

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

MEMBERS

Argentina and Brazil
Britain and Ireland
Canada
Czech Republic
Denmark
France
Germany
Greece
Italy
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**Minutes of the Meetings
of the
Executive Committee
of the
International Association for the Properties of
Water and Steam**

**Santorini, Greece
3 – 8 July 2005**

Prepared by: Barry Dooley



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Minutes of the Meetings
of the
Executive Committee
of the
International Association for the Properties of Water and Steam
held in
Santorini, Greece
3-8 July 2005

Plenary Session. Monday, 4 July 2005. 9:00am

The President of IAPWS, Dr. Frantisek Marsik, welcomed the Executive Committee (EC) and other IAPWS members to Santorini for the EC and Working Group (WG) Meetings of IAPWS. The President officially opened the 2005 EC Meetings by introducing the National Delegates. He made special mention that Greece had become a full member of IAPWS on 1 January 2005. Each of the member countries of IAPWS was in attendance with the exception of Argentina/Brazil, Italy and Russia. There were 46 people in attendance.

The President asked the head of the Greece National Committee to provide some comments. Assael welcomed everybody and introduced the other members of the National Committee.

1. Adoption of Agenda

A provisional agenda had been posted on the IAPWS Website for all IAPWS members by the Executive Secretary in January 2005. The President indicated that there had been a rearrangement of the agenda and asked for any other items. There were no suggestions from the EC. 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 and Assael to serve on this Committee. The Press Release is discussed in Minute 16.2 and Attachment 12.

2.2 Evaluation Committee on International Collaboration.

The President indicated that only one proposal 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. A chairman would be chosen if any suggestions are received. The discussion of this Committee is reported in Minute 14.1 and Attachment 11.

2.3 IAPWS Awards Committees

2.3.1 Helmholtz Award Committee

The President indicated that there was an Helmholtz Awardee this year and that the Award would be presented at the Symposium. He then reminded the EC that the Helmholtz Committee for the 2006 award would consist of a member from Canada, Czech Republic, Denmark, France, and Germany. The President asked the Canada delegate (Svishchev) to organize the committee and to report back to the EC on Friday with the names of the members of this committee (Minute 15.1). The procedures to be followed are delineated in the 1999 EC Canada Minutes.

The President indicated that the US National Committee had raised a concern about the lack of candidates for the Helmholtz Award. He requested the US Delegate (Friend) to make a few comments. Friend emphasized that this Helmholtz award is very important to the future of IAPWS and encouraged National Committees and Working Groups to nominate young persons for the award.

2.3.2 Honorary Fellow Award Committee

The President requested that Fernandez-Prini remain as the Chairman of this committee for 2006. Daucik was also requested to remain as the other member. The IAPWS President would be ex. Officio.

2.4 Host Country for 15th ICPWS

The President reminded the EC that in Japan (Kyoto Minute 2) there was a request to the BIAPWS National Committee to host the 15th ICPWS. The BIAPWS National Committee had informed the Executive Secretary by December 2004 that they would be unable to host the ICPWS in 2008. The Executive Secretary then requested the German National Committee to explore whether they would be able to host the Conference. The President then requested the German Delegate to provide an update. Rukes indicated that the German National Committee would organize the 15th ICPWS in Berlin in 2008. More information would be provided at the EC Meetings in the UK in 2006.

2.5 Other Business Considered to Require Special/Extensive Discussions

There were no other items suggested by the EC

3. EC Mandate to Working Groups and Membership

3.1 IAPWS Restructuring

The President provided a possible view of a future for IAPWS in the biological life sciences. He then reminded the EC of the important restructuring activities during the previous two IAPWS meetings, and indicated that IAPWS EC wanted to ensure that the WGs acted upon the suggested approaches from the four Committees and five Task Groups. He requested the WG Chairmen to provide any contrary indications in their WG presentations at the Friday EC meeting (Minute 16.1).

3.2 Releases, Guidelines and Certified Research Needs.

The President asked the Executive Secretary to review the status of various Releases, Guidelines and ICRNs that would need action by the WGs and the EC during the week. The Executive Secretary indicated that one Supplementary Release had been forwarded to the Heads of National Committees in April (Supplementary Release on Backwards Equations for Specific Volume as a Function of Pressure and Temperature $v(p,T)$ for Region 3 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam). No comments had been received prior to the meeting so the TPWS WG needed to provide a final review prior to presenting it to the EC on Friday for approval. Cooper (UK) indicated that the approval of this Supplementary Release would require an updating of the Advisory Note.

The Executive Secretary then noted that ICRNs 10, 13, 14 and 15 would need action by the respective WGs during the week.

3.3 Working Group Directions.

The President reminded the WG Chairmen that they should only report to the EC on Friday, those activities that needed approval or discussion by the EC.

4. Preview by WG Chairmen of Weeks Activities

President Marsik requested each WG Chairman to review briefly the main topics which would be covered in their WGs during the week. The details of these WG meetings are covered in detail in Minutes 7, 8, 9 and 10.

Activities During the Week

The first day activities of the WGs and Executive Committee were followed by WG meetings on Monday, Tuesday and Thursday. The Symposium entitled “Applied Water Treatment Processes for Power Plant Cycles” was conducted on Wednesday. The program is shown in Attachment 2.

The full IAPWS program for the week is shown in Attachment 3.

Executive Committee Meeting. Friday, 8 July 2005

President Marsik opened the continuation of the EC Meeting at 8:45am. All members of IAPWS were present except Argentina/Brazil, France, Russia and Italy. He first asked the EC if there were any additional items that should be added to the Agenda. None were suggested.

5. Acceptance of Minutes of Previous Meeting

President Marsik asked for comments and changes to the minutes of the EC meeting held in Kyoto, Japan in August 2004. No changes were noted, thus the 2004 Minutes were accepted.

6. President’s Report

President Marsik provided the following comments. He first reiterated that in January 2005 Greece became a full member of IAPWS. On behalf of IAPWS he wanted to officially thank the Greece National Committee for organizing the 2005 EC and WG Meetings, and the Symposium. It had been an excellent week on Santorini Island. The French National Committee had also undergone some changes and had a new head: Dr. Jean-Marc Dorey. The President next reviewed the current officers of the WGs because there were some changes for the 2005 Meetings. He particularly wanted to mention that most of the restructuring activities of the past two years were now being incorporated into the WGs.

7. 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. He indicated that most of the WG activities had been conducted with IRS. Full minutes can be found in Attachment 4.

- 7.1 Friend indicated that he would be stepping down as Chairman of TPWS and that the WG proposes to the EC that the new officers would be Kretzschmar, Chair and Harvey, Vice-Chair, effective from 11 July 2005.

The EC approved these new officers unanimously.

- 7.2 The WG proposed the development of an Advisory Note on Calculating Thermodynamic Derivatives from IAPWS Formulations for formal approval in 2006.
- 7.3 The WG established a Task Group on Properties of Sea Water (Feistel, Wagner, Harvey, Hiegemann), and that this would be a cooperative effort with the International Association for Physical Science of the Oceans (IAPSO). Friend also indicated to the President that this would be an activity within Life Sciences as requested in Minute 3.1.
- 7.4 The Guideline on Fundamental Constants had been revised with minor updates.
- 7.5 The document on obsolete documents has been posted on the IAPWS web site.
- 7.6 The WG was proceeding with the density WG of CCM (Consultative Committee for Mass and Related Quantities) to prepare documents clarifying the roles of IAPWS and CCM density standards for possible EC action in 2006.
- 7.7 The WG approved the Revised Release on D₂O Thermodynamics, which had been changed to account for ITS-90. The WG recommends approval by EC, subject to editorial revisions. Svishchev has been added to the D₂O Task Group.

The EC approved this Revised Release unanimously.

- 7.8 The TPWS and IRS WGs discussed property-related priorities in conjunction with the Environmental TG. Further details will be reported in 2006.

- 7.9 The TPWS and IRS WGs recommend that ICRN Number 14 on Humid Air be extended for 3 years to September 2008. Chairman Friend also indicated that the joint project with the European Union is continuing.

The EC approved the revised date of ICRN 14 unanimously.

- 7.10 The Transport Properties Task Group proposed a Release on viscosity. The Evaluation Task Group consists of Mares (chair), Konas, Alexandrov, Cooper, and Ueno. The intention is to present the release to the EC for adoption in 2006. Mares was added to the Transport Properties Task Group for work on thermal conductivity.
- 7.11 The WG proposes a Release on thermodynamic properties of ice. The Evaluation Task Group will be Hruby (chair) and Harvey. The intention is to present this to the EC for adoption in 2006. Chairman Friend indicated that this is a new area for IAPWS.
- 7.12 Membership. The WG proposes the following new members Feistel (Germany) and Hruby (Czech Republic). The latter is moving from the PCAS WG.

The EC approved these WG membership changes unanimously.

At the end of the WG presentation, the German delegate (Rukes) asked the EC to thank Friend for his leadership of the TPWS WG over the last five years.

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

Chairman Parry provided the IRS Report to the EC. Full minutes can be found in Attachment 5. The Chairman indicated that many of the technical items had been covered by Friend in the TPWS report. He then presented the items that needed action by the EC.

- 8.1 The TPWS and IRS WGs unanimously voted to recommend adoption of the Supplementary Release on Backwards Equations for Specific Volume as a Function of Pressure and Temperature $v(p,T)$ for Region 3 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam.

The EC approved this Supplementary Release unanimously.

Chairman Parry then indicated that following the procedure of previous publications the two working groups recommend to the EC to provide up to US\$2,000 for the page charges of a detailed background paper.

The EC approved this expense unanimously.

- 8.2 With regards to the amendment of the “Revised Supplementary Release on Backward Equations for the Functions $T(p,h)$, $v(p,h)$ and $T(p,s)$ for Region 3 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam”, the working groups recommend to the EC to authorize the editorial committee to make the necessary changes without further formal acceptance by the EC. Parry indicated that a corrected document will be available for the next EC meeting.

The EC approved this revision unanimously.

- 8.3 Computing time investigations of IAPWS-IF97 Equations. Chairman Parry indicated that Miyagawa has agreed to start the preparation of a paper which will document the significant achievements including all now available backward equations and present it at a suitable occasion.
- 8.4 Advisory Note #2 needs to be updated since the additional supplementary release has been approved. The EC was further requested to authorize the Editorial Committee to revise the Advisory Note as needed in the future without further formal acceptance by the EC.

The EC approved this process unanimously.

- 8.5 For new Industrial Requirements of the Future a new Task Group on “Future Cycles” has been formed with the following people: Parry (chair), Okita, Gachon and Hiegemann (potential). This group will identify new ICRNs
- 8.6 ICRN 15 on Thermodynamic Properties of Metastable Steam. The WG recommends to the EC that this ICRN be extended to September 2008.

The EC approved this extension unanimously.

- 8.7 Membership. The WG recommends that the following people are added to the membership roster: Hiegemann (Alstom Power, Switzerland) and Gachon (EdF, France)

The EC approved these IRS membership changes unanimously.

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

Chairman Lvov provided the PCAS Report to the EC. Full minutes can be found in Attachment 6. He covered the following items with the EC:

- 9.1 All existing task groups which affiliated with PCAS WG will continue to function except two - “Electrochemical Processes in High Temperature Aqueous Systems” and “Fuel Cells and H₂ Technologies”. These task groups will be combined into a new one entitled “Interfacial Chemistry and Electrochemistry in High Temperature Fluids”. Lvov will be the Task Group chairman. The two closing task group reports approved at the PCAS WG meetings are provided as Attachments 7 and 8.
- 9.2 As a result of the consolidation mentioned in 9.1 and in an effort to expose this area much more broadly, the WG proposes to organizing an International Symposium entitled “Interfacial Chemistry and Electrochemistry in High Temperature Fluids” (Attachment 9). Chairman Lvov indicated that the WG estimated that around \$5,000 will be needed in 2006 or 2007 to partially support four to six key speakers who will be invited to participate in the symposium. This lead to some discussion by the EC about expenses, the number of participants and whether the Electrochemistry Society would be interested in hosting a joint symposium. Finally the following proposal was put to the EC: “The EC supports the concept of providing up to \$5,000 to support this symposium with the caveat that there must be clear attribution to IAPWS”

The EC approved this proposal unanimously.

- 9.3 Two new members for the PCAS WG were proposed: Molinero (California Institute of Technology) and Papangelakis (University of Toronto). It was also proposed to remove Hruby who has transferred to TPWS. The Chairman also reminded the EC that Franck was deceased.

The EC approved these membership changes unanimously.

- 9.4 The WG decided to continue ICRN 10 on “pH Measurements in High-Temperature Solutions”. A revised copy of the ICRN will be provided to the Executive Secretary by D. Palmer in August 2005.
- 9.5 A draft of an IAPWS Release entitled “The Ionization Constant of Water” will be prepared by Lvov and presented at the 2006 IAPWS meeting. Palmer will review the first draft and report to PCAS WG at the 2006 IAPWS meeting.

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

Vice Chairman Svoboda highlighted those activities that needed action/approval by the EC. A full written report of the PCC WG activities forms Attachment 10.

10.1 Priority List

The WG revised the Priority List, which provides the research needs as formulated by the PCC. This list will also be of interest to the other IAPWS working groups. PCC will develop future activities (International Collaborations, ICRNs, task forces and presentations) from this Priority List. Currently, this list contains 12 items, including 2 of interest for fossil plant chemistry, 1 for nuclear plant chemistry, and 9 of common interest for both fossil and nuclear chemistry. The list will be discussed and revised at each annual meeting. The revision, discussions and Task Groups will be a major topic of the annual PCC meeting maybe taking up to 40% of the WG time. The revised Priority List is attached to the PCC minutes (PCC Attachment B).

10.2 International Collaboration:

Last year PCC initiated an International Collaboration between Japan and Canada on Flow-Accelerated Corrosion. The project was finished within budget and time schedule, and a full report was given at the PCC WG meeting. The quality of work and of the report was positively appraised by the PCC. This also goes for the organization of this collaboration project.

This year, PCC does not have a collaboration project ready, but at least one will be prepared for approval by the EC in 2006. One will be on Sampling and Analysis Techniques for Low Levels of Iron (and other metals) in Water. The collaboration will have more than 2 hosting partners and possibly include partners from IAPWS as well as non-IAPWS members, and possibly from PCC and other IAPWS WGs. PCC will present this proposal at the 2006 meeting.

10.3 The ICRNs on "Surface Tension of Aqueous Solutions" (active, but expiring) and "Origin and Fate of Organics" (expired, closing statement pending) need to be readdressed after the forthcoming PowerPlant Chemistry/EPRI conference on "Interaction of Organics and Organic Cycle Treatment Chemicals with Water, Steam and Materials" in Stuttgart in October 2005. Reconsideration of these ICRNs will therefore be deferred to the 2006 PCC meeting.

The WG identified four more topics from the Priority List that will be formulated into ICRNs for next year's meeting. Two of them are joint PCC / PCAS projects. It was agreed that the respective task group leader will send the draft of the ICRN to the WG chairman by the end March 2006. This will be forwarded to the National Committees before the EC and WG meetings in the UK.

- 10.4 The WG has identified the need to issue a guidance document on the Measurement of the Mechanical Carryover in Steam Generators.

A task group was established at the Kyoto meeting and is expected to produce a document within the coming year. Thus the WG proposes to issue a new IAPWS document. This suggestion created some discussion with the EC which included a review of the definitions of Guidelines and Advisory Notes in the Bye-Laws. The Vice Chairmen then requested the EC to agree in principle to produce such a document.

The EC approved this request unanimously and that the PCC WG will need to suggest a document name for consideration by the EC at the 2006 meeting.

- 10.5 The WG proposes the following persons as new members of the WG: Lister (University of New Brunswick, Canada), Vidoikovich (Serbian Power Generation, Serbia/Montenegro), de Wispelaere (Laborelec, Belgium), and Stellwag (Framatome / ANP, Germany)

The EC approved these membership additions unanimously

11. Editorial Committee Report

Chairman Harvey reported that the Editorial Committee had reviewed and approved the Supplementary Release on Backwards Equations for Specific Volume as a Function of Pressure and Temperature $v(p,T)$ for Region 3 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam. He also indicated that the Committee had reviewed two other documents.

12. Membership and Associates

12.1 Membership.

The Executive Secretary again mentioned that the Greece National Committee had become a full member of IAPWS on 1 January 2005. No other activity had occurred in the membership area.

12.2 Members Defaulting on Dues.

The Executive Secretary indicated that according to the latest Swiss bank account statement (end of May 2005), the following countries had not paid the 2005 IAPWS dues: Argentina/Brazil, France, Greece, and Russia. In 2004 France and Russia had not paid the dues.

13. Executive Secretary's Report

13.1 Financial, Auditors and Dues

The Executive Secretary reported that IAPWS remained on a sound financial footing with currently over SFrs 96,000 in the Swiss bank account and about \$15,000 in the US account for a total of \$90,797 combined. The status as at 22 June 2005 in the bank accounts had been provided to each National Delegate present at the EC meeting.

The Executive Secretary next reported that the 2004 financial statements had been forwarded to the Auditors in January 2005. Mr. Miyagawa in Japan and VDI in Germany had reviewed and approved them. The financial statements for 2004 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 2006.

The EC unanimously agreed to this proposal.

The Executive Secretary also provided a rough estimate of the income and known planned expenditures for 2005.

13.2 Financial Report on the 14th ICPWS

The Chairman of the 14th ICPWS, Watanabe, provided printed copies of the final financial statement for the 14th ICPWS for all the Delegates. He particularly wanted to mention the support by the Sponsors and the Foundation Donations.

The Sponsors were:

- * Chubu Electric Power Co. Inc.
- * Kansai Electric Power Co. Inc.
- * Tokyo Electric Co.
- * Fuji Electric
- * Hitachi, Ltd.
- * Mitsubishi Heavy Industries
- * IHI (Ishikawajima-Harima Heavy Industries, Ltd.
- * Toshiba Corp.

- * CRIEPI
- * JEOL (Japan Electron Optics Laboratory Co. Ltd.)
- * Aoyama Trading Co. Ltd.
- * Gikenkagaku Ltd.
- * Teramecs Co. Ltd.

The Foundation Donations were supplied by:

- * Commemorative Organization for the Japan World Exposition '70
- * Japan Society for the Promotion of Science

The Chairman of the 14th ICPWS also thanks IAPWS for the IAPWS Fund of \$25,000. He then introduced the Editor of the Proceedings, Nakahara, and thanked him for doing an excellent job in developing the final document within a year of the conference. Nakahara provided an overview of the important processes that the German National Committee will have to consider for the 15th ICPWS in Berlin in 2008.

13.3 Time and Place of the 2006 and 2007 Meetings

The 2006 EC Meetings will be held in the UK. The Executive Secretary asked the delegate from BIAPWS to provide the details. Harries indicated that the next EC and WG meetings would be held at a Hotel/Conference Center at Witney, which is about 10 miles west of Oxford in the UK. The dates are Sunday, 3 September to Friday, 8 September. BIAPWS will develop a website for the meetings. The Japanese delegate, Watanabe, requested the BIAPWS organizing committee for the one day symposium to include a presentation on the new IAPWS areas of involvement as well the Helmholtz Lecture, which will start the symposium.

The Executive Secretary indicated that the location of the 2007 EC Meetings was still under consideration. Initial discussions with the new Chairman of the French National Committee (Dorey) indicate a good possibility of holding the meetings in Paris.

14. Guidelines, Releases, Certified Research Needs, and International Collaborations

The President indicated that the Releases and ICRNs had been discussed and approved within the WG Reports so no further discussion took place.

14.1 International Collaborative Projects.

The President asked the Chair of the Committee (Friend) to report on the discussions during the week. The Chairman indicated that the Committee had considered two topics. The first was with regards to eligibility of the member countries and the young collaborator. Friend indicated that the

Committee suggests that these projects should be as flexible as possible in that one of the two member countries could be supplemented by a non-member country, and that the collaborator could be from a member or non-member country.

The EC approved this unanimously.

Chairman Friend then indicated that only one proposal had been received. The details of this proposal are provided in Attachment 11. As both the IAPWS President and the Chair of PCAS were the supporting sponsors, they were asked to leave the room. The Chairman then summarized the proposal for the EC. The IAPWS Sponsors are Frantisek (Czech Republic) and Lvov (USA). A young Czech investigator will travel to Penn State University in the USA to investigate the Irreversible Thermodynamics of Fuel Cells Membrane Transport. The period of performance will be five months starting in February 2006 at a proposed budget cost of \$9,500 for travel expenses and costs. The Chairman indicated that the Committee approved the technical content and recommends to the EC that this project be funded

The EC approved the project unanimously.

15. IAPWS Awards

The President first of all lead some discussion on developing an “Awards Page” on the IAPWS website. The consensus of the EC was that this would be a good idea and that the page should contain descriptions of the IAPWS Awards and listings of the Gibbs, Honorary Fellow and Helmholtz awardees.

15.1 IAPWS Honorary Fellowships

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

The President reminded the EC of the Awards Committee for 2006 with Fernandez-Prini as Chairman and Daucik as member with the IAPWS President as ex.-officio member. Nominations are due to the Executive Secretary by January 31, 2006.

15.2 IAPWS Helmholtz Award

The President reported that Molinero had been selected as the 2005 Helmholtz Awardee and that she had been presented with the award prior to her Helmholtz Lecture at the Symposium on Wednesday. He then asked the Canadian Delegate for the names of the Helmholtz Award Committee for 2005. In his absence, the Executive Secretary indicated that the 2006 Helmholtz Committee would consist of: Svishchev (Chairman), Mares (Czech Republic), Therkildsen (Denmark), Kretzschmar (Germany) and Gachon (France), Nominations are due to the Executive Secretary by January 31, 2006.

16. New Business

16.1 IAPWS Restructuring

At Monday's EC Meeting (Minute 3.1), the President had reminded the EC of the importance of the follow-on activities that were needed within the WGs during the week. The WGs appeared to have taken action on all the committees and Task Groups with the exception of the Task Group on Education and Outreach. The Executive Secretary had received a note from the Chairman of this Group indicating that there had not been much activity over the last year. This led to much discussion by the EC which culminated in the suggestion that the Task Group continue during the next year under the Chairmanship of Corti, and that it should redefine the Task Group approaches and activities. Three new members volunteered to join this important task group: Kretzschmar (Germany), Safarik (Czech Republic) and Lvov (USA). The President requested that the Task Group will report on status at the 2006 EC Meetings in the UK.

16.2 Press Release

The President requested that the Press Release be projected for review by the EC. Suggestions were provided by the EC and the final version is contained in Attachment 12

16.3 Miscellaneous Items

The US Delegate (Friend) requested that the latest Statutes and Bye-Laws be put on the IAPWS website.

The EC approved this suggestion unanimously.

The Greece Delegate (Assael) requested that the EC consider changing the names of the WG activities during the week into a "program" which could then be used to attract new members. He volunteered to take the 2006 Agendas and develop a Program format. Discussion by the EC resulted in

the suggestion to include this item on the 2006 EC Agenda and to possibly form a committee.

16.4 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 13
Czech Republic	Attachment 14
Germany	Attachment 15
Greece	Attachment 16
Japan	Attachment 17
Russia (Forwarded to Executive Secretary)	Attachment 18
USA	Attachment 19

16.5 Participants

Attachment 20 provides a list of participants at the IAPWS EC and WG Meetings in Santorini, Greece in July 2005.

16.6 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 Santorini Meetings. This will be forwarded electronically to the Head of each National Committee.

17. Closing Remarks and Adjournment

The President thanked everybody for participating at this EC meeting. He particularly thanked the Greece National Committee for organizing the 2005 Annual IAPWS Meetings, and then he formally closed the 2005 EC meeting at 12:37pm.