Attachment 1

AGENDA for the EXECUTIVE COMMITTEE
IAPWS

GAITHERSBURG, MARYLAND, USA. SEPTEMBER 9-14, 2001

Monday, September 10, 2001. Opening Session (8:30-10:00am)

Opening Remarks and Welcome
1. Adoption of Agenda
2. IAPWS Business and Appointment of Committees
   - 2.1 Press Release
   - 2.2 Evaluation Committee on International Collaboration
   - 2.3 Helmholtz Award and Committee
   - 2.4 IAPWS Atlas
   - 2.5 IAPWS on the Internet
   - 2.6 Other business requiring special/extensive discussions
3. EC Mandate to Working Groups and Membership
   - 3.1 Releases, Guidelines and Certified Research Needs (New and Expiring)
   - 3.2 IAPWS Electronic Minutes
   - 3.3 Membership List
   - 3.4 IAPWS Structure
4. Preview by WG Chairpersons of Week's Activities

Friday, September 14, 2001. Executive Meeting. (9:00am - 4:00pm)

5. Acceptance of Minutes of Previous Meeting
6. President's Report
7. Report and Recommendations of TPWS
8. Report and Recommendations of IC
9. Report and Recommendations of PCAS
10. Report and Recommendations of PCC
11. Editorial Committee Report
12. Membership and Associates
    - 12.1 Report on Membership
    - 12.2 Members Defaulting on Dues
13. Executive Secretary's Report
    - 13.1 Financial, Auditors and Dues
    - 13.2 Time and Place of 2002 and 2003 Meetings
14. Guidelines, Releases, Certified Research Needs and International Collaborations
    - 14.1 International Collaborations
15. IAPWS Honorary Fellowships and Helmholtz Awards
16. IAPWS Atlas
17. IAPWS on the Web
18. New Business
    - 18.1 Time, Place, and Planning Details of 14th ICPWS
    - 18.2 IAPWS Structure
    - 18.3 Press Release
    - 18.4 New Products
19. Adjournment

Attachment 2

Electronic Download Committee
Friend, Miyagawa, and Cooper
(Numbered bullets refer to Minutes of 2000 IAPWS EC)

* 8.2.a: *Should proposed TTSE document be guideline, release, or something else?*

Recommendation 1 to EC

"IAPWS Documentation and Software for the Tabular Taylor Series Expansion Method …"

If a series of such products are anticipated a TG should be formed to consider amending statutes.

* 8.2.b: *What should be available from the IAPWS web site: text documents, source codes, and/or executables?*
Consider two categories: code an integral part of IAPWS product or not

Recommendation 2 to EC:

When computer code is an integral part of an IAPWS product, such that the product would not be readily useable or understandable without such code, IAPWS may make the code available through its web site. A preliminary decision to include code with a product can be made by the original developers. Such a decision, including the extent of the associated code to be included in the IAPWS product, should be reviewed by the evaluation task group and the originating working group. Because the release of an IAPWS product containing computer code may have a direct impact on some Members of IAPWS, the EC should attempt to achieve unanimous consent before releasing such a product. All products disseminated through the IAPWS web site, including computer code, should include an IAPWS copyright statement.

* A standing "software review" committee should be established by EC: 1-2
* Core code for IAPWS IF97 should be available from IAPWS web site; an integral part of release: 2-1
* Source code for all IAPWS-approved equations should be available on IAPWS web site: 2-1

Recommendation 3 to EC:

Establish TG to ensure that all tables of coefficients, verification tables, etc. are easily accessible from IAPWS web site.
(Debate on utility of "skeleton" tables.)

* Considered establishing set of charts and property tables to be included on web site: 0-3
* 8.3.c: *Clarify copyright of IAPWS-95 code*

Portions of IAPWS-95 will evidently **not** be needed for TTSE document

* 8.3.d: *Copyright issues when downloading IAPWS-95 (executable) or other products.*

Recommendation 4 to EC:

Copyright and liability disclaimer should appear on web page (before downloading), on a banner screen when running executable IAPWS code, and written as a comment within the code itself.

Copyright 20xx by the International Association for the Properties of Water and Steam. Permission for individual use of this product is granted without restriction, provided that attribution is given to the International Association for the Properties of Water and Steam for any derivative products.

{For information about commercial use of this product, please contact your National Committee or, in the absence of a National Committee, contact IAPWS through its web site at http://www.iapws.org . } 2-1

IAPWS has made its best effort to deliver a high quality copy of this product and to verify the models contained herein on the basis of sound scientific judgment. However, IAPWS makes no warranties to that effect, and neither IAPWS nor individuals associated with this product shall be liable for any damage that may result from errors or omissions in the product. Further, IAPWS does not warrant that this product is suitable for any particular purpose.

IAPWS has made this product available to individuals free of charge, and cannot accept questions or resolve difficulties with the product. However, users can contact their National Committees for IAPWS or contact IAPWS directly through the web site at http://www.iapws.org for general information about IAPWS products and activities.

Attachment 3

Electric Power of the Future

National Institute of Standards and Technology
100 Bureau Drive, Gaithersburg, MD 20899
Wednesday, September 12, 2001
Green Auditorium (8:30AM – 5:30 PM)

The Symposium focuses on new technologies that promise to lessen the environmental impact of major sources of electric power. Sessions are featured on advanced fossil cycles, fuel cells, and nuclear power generation. Issues considered include increasing the efficiency of power generation, distributed power generation, and reducing waste generation by nuclear plants.

PROGRAM

Welcome and Introduction (8:30 AM - 8:45 AM)

Allan Harvey and Johanna Levelt Sengers, NIST, Symposium Chairs

Advanced Fossil Cycles (8:45 AM -10:30 AM)

Steve Gehl, Electric Power Research Institute, Palo Alto, California, USA

Electricity Technology Strategy for the 21st Century

William Day, Pratt & Whitney Power Systems, East Hartford, Connecticut, USA

Advanced Gas Turbines for Present and Future Electric Power Generation

Break (10:30-11:00 AM)

Fuel Cells (11:00 AM -1:00 PM)

Amory Lovins, Rocky Mountain Institute, Snowmass, Colorado, USA

Hydrogen, Distributed Utilities, and Distributed Benefits

Stephen Veyo, Siemens Westinghouse Power Corporation, Pittsburgh, Pennsylvania, USA

Tubular Solid Oxide Fuels Cells-The New Generation of Power

Lunch break (1 PM - 2 PM)

Nuclear Power (2:00 PM - 4:00 PM)

James Lake (Past President, American Nuclear Society), Idaho National Engineering and Environmental Laboratory, Idaho Falls, Idaho, USA

The Fourth Generation of Nuclear Power

Ichiro Ikemoto, Central Research Institute of the Electric Power Industry, Tokyo, Japan

Fast Breeder Reactors -- Flexible, Clean, and Abundant Energy for the 21st Century and Beyond

Panel Discussion (4:15 PM -5:30 PM)

Moderator: Richard Jacobsen, Idaho National Engineering and Environmental Laboratory

SPONSORS

U.S. National Committee, International Association for the Properties of Water and Steam
Colloquium Committee, National Institute of Standards and Technology

REGISTRATION www.iapws.org under meetings Fax to Kim Snouffer, 301 948 2067

Attachment 4

AGENDA for Technical Tours
INTERNATIONAL ASSOCIATION FOR THE PROPERTIES OF WATER AND STEAM (IAPWS)

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
THURSDAY, SEPTEMBER 13, 2001

GROUP A

1:15 p.m.	Meet in Lecture Room A/Break into Groups/ Travel to first Tour Stop Walk to Advanced Chemical Sciences Laboratory #227, Room B111
1:30 p.m.	**Measurement and Standards Issues Relating to Global Climate Change**
2:00 p.m.	Travel by bus to Metrology Building, Room A248
2:10 p.m.	**Providing the Electrical Measurement Basis for the Nation: From Basic Standards to the Factory Floor**
2:40 p.m.	Travel by bus to Fluid Mechanics Building #230, meet in lobby
2:50 p.m.	**Fluid Flow Research**
3:20 p.m.	Travel by bus to Administration Building, Lecture Room A
3:30 p.m.	Break, followed by late afternoon program
5:00 p.m.	Depart NIST

GROUP B

1:15 p.m.	Meet in Lecture Room A/Break into Groups/ Travel to first Tour Stop Walk to Metrology Building, Room A248
1:30 p.m.	**Providing the Electrical Measurement Basis for the Nation: From Basic Standards to the Factory Floor**
2:00 p.m.	Travel by bus to Fluid Mechanics Building #230, meet in lobby
2:10 p.m.	**Fluid Flow Research**
2:40 p.m.	Travel by bus to Advanced Chemical Sciences Laboratory #227, Room B111
2:50 p.m.	**Measurement and Standards Issues Relating to Global Climate Change**
3:20 p.m.	Walk to Administration Building, Lecture Room A
3:30 p.m.	Break, followed by late afternoon program
5:00 p.m.	Depart NIST

Fluid Flow Research
John Wright, Project Leader for Gas Flow Standards
Process Measurements Division
Chemical Science and Technology Laboratory
meet in lobby of Fluid Mechanics Building

NIST offers calibration services for flow meters used in gas, water, and liquid hydrocarbons. Gas flow meters are calibrated using PVTt systems, piston provers, or bell provers for flows ranging from 0.04 liters per minute to 78,000 liters per minute. A critical nozzle-based gas flow standard allows performance testing of flow meters in gas mixtures at temperatures up to 700 K for flows ranging from 60 liters per minute to 6,200 liters per minute. The water flow standard is a static gravimetric system that handles flows up to 38,000 liters per minute. A dynamic gravimetric flow standard provides hydrocarbon liquid flow calibrations between 0.04 liters per minute and 1,500 liters per minute.

NIST also conducts research on flow measurement topics including species effects on various flowmeters, installation effects, ultrasonic flow measurement techniques, and the design of highly stable transfer standards.

MEASUREMENT AND STANDARDS ISSUES RELATING TO GLOBAL CLIMATE CHANGE

William Dorko, Reseach Chemist
and
Pamela Chu, Research Chemist
Analytical Chemistry Division
Chemical Science and Technology Laboratory
B111 Advanced Chemical Sciences Laboratory Building

Decisions regarding global climate change will require accurate measurements on atmospheric constituents, especially global warming gases, their lifetimes, absorption characteristics, and thermophysical properties. It is also critical to ensure that measurements carried out in different parts of the world by different laboratories and organizations are comparable and mutually acceptable. Furthermore, validation of atmospheric transport models and implementation of global emissions trading will require accurate measurements. NIST is involved in several activities that promote the traceability of measurements to national standards, ensuring reliability of measurements, as well as mutual acceptance of measurements, through our participation in a global network of National Metrology Institutes. A Mutual Recognition Arrangement among these institutes and the International Bureau Of Weights and Measures provides the framework for comparability of national standards worldwide, and accuracy of measurements. In addition to providing national standards for gas mixture, NIST provides reference data on reaction rates of greenhouse gases in the atmosphere, develops spectroscopic and other methods to facilitate accurate monitoring of atmospheric species, and provides data on the transport properties of chemical compounds, such as the solubility of gases in water.

Attachment 4

Providing the Electrical Measurement Basis for the Nation: From Basic Standards to the Factory Floor

J. Franklin Mayo-Wells
Staff Associate for Technical Coordination/Operations
Electronics and Electrical Engineering Laboratory
A248 Metrology Building

NIST provides the fundamental basis for all electrical measurements in the United States. To do so, NIST develops and provides the infrastructure measurement science and technology needed by the $400 billion-plus electronics sector defined broadly in the development, design, manufacture, testing, and maintenance of current and future generations of products. In a companion effort, NIST measurements support the transmission and distribution of electric power; all revenue measurements of the some $ 218 billion generated annually are traceable to NIST.

NIST has implemented quantum-based standards for voltage and resistance in response to increasingly demanding industry requirements. Such fundamental high-accuracy measurements underpin methods developed by NIST and by NIST collaborating with industry to address practical measurements essential for advances in areas such as semiconductors, magnetic data storage, optoelectronics, microwaves, and superconductivity. The increasing reduction in size of component structures into the nanoscale regime constitutes a major challenge common to measurements in these fields.

Attachment 5

Schedule

IAPWS Meetings

Gaithersburg, Maryland, USA. September 9-14, 2001

(All meetings will be at NIST)

Sunday 9 Sept.	3:00pm	Meeting of WG Chairmen (at Quality Suites)(If needed to finalize agendas)
	6:00pm	Informal Get-together and Registration **(Hosted by US National Committee at Quality Suites)**
Monday 10 Sept .	8:30am.	Opening Plenary Session - Executive Committee
	10:00am	Helmholtz Award and Presentation
	11:30am.	TPWS/IC Joint Meeting (To set agendas for the week)
	11:30am	PCAS and PCC Separate Meetings
	(To conduct IAPWS Business, thus allowing remainder of week for technical matters)	
	1:30pm.	TPWS and IC Joint or Separate Meetings
	1:30pm.	PCC/PCAS Joint Workshop **"Topic to be decided by WG Chairmen"**
Tuesday 11 Sept.	8:30am.	PCAS Workshop (or PCAS Separate Meeting) **"Topics to be decided by WG Chairman"**
	8:30am.	TPWS, IC, PCC Separate Working Groups Meetings. (Maybe can include Local Speakers of Interest to Each Working Group)
	11:00am.	TPWS/IC Joint or Separate Meetings
	11:00am.	PCC Separate Meetings
	1:30pm	IC and PCC Separate WG Meetings
	1:30pm	TPWS/PCAS Workshop (or Separate or Joint WG Meeting) **"Topic for Workshop to be decided by WG Chairmen"**
Wednes. 12 Sept.	8:30-5:00	**IAPWS Symposium (http://www.iapws.org/mtg2001/symp.htm)** **"Electric Power of the Future"**
Thursday 13 Sept.	8:30am.	TPWS/IC/PCAS/PCC Separate WG Meetings
	10:30am.	TPWS/IC/PCC /PCAS Joint or Separate Meetings
	1:30-5:00pm.	NIST Technical Visits/NIST History/NIST and Steam
	3:30pm.	Separate meetings of Working Groups (If needed to prepare for Executive meeting)
	6:30 pm.	IAPWS Dinner. **(Hosted by US National Committee)**
Friday 14 Sept.	9:00am.	Executive Meeting **(9:00am - 4: 00pm)** (Will include at least one member from each National Delegation)

TPWS - Thermophysical Properties of Water and Steam WG
PCAS - Physical Chemistry of Aqueous Solutions WG
PCC - Power Cycle Chemistry WG
IC - Industrial Calculations WG

Barry Dooley
2 May 2001