

Minutes of the Meetings  
of the  
Executive Committee  
of the  
International Association for the Properties of Water and Steam  
held in  
Prague, Czech Republic  
3-9 September 2000

Plenary Session. Monday, 4 September 2000

The President of IAPWS, Peter Tremaine, welcomed the EC and other IAPWS members to Prague for the EC and WG Meetings of IAPWS. He then asked the Chairman of the Czech Republic National Committee, Professor Kadrnozka, to welcome IAPWS to Prague. The President then officially opened the 2000 EC Meetings by introducing all the National Delegates. Each of the member countries of IAPWS was in attendance with the exception of Italy.

1. Adoption of Agenda

A provisional agenda had been circulated to all IAPWS members by the Executive Secretary in May. The President indicated two small additions to this agenda, and then requested any other additions and changes to the agenda. There were no further suggestions for additional items. The agenda was then approved by the heads of all National Delegations and forms Attachment 1 of these minutes.

2. IAPWS Business and Appointment of Committees

2.1 Press Release.

The President asked Dr. Bellows, Mr. Gallagher, Dr. Bignold and Mr. Cooper to serve on this Committee. The Press Release is discussed in Minute 19.3 and Attachment 12.

2.2 Evaluation Committee on International Collaboration.

The President indicated that only one proposal had been received 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. The discussion of this Committee is reported in Minute 14.3 and Attachment 9.

### 2.3 Helmholtz Award Committee

The President introduced the first Helmholtz Awardee, Dr. Anderko. He then reminded the EC that the Helmholtz Committee for the 2001 award would consist of the Delegates from Canada, Czech Republic, Denmark, France and Germany. The Chairman would be Mr. Stodola from Canada. The procedures to be followed are delineated in the 1999 EC Canada Minutes

### 2.4 IAPWS on the Internet

The President indicated that all the items concerning the IAPWS Web Site would be discussed in Minute 3.5.

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

Mr. Cooper indicated that he had attended the International Electrotechnical Committee (IEC) meeting in London in March 2000 with Dr. Rukes. He suggested that IAPWS should officially respond to IEC concerning the Steam Purity Standards being formulated by the IEC. He suggested a committee should be formed with a representative from the PCC WG. The President suggested the members would be Dr. Rukes, Mr. Cooper and Mr. Daucik.

## 3. EC Mandate to Working Groups and Membership

### 3.1 Refreshment of WG Officers

The President reminded the EC that the WG Chairmen for IC, PCAS and PCC had been in the position for five years, and that the Chairman for IC would be taking over as the IAPWS President in January 2001. Thus he suggested that all the WGs review the officer positions in their WG during the week, and that the Chairmen report back to the EC in their respective reports on Friday 8 September, 2000.

### 3.2 Releases, Guidelines and Certified Research Needs.

The President reported that the Executive Secretary had sent one Guideline (Critical Locus of Aqueous Solutions of Sodium Chloride) out for postal ballot to National Committees, and that any comments were due to the Executive Secretary by the end of this first day of the EC meetings. Two other Guidelines were in review by the WGs.

The President next indicated that the WGs needed to review the status of the ICRNs, with particular emphasis on ICRN numbered 6, 9, 10 and 11.

### 3.3 Proposals for International Collaborations.

The President reminded the EC that any proposals for Collaboration should be handed to the Executive Secretary before the end of this first day of the EC meetings.

### 3.4 Reporting WG Activities to the EC.

The President wished to remind the WG Chairmen that their reports to the EC on Friday should focus only on those actions of major interest to the EC and those items, which needed approval by the EC.

### 3.5 IAPWS on the Internet and IAPWS Electronic Minutes

The President asked Dr. Friend to provide the report prepared by Dr. Harvey on the current status of the IAPWS website ([WWW.IAPWS.org](http://WWW.IAPWS.org)).

Dr. Friend indicated that the website was located at NIST and run by Dr. Harvey. There were typically about 500 visits to the site every month.

Dr. Friend next reviewed the “Frequently Asked Questions” (FAQs). Dr. Harvey had organized answers to the FAQs on the technical side and on the business side. The answers were reviewed by the WG Chairmen.

For the future, it is desirable to place all the Releases and Guidelines on the Website so that they can be downloaded. At this stage Mr. Miyagawa indicated that as part of preparing the new JSME Steam Tables, a CD had been included which contained scanned versions of all the IAPWS Releases and Guidelines. He suggested that IAPWS should request to JSME that these could be inserted into the IAPWS Website.

Next, Dr. Rukes requested that the EC officially thank Dr. Harvey for doing an excellent job in developing the IAPWS Website into such a success for IAPWS.

### **The Whole EC Applauded in Appreciation**

The Executive Secretary reported to the EC that there had been 79 requests for IAPWS Documents during the year. He then suggested that to advertise IAPWS further the EC Minutes should also be inserted on the Website. He indicated that the 2000 Minutes could take an intermediate step and that for this year the minutes would be available in both hard copy and electronic format. In 2001 the minutes would be available on the Website. Some discussion by the EC ensued; the consensus of which was that a hard copy and any WG (or other) attachments to the minutes should still be kept within the IAPWS Secretariat.

4. Preview by WG Chairmen of Weeks Activities

President Tremaine requested each WG chairman to provide an overview of their respective planned meetings and activities throughout the week. The details of these WG meetings are covered in detail in Minutes 7, 8, 9, and 10

Activities During the Week

The first day activities of the WGs and Executive Committee were followed by WG meetings from Monday–Thursday. An IAPWS Symposium “Processes in Steam and Material Protection in Power Plants” was held on Wednesday September 6, 2000. The Symposium was opened by the Czech National Committee Chairman, Professor Kadrnozka. The Symposium program is given in Attachment 2. During the Symposium, the President presented the first IAPWS Helmholtz Award to Dr. A. Anderko.

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

Executive Committee Meeting. Friday 8 September 2000

President Tremaine opened the continuation of the EC Meeting at 9:00am and first of all asked if there were any additional items that should be added to the Agenda. None were suggested.

5. Acceptance of Minutes of Previous Meeting

President Tremaine asked for comments and changes to the minutes of the EC meeting held in Toronto, September 1999. None were provided.

6. President’s Report

President Tremaine wished to note some successes over the last two years:

- The 13<sup>th</sup> ICPWS had been held and a report would be provided later
- Work had started on the Atlas as a new enterprise for IAPWS
- Implementation of the IF-97 into industry practice
- Three new IAPWS awards had been initiated: Gibbs (for senior scientists), Helmholtz (for junior scientists), and Whalley, Kell and Haar (for travel support to the 13<sup>th</sup> ICPWS)
- Shift from the classical water and steam areas to other areas, with prime examples being the Atlas and TPWS WG move to binary solutions.

President Tremaine finished his report with a challenge to IAWPS, the EC and WGs, which involved the need to continue sharing information in a changing world. He suggested that whereas previously much research had been supported through large corporate programs, it had now moved to smaller government, industrial, and university laboratories, and that IAPWS had been one of the pioneers.

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

Chairman Friend highlighted the following activities from the TPWS working sessions during the week, some of which had been joint meetings with IC and other WGs. Full minutes can be found in Attachment 4.

- 7.1. The work of the Task Group on Transport Properties is continuing; Drs. Mares and Sifner will be added to the TG to assist with evaluation.
- 7.2. The work of the Task Group on D<sub>2</sub>O thermodynamic properties formulation is continuing slowly; Drs. Kretzschmar and Sengers will be added to the TG to assist Dr. Hill.
- 7.3. The WG recommends that the proposed guideline on "Fundamental Constants" proceed for possible adoption next year. The cover page should include the words "This Guideline is reviewed annually in September and revised as necessary. Date of this revision September 2000;". Dr. Harvey will be asked to serve as chairman of a permanent task group to conduct an annual review; the document should add the viscosity of water at 20°C; input from other WGs is requested for approval and consideration as possible additions to future versions of this document.
- 7.4. The technical content of the proposed collaborative research project (NIST and Dagestan Thermophysical Center) was endorsed by the WG.
- 7.5. Mr. Cooper should continue as IAPWS liaison to IEC, and PCC interaction with IEC is also encouraged.
- 7.6. The draft Guideline on ammonia-water properties was endorsed by the WG with additional wording at the bottom of Section 7 to indicate that this formulation may not be reliable in the vicinity of the density maximum. This Guideline needs to pass through the Editorial Committee and will then be forwarded to the Executive Secretary for a Postal Ballot.
- 7.7. The WG recommends that a new TG be established to study computer simulation issues related to aqueous systems; this may be joint with PCAS; Dr Igor Svishchev should be chair.

Professor Watanabe asked whether there was any timetable to find new members for this TG. It was suggested by the President that the WG Chairman writes to each National Committee requesting the names of potential members for the TG. The people do not need to be current members of the WG.

7.8. The WG is interested in the following new projects:

- a) H<sub>2</sub>O-CO<sub>2</sub> surface as a function of  $T, p$  and  $p, h$
- b) Solid-Liquid Equilibrium as applied to methane hydrates (clathrates)
- c) Humid Air Turbines
- d) NaCl-H<sub>2</sub>O Mixtures
- e) Backwards Equations  $T(p, h)$  and  $T(p, s)$  for the critical and supercritical regions (Region 3) of IF97. For this item, a new TG will be established with Dr. Kretzschmar as chair, and Drs. Mares and Wagner as members.

These suggested new WG items resulted in the following discussion:

- The President indicated that the NaCl-H<sub>2</sub>O system is also a priority item for PCAS
- Professor Sengers wished to add that there was not sufficient expertise within the current WG and would like to ask each country for help in finding new members to assist in the work
- Dr. Levelt Sengers raised the issue of different terminology between the WGs, and suggested that the first step should be to set up a collaboration to find commonality

7.9. Dr Svishchev is nominated as new member of WG; Mr. Dirk Schmaus should be removed from roster.

**The EC approved these new membership changes unanimously.**

7.10. The WG recommends that the ICRN on ammonia-water properties be renewed for a period of one year, and further intends to develop a revised ICRN on this system (with some emphasis on diffusion coefficients) for consideration next year.

## 8. Report and Recommendations of Industrial Calculations Working Group (IC)

Chairman Rukes provided the IC report to the EC. Full minutes can be found in Attachment 5. He first mentioned that items 8.1 and 8.2 are common topics of the WGs TPWS and IC.

- 8.1 Professor Kretzschmar presented the draft of the supplementary release on the p(h,s) backward equations in IAPWS-IF97 region 1 and 2. The need for the backward equation was explained. It was reported that the developed equation fulfils all requirements regarding numerical consistency and that a remarkable computing time advantage can be achieved. The WGs TPWS and IC recommended to proceed with this proposal for a supplementary release. An evaluation task group with Mr. K. Miyagawa as chair and Mr. J. Gallagher as a member was set up to finalise the product at the 2001 meeting.
- 8.2 Mr. Miyagawa presented the proposal of a guideline for the Tabular Taylor Series Expansion (TTSE) Method. The WGs TPWS and IC recommended to proceed with this proposal for an IAPWS guideline. An evaluation task group with Mr. Weber as chair and Mr. Kodl as a member was set up, and will report at the 2001 meeting. The following issues could not be clarified by the WGs:
- a) The proposed guideline is only for the method of TTSE. Up to now IAPWS guidelines were formulated only for equations and data. Therefore the proposal is beyond the current range of IAPWS guidelines. The WGs could not decide for the proposed document whether the definition of an IAPWS guideline is appropriate or if a new IAPWS product should be defined. The EC was asked for clarification.
  - b) The purpose of the proposed guideline is to give the user easy access to the TTSE method. Therefore all required documents, source codes and executables will be included in the guideline and should be available from the IAPWS home page. The EC was asked for clarification concerning the distribution of documents through the home page and the maintenance of the home page.
  - c) The proposed downloading availability raises questions concerning copyright, since the documents included in the guideline use IAPWS-95. The WGs asked the EC for advice on this matter.
  - d) To address copyright issues associated with down loading of IAPWS-95 and other IAPWS products (including the question of whether downloadable executable code should be available on the web site).

After much discussion by the EC, it was proposed that a committee should be formed ("Electronic Download Committee") consisting of Dr. Friend, Mr. Miyagawa, and Mr. Cooper. This committee will address all aspects of downloadable IAPWS products, and would also include copyright issues of

IAPWS-95. The Committee would report back to the EC at the 2001 Meeting in the USA.

**The EC approved this proposal unanimously.**

- 8.3 Mr. Weber presented the results of an international survey which was conducted by the WG to define future needs of the industry. There were concerns about the meaningfulness of the survey since the reply rate was only 13% and no replies were existing for some major companies in the power plant industry. The main requirements contained in the replies were equations for the metastable regions and additional backward equations for IAPWS-IF97  $T(p,h)$  and  $T(p,s)$  in region 3. The WG IC recommended to proceed with both of the requirements. For the metastable regions Dr. Rukes agreed to prepare a draft document for an ICRN and to present it at the 2001 meeting. The WG IC requested the WG TPWS to set up a task group to investigate backward equations in IAPWS-IF97 region 3.

Another reason for the survey was to address a future name for the WG IC. Several proposals for the WG IC name were discussed including "Industrial Requirements and Solutions" (IRS), "Industrial Co-ordination" (IC) and "Industrial Computation and Modelling" (ICM). A final decision about the name will be made at the 2001 meeting.

Additionally a suggestion was made to the EC to include an ongoing survey of industrial needs on the IAPWS web pages.

- 8.4 Mr. Okita had provided a report to the WG about the impact of the change from IFC67 to IAPWS-IF97 on HRSG design and performance calculations. The differences found confirmed in general the findings of earlier investigations.
- 8.5 The WG chairman Dr. Rukes had expressed his intention to step down from the position of WG chairman when he becomes the IAPWS President in 2001. The WG nominates Mr. Miyagawa as the new WG Chairman and requests the EC to approve the nomination. The position of the vice chairman remains unchanged.

**The EC approved this proposal unanimously.**

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

The report to the EC was made by Chairman Palmer. The full minutes for PCAS are included in Attachment 6. The Chairman wished to inform the EC on the following six items:



- 9.1 Professor Majer had been nominated as the new chairman for PCAS and Professor Lvov as the new vice-chairman, although Professor Lvov had not been present at the PCAS meetings.

**The EC approved these proposed PCAS Officer changes unanimously.**

**Action: The current WG Chairman should write to Professor Lvov to ensure he agrees to the new appointment.**

- 9.2 PCAS seeks closer ties with PCC and TPWS, but it was also decided to continue as a separate WG. PCAS requests the following:
- a. A list of PCC research needs, and would like to participate with PCC in discussions on these issues in the future.
  - b. Collaboration with TPWS in forming a Task group on molecular simulations, noting that Professor Wood (Delaware, USA), who is a member of PCAS, is already active in this field.

- 9.3 ICRN #9 - has been closed with receipt of documentation from P. Tremaine.

ICRN #10 – was originally proposed by S. Lvov who was not in attendance. He will be contacted in the future as to his intentions for the future of this document.

ICRN #11 – will probably be closed, but co-proposer, D. Palmer, will contact R. Fernandez-Prini to confirm this action.

- 9.4 New research initiatives are (in order of priority):
- a. pH measurements and standards at high temperatures.
  - b. Model for prediction of standard thermodynamic properties of aqueous organic solutes to high temperatures and pressures.
  - c. Ion association of alkali metal salts at sub- and supercritical conditions (macroscopic and molecular understanding).

- 9.5 PCAS would like to consider establishing a Web site for PCAS with links to the main IAPWS site and those of other working groups.

- 9.6 PCAS nominated Dr. Anderko as a new WG member

**The EC approved this proposal unanimously.**

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

Chairman Daucik highlighted the key items from the WG meetings and those activities that needed action/ approval by the EC. A full written report forms Attachment 7.

### 10.1 Priority list

Chairman Daucik delineated the latest list to the EC

- Release and transport of copper compounds in the water/steam cycle
- Origin, behavior and significance of organic compounds in the power cycle
- Solubility of impurities in steam
- Nucleation and condensation in steam turbines
- Physical and chemical processes of concentration and deposition in the power cycle
- Interpretation of redox potential measurements in plant

### 10.2 Membership.

Chairman Daucik proposed two new members to the EC:

Michel Rziha, Siemens, Germany  
Patrick Colman, ESB, Ireland

Retired members: Dr. Izumiya, Japan

**The EC approved the WG membership changes unanimously.**

### 10.3 Officers

Chairman Daucik indicated that the WG had thoroughly discussed the situation with regards to the WG Officers and had elected two new vice-chairmen:

Andre Zeijseink, KEMA, Netherlands  
Robert Svoboda, Alstom, Switzerland

**The EC approved this new arrangement of officers for the WG unanimously.**

### 10.4 Liaison to IEC

Chairman Daucik presented the draft of the letter he proposed should be sent to IEC by IAPWS. This letter forms Attachment B to the PCC Minutes (Attachment 7)

### 10.5 Atlas

Chairman Daucik indicated that the WG had nominated Dr. Barry Dooley as the lead author for Chapter 15 of the Atlas

11. Editorial Committee Report

Chairman Cooper reported that the Editorial Committee had only examined one document during the year: Guideline on the Critical Locus of Aqueous Solutions of Sodium Chloride.

12. Membership and Associates

- 12.1 The Executive Secretary reported that there were no new members or associate members. However, he indicated that IAPWS had been contacted by Professor Marc J. Assael from Aristotle University in Greece to provide information on joining IAPWS. Professor Assael had contacted the Hellenic Association of Chemical Engineers and found that they were interested in representing Greece in IAPWS.

The Executive Secretary also had sent an invitational letter to introduce IAPWS to Mr. Guang-Yao Wei in China. This was based on contact of Professor Watanabe with Professor Zhu of Tsinghua University. To date there has not been any reply.

- 12.2 Members Defaulting on Dues. The Executive Secretary indicated that according to the latest Swiss bank account statement (31 August 2000), the following countries had not paid the 2000 IAPWS dues: Argentina, Italy, and Russia. Italy and Russia had also not paid the 1999 Dues. There was no Italian delegate present at the EC Meeting to explain the situation, and it was proposed that the Executive Secretary contact the Italian NC for an explanation. The Russian delegate told the EC that the situation is very difficult in Russia, but that the NC was continuing to seek support. The Argentinean Delegate indicated that the Dues were in process.

13. Executive Secretary's Report

13.1 Financial, Auditors and Dues

The Executive Secretary reported that IAPWS was on a sound financial footing with currently over SFrs 134,000 in the Swiss bank account and over \$10,000 in the US account for a total of \$89,370 combined. The status as at 31 August 2000 in the bank accounts was provided to each National Delegate present at the EC meeting.

The Executive Secretary next reported that the 1999 financial statements had been forwarded to the Auditors in January 2000. Both VDI in Germany and Mr. Miyagawa in Japan had reviewed and approved them.

The financial statements for 1999 and the Auditors reports were 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 2001.

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

As a final item under Finances, the Danish Delegate requested that the Executive Secretary should provide an estimate of the known future expenditures at each EC meeting.

#### 13.2 Time and Place of the 2001 and 2002 Meetings

The President asked the delegates from the USA and Argentina to provide a few details of plans for the years 2001 and 2002.

First, Dr. Levelt Sengers provided information on the 2001 meeting planned in the USA. Details are provided in Attachment 8.

Dr. Corti next told the EC of the early planning for the 2002 meeting in Argentina, and how the Argentinean NC was hoping to have participation from Brazil. Some discussion followed on the dates for this meeting. A straw pole of those in attendance suggested general support for either the last week in July or the first week in August. Dr. Corti will provide more details at the next EC meeting.

**ACTION: National Committees were requested to look for possible overlaps (meetings, conferences, etc.) which might interfere with the dates proposed for the 2002 meeting. Information should be provided to Dr. Corti.**

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

##### 14.1 Guidelines and Releases.

The Executive Secretary indicated that there had not been any comments received on the Guideline on the Critical Locus of Aqueous Solutions of Sodium Chloride. Thus this new Guideline was approved.

**ACTION: A final version of the guideline in hard copy and electronic formats should be sent to the Executive Secretary.**

As reported in the TPWS report (Minute 7.6) the Ammonia – Water Guideline will be finalized, forwarded to the Executive Secretary, and distributed to NCs for postal ballot.

#### 14.2 ICRNs.

The President indicated that the ICRNs had been dealt with during the WG reports.

#### 14.3 International Collaborative Projects.

The President asked Dr. Rukes as Chair of the Committee to report on the discussions during the week. Dr. Rukes indicated that only one proposal had been received. The details of this proposal are provided in Attachment 9. He indicated that the Committee had raised a number of issues:

- Professor Tremaine should provide some guidance with regards to the phosphates to be considered
- There was \$10K being proposed for the young scientist (currently not confirmed, but likely to be Mr. Aliev).
- There was \$2K being proposed for the Senior Investigator, Dr. Magee, who is a Group Leader at NIST.

Much discussion ensued with respect to whether IAPWS funds should be provided to a Senior Group Leader to supplement travel. Finally the President requested all of the interested parties to leave the room. He then asked for any further discussion and proposed two motions:

Motion 1. That the \$10K for the young scientist be approved.

**The EC approved this unanimously.**

Motion 2. That the \$2K be provided for Dr. Magee.

**The EC approved this by a majority vote (7 approvals).**

**The President requested, and the EC approved, that a note should be inserted into the minutes to indicate that this approval had set a precedence for the IAPWS Collaborative Projects, and was a very case specific expenditure.**

15. IAPWS Fellowships

The President reported that Professors J. Sengers and B. Le Neindre 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 Award had been presented to Professor Sengers at the IAPWS Dinner on Wednesday evening. As Professor Le Neindre was not present at the EC Meeting, the President requested that Professor Majer would carry the Award back to France and present it to Professor Le Neindre at a suitable opportunity.

The President next requested that Dr. Levelt Sengers and Professor Wagner remain as the members of the Awards Committee, and that the same procedures should be followed for any IAPWS Honorary Fellowships in 2001.

16. IAPWS on the Internet

The President asked Dr. Friend if there was anything else to report on this topic following the discussions on Monday (Minute 3.5).

Dr. Friend indicated that there were no further items, but reminded the EC and attendees to review the FAQs.

**ACTION: National Committees should review the FAQs and provide any comments to Dr. Harvey.**

The Executive Secretary indicated that the minutes would be prepared electronically and that he would work with Dr. Harvey to insert them into the IAPWS Website. He questioned whether the IAPWS financial information should be included in the Minutes and the reports of Member Research. The consensus of the EC was that the financial reports should not be included in the minutes, and that this was satisfactory as all Delegates receive copies of the financial statements at the EC meetings.

**ACTION: For 2001 each National Committees should provide their Country Reports on Research electronically to the Executive Secretary, as well as a hard copy for distribution to others at the EC meeting.**

The President next raised the issue of the IAPWS Newsletter and requested that all NCs and WGs should formulate an article to be included in the IAPWS Newsletter.

**ACTION: Each National Committee should provide an article for the IAPWS News to the Executive Secretary by the end of February 2001.**

17. Report on 13<sup>th</sup> ICPWS

The President provided a report on the final financial matters with respect to the 13<sup>th</sup> ICPWS in Toronto. This is provided as Attachment 10.

The President asked the EC if they thought extra copies of the Proceedings should be purchased for IAPWS use. Discussion ensued. The consensus of the EC was that this was not necessary. Professor Tremaine indicated that he would contact the NRC to suggest that favorable prices should be extended to all NCs.

18. Election of Officers

The President indicated that he would step down at the end of 2000 and that Dr. Bert Rukes will assume the position of IAPWS President on January 1, 2001. 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 noted the upcoming 14<sup>th</sup> ICPWS, and proposed that the Japanese National Committee should be asked to nominate one of their committee members for the position. This would assist the Japanese NC in organizing the conference and in acquiring financial support.

**The EC unanimously approved this selection.**

**Action: The Japanese National Committee should inform the Executive Secretary of their nomination for Vice President after the next meeting of their committee, and before the end of 2000.**

19. New Business

19.1 14th ICPWS

Professor Watanabe reported on the progress for organizing the 14<sup>th</sup> ICPWS in Japan. He indicated that the Japanese NC had looked for locations and had selected Kyoto. They were now looking for an optimum hotel. Professor Watanabe next indicated that the dates would be August 29 – September 4, 2004. The Japanese will return to the EC Meeting in the USA in September 2001 with more details. At this time, the formation of the Program Committee will also be discussed

19.2. IAPWS Atlas

The President requested Dr. Palmer to inform the EC of further organizational activities during the week. Dr. Palmer presented the information, which is included in Attachment 11. There was much discussion about the delivery dates for the chapter outlines and drafts.

However, the final consensus was that the first drafts should be provided to the Editors prior to the EC Meetings in September 2001 in the USA.

There was then some discussion about the request for \$50,000 to cover publication preparation costs. A proposal was formulated to request the EC, in principle, to provide funds to proceed with the final preparation of figures, tables, and word processing. A detailed budget will be prepared by the Editors for presentation to the EC in September 2001.

**The EC unanimously approved this proposal.**

### 19.3 Press Release

The President requested Dr Bellows to present the News Release to the EC. This is contained in Attachment 12.

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

As approved at the EC Meeting in Milan, September 1993, the 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:

Argentina	Attachment 13
Czech Republic	Attachment 14
Denmark	Attachment 15
France	Attachment 16
Japan	Attachment 17
Russia	Attachment 18
USA	Attachment 19

### 19.5 Technical Papers and Participants

There were no papers provided to the Executive Secretary prior to, and during the EC and WG meetings, which were not included in these minutes and attachments.

Attachment 20 provides a list of participants at the EC and WG Meetings in Prague in 2000.

### 19.6 List of Members

The up-dated list of members of the Executive Committee, Working Groups, and Honorary Fellows will be included in the mailing of these minutes.



20.     Closing Remarks and Adjournment

The President formally closed the 2000 EC meetings at 1:40pm.