

**THE INTERNATIONAL ASSOCIATION
FOR THE PROPERTIES OF
WATER AND STEAM**

MEMBERS

Argentina and Brazil
Britain and Ireland
Canada
Czech Republic
Denmark
France
Germany
Italy
Japan
Russia
United States of America

ASSOCIATE MEMBERS

Greece

EXECUTIVE SECRETARY

Dr. Barry Dooley
EPRI
3412 Hillview Ave,
Palo Alto, California,
94304, USA.
Phone: 650-855-2458
Fax: 650-855-1026
e-mail: bdooley@epri.com

**Minutes of the Meetings
of the
Executive Committee
of the
International Association for the Properties of
Water and Steam**

**Vejle, Denmark
August 24 – 30, 2003**

Prepared by: Barry Dooley



CONTENTS

	<u>Page</u>
IAPWS Minutes	1

ATTACHMENTS

1	Agenda for EC	17
2	Committee Report on the Structure of IAPWS	18
3	IAPWS Symposium Program	21
4	IAPWS Schedule for the week	22
5	TPWS Minutes	23
6	IRS Minutes and Attachments	27
7	PCAS Minutes	32
8	PCC Minutes and Attachment	36
9	IAPWS Releases, Guidelines, Advisory Notes and ICRNs	45
10	IAPWS Collaborative Grant Proposal	49
11	Press Release	54
12	Britain and Ireland Report of Current Research and Attachment	55
13	Czech Report of Current Research	57
14	Denmark Report of Current Research	62
15	Germany Report of Current Research	63
16	Hellenic Report of Current Research	65
17	Japan Report of Current Research	68
18	Russia Report of Current Research	73
19	USA Report of Current Research	76
20	List of Participants at the 2002 EC and WG Meetings in Buenos Aires	79

Minutes of the Meetings
of the
Executive Committee
of the
International Association for the Properties of Water and Steam
held in
Vejle, Denmark
August 24 – 30, 2003

Plenary Session. Monday, 25 August 2003

The new President of IAPWS, Professor Koichi Watanabe, welcomed the EC and other IAPWS members to Vejle for the EC and WG Meetings of IAPWS. He then introduced the Chairman of the Danish National Committee, Karol Daucik, who welcomed IAPWS to Denmark. Mr. Daucik indicated that all the EC and WG meetings would take place in Hotel Australia.

The President then officially opened the 2003 EC Meetings by introducing the National Delegates. Each of the member countries of IAPWS was in attendance with the exception of Argentina/Brazil, Canada, and Italy. He particularly mentioned and welcomed the new IAPWS Vice President, Professor Marsik from the Czech Republic. There were 42 people in attendance.

1. Adoption of Agenda

A provisional agenda had been posted on the IAPWS Website for all IAPWS members by the Executive Secretary in February 2003. The President and Executive Secretary indicated three additions/changes to this agenda, and then requested any other additions and changes to the agenda. There were no further suggestions for additional items. The agenda was then approved by the Heads of all National Delegations and forms Attachment 1 of these minutes.

2. IAPWS Business and Appointment of Committees

2.1 Press Release.

The President asked Bellows, Daucik and Bignold to serve on this Committee. The Press Release is discussed in Minute 17.4 and Attachment 11.

2.2 Evaluation Committee on International Collaboration.

The President indicated that no proposals had been received by the Executive Secretary prior to the meeting. The President reminded the EC that the Committee to review any proposals received by the end of the day would consist of the WG Chairmen, with the President and Executive Secretary as ex. officio members. He requested that Zeijseink be the Chairman of the Committee if any proposals were received. The discussion of this Committee is reported in Minute 15.1 and Attachment 10.

2.3 Helmholtz Award Committee

The President indicated that the 2003 Award would be presented at the IAPWS Symposium. He then reminded the EC that the Helmholtz Committee for the 2004 award would consist of the Delegates from Russia, USA, Argentina/Brazil, BIAPWS, and Canada. The President asked the Russian Delegate (Petrova) to organize the committee and to report back to the EC on Friday with the names of the members of this committee (Minute 16.2). The procedures to be followed are delineated in the 1999 EC Canada Minutes.

2.4 Gibbs Award

The President indicated that only one Nomination had been received by the Executive Secretary prior to the meeting. Any other nominations were due by the end of the day. The President then reminded the EC that the Evaluation Committee had been determined at the 2002 EC Meeting, but a number of these people were missing from this year's EC Meeting. He then modified the committee to consist of Harvey (TPWS), Miyagawa (IRS), Palmer (PCAS), and Daucik (PCC), with Cooper as Chairman. The President asked the Committee to meet during the week and report back to the EC on Friday. See Minute 16.3.

2.5 IAPWS Atlas

The President requested an update from one of the Editors of the Atlas (Palmer). Palmer indicated that the Atlas was almost finished. The deadline for submission to the Publisher is the end of September. The total number of chapters will be 18, however 2 are not yet ready. An estimate of the cost to prepare the chapters for publication is currently about \$5,000 compared to the original estimate of about \$40,000.

2.6 IAPWS on the Internet (IAPWS Website www.IAPWS.org)

The President indicated that this informational item would be delayed until Friday as Harvey was delayed in arriving in Denmark. (See Minute 17.2).

2.7 Publishing Addresses and E-mail Addresses on IAPWS Website

The President indicated that this item had been raised during the last year by BIAWPS, and asked the BIAWPS Delegate (Bignold) to make a few comments. Bignold indicated that BIAWPS was very satisfied with the action taken by the past President and the Executive Secretary in removing all e-mail addresses associated with Participation Lists for annual meetings on the IAPWS Website.

2.8 IAPWS Structure

The President asked the Chairperson (Levelt Sengers) of the IAPWS Structure Committee to review the status of the Survey that has been conducted over the last year. The Committee consisted of IAPWS past Presidents (Levelt Sengers as Chair, Watanabe, Fernandez-Prini and Cooper). A survey was sent to all NCs, responses were received and collated. Levelt Sengers provided a brief overview of the main conclusions and recommendations from the report. The President indicated that there wasn't sufficient time during the plenary session to discuss in detail, and suggested that a new committee be formed as a number of the original members were not present this week. Members of the new committee were Levelt Sengers (Chair), Marsik, Cooper and a PCC Representative (established later as Svoboda). This item is discussed further in Minutes 5.1 and 17.3.

2.9 IAPWS Products

The President asked Cooper as the only member of Editorial Committee present to address the aspect of the definition of Products in the IAPWS Statutes and By-Laws. Cooper suggested to delay this report until Friday's EC Meeting as Harvey was delayed in arriving in Denmark. This item is discussed in Minute 12.

2.10 Other Business Considered to Require Special/Extensive Discussions

The Executive Secretary informed the EC that he had received a letter from Tremaine concerning the situation of the Canadian NC in re-aligning industrial sponsorship. Tremaine wished to assure the EC that the Canadian NC was very active in trying to rebuild the NC. At this stage the French NC Delegate, Mayer, also informed the EC of a similar situation in France with regards to funding and support. He requested assistance from

members of the PCC WG to provide names in France that should be interested in IAPWS activities, and could be contacted to assist in developing a one-day symposium on Cycle Chemistry.

3. EC Mandate to Working Groups and Membership

3.1 Releases, Guidelines and Certified Research Needs.

The President asked the Executive Secretary to review the status of various Releases, Guidelines and Advisory Notes that would need action by the WGs and the EC during the week. Discussion and Approval of these are included later in the WG Minutes. The Executive Secretary also indicated that ICRNs 1, 5, 10, and 13 would need action by the respective WGs during the week

3.2 14th ICPWS

The President, as Chairman of the ICPWS Conference Organizing Committee, provided an overview of the organization of the Conference todate, which included outlines of the proposed Plenary lectures, invited lectures, finances, and logistics. He then requested the WGs to review the proposed program symposia and to help in fine-tuning. Abstracts will be required by December 15, 2003. A website has already been created (14icpws.iapws.jp/). The ICPWS is discussed further in Minutes 5.2 and 17.1.

3.3 WG Directions.

The President suggested that the presentation on IAPWS Structure in Minute 2.8 leads to a clear redirection of the WGs, particularly for PCC and PCAS. He thus requested the WGs to thoroughly review their operating regimes, their leadership and succession planning. He also requested that each WG takes a very close look at their membership list in terms of dormant members.

3.4 Reports to EC

The President again used the IAPWS Structure discussion (Minute 2.8) to remind the WG Chairmen that their reports to the EC on Friday should only include those items that needed action or approval by the EC.

4. Preview by WG Chairmen of Weeks Activities

President Watanabe requested each WG chairman to provide an overview of their respective planned meetings and activities throughout the week. The details of these WG meetings are covered in detail in Minutes 8, 9, 10, and 11. The

President concluded the morning by inviting the WGs to convene a joint session of WGs on Thursday between 1:30-3pm.

5. Special Joint Meeting of all Working Groups

President Watanabe called all members of the WGs together at about 1:40pm on Thursday, 28 August 2003. This meeting dealt with the following two items:

5.1 Structure of IAPWS

The President referred to the item of the same name of last Monday (Minute 2.8) and asked the Chairperson (Levelt Sengers) of the IAPWS Structure Committee to provide an update. Levelt Sengers reminded the assembly of the 37-page report and the set of recommendations contained within, and her new Committee (Cooper, Marsik, and Svoboda). She indicated that she would only cover the recommendations on Task Groups and Committees. She provided information, which is contained in Attachment 2. She then outlined the 4 Committees and 5 Task Groups, which had since Monday been populated by the IAPWS WGs with a chairperson and a number of suggested working members.

The President next asked each WG Chairman for some overall Responses on the Complete Restructuring Document. The TPWS Chairman responded: a) there was no need to change the TPWS or IRS WG names, b) there is now a shortened amount of time for WG activities at annual meetings and that there should be more time allowed in 2005, and c) TPWS /IRS had no objection to a four year cycle for ICPWS, but that there was no overwhelming desire to change from the current five year cycle. The PCAS Chairman responded: a) there was no need to change the WG name, b) there must be more PCAS-PCC interaction, and c) the WG recommends to change to a four year cycle for ICPWS, and that the papers should be published in Journals instead of an ICPWS Proceedings Book. The PCC Chairman responded: a) there is somewhat of a dilemma in that the WG needs to have technical content in meetings to attract people to the WG and the annual meetings, but that the PCC WG is regarded within IAPWS as the driver for ideas, b) there needs to be a compromise with a focus on certain items and also the development of reference documents for the other groups, and c) the output of PCC will not drastically change and for example at next years meeting there will be a focus on ultra-supercritical plants.

The President then requested that Chairperson Levelt Sengers make any necessary changes based on this feedback, and then report back to the EC again on Friday (Minute 17.3).

5.2 14th ICPWS

The President next reviewed the proposed symposia with each of the WGs to try to finalize the organizer of each and the invited speaker.

Activities During the Week

The first day activities of the WGs and Executive Committee were followed by WG meetings from Monday–Thursday. The IAPWS Symposium “Aqueous Thermodynamics in Power Generation” was held on Wednesday, 27 August 2003. The Symposium program is given in Attachment 3.

The full IAPWS program for the week is shown in Attachment 4.

Executive Committee Meeting. Friday, 29 August 2003

President Watanabe opened the continuation of the EC Meeting at 9:05am. All members of IAPWS were present except Argentina/Brazil, Canada, and Italy. He first asked if there were any additional items that should be added to the Agenda. None were suggested.

6. Acceptance of Minutes of Previous Meeting

President Watanabe asked for comments and changes to the minutes of the EC meeting held in Buenos Aires, in July 2002. None were provided, thus the 2002 Minutes were accepted.

7. President’s Report

President Watanabe provided the following comments:

- On behalf of IAPWS he wanted to thank the Danish National Committee for organizing an excellent week and the Symposium.
- The important task of looking at the structure of IAPWS had blossomed out into a comprehensive report, which had been outlined on Monday (Minute 2.8).
- In conjunction with the restructuring task, he was very pleased to report that the new direction for PCC seemed improved and that this will lead to a nice collaboration with PCAS at future meetings. He looked forward to this being very productive.
- The 14th ICPWS would be held in Kyoto, Japan in 2004. The two program committee meetings had now produced a set of clear objectives and ideas for the final planning process. The second circular will be issued in mid-September. The deadline for Abstracts will be 15 December 2003.
- The President wants to enhance the presence of IAPWS outside the organization and proposed: a) a liaison with IEC or other organizations as

- cosponsors, and b) agreement with other organizations for international collaboration (such as IUPAC).
- The President also wanted to develop a guideline/criteria on how to involve new people in IAWPS

Some discussion ensued with respect to the last two items, and the President developed the following action for the NCs:

Action for each National Committee: Each delegate should discuss these items with their National Committee and be prepared to make suggestions at next year's meeting.

8. Report and Recommendations of Thermophysical Properties of Water and Steam Working Group (TPWS)

Chairman Friend highlighted only those activities from the TPWS working sessions during the week, which needed action by the EC. Full minutes can be found in Attachment 5.

- 8.1 Most meetings were held jointly with WG IRS, but many items will be reported separately
- 8.2 Advisory Note #2 on "The Roles of Various IAPWS Documents Concerning the Thermodynamic Properties of Ordinary Water Substance". The document, as revised, was approved by the TPWS and IRS WGs. The WGs recommend that it is now ready for postal ballot. The WGs also recommend that a brief discussion of obsolete IAPWS documents should be included on the IAWPS web site.

The EC approved these two recommendations unanimously.

Action: Advisory Note #2 will be sent to the Executive secretary for Postal Ballot.

- 8.3 The Guideline on the "Henry's Constant and Vapor-Liquid Distribution Constants for Gases in H₂O and D₂O at High Temperatures". The document was approved by the WGs after a significant change. The WGs now recommend a postal ballot.

Action: The Guideline will be sent to the Executive secretary for Postal Ballot.

- 8.4 Transport properties. The international collaborative project was completed and the final report distributed. Work by the WG on the "Revised Release on the IAPS Formulation 1985 for the Viscosity of Ordinary Water Substance" noted some minor errors, which were

corrected. The WG endorsed the Release and now recommends that the EC approves the document

The EC approved the Release unanimously

- 8.5 Status of simulation task group. The Chair of the joint TG was unable to attend the meeting. Professor Yasuoka was selected as an interim chairman until ICPWS in 2004.
- 8.6 Membership. The WG recommends that Yasuoka (Japan) and Mares (Czech Republic) and Span (Germany) should be added to WG membership. Several inactive members will be contacted.

The EC approved these WG membership changes unanimously.

9. Report and Recommendations of Industrial Requirements and Solutions Working Group (IRS)

Chairman Miyagawa provided the IRS Report to the EC. Full minutes can be found in Attachment 6. The Chairman indicated that there were three recommendations to put to the EC.

- 9.1 “Supplementary Release on Backward Equations for the Functions $T(p,h)$, $v(p,h)$, and $T(p,s)$, and $v(p,s)$ for the Region 3 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam”. The WGs TPWS and IRS recommend to the EC that the draft distributed to National Committees for preview be accepted by IAPWS as a supplementary release. The WGs TPWS and IRS further recommend that the proposed code be treated as part of the IAPWS-IF97 authorized code.

The EC approved the Release and the code proposal unanimously.

- 9.2 Guideline on the “Tabular Taylor Series Expansion (TTSE) Method for Calculation of Thermodynamic Properties of Water and Steam Applied to IAPWS-95 as an Example”. This guideline had been distributed to National Committees for Postal Ballot. No objections had been received by the Executive Secretary. The WG made a few changes to the front page (changing the authorized date, place, and related terms from those of 2002 to 2003 IAPWS annual meeting). The guideline referenced downloadable software is now available from the Japanese National Committee website.

The WGs IRS and TPWS now recommend to the EC that this guideline be approved.

The EC approved the Guideline unanimously.

- 9.3. Advisory Note No. 1 “Uncertainties in Enthalpy for IAPWS-95 and IAPWS-IF97”. The WGs TPWS and IRS recommend that the draft distributed to National Committees previously for preview be accepted by IAPWS as an IAPWS product. It is also recommended that the Release “IAPWS Skeleton Tables 1985 for the Thermodynamic Properties of Ordinary Water Substance” be withdrawn from the IAPWS Listing of Releases and Guidelines, as approved by the EC at the 2002 annual meeting. It is also recommended that the EC allow creation of a document list on the IAPWS website, which would record for historical purposes, all outdated IAPWS releases, guidelines, and ICRNs.

The EC approved these three recommendations unanimously

10. Report and Recommendations of Physical Chemistry of Aqueous Solutions Working Group (PCAS)

Chairman Mayer provided the PCAS Report to the EC. Full minutes can be found in Attachment 7. Chairman Mayer mentioned that there were numerous Joint Sessions and Workshops with other WGs during the week.

- 10.1 The Chairman indicated that the WG had discussed the leadership of the WG and indicated that for the period starting after the next ICPWS, the Chair Designate would be Lvov, with Corti as the Vice Chair designate.

The EC approved these leadership changes unanimously.

- 10.2 International Collaborative Projects. The Chairman reported that the PCAS WG would like to simplify and standardize the final report format. After some discussion and suggestions by the EC, the President requested that the PCAS Chairman together with Palmer draft out a suggested format and forward it to the Editorial Committee in readiness for the EC Meetings in 2004.

- 10.3. The Chairmen indicated that he wished to report on three proposed IAPWS Products:

10.3.1. Preparation of a document on pH Measurements at High Temperatures. This had been discussed at a joint PCAS/PCC Meeting and it had been agreed that members from both WGs would work to assemble the document.

10.3.2 Preparation of a monograph on experimental techniques for high temperature measurements and collection of direct experimental data ($T > 200^{\circ}\text{C}$). The Chairman outlined the proposed members

of the team that would assemble the document and an initial table of contents with eight chapters. Valyashko was proposed as the leader of the project as he has already performed lots of work in this area. After the President called a coffee break to allow National Committees to confer, he indicated that there appeared to be consensus that the project was worthwhile. The President then developed the following action.

Action: An editorial/advisory board consisting of Mayer, Assael and Valyashko should develop a Proposal of Procedure, which would include an outline of each chapter, the proposed author(s), the philosophy of the book and any necessary background. This Proposal should be forwarded to the Executive Secretary for a Postal Ballot.

- 10.3.3. Establishing recommended data on hydration properties for selected organic solutes. This proposal for the generation of an international data base under the auspices of IAPWS and IUPAC, has an objective of establishing recommended values for hydration properties of selected organic solutes on the basis of the best available experimental data. The Chairman suggested a number of WG Members who would work on the project, and indicated that the project would need funding from IAPWS (\$12,000) and IUPAC (\$12,000) for technical support. This led to much discussion about spending IAPWS funds. Finally the President developed a proposal to establish a small committee of Mayer and Fernandez-Prini to develop a comprehensive statement to include the definition, philosophy, selected data, systems and a budget. The President mentioned that this statement should include consideration of who will update the data base. The statement should be sent within six months (end of February 2004) to the Executive Secretary for a Postal Ballot.

The EC approved this proposal unanimously.

- 10.4. WG Membership. The Chairman indicated that there were no new proposals for membership, but that the WG had reviewed the current membership and recommended that Haymet, Brunner, Longhi and Servida be removed.

The EC approved these membership changes with one abstention.

11. Report and Recommendations of Plant Cycle Chemistry Working Group (PCC)

Chairman Zeijseink highlighted those activities that needed action/approval by the EC. A full written report of the PCC WG activities forms Attachment 8.

- 11.1. The Chairman indicated that the WG had decided not to produce an amended Priority List, but had spent some time on developing a new procedure for developing ICRNs on high priority items. The Chairman also indicated that the WG would like to propose that each National Committee provide an indication of the priority items in their country. The Chairman next indicated that he will via email make clear to PCC members what is required to produce a proposal, and frequently remind members to actively pursue the objective of making a proposal for International Collaboration. The President asked for any comments and then developed the following action:

Action: Each National Committee should discuss the priorities within their country and bring a listing to the next EC Meeting in Japan. Each National Committee should also provide feedback on the proposed procedure for developing ICRNs on high priority items. This is included as PCC Attachment A to the PCC Minutes in Attachment 8.

- 11.2. The Chairman indicated that the PCC had no new proposals for membership, but indicated that he would contact members who had been inactive for three years or more to determine if they still wished to be a member.

At this stage in the EC, the President thanked the PCC Chairman for the outstanding work he had done during the week in bringing together ideas so that IAPWS overall could move forward. He indicated that the principle objectives of the IAPWS Annual Meetings include: a) to prepare and disseminate IAPWS Documents, such as Releases and Guidelines being the international standards, Advisory Notes and ICRNs for the better understanding of various properties on behaviour pertinent to water, steam and aqueous systems, b) to update the property standards disseminated worldwide in the past, and c) to discuss several business items on how IAPWS can enhance the international collaboration not only within IAPWS, but also by co-opting with other relevant organizations such as IUPAC.

The President then indicated that it is certainly true that the annual IAPWS meetings are a wonderful opportunity for all IAPWS members to exchange views on updated knowledge for science and technology within the framework of IAPWS activities. However, one of the important issues is that IAPWS is not a gathering merely for the purpose of having a forum, but for all WGs to collaborate together to pursue the common goals of IAPWS just mentioned. In other words, it is essential that all WGs must challenge, along the same road map, to aim the scientific and technical achievements throughout the discussion at each WG's annual meetings.

12. Editorial Committee Report

Chairman Harvey reported on the Editorial Committee activities since the last EC Meetings in 2002.

- 12.1 The Editorial Committee has reviewed five IAPWS documents during the last year: the Guideline on TTSE, the Supplementary Release on Backwards Equations, the Guideline on Henry's Constant, Advisory Note #1, and the Revised Release on Viscosity
- 12.2 The Editorial Committee was asked in Buenos Aires to "review the names of products within the IAPWS Statutes and By-Laws". The Chairman indicated that essentially any new product can be issued by the EC within the existing Statutes and By-Laws even though not explicitly defined.
- 12.3 As an extension to Minute 12.2, the Chairman then wished to inform the EC that: a) there was a number of areas where the Statutes and By-Laws were inconsistent with the current way in which some IAPWS business was conducted, and b) there was some redundancy within the Statutes and the By-Laws. Some discussion on this matter ensued. The President finally developed the proposal that a Task force should be assigned by the EC (Harvey, Miyagawa, Assael and Cooper) to look primarily at the areas of documents and awards within the Statutes and By-Laws. Any changes should be made and a Revised Version of the Statutes and By-Laws should be sent to the Executive Secretary for Postal Ballot so that it can be approved by the General Assembly in Japan.

The EC approved this proposal unanimously.

13. Membership and Associates

13.1 Members Defaulting on Dues.

The Executive Secretary indicated that according to the latest Swiss bank account statement (31 July 2003), the following countries had not paid the 2003 IAPWS dues: Argentina/Brazil, France, Italy, and Russia. In 2002 France (partial), Germany, Italy and Russia had also not paid their dues. Since the July 2003 Bank statement, the Executive Secretary had received a note from the Russian NC indicating that the 2002 and 2003 Dues had been paid into the Swiss Bank. The Delegate from Argentina/Brazil was absent from the EC meeting. The Delegate from France had reported about the situation in France in the opening EC session (Minute 2.10). The situation with Italy had been reported at the 2002 EC meeting.

14. Executive Secretary's Report

14.1 Financial, Auditors and Dues

The Executive Secretary reported that IAPWS remained on a sound financial footing with currently over SFrs 137,000 in the Swiss bank account and over \$6,500 in the US account for a total of \$108,538 combined. The status as at 31 July 2003 in the bank accounts had been provided to each National Delegate present at the EC meeting.

The Executive Secretary next reported that the 2002 financial statements had been forwarded to the Auditors in January 2003. Both VDI in Germany and Mr. Miyagawa in Japan had reviewed and approved them. The financial statements for 2002 and the Auditors reports had also been provided to all the National Delegates present.

The Executive Secretary proposed that these organizations continue to act as auditors.

The EC approved this unanimously.

The Executive Secretary proposed to the EC that the dues structure for member countries remain unchanged for 2004.

The EC unanimously agreed to this proposal.

The Executive Secretary also provided a rough estimate of the income and known planned expenditures for 2003.

14.2 Time and Place of the 2003 and 2004 Meetings

The ICPWS will be held in Kyoto, Japan in August 2004. The Executive Secretary asked the delegate from Greece to provide a few details of initial ideas and plans for the 2005 meetings. The President thanked Assael and asked him to provide further details at the EC Meeting in Japan.

15. Guidelines, Releases, Certified Research Needs, International Collaborations

President Watanabe indicated that discussion on Guidelines, Releases and ICRNs had been dealt with during the WG presentations. A listing of all IAPWS Releases, Guidelines, Advisory Notes and ICRNs is provided as Attachment 9.

15.1 International Collaborative Projects.

The President asked the Chair of the Committee (Zeijseink) to report on the discussions during the week. The Chairman indicated that only one

proposal had been received. The details of this proposal are provided in Attachments 10. The Chairman summarized the proposal for the EC. The IAPWS Sponsors are Harvey (US) and Alexandrov (Russia). A young investigator from the Dagestan Scientific Center will travel to NIST in the USA to address PVT Properties for the Ammonia/Water system. The period of performance will be one year at a proposed budget cost of \$10,000 for travel expenses and costs.

After some discussion by the EC, the President asked the EC for approval

The EC approved the project unanimously.

16. IAPWS Awards

16.1 IAPWS Honorary Fellowships

The President reported that Karol Daucik (Denmark) had been elected Honorary IAPWS Fellow, following the established procedure and after unanimous approval through the postal ballot conducted by the Executive Secretary. The Fellowship Award had been presented to Daucik at the IAPWS Dinner on Thursday evening.

The President next discussed the Awards Committee, and requested that Cooper become the chair of the committee for the 2004 Award. He also suggested that Fernandez-Prini should become the second member of the committee.

16.2 IAPWS Helmholtz Award

The President asked the Russian Delegate for the names of the Helmholtz Award Committee for 2004. Petrova indicated that Alexandrov from Russia would be the Chairman, and that the following would be members: Argentina/Brazil (Japas), BIAPWS (Bignold), Canada (Svishchev), and USA (Harvey). Nominations are due to the Executive Secretary by January 31, 2004.

16.3 IAPWS Gibbs Award

The President requested the appointed Chairman of the Gibbs Award Committee to provide a report of the discussions during the week. Cooper indicated that three people had been nominated. The committee had reviewed proposals for three people in detail. The Chairman then recommended to the EC that Professor R. Wood of the University of Delaware should become the 2004 IAPWS Gibbs Awardee.

The EC approved this nomination unanimously.

17. New Business

17.1 14th ICPWS, Kyoto, Japan. August 29 – September 3, 2004

The Chairman of the Japanese Organizing Committee, Watanabe, provided details of the activities during the week. The Organizing and Program Committees had met twice. There is now a complete set of proposed Symposia together with an organizer and an invited speaker. The topics for the Plenary Lectures have been decided. The Second Conference Brochure will be available by September 15, 2003, and the closing date for abstracts will be 15 December 2003. The EC will meet on Sunday 29 August 2003.

17.2. IAPWS Website (<http://www.iapws.org>)

The President requested Harvey to provide an update of activities on the IAPWS Website.

Harvey first indicated that the website now contained: a) all IAPWS Releases, Guidelines and ICRNs, b) details for all annual meetings including this Denmark meeting, c) the IAPWS Minutes from EC meetings, and d) a new section on IAPWS News. He then indicated that there had not been any new Frequently Asked Questions developed. He thought that maybe there should be some better descriptions of the WGs, and suggested that the IAPWS Atlas should be mentioned in a promotional fashion.

17.3. IAPWS Restructuring

The President requested the Chair of the Committee (Levelt Sengers) to provide a final status report on any outstanding items, which were not covered in the Thursday Special Session (Minute 5). The Chair reminded the EC of the Committees and Task Groups that had been set up. Attachment 2 provides the final makeup. She then raised the issues of changes to the WGs and the cycle frequency of ICPWS. After some discussion, the President indicated that it appeared that the consensus was that changes to the WG structure were not required. He then developed a proposal for the EC to move the ICPWS to a four-year cycle.

The EC approved the proposal by majority with 4 abstentions.

The President next asked the EC to approve the formation of the Committees and Task Groups.

The EC approved these unanimously.

The President then thanked the Chair, her committee, the WG Chairmen, and National Committees for the tremendous work they had conducted to thoroughly review so many aspects of IAPWS operation. He then requested the EC to dissolve the IAPWS Restructuring Committee.

The EC approved this unanimously.

17.4 Press Release

The President requested Bellows to present the News Release to the EC. This is contained in Attachment 11.

The EC approved this unanimously.

17.5 Review of Progress of Research in Member Countries

Written reports on progress in member countries were not reported to the EC but were distributed to other members and the Executive Secretary during the IAPWS week. They are attached to these minutes as follows:

Britain and Ireland	Attachment 12
Czech Republic	Attachment 13
Denmark	Attachment 14
Germany	Attachment 15
Greece	Attachment 16
Japan	Attachment 17
Russia	Attachment 18
USA	Attachment 19

17.6 Participants

Attachment 20 provides a list of participants at the EC and WG Meetings in Vejle in August 2003.

17.7 List of Members

An up-dated list of members of the Executive Committee, Working Groups, and Honorary Fellows will be developed by the Executive Secretary following the Denmark Meetings. This will be forwarded electronically to the Head of each National Committee.

18. Closing Remarks and Adjournment

The President thanked the Danish National Committee for their hospitality during the week. He then formally closed the 2003 EC meetings at 2:45pm.