

**Minutes of the Program Committee Meeting
ANS Thermal Hydraulics Division**

**2003 ANS Summer Meeting
San Diego, CA, Town and Country Resort & Convention Center
3:00 –5:00 PM, Sunday, June 1, 2003, Pacific 4**

Attendees: F. Bill Cheung, Karen Vierow, Undine Shoop, Shripad T. Revankar, Hisashi Ninokata, Jong Kim, Per Peterson, Yassin Hassan, Whee Choe, Tom K Larson, Chang Oh, Won-Pil Baek, Don Todd, Kung Y. Suh, Soon Heung Chang, Donald M. McEligot, Akira Yamaguchi, Steve Shepherd, Mitch Harkendrider.
(Attachment A)

1. Opening

The THD Program Committee Meeting was called to order by Karen Vierow at 03:00 p.m.

2. Agenda

The proposed agenda was distributed (see Appendix B). The agenda was approved.

3. Minutes from November 2002 meeting (Washington, DC)

The minutes were distributed. A correction on item number 6 on pages two, the misspelled name Cheng was corrected to Chang. The minutes were approved with this correction.

4. Review of the Action Items from November 2002 Meeting

It was decided to follow the agenda to review the action items from November 2002 meeting.

5. 2004 ANS Summer Meeting Program

The following list of sessions have been proposed and approved for the 2004 ANS Summer Meeting:

- *Thermal Hydraulics of Next Generation of Nuclear Reactors* – Chang Oh and Kung Y Suh agreed to be the lead organizers
- *Thermalhydraulics Code Development/ Applications* – Robert Martin (as reported by Undine Shoop) and Undine Shoop agreed to be the lead organizers.
- *Thermalhydraulics Experimentation* – Yassin Hassan and Bill Cheung agreed to be

- the lead organizers.
- *General Thermalhydraulics* - Karen Vierow, Kung Suh and Yassin Hassan agreed to act as the session lead organizers.

In addition to these sessions it was agreed that ANS THD co-sponsor a session on “Thermo Fluid Physics for Space Applications” with the Aerospace Nuclear Science and Technology (ANST) Technical Group. Tom Larson was nominated to represent ANS as contact person and was approved.

6. 2004 National Heat Transfer Conference

Jong Kim reported that the 2004 Summer National Heat Transfer Conference is sponsored by ASME and AIChE. A motion was made to co-sponsor sessions in 2004 NHTC and the committee approved the motion. The program committee decided to hold program committee annual meeting at the 2004 NHTC with a qualifier that ASME meeting is at least one month from the ANS Meeting otherwise it will be held at the ANS meeting.

The following list of sessions have been proposed and approved for the 2004 NHTC:

- *General Two-Phase Flow* – Jong Kim and Whee Choe agreed to be the lead session organizers.
- *Fundamental of Thermalhydraulics* – Shripad Revankar and Chang Oh agreed to be the lead session organizers.
- *Thermalhydraulics Experimentation* – Bill Cheung and Yassin Hassan agreed to be the lead organizers.
- *Computational Nuclear Thermalhydraulics*– Karen Vierow and Joy Rempe agreed to act as the session lead organizers.

7. International Meetings

a. NUTHOS-6 (Japan 2004)

Professor Ninokata reported status report on the NUTHOS-6 meeting. He also distributed the announcement and call for the papers (see attachment C). Professor Ninokata reported that the documentation were submitted to ANS and ANS has approved NUTHOS-6 as a class two meeting with sponsorship from ANS with the conditions that the sponsored sessions are limited to topics: numerical reactor thermalhydraulics, operation and safety and no fuel sessions. Professor Ninokata requested organizing members participation for this meeting. Prof. Ninokata asked for assistance in obtaining participation from other societies. Dick Schultz will be the ASME contact, Bill Cheung will be the AIChE contact and Won Pil Baek will be the European societies contact. The ANS THD has approved to sponsor this meeting and *an action item was identified to send the draft to this effect.*

a. NURETH-10 (Korea, 2003)

Dr. Won-Pil Baek of KAERI distributed copies of the status report by the Korean Nuclear Society on planning activities for NURETH-10 (see the attachment D).

b. NURETH-11(France, 2005)

An action item was identified that Per Peterson will contact Dr. Jean-Marc Delhaye to identify the ANS role and in organization and sponsoring this meeting.

8. Web page subcommittee report

An action was identified that Karen Vierow will contact Dr. Robert Martin regarding web page status/activities.

9. Editorial subcommittee meeting

There was no report. *An action item was identified: the selection/election of the editorial subcommittee members.*

10. Membership subcommittee report

Tom Larson reported that the ANS THD membership is generally up and as of October 2002 there were 805 members in the list. Jong Kim reported that we have currently 28 program committee members on list. He suggested that there is need to check active membership. *An action was identified that Jong Kim will prepare the list of active members in program committee by directly contacting members.*

11. New business

The outgoing chair of program committee (Via Vierow) thanked the members. *An action item was identified for new the chair to contact the Samim Anghai to coordinate the ICAP embedded meeting with ANS meeting.*

12. Adjourn

The meeting was adjourned at 05:30 p.m.

Minutes prepared by Shripad Revankar

Attachment A

Attendees List

ANIS Program Committee Meeting 6/1/03

| <u>Name</u> | <u>e-mail</u> |
|---------------------|-------------------------------------|
| S. T. Revankar | shripad@ecn.purdue.edu |
| F. B. Chang | fxch@psu.edu |
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| Karen Vierow | vierow@ecn.purdue.edu |
| Donald M. Mc-ELIGOT | dm6 ^{numerical} @inell.gov |
| Soon Henng Chang | shchang@mail.kaist.ac |
| Won-Pil Baek | wpbaek@kaeri.re.kr |
| Akira Yamaguchi | yamaguti@oec.jnc.go.jp |
| UNDINE SHOOP | uss@NRC.gov |
| HISASHI NINOKATA | hninokat@nr.titech.ac.jp |
| Jong Kim | jkim@epri.com |
| Whee Choe | whee.choe@txu.com |
| CHANG Oh | chh@INEL.GOV |
| Er Peterson | peterson@nuc.berkeley.edu |
| Yassin Hassan | y-hassan@Eamus.edu |
| T. K. Larson | tkl@inell.gov |
| STEVE SHEPHERD | SHEPHERD@songs.sce.com |
| Don Todd | douald.todd@Framatome-AWP.C |
| Mitch Harkenrider | mharkenr@purdue.edu |

Attachment B

PROPOSED AGENDA

American Nuclear Society – Thermal Hydraulics Division

Program Committee Meeting

Town and Country Resort & Convention Center, San Diego, California

3:00 –5:00 PM, Sunday, June 1, 2003

Room: Pacific 4

1. Opening
2. Approval of Meeting Agenda
3. Minutes from November 2002 Meeting
4. Action Items from November 2002 Meeting
5. 2004 ANS Summer Meeting Program
6. 2004 NHTC
7. International Topical Meetings
 - a. NURETH-10 (Korea, 2003)
 - b. NURETH-11 (France, 2005)
8. Web page subcommittee report
9. Editorial subcommittee report
10. Membership subcommittee report
11. New business

Attachment C

First Announcement and Call for Papers



NUTHOS-6

6th International Topical Meeting on
NUclear Reactor Thermal Hydraulics, Operations and Safety
October 4 - 8, 2004, Nara-Ken New Public Hall, Nara, JAPAN

Introduction

International Topical Meeting on Nuclear Reactor Thermal Hydraulics, Operation and Safety (NUTHOS) is an important series of international topical meetings in the fields of thermal hydraulics, operation, safety, and related areas.

NUTHOS has served for international nuclear society as an open forum where high-quality and up-to-date information is actively discussed and exchanged among world-class experts. Now NUTHOS-6 will bring together all the experts, together with new information and research results from all over the world. It is our utmost pleasure to welcome you to this significant international conference.

Preliminary Topics

- Fundamentals of Thermal Hydraulics, Single- and Two Phase Flow and Heat Transfer
- Mathematical and Computational Method, Theory and Validation
- CFD Applications
- Subchannel Analysis
- Thermal Hydraulics and Safety of Advanced Reactor
- Plant Transients and Accidents Analysis and Testing
- Severe Accidents and Degraded Core Thermal Hydraulics
- Accident Management
- Steam Generator Thermal-Hydraulics
- Thermal Hydraulic Loads and Flow-Induced Vibration
- Containment Analysis and Experiment
- Advances in Measurements and Instrumentations
- Load Follow Strategies
- Thermal Hydraulics of Plant Power Up-rating
- Thermal Hydraulics of Waste Management
- Design and Behavior of Spent Fuel Repository
- Plant Operation, Retrofitting, and Maintenance Experiences
- Plant Diagnostics and Monitoring
- Application of Innovative Technology: AI, Expert Systems, Robotics, and Others
- Plant Licensing Renewal and Life Extension
- In-Core Fuel Management
- Steam Generator Operation and Maintenance
- Plant Simulators, Analyzers, Operator Training
- Design Code and Standard
- PRA Applications to Design, Operation and Maintenance
- Risk-Informed and Performance Based Regulation
- Current Topics

Organizers

- **General Chair**
Dr. Mamoru Akiyama (Inst. Applied Energy)
- **General Co-chair**
Prof. Neil E. Todreas (MIT)
- **Organizing Committee**
Chair Prof. Hisashi Ninokata (TITech)
Co-chair Prof. Jong Kim (EPRI-KAIST)
- **Technical Program Committee**
Chair Prof. Hidekazu Yoshikawa (Kyoto U)
Co-chair Prof. Soon Heung Chang (KAIST)

Sponsors

- Atomic Energy Society of Japan (AESJ)
- Co-sponsors (partly to be decided)
 - ANS Thermal Hydraulics Division
 - Japan Atomic Industrial Forum (JAIF)
 - AESJ-THD, Nuclear Power Div, Human-Machine System Div, ...
 - International sponsors (Nuclear Societies of Pacific rim countries, ENS, ...)

Key Date

- Sep. 1, 2003 Submission of Summaries
- Oct. 15, 2003 Summaries Due
- Nov. 30, 2003 → Notification
- Jan. 31, 2004 Full Manuscripts Due
- Apr. 30, 2004 → Notification
- Jun. 30, 2004 Camera Ready Manuscripts Due
- Aug. 31, 2004 Preliminary Registration
- Oct. 4, 2004 Date of Meeting

Venue

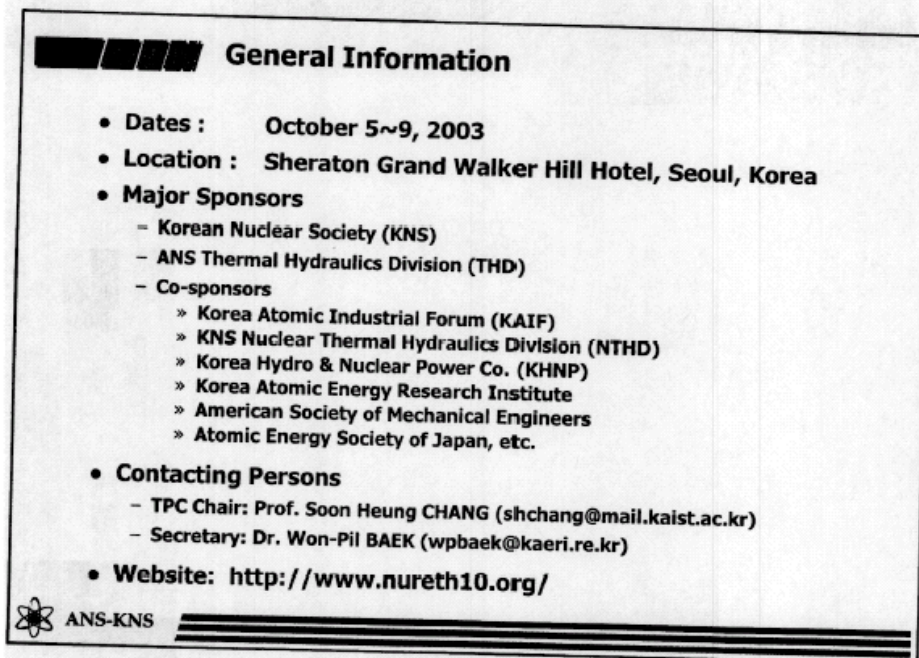
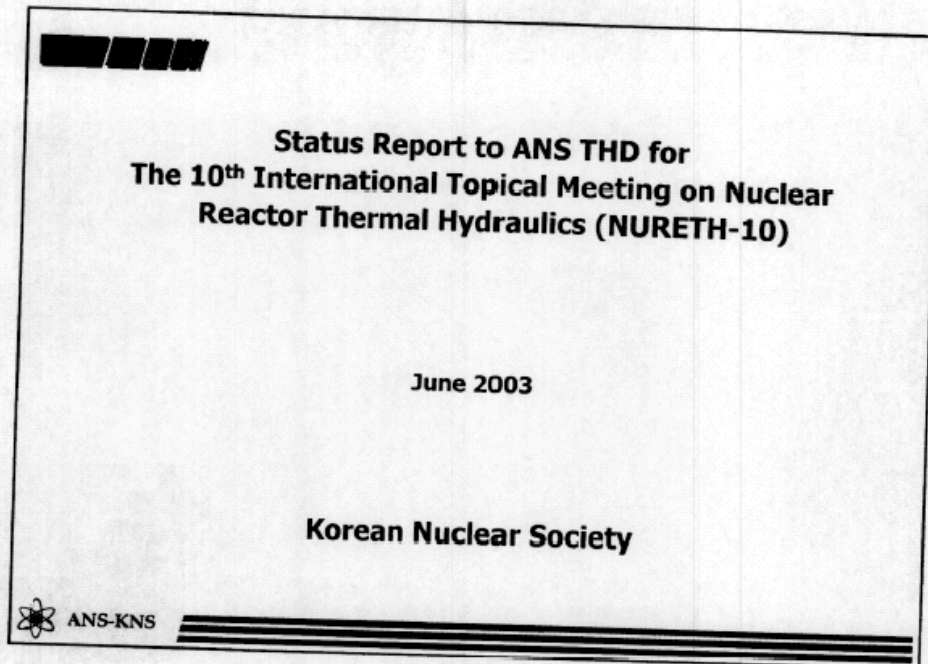
Nara-Ken New Public Hall, Nara-pref., JAPAN
<http://www.pref.nara.jp/koukaido-e/>

Web-site and More info...

<http://www.nuthos6.org>
mailto:info@nuthos6.org



Appendix D



Organizing Committee

- **Honorary Chair** : Minister of Science & Technology, Korea
- **General Chair** : Dr. Chang Sun KANG (Seoul Nat. Univ.)
- **General Co-chair** : Dr. Salomon LEVY (S. Levy Inc.)
- **International Steering Committee**
 - **Co-chairs** : Dr. Un Chul LEE (Seoul Nat. Univ.)
Dr. Jong KIM (KAIST/EPRI Worldwide)
 - **Members** : ~20 members
- **Technical Program Committee**
 - **Chair** : Dr. Soon Heung CHANG (KAIST)
 - **Co-chair** : Dr. George YADIGAROGLU (ETH Zentrum)
 - **Secretary** : Dr. Won-Pil BAEK (KAERI)
 - **Members** : ~90 members
- **Local Organizing Committee** : ~10 members

Progress and Future Key Dates

- Jan. 2001 NURETH-10 Proposal to THD
- Mar. 2001 KNS Selected by THD to Host NURETH-10
- May 2001 Submission of Documents to NPC for Calendar Placement
- Nov. 2001 Progress Report to THD / Calendar Placement by NPC
- Feb. 2002 Opening of Official Website / First Call for Papers
- June 2002 Progress Report to THD / Preliminary Approval by NPP
- Nov. 2002 Progress Report to THD
- Jan. 31, 2003 *On-line Submission of Summary*
- Feb. 2003 *Final Approval by ANS-NPC*
- Feb. 28, 2003 *Notification of Summary Acceptance*
- May 30, 2003 *Submission of Full Paper for Review*
- July 15, 2003 *Notification of Full Paper Acceptance*
- Aug. 15, 2003 *Submission of Final Manuscripts*
- Aug. 31, 2003 *Advanced Registration*
- Oct. 5~9, 2003 *Conference Dates*



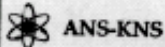
Major Recent Progress

- **Paper Solicitation**

- Notice of Summary Acceptance in February 2003
- Receipt of Full Manuscripts: Near Completion
- Appointment of Paper Reviews: Underway
- Arrangement of Plenary/Keynote Lectures: Near Completion

- **Conference Organization**

- Final Approval by ANS-NPC in February 2003
- Hotel Arrangement(Conference/Sister Hotels) Completed in April 2003
- Travel Agency Selected in May 2003
- Preliminary Conference Schedule Prepared in May 2003
- Arrangement of Government Sponsorship for Limited Number of Participants from Developing Countries



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Status of Summary Submission (1)

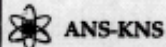
- **Overall Statistics**

- Number of Contributed Papers: 351
- Number of Invited Papers (Plenary & Keynote): ~20

- **Participating Countries**

- Total # of Countries From Which Summaries Submitted: 31
- Number of Contributed Summaries*:
 - » Korea (91)
 - » Japan (60)
 - » USA (38)
 - » France (35)
 - » Germany (25)
 - » Russia (17)
 - » China (10)
 - » Canada (7), Sweden(6), Finland(6), Switzerland(6), etc.

* Plenary & keynote lectures are not counted.



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■■■■■ Status of Summary Submission (2)

| | |
|---|----|
| • Number of Summaries According to Sessions | |
| A. Thermal Hydraulic Fundamentals | 62 |
| B. Experimental Methods and Instrumentation | 18 |
| C. Boiling and Condensation Heat Transfer | 35 |
| D. Subchannel Thermal Hydraulics | 16 |
| E. Computational Methods and Code Development | 52 |
| F. Large-Scale Tests and Databases | 18 |
| G. Thermal Hydraulics in Severe Accidents | 59 |
| H. Operating Water Reactor Thermal Hydraulics & Safety | 25 |
| I. Advanced Water Reactor Systems and Thermal Hydraulics | 25 |
| J. High-Temperature Gas-Cooled Reactor Systems&Thermal Hydraulics | 8 |
| K. Liquid Metal Reactor Systems&Thermal Hydraulics | 17 |
| L. Non-Classical Nuclear Reactor Systems | 0 |
| M. Fusion Related Thermal Hydraulics | 4 |
| N. Thermal Hydraulics in Other Applications | 3 |
| O. Thermal Hydraulics in Emerging Areas | 1 |
| P. Thermal Hydraulic Aspects of Materials Compatibility | 1 |
| Q. Miscellaneous Subjects | 7 |

■■■■■ Plenary and Keynote Lectures

- **Plenary Lectures at Opening Session Countries**
 - Dr. R. Bennet on Generation-IV Roadmap
 - Prof. Akiyama on Prospect of Nuclear Energy
 - President of Korea Hydro and Nuclear Power Co.
- **Keynote Lectures**
 - Plenary-type keynote lectures with minimum number of parallel sessions
 - Confirmed: Prof. Yadigaroglu, Dr. Eltawila, Prof. Podowski, Prof. Theofanous, Prof. Ishii, Prof. Reyes, Prof. Hassan, Prof. Cheung, Prof. Kazimi, Prof. Corradini, Prof. Sehgal, Prof. Oka, Prof. Ninokata, Prof. Serizawa, Prof. Chang, Prof. M.H. Kim, Prof. Nigmatulin
 - 2~3 more lecturers to be arranged



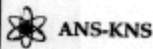
Registration and Tour Programs

- **Registration Fee**

- Members of Sponsoring Organizations: USD 450 (Advanced) / 525 (On-site)
- Members of Co-sponsoring Organizations: USD 500 / 575
- Other Participants: USD 550 / 625
- Students: USD 150
- Advanced registration of at least one author/co-author is required for inclusion of paper in conference proceedings.

- **Tour Programs**

- Tour agency has been arranged.
- Technical Tours
 - » Two-day tour to a PWR site, hot spring, and Sorak Mountain
 - » One-day tour to Korea Atomic Energy Research Institute
 - » Two-day tour to a CANDU site and Gyeongju City
- One/Half-Day Tours for Accompanying Persons
 - » Seoul city tour
 - » Cultural programs
- Scenic Tours
 - » 2 or 3 day tour to Jeju Island (through personal arrangement)



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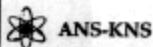
Accommodation

- **Conference Hotel: Sheraton Grand Walker Hill**

- 5-star luxurious hotel on the side of Hangang River
- Room Rates:
 - » Standard Double or Twin: 190,000 Won
 - » Douglas Executive: 280,000 Won
 - » Tower Deluxe: 320,000 Won
 - » Tower Suite: 455,000 Won
 - » Applicable tax and/or service charge will be added.

- **Sister Hotel: Hangang Tourist Hotel**

- 4-star tourist hotel on the side of Hangang River
- Room Rate: 110,000 Won + Tax for Double or Twin Rooms
- ~20 min. walk from the Conference Hotel; free shuttle will arranged to/from the conference hotel every morning and evening.



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████████ Preliminary Programs (1)

- Meeting Schedule

- Oct. 5 (Sun) Opening Reception
- Oct. 6 (Mon) Opening Ceremony, Technical Sessions
- Oct. 7 (Tue) Technical Sessions, Conference Banquet
- Oct. 8 (Wed) Technical Sessions
- Oct. 9 (Thu) Technical Sessions
- Oct. 10-11 Technical Tours

- Technical Sessions

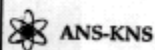
- 1 Half Days with 1 Session
- 7 Half Days with 4~5 Simultaneous Sessions
- ~15 Plenary/Keynotes Lectures
- 15 min. Presentation + 5 min. Discussion per Paper

- Exhibition

- Nuclear Organizations, Instrumentation Vendors, Software Vendors, etc.

- Proceedings

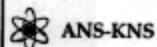
- CD-ROM + A Bound Volume of Abstracts



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████████ Preliminary Programs (2)

| | Oct. 5(Sun) | Oct. 6(Mon) | Oct. 7(Tue) | Oct. 8(Wed) | Oct. 9(Thu) | Oct. 10-12 |
|-------|-----------------------|--|----------------|----------------|----------------|---|
| 08:00 | | Registration / Authors-Session Chair Meeting | | | | |
| 09:00 | | Opening Ceremony & Plenary Lectures | | | | Post-Conference Tour Programs -Technical -Scenic |
| 10:00 | | Tech. Sessions | Tech. Sessions | Tech. Sessions | | |
| 11:00 | | Coffee Break | | | | |
| 12:00 | | Tech. Sessions | Tech. Sessions | Tech. Sessions | Tech. Sessions | |
| 13:00 | | Lunch | | | | |
| 14:00 | | Registration | | | | |
| 15:00 | | Tech. Sessions | Tech. Sessions | Tech. Sessions | Tech. Sessions | |
| 16:00 | | Coffee Break | | | | |
| 17:00 | | Tech. Sessions | Tech. Sessions | Tech. Sessions | Tech. Sessions | |
| 18:00 | Exhibition Opening | Tech. Sessions | Tech. Sessions | Tech. Sessions | Tech. Sessions | |
| 19:00 | Opening Reception | | | | | |
| 20:00 | | Conference Banquet | | | | |
| 21:00 | | | | | | |



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