Attachment 14

PRESS RELEASE FOR IAPWS ANNUAL MEETING IN GAITHERSBURG, MD, USA

September 2001

Over sixty scientists and engineers from thirteen countries attended the annual meetings of the International Association for the Properties of Water and Steam (IAPWS), September 9-14, 2001 in Gaithersburg MD, USA coinciding with the 100th anniversary of the founding of the National Institute of Standards and Technology. IAPWS provides standards for steam and water properties and serves as a forum where engineers from the power industry and academic scientists can communicate problems and solutions to each other. IAPWS has traditionally concentrated on the science underlying the thermodynamics and chemistry in steam power plants, but is broadening into other aspects of power generation and high temperature aqueous systems.

Nobuyuki Matubayasi opened the technical proceedings with the IAPWS Helmholtz Award Lecture on NMR and Computer Simulation Studies of Structure, Dynamics and Reaction of Supercritical Water. Although the tragic national events reduced the scope of the symposium on Electric Power of the Future, Ichiro Ikemoto of the Central Research Institute of Electric Power Industry (Japan) presented an enlightening and forward looking talk on Fast Breeder Reactors—Flexible, Clean and Abundant Energy for the 21st Century and Beyond.

A highlight of the meeting was the workshop on computer simulation of water. IAPWS has a task group to provide guidance to users for the evaluation of computer models and databases for aqueous systems. A goal of this task group is to explore a formulation of the properties of water simulated in a particular model for comparison with real water. Other areas of focus include pH standards at high temperature and pressure, models for the thermodynamic properties of organic compounds in water, and molecular level understanding of ion-pairing interactions at temperatures exceeding 200°C.

IAPWS formally adopted a Guideline on the IAPWS Formulation 2000 for the Thermodynamic Properties of Ammonia-Water Mixtures, which correlates pressure, temperature, density, internal energy, enthalpy, entropy, heat capacities, speed of sound, fugacity, phase equilibria and composition for this system.

In 1997, IAPWS adopted a formulation for industrial calculations IAPWS-IF97. It includes both defining equations and backward (closely approximating inverse) equations to promote speed of calculation. This year IAPWS approved supplementary backward equations, with enthalpy and entropy as the input variables, that significantly enhance the speed of computation for calculations using IAPWS-IF97. IAPWS expects to enhance IAPWS-IF97 further with additional backward equations.

The working group on Power Cycle Chemistry exchanges information on the chemical problems in steam power plants world wide. Copper transport in power systems remains an important topic, although there is now much more information available. The significance, sources, and methods of removal for organic chemicals, particularly carboxylic acids and their precursors, in the steam cycle is also a major topic of interest. A full priority list of power cycle issues will be available on the IAPWS website.

The next IAPWS meeting will be held July 21-26, 2002 in Buenos Aires, Argentina. Details will be available through links from the IAPWS website at www.iapws.org. Minutes of the 2001 meeting will appear on the website shortly.

People interested in IAPWS documents and activities should contact the chairman of their IAPWS National Committee (see website [or fill in information]) or the IAPWS Executive Secretary, Dr. Barry Dooley, EPRI, 3412 Hillview Ave, Palo Alto, California 94304, USA.