# 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

Kyoto, Japan 29 August – 3 September, 2004

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
Kyoto, Japan
29 August – 3 September, 2004

#### Plenary Session. Sunday, 29 August 2004. 9:00am

The President of IAPWS, Professor Koichi Watanabe, welcomed the EC and other IAPWS members to Kyoto for the EC and WG Meetings of IAPWS as well as for 14<sup>th</sup> ICPWS. He indicated that over 220 people had pre-registered for the ICPWS from about 20 countries with about 70 coming from overseas.

The President then officially opened the 2004 EC Meetings by introducing the National Delegates. Each of the member countries of IAPWS was in attendance with the exception of Canada, France and Italy. There were about 40 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 June 2004. There were no suggestions for additional items. The agenda was then approved by the Heads of all National Delegations and forms Attachment 1 of these minutes.

# 2. <u>Preparation for IAPWS General Assembly</u>

The President indicated that the EC would defer discussion on this until later in the day.

At 4:30pm the EC reassembled. The Executive Secretary indicated that the next ICPWS would be in 2008 and that no member had offered to host the conference. He indicated that BIAPWS was next in line to host the ICPWS followed by Germany. He proposed to the EC that the BIAPWS Delegate (Cooper) officially request the BIAPWS Joint Committee to inform the Executive Secretary by the end of 2004 if they could host the 15<sup>th</sup> ICPWS. In the event that the BIAPWS committee could not, then Germany would be the backup location.

#### The EC approved this suggested approach unanimously.

#### 3. IAPWS Business and Appointment of Committees

#### 3.1 Press Release.

The President asked Bellows and Oguchi to serve on this Committee. The Press Release is discussed in Minute 18.2 and Attachment 18.

#### 3.2 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. A chairman would be chosen if any suggestions are received. The discussion of this Committee is reported in Minute 15.3 and Attachment 10.

#### 3.3 IAPWS Awards Committees

#### 3.3.1 Helmholtz Award Committee

The President indicated that no suggestions had been made for the 2004 Award which was very disappointing for IAPWS. He then reminded the EC that the Helmholtz Committee for the 2005 award would consist of a member from Argentina/Brazil, BIAPWS, Canada, Czech Republic and France. The President asked the Argentina/Brazil delegate (Corti) 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.

#### 3.3.2 Honorary Fellow Award Committee

The President asked the Executive Secretary to review the procedures and status of the Committee. He then asked Daucik to join Fernandez-Prini on the Committee for 2004. Fernandez-Prini will be the Chairman.

#### 3.4 IAPWS Restructuring

The President requested an update from each of the chairpersons of the four Committees and five Task Groups within the restructuring activities discussed at the Denmark EC Meetings (Committees and Task Forces. Vejle Minutes, Attachment 2).

#### Committees:

- Nuclear Power. Chairman Uchida outlined the work accomplished during the last year
- Fuel Cells and Hydrogen Technology. Chairman Lvov was not present at the EC meeting.

- Effectiveness of ICRNS. Chairman Bellows indicated that there had been insufficient time for any activity.
- Awards. Chairman Cooper outlined his review of the IAPWS Awards and made a number of suggestions for achieving better IAPWS recognition.

#### Task Forces:

- Properties and Formulations for High Temperature Aqueous Systems. Chairman Mayer was not present at the EC meeting.
- Electrochemical Processes in High Temperature Aqueous Systems. Chairman Lvov was not present at the EC meeting.
- Education and Outreach. Chairman Corti outlined the input from Greece and BIAPWS.
- Environmental Issues. Chairman Okita presented an initial report.
- Metastability, Nucleation, Early Condensate, Droplet Sprays, Cavitation. Chairman Marsik provided an initial list of names of people who should be interested in joining this Task Force.

After each chairperson had presented the initial information, the President requested that work should continue during the week with a final presentation to the EC on Friday. See Minute 18.1 and Attachments 11-17.

#### 3.5 IAPWS Statutes and By-Laws

The President requested the Chairman of the Task Group (Harvey) to report on the activities of the Committee (Assael, Cooper and Miyagawa). Attachment 2 provides the information on the changes suggested. The BIAPWS Delegate (Cooper) then suggested that these changes only constitute an "Amendment" of the Statutes and By-Laws, rather than a "Revision". He also suggested that the flavour of Section 14 of the Statutes ("Taking Effect of these Statutes") should not be changed from the September 1994 version, and that the Statutes and By-Laws should be submitted to the General Meeting for adoption. The President suggested that these items needed to be considered by the EC later in the day.

At 4:30pm, the EC reassembled and the President re-proposed the items suggested by Cooper.

The EC unanimously approved the suggestions by the BIAPWS Delegate, and that the Statutes and By-Laws will be submitted to the General Meeting for adoption.

3.6 Other Business Considered to Require Special/Extensive Discussions

There were no other items suggested by the EC

#### 4. EC Mandate to Working Groups and Membership

4.1 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. The Executive Secretary indicated that the following four documents had been forwarded to the Heads of National Committees during the year:

- Revised Supplementary Release on Backward Equations for the Functions T(p,h), v(p,h) and T(p,s), v(p,s) for Region 3 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam.
- Supplementary Release on Backward Equations p(h,s) for Region 3, Equations as a Function of h and s for the Region Boundaries, and an Equation  $T_{\text{sat}}(h,s)$  for Region 4 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam.
- Guideline on the Henry's Constant and Vapor-Liquid Distribution Constant for Gases in H<sub>2</sub>O and D<sub>2</sub>O at High Temperatures.
- Advisory Note No. 2. Roles of Various IAPWS Documents Concerning the Thermodynamic Properties of Ordinary Water Substance.

The Executive Secretary reminded the EC that comments on any of these documents were due by the end of the day and that the EC would then be asked to approve these IAWPS documents at the EC meeting on Friday (Minutes 8.1, 8.2 and 15.1). The Executive Secretary then noted that ICRNs 1, 5, 10, and 13 would need action by the respective WGs during the week (Minute 15.2).

#### 5. Preview by WG Chairmen of Weeks Activities

President Watanabe indicated that in the interest of time the EC would forego these previews this year. The details of these WG meetings are covered in detail in Minutes 8, 9, 10, and 11.

#### Activities During the Week

The first day activities of the WGs and Executive Committee were followed by WG meetings on Sunday 29 August 2004. The 14<sup>th</sup> ICPWS was held from Monday, 30 August 2004 to Thursday, 2 September 2004.

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

#### Executive Committee Meeting. Friday, 3 September 2004

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

# 6. <u>Acceptance of Minutes of Previous Meeting</u>

President Watanabe asked for comments and changes to the minutes of the EC meeting held in Vejle, Denmark in August 2003. The Executive Secretary indicated that an errata sheet had been developed for the 2003 Minutes and posted on the IPAWS Website. No further changes were noted, thus the 2003 Minutes were accepted.

# 7. <u>President's Report</u>

President Watanabe provided the following comments:

- He had provided his main report for the General Meeting (General Meeting Minutes).
- He wished again to to indicate that the ICPWS was a nice assembly of people and illustrated the collaboration within the IAPWS community, which he hoped would continue.
- IAPWS is currently restructuring, but is basically on track.
- He will be forwarding a signed copy of the just published IAPWS "Atlas" to Professor Ulrich Franck.

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

8.1 The TPWS and IRS WGs had voted to recommend the adoption of the Supplementary Release "Supplementary Release on Backward Equations p(h,s) for Region 3, Equations as a Function of h and s for the Region Boundaries, and an Equation  $T_{\text{sat}}(h,s)$  for Region 4 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam" after some minor revisions had been addressed in conjunction with the Editorial Committee. The Chairman proposed that this supplementary release be approved by the EC

#### The EC approved this supplementary release unanimously

8.2 The WGs had voted to recommend the adoption of the revised Supplementary Release "Revised Supplementary Release on Backward Equations for the Functions T(p,h), v(p,h), and T(p,s), v(p,s) for Region 3 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam". Chairman Friend then proposed to the EC that this release be approved.

#### The EC approved the release unanimously.

8.3 Chairman Friend noted that the *Journal of Engineering for Gas Turbines* and *Power* was imposing excess page charges (\$200 for each page above nine) for the publication of the comprehensive article reporting the first Supplementary release with additional backward equations, adopted in 2001. This might amount to approximately \$2000. The WG felt that this was a necessary expense for the dissemination of IAPWS standards. Friend requested approval from the EC that these page charges could be paid from IAPWS funds.

# After much discussion, the EC approved this payment with one objection from Canada.

- 8.4 Chairman Friend noted that a WG member was frequently asked about the status of IAPWS recommendations as an engineering standard, and the relationship with ISO. He wanted to inform the EC that it had been decided to draft a FAQ on this issue for the IAPWS Website and that Harvey and Span will work on this.
- 8.5 Chairman Friend next raised the issue of WG membership. He indicated that last year some WG members were asked to attempt to contact members who had not been active to see if they wished to continue. As a result of this, he proposed to the EC that Dr. Agayev (Azerbaijan) and Dr. Mayinger (Germany) should be withdrawn from TPWS membership.

# The EC approved these membership changes unanimously.

8.6 Chairman Friend indicated that the WG now realized that Advisory Note #2 should be updated to reflect the new Supplementary Releases (Approved in Minutes 8.1 and 8.2). He indicated that Cooper will draft the updated language. This Advisory Note will then be forwarded to the Executive Secretary for circulation to the National Committees.

#### The EC approved this process unanimously.

8.7 Chairman Friend noted that in regard to the issue raised about attracting people (especially young people) to annual meetings, the TPWS WG wished to recommend to the EC that the Executive Secretary should send invitations for the Annual Meetings directly to each WG member (either

by postal mail or e-mail) rather than relying solely on the Website. This raised much discussion. The President finally indicated that the consensus was for the Heads of National Committees and WG Heads to forward the information supplied by the Executive Secretary to them and to the IAWPS Website to any special invitees. Then an individual invitation could be formulated.

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 5. The Chairman indicated that all the technical items had been covered by Friend in the TPWS report. He only had two items that needed action by the EC.

9.1 With regards to membership of IRS, Chairman Miyagawa requested that three people be removed from the membership: Perstrup, Meyer-Pittroff and Perera. He then proposed one new member, Daur from Alstom Power in Germany.

# The EC approved these membership changes unanimously.

9.2 Chairman Miyagawa expressed his wish to step down as the WG chairman at the end of 2004 and proposed to the EC that Parry becomes the chairman with Weber as the vice chairman.

#### The EC approved these IRS leadership changes 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 6.

10.1 The Chairman indicated that he will be stepping down as of January 2005. He proposed to the EC that Lvov becomes the new chairman and that Corti becomes vice chairman.

#### The EC approved these leadership changes unanimously.

10.2 Chairman Mayer next informed the EC about the PCAS Priority Areas: a) pH of water at high temperatures, b) prediction of standard state properties of non-electrolytes, and c) ion pairing in 1-1 electrolytes. The PCAS WG will be discontinuing work in the last area.

10.3 Chairman Mayer next proposed Sedlář of Sigma Research and Development Institute as a new WG member.

#### The EC approved this membership addition unanimously.

10.4 Chairman Mayer next introduced a proposal for a new project to the EC on "Establishing Recommended Data on Thermodynamic Properties of Hydration for Selected Organic Solutes". He indicated that the proposal and an appendix had been provided to each National Committee during the week. These are Attachment 7. The Chairman requested that the EC approve the requested funding of 12K euros (with 5K in 2005, 5K in 2006 and 2K in 2007). Some discussion ensued about the ownership of the common data base between IUPAC and IAPWS, the likelihood of funding from IUPAC, and how the data base will be updated. The President delayed the EC vote on this item until after the EC had been informed about the IAPWS finances (Minute 14.1). At that time the EC was asked to approve the full funding over the period 2005 – 2007.

#### The EC approved the funding for this project unanimously.

10.5 Chairman Mayer next introduced another proposal for a new project to the EC on "Hydrothermal Experimental Data: Phase Equilibria and Solution Properties in Binary and Ternary Systems". He again indicated that the proposal and an appendix had been provided to each National Committee during the week. These are Attachment 8. The Chairman indicated that no financial support was being requested from IAPWS. Some discussion ensued about whether the timetable was realistic, and that the EC wanted to ensure that IAPWS received full credit by having the IAPWS logo prominently displayed on the front of the book. The President asked the EC to approve the project

#### The EC approved the project unanimously.

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 9.

- 11.1. The Chairman indicated that the new procedure for Guidelines/ICRN had not yet been fully developed, but that the WG intended to test it out on a new priority item involving mechanical carryover. Attachment A to the PCC WG minutes is a first draft.
- 11.2. The Chairman indicated that PCC had developed a proposed International Collaborative proposal on flow-accelerated corrosion.

11.3 The Chairman proposed Therkildsen from Energi E2 in Denmark as a new member of the WG.

# The EC approved this membership addition unanimously

# 12. <u>Editorial Committee Report</u>

Chairman Harvey reported that the Editorial Committee had reviewed and approved four IAPWS documents during the last year: the Supplementary Release on Backwards Equations, the revised Supplementary Release on Backwards Equations, the Guideline on Henry's Constant, and the Advisory Note #2.

#### 13. Membership and Associates

#### 13.1 Membership.

The Executive Secretary requested the Greece Delegate, Assael, to provide an update on the membership of Greece in IAPWS. Assael indicated that he now had agreement that the IAPWS Membership dues would be paid for 2005 and that Greece was now ready to apply for full membership in 2005.

#### The EC approved this new full IAPWS member unanimously

#### 13.2 Members Defaulting on Dues.

The Executive Secretary indicated that according to the latest Swiss bank account statement (31 July 2004), the following countries had not paid the 2004 IAPWS dues: Canada, France, Japan, USA, and Russia. In 2003 France had not paid the dues. In 2002 France paid a partial payment. In response: a) the Canada delegate indicated that the Canadian NRC was in the process of paying, b) the Japan delegate indicated that the invoice had been sent to the payment authority, c) the US ensured the EC that the dues would be paid, d) the Russia delegate indicated that Russia will fully pay the dues but cannot do this each year, and e) the France delegate once again reminded the EC of the revitalization of the French national committee. The Executive Secretary indicated that there had been no change in the Italian national committee situation and there was still no active committee in Italy.

#### 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 85,000 in the Swiss bank

account and over \$17,500 in the US account for a total of \$86,037 combined. The status as at 16 August 2004 in the bank accounts had been provided to each National Delegate present at the EC meeting.

The Executive Secretary next reported that the 2003 financial statements had been forwarded to the Auditors in January 2004. Mr. Miyagawa in Japan had reviewed and approved them. VDI in Germany had not to date replied. The financial statements for 2003 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 2005, and that the dues for the new Greece National Committee would be set at 1,600 SFrs for 2005.

#### The EC unanimously agreed to this proposal.

The Executive Secretary also provided a rough estimate of the income and known planned expenditures for 2004. This lead to some discussion about the overall planned IAPWS expenditures. The BIAPWS delegate specifically wished to know whether there would be the same level of support for the BIAPWS committee if they decided to hold the 15<sup>th</sup> ICPWS in the UK or Ireland in 2008. Instead of suggesting a specific amount, the following proposal was formulated for the EC: "The EC would agree to support the BIAPWS (or Germany if BIAPWS cannot hold the next conference) committee for the next ICPWS, to about the same level as was provided to Japan for the 14<sup>th</sup> ICPWS, upon receiving an official request".

#### The EC approved of this proposal unanimously

#### 14.2 Time and Place of the 2005 and 2006 Meetings

The 2005 EC Meetings will be held in Greece. The Executive Secretary asked the delegate from Greece to provide the details. Assael indicated that the next EC and WG meetings would be held at the Santorini Palace Hotel at Fira on the Island of Santorini from Sunday, 3 July to Friday, 8 July, 2004. He planned to very quickly establish a website, and requested early registration and booking.

The Executive Secretary indicated the location of the 2006 EC Meetings was dependent on the response from BIAPWS (and maybe Germany)

about hosting the 2008 ICPWS. The countries next in line to host the EC Meetings are Russia, France, Germany and Britain/Ireland. Discussions with the Russia delegate had indicated that it was financially not possible for Russia to host the meetings, but that France was prepared to consider holding the 2006 or 2007 meetings depending on the revitalization of the national committee. The EC was asked to approve delaying the decision of a location for 2006 until the 2005 EC meetings.

#### The EC approved this delay unanimously.

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

#### 15.1 Guidelines and Releases

Four documents had been forwarded to National Committee for postal ballot during the year. The overall status of these documents follows:

- Revised Supplementary Release on Backward Equations for the Functions T(p,h), v(p,h) and T(p,s), v(p,s) for Region 3 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam. This was approved by the EC during the TPWS WG presentation (Minute 8.2).
- Supplementary Release on Backward Equations p(h,s) for Region 3, Equations as a Function of h and s for the Region Boundaries, and an Equation  $T_{\text{sat}}(h,s)$  for Region 4 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam. This was approved by the EC during the TPWS WG presentation (Minute 8.1).
- Guideline on the Henry's Constant and Vapor-Liquid Distribution Constant for Gases in H<sub>2</sub>O and D<sub>2</sub>O at High Temperatures. One small change had been raised by the Japanese National Committee, which had been dealt with during the TPWS WG meeting and approved by the Editorial Committee.

#### The EC approved this Guideline unanimously

• Advisory Note No. 2. Roles of Various IAPWS Documents Concerning the Thermodynamic Properties of Ordinary Water Substance. The EC had already approved of the process to finalize this Advisory Note during the TPWS WG presentation (Minute 8.6)

#### 15.2 IAPWS Certified Research Needs (ICRNS)

The President indicated that discussion on ICRNs should have been dealt with during the WG meetings as requested during the Plenary EC Meeting on Sunday, 29 August 2004. The following actions were developed:

- ICRN 1. This will be "Closed August 2004". The PCC Chairman will provide a closing statement to the Executive Secretary within two months.
- ICRN 5. This will be "Closed August 2004". The PCC Chairman will provide a closing statement to the Executive Secretary within two months.
- ICRN 10. This needs new life. It will be extended to, and then revised in, July 2005. The new PCAS Chairman, Lvov, has the responsibility.
- ICRN 13. This needs new life. It will be extended to, and then revised in, July 2005. The PCC Chairman, Zeijseink, has the responsibility to contact one of the original authors, Gabrielli.

### The EC approved all these actions on ICRNs unanimously

### 15.3 International Collaborative Projects.

The President asked the Chair of the Committee (Friend) 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 Attachment 10. The Chairman summarized the proposal for the EC. The IAPWS Sponsors are Uchida (Japan) and Tremaine (Canada). A young Japanese investigator will travel to UNB in the Canada to investigate the experimental techniques being used there to assess flow-accelerated corrosion. The period of performance will be four months at a proposed budget cost of \$5,000 for travel expenses and costs.

After some discussion by the EC, the President asked the Japanese and Canadian delegates to leave the room and then asked the EC for approval

#### The EC approved the project unanimously.

#### 16. IAPWS Awards

#### 16.1 IAPWS Honorary Fellowships

The President reported that Tremaine (Canada) and Miyagawa (Japan) had been elected Honorary IAPWS Fellows, following the established procedure and after unanimous approval through the postal ballot conducted by the Executive Secretary. The Fellowship Awards had been presented at the IAPWS Dinner on Thursday evening.

The President reminded the EC of the Awards Committee for 2005 with Fernandez-Prini as Chairman and Daucik as member. The IAPWS President in 2005 (Marsik) will be an ex.-officio member.

#### 16.2 IAPWS Helmholtz Award

The President asked the Argentina-Brazil Delegate for the names of the Helmholtz Award Committee for 2005. Corti (Chairman) indicated that the members would be Harries (BIAPWS), Svishchev (Canada), Mares (Czech Republic) and Mayer (France). Nominations are due to the Executive Secretary by January 31, 2005.

#### 17. Election of Officers for 2005 and 2006

The President indicated that he would step down at the end of 2004 and that Vice President Marsik will assume the position of IAPWS President on January 1, 2005. According to the Statutes, the election of the next Vice President should be made at the end of the EC meeting in even years. The President and Executive Secretary had checked the recent history and proposed that the BIAPWS Joint Committee should be asked to nominate one of their committee members for the position. The President asked the EC if there were any other suggestions. None were suggested, so he then requested the EC approves this selection.

#### The EC unanimously approved this selection.

Action: The BIAPWS Joint Committee should inform the Executive Secretary of their nomination for Vice President after the next meeting of their committee, and before the end of 2004.

#### 18. New Business

#### 18.1 IAPWS Restructuring

The President reminded the EC that some initial discussions had taken place at the Plenary meeting of the EC on Sunday, 29 August 2004 (Minute 3.4), and that he had requested each of the Committee and Task Group Chairmen to return at the Friday EC meeting with a final report. He then requested each chairman to provide the status.

#### Committees:

- Nuclear Power. Chairman Uchida indicated that there were no significant changes from his presentation on Sunday and provided Attachment 11 as a final report of his committee.
- Fuel Cells and Hydrogen Technology. Chairman Lvov presented his committee report. (Attachment 12)
- Effectiveness of ICRNS. Chairman Bellows was not present at the EC meeting.
- Awards. Chairman Cooper indicated that there were no further activities. He provided his committee report (Attachment 13) and

indicated that this committee should now be closed. However, the suggested actions should be addressed in Greece.

#### Task Forces:

- Properties and Formulations for High Temperature Aqueous Systems. Chairman Mayer indicated that this Task Group had been discussed in the PCAS WG and that his report is included within the PCAS Minutes (Attachment 6).
- Electrochemical Processes in High Temperature Aqueous Systems. Chairman Lvov presented his report. (Attachment 14).
- Education and Outreach. Chairman Corti indicated no significant changes and provided his report (Attachment 15).
- Environmental Issues. Chairman Okita indicated no significant changes and provided his report (Attachment 16).
- Metastability, Nucleation, Early Condensate, Droplet Sprays, Cavitation. Chairman Marsik indicated no significant changes and provided his report (Attachment 17).

#### 18.2 Press Release

The President requested that the Press Release be projected for review by the EC. The final version is contained in Attachment 18.

#### The EC approved this unanimously.

#### 18.3 14th ICPWS, Kyoto, Japan. August 29 – September 3, 2004

The President reported that the final count at the 14<sup>th</sup> ICPWS was 235 people, and that 195 papers had been presented.

#### 18.4 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 ICPWS/IAPWS week. They are attached to these minutes as follows:

Attachment 19		
Attachment 20		
Attachment 21		
Attachment 22		
Attachment 23		
Attachment 24		
Attachment 25		
Attachment 26		

# 18.5 Participants

Attachment 27 provides a list of participants at the ICPWS and IAPWS EC and WG Meetings in Kyoto, Japan in August 2004.

#### 18.6 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 Kyoto Meetings. This will be forwarded electronically to the Head of each National Committee.

# 19. Closing Remarks and Adjournment

The President thanked everybody for their patience during this EC meeting. He indicated that he had enjoyed his second IAPWS Presidency, and then formally closed the 2004 EC meetings at 12:30pm.