

**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  
Japan  
Russia  
United States of America

**ASSOCIATE MEMBER**

Switzerland

**EXECUTIVE SECRETARY**

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

**Lucerne, Switzerland  
26 August – 1 September 2007**

**Prepared by: Barry Dooley**



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Minutes of the Meetings  
of the  
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of the  
International Association for the Properties of Water and Steam  
held in  
Lucerne, Switzerland  
26 August – 1 September 2007

Plenary Session. Monday, 27 August 2007. 8:40am

The President of IAPWS, Jeff Cooper, welcomed the Executive Committee (EC) and other IAPWS members to Lucerne for the EC and Working Group (WG) Meetings of IAPWS. The President officially opened the 2007 EC Meetings by introducing the National Delegates. Each of the member countries of IAPWS was in attendance with the exception of Argentina/Brazil, France, and Italy.

The President asked the head of the newly formed Swiss National Committee to provide some comments. Svoboda welcomed everybody to Switzerland and to the 2007 IAPWS meetings.

1. Adoption of Agenda

A provisional agenda had been posted on the IAPWS Website for all IAPWS members by the Executive Secretary in May 2007. There were no further agenda 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 to serve on this Committee. Another member will be added to the Committee. The Press Release is discussed in Minute 16.1 and Attachment 9.

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 by the

Committee. The discussion of this Committee is reported in Minute 14.1 and Attachment 8.

## 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 2008 award would consist of a member from Germany, Greece, Japan, Russia and USA. The President asked the German delegate (Rukes) 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 President indicated that a new guidelines had been adopted for the selection of Helmholtz awardees at the Whitney meetings in 2006 and suggested that the amended age limit could possibly eliminate candidates who would be eligible under the old guidelines. He suggested that the EC reflect on this and that Friend, Bellows and himself provide an amendment at the Friday EC meeting. (See Minute 15.1)

### 2.3.2 Honorary Fellow Award Committee

The President requested that Tremaine take over as the Chairman of this committee from Daucik for 2008. Watanabe was added as the other member. The IAPWS President would be ex. Officio.

### 2.3.3 Gibbs Award Committee

The President indicated that the Gibbs Award was the most prestigious international award at IAPWS, and because the Executive Secretary had only received one nomination that the time period to receive nominations would be extended until 5PM on Tuesday. The Gibbs Award Committee had already been formed in Whitney and they would report back to the EC on Friday. (Minute 15.3).

## 2.4 Host Country for 15<sup>th</sup> ICPWS

The President requested the German Delegate to provide an update. Rukes indicated that preparations are in very good shape to organize the 15<sup>th</sup> ICPWS in Berlin in 2008. Rukes indicated that the International Program Committee would meet during the week as well as the German Organizing Committee. Full information, including a budget, would be provided at the EC Meeting on Friday (Minute 16.2).

## 2.5 and 2.6 IAPWS Member Countries and IAPWS Statutes and By-Laws

The President indicated that these two items are closely related and would be dealt with together. He first indicated that a committee had been assembled in Whitney under the Chairmanship of Watanabe to review the Statutes and By-Laws, and a second committee to look into reorganizing IAPWS to allow individual memberships in addition to National memberships. The President next requested Harvey to provide a short presentation on a number of items within the Statutes which might need to be addressed by the committee. He then requested that Watanabe as Chairman, meet with his committee during the week and report back to the EC on Friday. The committee will consist of Cooper, Harvey, Hruby, Svoboda, Daucik and Alexandrov. This report is provided in Minute 16.3.

## 2.7 IAPWS Education and Outreach

The President requested the Chairman of this committee to provide a short report. Kretzschmar indicated that the committee had suggested four proposals in Whitney and that his committee would research the activity during the week and provide a status report to the EC on Friday (Minute 16.4).

## 2.8 Acknowledging Contributions to IAPWS Documents

The President indicated that the Executive Secretary had received a note from the Head of the US National Committee on this topic. Friend had not yet arrived in Switzerland so Harvey indicated that IAPWS Documents do not have named authors and asked whether it would be possible to give credit to people who had contributed. Lvov then presented an example acknowledgement in a current release. Some discussion ensued from the EC reflecting that IAPWS needed to take a closer look at this. A committee was formed with Friend (Chairman), Lvov, Hiegemann, and Wagner with the President as ex-officio. The Chairman was requested to report to the EC on Friday (Minute 16.5).

## 2.9 Other Business Considered to Require Special/Extensive Discussions

No other business was raised by the EC.

### 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 and ICRNs that would need action by the WGs and the EC during the week. The Executive Secretary indicated that four final Draft Releases had been forwarded in April, May and July to the Heads of National Committees. No comments had been received prior to the meeting so the TPWS/IRS and PCAS WGs need to provide a final review prior to presenting them to the EC on Friday for approval.

The Executive Secretary then noted that six ICRNs (16-21) had been forwarded to the National Committees in October 2006. Three (18,19,20) had been approved and are available on the IAPWS Website. ICRNs 16, 17 and 21 had received comments and would need action by the WGs during the week.

#### 3.2 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 Cooper 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 (Attachments 4, 5, 6, and 7).

The President closed the opening session of the EC at 10:03am.

### 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 “Interaction of Water and Steam with Materials in Power Plants” 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, 31 August 2007

President Cooper opened the continuation of the EC Meeting at 8:35am. All members of IAPWS were present except Argentina/Brazil, France, Greece, and Italy. Cooper first asked the EC if there were any additional items that should be added to the Agenda. None were suggested. The Executive Secretary showed the latest Agenda with additional items relating to the new activities from the Monday EC Meeting.

5. Acceptance of Minutes of Previous Meeting

President Cooper asked for comments and changes to the minutes of the EC meeting held in Witney, England in September 2006. No changes were noted, thus the 2006 Minutes were accepted.

6. President's Report

President Cooper indicated that IAPWS was in a very healthy condition both financially and in terms of a broad range of activities. He particularly wanted to highlight the expansion of IAWPS into Seawater and the activities associated with the Workshop and ICRNs. He hoped that other opportunities would arise in the future.

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

Chairman Kretzschmar highlighted only those activities from the TPWS working sessions during the week which needed action by the EC or which he thought were of interest to the EC. He indicated that most of the WG activities had been conducted with IRS. Full Minutes and the WG Agenda can be found in Attachment 4.

- 7.1 Kretzschmar indicated that the WG had reviewed a draft of a Revised Release on the Melting and Sublimation Curves of Water and that a Task Group had been set up. The plan is to have the Revised Release ready for approval in Berlin in 2008.
- 7.2 The Task Group on the Properties of Liquid Water at Atmospheric Pressure had been authorized to develop a draft of a Supplementary Release for approval at the EC meetings in Berlin 2008. An Evaluation Task Group had also been formed.
- 7.3 A new release on Viscosity of Water and Steam will be proposed to the EC next year. Chairman Kretzschmar indicated that this will be forwarded

to the Executive Secretary for Postal Ballot following review by the Editorial Committee.

- 7.4 The Chairman indicated that the Release on the Transport Properties of Heavy Water had been reviewed by both TPWS and IRS. The WGs recommended that the EC approve this Release which had been circulated to all National Committees prior to the EC Meetings.

**The EC approved this Release unanimously.**

- 7.5 The Chairman reported that a workshop had been held on the Properties of Humid Air and Humid Combustion Gases jointly with IRS, PCAS and PCC. ICRN #14 on Thermophysical Properties of Humid Air and Combustion Gas Mixtures will be updated by the next EC meetings in 2008. Also a new ICRN on Dew Point Determination for Combustion Gases will be prepared by a Task Group before the next EC Meetings.
- 7.6 Kretzschmar reported that at the Workshop on the Properties of Seawater a draft Release on the Properties of Seawater had been presented by Feistel. Adoption of this Release is planned for the Berlin EC meetings in 2008. The Chairman also indicated that an updated version of ICRN 16 on Seawater had been approved by TPWS, IRS and PCAS, and he requested that this now be sent to National Committees for approval.
- 7.7 With regards to IAPWS-IF97 for the Calculation of the Density for Determining the Dielectric Constant, Refractive Index, Ionization Constant etc., the TPWS and IRS WGs request that the EC ask National Committees if they have any input on the question: “is there any need for instructions from IAPWS about using IAPWS-IF97 in conjunction with formulations for quantities that have been based on IAPWS-95 (dielectric constant, refractive index, ionization constant, etc)”. The Chairman requested that each National Committee (NC) will report the results next year. Discussion by the EC suggested that the IRS Chairman should arrange to draft a brief statement to make it clear exactly what is required from each NC. Replies are expected by 1<sup>st</sup> March 2008.
- 7.8 Kretzschmar next informed the EC that in relation to the liaison with CCM, Harvey had been instructed to prepare a joint paper regarding using IAPWS-95 outside of the range of validity of the CCM standard for liquid water.
- 7.9 With regards to membership of TPWS, the Chairman requested that three new members be added to the WG: V. Ochkov (Moscow Power Institute), P. Spitzer (PTB Germany) and M. Wendland (University of Applied Life Sciences, Vienna, Austria).



**The EC approved these membership additions unanimously.**

The Chairman also indicated that the Czech Republic National Committee had requested that Kadrnitzka be withdrawn from membership of TPWS.

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

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

- 8.1 Parry first informed the EC that IRS has decided to change its Approval of Minutes procedure. The Chairman will distribute an electronic version to all working group members. Any comments or additions will be reflected in an updated version. After a specified period of time when no further comments are received, the minutes will be considered approved.

In discussion by the EC, the Japanese Delegate (Watanabe) suggested that all WGs adopt the same procedure.

- 8.2 The Chairman then reported on the Release concerning Region 5 Extension of IAPWS IF-97 to 50 MPa. TPWS and IRS had reviewed the draft release and the results of the Evaluation Task Group. The Working Groups recommend to the EC that the revised release be accepted. This Release had been circulated to all National Committees prior to the EC Meetings.

**The EC approved this Release unanimously.**

- 8.3 With regards to future Industrial Requirements for Steam Properties the Chairman informed the EC that he had given the WGs a presentation on the future needs of industry with special emphasis on computational fluid dynamics. As a result two Task Groups had been formed. The first Task Group will define Industrial Requirements in connection with CFD Calculations and other industrial applications which would benefit having very fast property calculations. This Group will be chaired by Parry. The second Task Group will investigate homogeneous nucleation as steam is expanded from a dry to wet condition. This Group will be chaired by Hruby.

- 8.4 With regards to Advisory Note No. 3 on Thermodynamic Derivatives from IAPWS Formulations, the Chairman reported that the WGs had thoroughly reviewed the Release and the results of the Evaluation Task

Group. The Working Groups recommend to the EC that the Advisory Note be accepted. This Advisory note had been circulated to the National Committees prior to the EC meetings.

**The EC approved this Advisory Note 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 An international collaboration proposal on “Equilibrium Constants and Speciation of Aqueous Transition Metal Chlorocomplexes over a Wide Range of Temperatures and Pressures” was developed and submitted by Tremaine (Canada) and Sedlbauer (Czech Republic). The President thanked PCAS and indicated that this would be dealt with later (Minute 14.1)
- 9.2 The IAPWS Release on “Ionization Constant of Water over Wide Ranges of Temperature and Density” had been reviewed by PCAS. All comments had been addressed, editorial changes had been made, and the Release had been circulated to National Committees. This release had included as an example a proposed “Acknowledgements Section” as discussed in Minute 2.8. However at this stage in the EC Agenda, the committee to address acknowledgements had not presented its finding to the EC (Minute 16.5), so the President proposed that the Release be approved by the EC and that if the acknowledgement section is approved later it would be added to the Release. If the acknowledgements section is not approved then the Release would remain approved without an acknowledgements section.

**The EC approved the Release unanimously with this caveat.**

- 9.3 Final Report on IAPWS International Collaboration on “Irreversible Thermodynamics of PEM Fuel Cells” by Mican, Marsík, and Lvov has been completed and submitted to the Executive Secretary for the IAPWS files.
- 9.4 Final Report on IAPWS International Collaboration (in PowerPoint format) on “The ionization constant of o-, m, and p-nitrophenol under hydrothermal conditions” by Ehlerova, Tremaine and Sedlbauer has been completed and submitted to the Executive Secretary for the IAPWS files.
- 9.5 It will be necessary to rearrange the joint IUPAC/IAPWS Project on Standard Partial Molar Properties of Solutes following receipt of a letter from Majer explaining that he has left his position as Director of the

Thermodynamics Lab at Blaise Pascale and will not continue the work. Lvov indicated that he had sent an e-mail letter to Majer asking for a number of clarifications about the project. This led to much discussion by the EC. Finally Tremaine indicated that PCAS was simply alerting the EC of the problem, and that PCAS would await a response from Majer until taking any action. The US Delegate (Friend) proposed postponing all expenditures by IAPWS and that a new Proposal should be prepared by PCAS for a postal ballot.

**The EC agreed unanimously with this proposal.**

- 9.6 Lvov proposed that the WG would be renamed from “Physical Chemistry of Aqueous Solutions” to “Physical Chemistry of Aqueous Systems” as this more closely agreed with the work within the PCAS WG.

**The EC approved this WG name-change unanimously**

Chairman Lvov finalized his report by indicating: a) that the joint symposium with ECS will take place on 7 October 2007, b) that the IAPWS Data Book (Valashko) had six of seven chapters in good shape, and c) that PCAS would review its leadership and direction to make the WG work more effectively within IAPWS. A recommendation will be provided at the 2008 Berlin meetings.

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

Chairman Svoboda highlighted those activities that needed action/approval by the EC. A full written report of the PCC WG activities forms Attachment 7.

- 10.1 PCC Workflow. Svoboda first reported to the EC that the WG had spent time during the week to define a Mission Statement and the major Relevant Documents which PCC produces. As well as ICRNs and Technical Publications by PCC members, the WG is developing a new guidance document which at this time is called an IAPWS Technical Application Guidance (ITAG). This will be brought to the EC for approval in Berlin.
- 10.2 ICRNs. Svoboda reported that three ICRNs are pending. The first (ICRN 21) on Ultra-Supercritical Plants and the second (ICRN 17) on Amines are in review following comments from National Committees. The third ICRN (22) is new and needs to be harmonized with the current ICRN 13 on Surface Tension. All three ICRNs will be forwarded to the Executive Secretary for postal ballot.
- 10.3 International Collaboration. The Chairman indicated that the 2006 International Collaboration Project on “Improved analysis of low concentrations of particulate oxides in water/steam cycles” had been completed and circulated for peer review within PCC. When completed it

will be forwarded to the Executive Secretary for the IAPWS files, and submitted for publication. The overall project was completed well below the budget estimate because of the raising of local funds. Here the Danish Delegate proposed that the remaining funds could be used to send the student to the Berlin ICPWS to present a paper on the topic.

**The EC approved this no-cost extension for the project unanimously.**

- 10.4 Guidance Document on Mechanical Carryover. The PCC Chairman reported that draft number 16 was still circulating within PCC but was expected to be finalized by the end of 2007. This will be the first of the new PCC Guidance documents.

The President initiated discussion on the process to be used for approval of this new document and the issue of the exact name for these documents. The consensus of the EC was that it was not necessary to rigidly fix the name of the document until the National Committees have reviewed the first one. The process to be used for approval will be: a) review by WG, b) review by Editorial Committee, c) Postal Ballot for review by NCs, and d) approval by EC.

**The EC approved this suggested process unanimously.**

- 10.5 PCC Membership. The Chairman proposed one new members for PCC: Dr. Andreas Drexler (Areva, Germany). He also indicated that PCC had elected a second Vice-Chairman: Marc deWispelaere (Laborelec, Belgium)

**The EC approved these membership and officer changes unanimously.**

The Chairman informed the EC that two PCC members (McGrath and Mathur) had retired and wished to be removed from the membership list.

- 10.6 The Chairman next informed the EC that PCC had formed three Task Groups on: a) Carryover, b) Risk for Asset Damage, and c) Review of the European Standard EN 12952.12. With reference to the last, the Task Group will prepare a uniform technical statement that will be used by National EN committees to support an update of this standard.

With regards to this item, the President asked the EC for comment. After much discussion focused on IAPWS commenting on standards, a proposal was made that the technical statement will be circulated to the Members of the EC for review and approval with a two weeks time period for response.

**The EC approved this process unanimously.**

- 10.7 PCC Public Relations. The Chairman indicated that the commented and edited Minutes would be submitted to PPChem for publication, and that a presentation of IAPWS/PCC will be made at the VGB “Chemistry in Power Plants” conference in October 2007.

11. Editorial Committee Report

Chairman Harvey reported that the Editorial Committee (Harvey and Cooper) had reviewed and approved four items during the year: a) Revised Release on the IAPWS Industrial Formulation 1997, b) Advisory Note #3 (thermodynamic derivatives), c) Release on the Ionization Constant of H<sub>2</sub>O, and d) Revised Release on Viscosity and Thermal Conductivity of Heavy Water Substance. The Committee had also provided preliminary input on the proposed viscosity release.

Harvey then raised the following issues:

1. Reminder to the WGs to allow sufficient time for Editorial Review.
2. The names and contact of the President and Executive Secretary need to be updated on all future documents.
3. There is a need to agree on a procedure for updating references in Releases without going through a long approval process. A motion was developed to “allow the Editorial Committee to make small changes to IAPWS Documents without needing EC approval”.

**The EC approved this simplification unanimously.**

4. Should the IAPWS document come before or after the journal publication? After much discussion, the consensus of the EC was that there is no need to have a release first, and the procedures should allow for both approaches.
5. Should the Editorial Committee review ICRNs? After some discussion which reviewed the initial simple and quick concept for ICRNs, the consensus of the EC reflected that if a National Committee, during review, indicated that Editorial Review was necessary then the ICRN would be sent to the Editorial Committee. This process should be included in the revised Statutes and By-Laws.
6. The final item was a request by Harvey to the President and EC that a third person should be added to the Editorial Committee.

12. Membership and Associates

12.1 Members Defaulting on Dues.

The Executive Secretary indicated that according to the latest Swiss bank account statement (end of June 2007), the following countries had not paid the 2007 IAPWS dues: Argentina/Brazil, Canada, Denmark, France, and Russia. The Executive Secretary further reported that in 2006 France

Russia and the Argentinean/Brazil National Committee had not paid the dues. In 2005 France and Russia had not paid the dues. The Canadian Delegate (Tremaine) told the EC that the Canadian NC had been undergoing changes in personnel and in support. He considered the Canadian committee was now stable and would be able to pay the 2007 dues relatively soon. The Russian NC had paid the 2007 dues to the Executive Committee earlier this week.

## 12.2 New Associate Member

The Executive Secretary reported that earlier in August he had received an application for IAPWS Associate Membership from the newly formed Swiss National Committee. The President requested the Head of the newly formed committee to say a few words. Svoboda reported that the Swiss National Committee will probably have about 12 individual members, and were going to test the feasibility of developing a joint membership with Austria, and that they hoped to be able to soon apply for full IAPWS membership.

## 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 81,017 in the Swiss bank account and about \$27,935 in the US account for a total of \$94,569 combined. The status as at 30 June 2007 in the bank accounts had been provided to each National Delegate present at the EC meeting.

The Executive Secretary next reported that the 2006 financial statements had been forwarded to the Auditors in January 2007. Both VDI in Germany and Mr. Miyagawa in Japan had reviewed the financial statements. 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 2008.

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

The Executive Secretary also provided a rough estimate of the income and known planned expenditures for 2007.

### 13.2 Time and Place of the 2008 and 2009 Meetings

The Executive Secretary reminded the EC that the 15<sup>th</sup> ICPWS would be held in Berlin in September 2008 and that a status report would be presented later (Minute 16.2). He then explained that the next logical host countries to hold IAPWS annual EC and WG meetings were Canada, Czech Republic and the USA. He had spoken to the Canadian Delegate, who had suggested that 2010 would be a much more convenient time. During the week, the IAPWS Executive Secretary had asked Zeijseink to explore the possibility of hosting the 2009 meetings in The Netherlands and to present an invitation at the 2008 EC Meetings in Berlin. If it will not be possible, then Zeijseink will inform the Executive Secretary. The 2009 meetings would then revert to Canada if possible.

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

The President indicated that the Releases and ICRNs had been discussed within the WG Reports so no further action was required by the EC.

### 14.1 International Collaborative Projects.

The President asked the Chair of the Committee (Parry) to report on the discussions during the week. The Chairman indicated that the Committee had only reviewed one proposal for international collaboration. The details of this proposal are provided in Attachment 8. The Chairman then summarized the proposal for the EC.

“Equilibrium Constants and Speciation of Aqueous Transition Metal Chlorocomplexes over a Wide Range of Temperatures and Pressures”. The IAPWS sponsors are Tremaine (Canada) and Sedlbauer (Czech Republic). The young scientist will be Jitka Felcmanova at the Technical University of Liberec, Czech Republic. The requested contribution from IAPWS is \$14,000 for subsistence for 10 months.

The Chairman recommended to the EC that IAPWS support this proposal. Members of the EC indicated that the contribution was a little higher than in the past and questioned whether this fell within the spending guidelines of IAPWS in relation to the large expenditures needed over the next year to support the 15<sup>th</sup> ICPWS. After some discussion and analysis

**The EC approved the Collaborative Project unanimously.**

## 15. IAPWS Awards

### 15.1 IAPWS Helmholtz Award

The President reported that Dr. Karsten Meier had been selected as the 2007 Helmholtz Awardee and that he had been presented with the award prior to his Helmholtz Lecture at the Symposium on Wednesday. He then asked the German Delegate for the names of the 2008 Helmholtz Award Committee. The 2008 Helmholtz Committee would consist of: Chairman Wagner (Germany), Assael (Greece), Nakahara (Japan), Petrova (Russia) and Anderko (USA). Nominations will be due to the Executive Secretary by January 31, 2008.

The President next asked the Chairman of the Helmholtz Procedures Committee to review the results of this committee's further discussions during the week (Minute 2.3). Friend indicated that the committee (Cooper and Bellows) had discussed only the issue of the age requirement for the Helmholtz Award. Initially it had been set at age 40. Then last year this had been changed to 10 years after the highest degree. The President had raised this as a limiting requirement so the Committee now proposes 12-15 years after the highest degree as being the upper limit. After some discussion the Canadian Delegate (Tremaine) modified the "12-15 year" proposal to 15 years

**The EC approved this modification to the Helmholtz requirements unanimously.**

### 15.2 IAPWS Honorary Fellowships

The President reported that Palmer (USA) had been elected Honorary IAPWS Fellow, following the established procedures and after unanimous approval through the postal ballot conducted by the Executive Secretary. In Palmer's absence, the Fellowship Award had been presented at the IAPWS Dinner on Thursday evening to the Head of the US National Committee.

The President reminded the EC of the Awards Committee for 2008 with Tremaine as Chairman and Watanabe as member with the IAPWS President as ex.-officio member. Nominations are due to the Executive Secretary by January 31, 2008.

### 15.3 IAPWS Gibbs Award

The President requested that the Chairman of the Gibbs Award Committee, Nakahara, present the results of his committee's discussions



during the week. Nakahara reported that the committee agreed with the Presidents extension of the nomination time to Tuesday at 5pm. The committee had reviewed the nomination of Professor Wolfgang Wagner and recommended him as the 2008 IAPWS Gibbs Award.

**The EC approved this nomination unanimously.**

16. New Business

16.1 Press Release

The President requested that Bellows project the Press Release for review by the EC. Suggestions were provided by the EC and the final version is contained in Attachment 9.

16.2 15<sup>th</sup> ICPWS

The President requested the Head of the German National Committee to provide a status report on the 15<sup>th</sup> ICPWS. Rukes delegated this to Weber, who reported on the following items:

- The German Organizing Committee had met 2 times since Witney and several times during the current IAWPS week
- The International Program Committee met twice during the current IAPWS week. 17 Symposia subjects with Chairmen have been developed.
- First Announcement has been distributed through IAPWS and VDI. The second announcement and call for papers will be issued in October 2007. Submission and review of Abstracts will take place before the meeting of the International Program Committee on 21/22 February 2008 in Berlin.
- Web site is online ([www.icpws15.de](http://www.icpws15.de))
- Title, Dates, Location and Hotel have been decided upon
- Preliminary Schedule for the conference week exists, with option for 4 parallel sessions
- An initial Program and Timeline has been developed
- Conference fees and projected participants have been developed so that a preliminary budget could be presented to the EC.

Weber then requested that the EC support the Conference with the remainder of the donation approved at the Witney meeting in 2006.

**The EC unanimously approved the remaining \$20,000 of the IAPWS donation to the 15<sup>th</sup> ICPWS.**

### 16.3 IAPWS Member Countries, and Statutes and By-Laws

The President requested that Chairman Watanabe report on the activities of the Task Group, which had been formed on Monday (Minutes 2.5 and 2.6). Watanabe indicated that the six person committee had met twice during the week. The Committee was asked to: a) assess ways to improve participation in IAPWS of countries and individuals, and b) consider other needed changes to the IAPWS Statutes and By-Laws for adoption at the 2008 15<sup>th</sup> ICPWS. The Chairman then asked Harvey to present the suggestions from the Committee on only those items where the EC needs to provide decision or guidance. Harvey then provided discussion on the following five items:

1. General Meeting. The recommendations here were: a) to continue with the General Meeting, make it only informational and give the responsibility for the Statutes to the EC, and b) changing the Statutes should not become too easy. These recommendations resulted in much discussion by the EC. The Canadian Delegate (Tremaine) proposed the first motion to the EC which was that “Non-members should not have voting rights at the General Meeting”. This was seconded and

**The EC approved this motion unanimously**

The German Delegate (Rukes) next proposed a motion “That the authority to vote on the Statutes and General Policy should be changed from the General Meeting to the EC”. This was seconded and

**The EC approved this motion by 6 votes to 2 of Members present.**

The US Delegate (Friend) then proposed the motion that “The Statutes Committee should include that the EC should vote only on the Statutes at a General Meeting”. This was seconded and

**The EC approved this motion by 4 votes to 3 with one Member abstaining.**

2. Members Defaulting on Dues. Here Harvey reminded the EC that the Statutes already include that after three years of a member defaulting on payment of dues “its status will be changed to that of Associate Member”. The Committee recommends that the EC should be allowed to make exceptions each year.

**The EC approved this recommendation unanimously.**

The Committee also suggested, as a one-time experiment, that each member in default on dues payment should send a written report to the President and Executive Secretary by 31<sup>st</sup> December on the health of its National Committee.

3. Role of Individuals in IAPWS. Harvey indicated that this was already covered in the Statutes, but it would be made clearer in the Statutes and on the IAPWS Web Site that individuals can be members of a WG even if their country is not an IAPWS Member. Observers from non-member countries (and affiliated countries) are welcome to attend EC meetings.
4. Document Procedures. First Harvey provided the recommendation that for Releases and Guidelines, the procedures should be revised and clarified for faster processing now that electronic communication was used. Adequate time would still be incorporated for review by National Committees.

**The EC unanimously approved that these Statutes changes should be implemented**

With regards to ICRNs the Committee recommends that the Statutes be changed so that minor comments do not delay the approval process.

**The EC unanimously approved this recommendation**

5. Speakers Invited to Meetings. Harvey indicated that the Committee wanted to remind annual meeting organizers to arrange for one-day registrations, and to consider ways to provide partial support to invited people who can help in advancing the interest of IAPWS. The Statutes already include this but currently there are no mechanisms to activate the process. The EC suggested that a Task Group consisting of Friend and Harries develop a set of procedures to support invited speakers and present this to the EC at the 2008 meeting. The EC accepted the principle and suggested leaving it up to the President and Executive Secretary to make a local decision for the 2008 meetings.

As a final item, the President wished to develop a series of next steps to address the revision of the IAPWS Statutes and By-Laws. After some discussion with EC, the following steps were formulated:

1. A Task Group to draft the revision was formed and consisted of Harvey (Chair), Cooper, Watanabe, Hruby and Alexandrov
2. Once drafted the Executive Secretary will circulate copies to the Heads of National Committees at least six months prior to the Berlin EC meeting.

3. Comments will be reviewed by the Task Group and changes will be made. The final version will be circulated to the Heads of NCs about one month before the Berlin EC meeting. A vote for approval will be taken at the Sunday EC meeting.
4. The final vote will be taken at the General Meeting.

**The EC approved these steps unanimously.**

#### 16.4 IAPWS Restructuring: Education and Outreach

At Monday's EC Meeting (Minute 2.7), the President had asked the Chairman of the Education and Outreach Committee (Kretzschmar) to meet with his committee members during the week and report to the EC on Friday. The Chairman presented his Committee's report which is Attachment 10. Only item 3 of this report needed discussion by the EC as this was new in the suite of items. The Committee suggested to the EC that there should be 10 Awards for Students at the ICPWS at an amount high enough to offset a significant portion of the travel costs (500 Euros). Much discussion resulted in the US Delegate (Friend) proposing to the EC that "the EC allocate 2500 Euros from IAPWS for 5 students to attend the 15<sup>th</sup> ICPWS with the local committee making the selection".

**The EC approved this proposal unanimously.**

#### 16.5 Acknowledging Contributions to IAPWS Documents

At Monday's EC Meeting (Minute 2.8), the President had formed a Committee to investigate whether acknowledgements should be added to IAPWS documents: Friend (Chair), Lvov, Hiegemann and Wagner. Friend presented the findings and first indicated that his Committee recommends that the EC exercise maximum flexibility in approving or removing an Acknowledgements section in any future IAPWS document.

The Committee further recommended that the primary authors of an IAPWS document provide a draft with the content and format of any Acknowledgement appropriate to that document. The Evaluation Committee, the Working Group(s), the Editorial Committee, and the Executive Committee should review and revise any Acknowledgement section and explicitly give its recommendation for inclusion in the final document.

These two recommendations lead to much EC discussion. The President asked the WG Chairmen for their WG's specific response. TPWS/IRS did not recommend any acknowledgements in any IAPWS documents. PCC and PCAS recommended that acknowledgements should be included. This

lead to further discussion as to whether different documents could/should have different approaches. The President then asked if the EC agreed with the Committee's recommendations. This led to two motions to the EC. The first was proposed by the Canadian Delegate (Tremaine) and seconded by the US Delegate (Friend): "All IAPWS documents have acknowledgements, which include the names of those who prepared the document and the Evaluation Committee".

**The EC rejected this proposal by a vote of 5 to 1 with 2 abstentions**

The second was proposed by the US Delegate (Friend) and seconded by the Canadian Delegate (Tremaine): "All IAPWS documents may have acknowledgements, which include the names of those who prepared the document and the Evaluation Committee and the names of WG members who had prepared the document".

**The EC rejected this proposal by a vote of 5 to 2 with 1 abstention.**

As a result of these votes by the EC, the President announced that the inclusion of acknowledgements in IAPWS documents had been rejected by the EC. He also indicated that a letter should be sent to the author of the Ionization Constant Release.

**Action: The President will send a thank-you letter to the author of the Ionization Constant Release which will clearly provide attribution of his contribution.**

#### 16.6 Review of Progress of Research in Member Countries

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

Britain and Ireland	Attachment 11
Czech Republic	Attachment 12
Germany	Attachment 13
Japan	Attachment 14
Russia	Attachment 15
USA	Attachment 16

#### 16.7 Participants

Attachment 17 provides a list of participants at the IAPWS EC and WG Meetings in Lucerne, Switzerland in August 2007.

#### 16.8 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 Lucerne Meetings. This will be forwarded electronically to the Head of each National Committee.

#### 18. Closing Remarks and Adjournment

The President thanked everybody for participating at this EC meeting. He particularly thanked the new Swiss National Committee for organizing the 2007 Annual IAPWS Meetings, and then he formally closed the 2007 EC meeting at 4:20 pm.