment of selected nuclear desalination projects and case studies" (2001/Task-3, 2002/Activity 5): Conduct as proposed.
- Co-operation in non-Agency meetings and present papers at international conferences (2001/Task-8, 2002/Activity 6): Conduct as needed.
- Development and maintenance of Internet Homepages for nuclear desalination and INDAG (in cooperation with NESI) (2001/Task-9, 2002/Activity 7): Complete by 2002.
- Collect and process data on non-electrical applications at NPPs (Extended PRIS) and preparation of a technical document on extended PRIS tables (in cooperation with NPES) (2001/Task-7, continued on 2003): Conduct as planned. Interim status should be reported to INDAG2002.
- Prepare a technical document on socio-economic impacts of introducing nuclear desalination plants (in co-operation with NPES) (2001/Task-6, 2002/Activity 8): A new TECDOC on "Nuclear power programme planning: an integral approach" was briefed to the Group by NPES. Accepted its planned approach of compiling another document "Effect of changing environment on nuclear power programme planning", in which socio-economic impacts will be addressed.
- Prepare a technical document on methodology for nuclear desalination project implementation (2002/Activity 9): This activity has already been mostly covered by the publication of the Guidebook. Further action may be taken if INDAG recommends.
- Interregional TC Project (INT/4/134) on "Integrated Nuclear Power and Desalination System Design": Make efforts to facilitate potential collaborative frameworks. Upon identifying technical partnerships for joint development, it may be the time to consider shifting the interregional project to national (bilateral) projects.
- Provide training on nuclear desalination technologies and desalination economic evaluation program DEEP (Extrabudgetary) (2002/Activity 12): Implementation plan to be specified. Basically it should be continuing.
- Co-operate with other international organizations, for (i) joint activities and (ii) co-ordination of programmes (2002/Activity 13): Specify product(s) foreseen, e.g., "Desalination and Guidelines for Drinking Water Quality" under the initiative of WHO to be proposed in 2003.
- Preparation of an international symposium (2002) on Status and prospects of nuclear desalination deployment (2001/Task-10, 2002/Activity 14): Should be funded by the Regular Budget. Conduct as proposed. INDAG members should be informed of the development.
- Review nuclear desalination programmes and provide recommendations to the Agency (INDAG) (2001/Task-1, 2002/Activity 15): Should be funded by the Regular Budget. Compilation of a status report as proposed with country's contribution as an annex. Issue a "NEWSLETTER" on periodic basis.

E. Potential tasks for 2004/2005

INDAG identified the following potential new activities for 2004/2005:

1. Evaluation of utilization potential of nuclear waste heat for desalination.
2. Development of computer programs for optimum coupling.
3. Development of DEEP-3 incorporating new modeling of coupling configurations and its validation.
4. Provide training on operating and maintenance of a nuclear desalination plant using the Indian nuclear desalination plant at Kalpakkam and other available experimental facilities.
5. Address regulatory aspects specific to nuclear desalination systems.

In addition, some activities are likely to be continued from 2002/2003 including:

1. CRP on "Economics, Research on, and Assessment of, Selected Nuclear Desalination Projects and Case Studies";
2. INDAG and compilation of a status report and Newsletters;
3. Maintenance of the extended PRIS data tables for heat application systems;
4. Updating of non-electric application of nuclear energy.

F. Recommendations

INDAG observed that the Agency has already made considerable efforts for the promotion of the cause for nuclear desalination in the Member States through a series of actions under INDAG's recommendations and suggestions:

- Preparation of the guide-book on Nuclear desalination;
- Development and distribution of the DEEP code for economic evaluation;
- Preparation of the User Requirements document;
- Launching of the CRP on the optimization of the coupling schemes.

INDAG noted that a major impact of Agency activities has been to serve as an international forum for technical exchanges between interested supplier and user Member States and that these exchanges have gradually led to bi-lateral or multi-lateral collaborations between several Member States, for example:

- Launching of the EURODESAL project in the European Union;
- The collaboration between Canada and Russia on the barge mounted nuclear desalination concept;
- The initiation of Franco-Tunisian collaboration on feasibility studies of nuclear desalination for a site in Tunisia.

1. In order to further enhance the chances for an accelerated deployment of nuclear Desalination, INDAG members proposed that the Agency should:

- Promote experimental studies designed to confirm or validate theoretical results
- Favour site-specific studies
- Promote research, development and demonstration on the utilisation of waste heat from nuclear reactors, coupled to appropriate desalination systems).

2. INDAG proposed that the Agency promote manpower development in all aspects of nuclear desalination. In this context, the INDIAN offer of accepting trainees on its Kalpakkam nuclear desalination plant, beginning 2003, should be fully exploited

3. INDAG members noted that through its meetings, they provided and agreed upon, common methodology, computer tools and activities that have encouraged other MS to engage in nuclear desalination activities in a more coherent manner. Nevertheless, most developing countries feel the necessity of having additional tools for their own project evaluations. INDAG recommended that the Agency:

   - Provide new software tools and upgrade existing ones, permitting the accurate technical and economical assessments of relevant projects;
   - Launch the CRP on detailed site-specific economic studies;
   - Undertake an activity on benchmarking and the preparation of appropriate databases.

4. INDAG members noted that the most expeditious means of introducing nuclear desalination would be to install desalination facilities at existing nuclear plants, where possible and where a need for water exists. INDAG recommends that the Agency:

   - Explore the possibility of stimulating such a project, with MS having existing nuclear installations in locations where water is needed.
   - Explore the possibility of cooperating in such a project as a means for obtaining and disseminating information to interested MS regarding the practical, detailed aspects of project implementation.

5. INDAG reiterated its previous recommendation on addressing the environmental aspects of nuclear desalination systems:

   - Individual environmental issues arising from nuclear plants or desalination units have been more or less investigated in the past. But potential issues from an integrated complex have not been thoroughly examined. Due consideration in the Agency's future activities may be necessary.

6. INDAG noted the need to address regulatory aspects specific to nuclear desalination systems. The Agency is therefore requested to present relevant information on this subject in the next INDAG meeting.

7. INDAG noted the importance of enhancing its visibility and proposed to issue a "NEWSLETTER" for distribution in order to circulate information on the INDAG

stimulated activities and achievements. This newsletter will be prepared and edited by INDAG members but INDAG requested the Agency to provide layout and other publishing and distributing facilities. INDAG recommended publishing the first issue for the General Conference in September 2001.

G. Schedule of Next Meeting

INDAG recommended to plan the next meeting from 20 to 22 May 2002 in Vienna. Following items have been proposed to be included in the agenda.

- INPRO;
- Regulatory aspects specific to nuclear desalination system;
- Technical talks on the Potential Application of Waste heat for desalination.