

ANS – THD Division
Executive Committee Meeting
Phoenix, AZ

November 13th, 2022

Attendees (EC Members): Jun Liao (WEC), Piyush Sabharwall (INL), Dave Pointer (ORNL), Hisashi Ninokata, Yassin Hassan (TAMU), Musa Moussaoui, Marilyn Delgado, Caleb Brooks, Xiaodong Sun, Dillon Shaver, Igor Bolotnov

Proxies:

- 1) Bao-Wen has proxy for Steve Bajorek, John Luxat, Annalisa Manera, and Robert Martin
- 2) Xiaodong has proxy for Hyoung Kyu Cho (SNU); Yang Liu (VT)
- 3) Igor has proxy for Maria Avramova

Absents: None.

Leadership

Chair: Bao – Wen Yang

Vice Chair: Analisa Manera

Secretary: Igor Bolotnov

Treasurer: Steve Bajorek

Ex Officio: Elia Merzari

Appointments

Webmaster: Trevor Kent Howard

Members with Terms:

2023

Yang Liu

John C. Luxat

Hisashi Ninokata

Piyush Sabharwall

Caleb Brooks

2024

Xiaodong Sun

Dillon Shaver

W. David Pointer

Hyoung Kyu Cho

Musa Moussaoui

2025

Yassin Hassan

Maria Avramova

Jun Liao

Bob Martin

Marilyn Delgado

Attendees (Other):

(refer to sign-up sheet)

1. Opening

Dr. Yang opened the meeting. Roll call and quorum met.

2. Approval of meeting agenda

A DRAFT agenda was provided for approval (APPENDIX A)

MOTION: Dr. Pointer moved to approve the agenda

SECOND: Dr. Shaver

NO DISCUSSION

All in favor.

Agenda is APPROVED.

3. Approval of minutes from 2022 ANS Annual Virtual EC Meeting

The DRAFT minutes of the 2022 ANS Annual Meeting have been provided for review and approval.

MOTION: Dr. Sabharwall motioned to approve the minutes with the correction from \$100 to \$1000 on student scholarship

SECOND: Dr. Pointer

NO DISCUSSION

All in favor.

Minutes are APPROVED with the proposed change.

4. Action items from 2022 ANS Annual Meeting

Action items are included in the following agenda.

No immediate action items.

5. Chair report

a. Updates from HQ

ANS is pushing for certification effort. Trying to engage to get 20% income from a certification program. How to engage in that regards – Steve please.

Dr. Steve Arndt (ANS President): We are looking in certification. Doing market surveys etc. Nuclear is different. QA process. Nuclear aspects of any particular technology. Doing certification in different areas of interest to nuclear community. We are asking all the divisions: in your particular areas, is there a need which certification effort can support. Will be input from technical experts of the society. There will be a call. Chair of special committee is Rebecca Steiman. You will hear from her and the committee. June meeting will have a final decision. Might be revenue generator and services to the community. Will allow the society to bring new members. We only going to do if only makes sense. One of the new things. Will look at other new strategic initiatives. More board meetings between now and June. We want use all the opportunities to engage with the community.

Dr. Bao-Wen Yang: engaging with industry was the topic of the previous meeting. I think a certification program could be another revenue stream. Should we setup standards. Something to think about.

Dr. Yassin Hassan: ASME has codes & standards across a wide range of topics, including power, plants, piping, nuclear components, verification, and validation, and many more. ASME codes and standards are well-known around the world.

Dr. Steve Arndt: this will be certification to demonstrate a particular set of skills. One example is nuclear criticality safety. Broader is safety culture type issues. Understanding the regulations / safety culture. Credentials to demonstrate specific skill set.

Dr. Bao-Wen Yang: Craig conversation: what can we help as a division? Updating website. How can ANS help us? How can we improve the membership? Possibility of free membership to **topical** meetings attendees. NUTHOS – mostly international. Our international members dropped significantly –from over 179 dropped to only 100 international members left. Wednesday (Nov 16th) lunch time with Dan

Goldberg (ANS Director of Program) – discussion on some ideas on how ANS can help THD in promoting membership through some kinds of incentive (such as two years free or discounted membership) to match the biannual nature of THD's topical meetings.

Dr. Pointer: This is a huge challenge. Membership grows with each large meeting. How do you convince people to stay on?

Dr. Bao-Wen Yang: ramp down discount for membership over the years might be one potential approach?

Dr. Lane Carasik: Webinars are very good examples of value presented to membership for wanting to stay part of the society. For example, the archive is starting to have a big catalog of past webinars worth watching in future years.

b. Webinars

Dr. Yang organized and hosted a meeting on June 15th with intention to make THD webinar a long term, continuous and organized efforts through a special task force committee. Dr. Marilyn Delgado volunteered to chair the committee.

Dr. Bao-Wen Yang proposes to introduce a motion on this topic.

MOTION: Dr. Pointer: THD to establish a webinar committee with 5 members and to plan and organize the THD webinars.

SECOND: Dr. Shaver

DISCUSSION:

Dr. Elia Merzari: Creating a standing committee will require the change in bylaws and rules.

A good amendment would be: make a special committee with a term of 3 years.

Dr. Marilyn Delgado: yes – question was about appointment length.

AMENDMENT: Dr. Marilyn Delgado: amend the original motion to have a 3-year term.

SECOND: Dr. Xiaodong Sun.

DISCUSSION on the amendment:

Dr. Lane Carasik: Can we fit under existing committee?

Dr. Elia Merzari: We can potentially task the PC, but they have already many responsibilities.

Dr. Jun Liao: is that EC or PC job?

All in favor. MOTION is amended.

All in favor. MOTION is carried as amended:

THD to establish a webinar committee with 5 members (3-year terms) and to plan and organize the THD webinars.

Dr. Elia Merzari: How will the membership of the committee be determined?

Dr. Wade Marcum: I would recommend working with them to identify them.

Dr. Bao-Wen Yang: Nominate Dr. Delgado as the chair of this special committee.

c. Industrials and internationals liaisons.

Dr. Bao-Wen Yang got membership data from ANS: 2014-today. Presented results in chair's member message in the THD Fall Newsletter. Dr. Yang reviews same data on the membership. Stayed now around 900... used to be 1200. We are very internationally involved – hence the major impact from the international policy as shown in two big drops, 9.6% in 2017, and almost 24% drop in 2019 prior to pandemics (all data were taken around June each year for fair comparison). We've been working on student members. Continue to work with young professionals. Under-represented groups are industry and internationals. We must have a continued effort. I propose someone in the EC to serve as a liaison to work in these areas.

As a chair, I would like to designate international liaison positions and industrial liaison position.

Dr. Yang had discussed and got agreement from one industrial member, Jun Liao (intend to talk to more) and 3 international members. Dr. Jun Liao is appointed to be an industrial liaison. He would work with membership committee and PC.

Dr. Wade Marcum: membership committee is designed to grow the membership? What is the role of Dr. Jun Liao?

Dr. Bao-Wen Yang: My suggestion for him is to work with membership committee and PC to come up with a plan.

Dr. Pointer: are you proposing to assign the action to define the role for Dr. Jun Liao?

Dr. Bao-Wen Yang: Dr. Liao – please come up with a proposal. Before our next meeting – present the proposal. In 3 months – please send to EC the proposal.

Dr. Wade Marcum: please co-charge the chair of membership committee (Dr. Matt Zimmer).

Dr. Bao-Wen Yang: Dr. Matt Zimmer is difficult to reach with his working email address. He is now communicating through a different email address. However, he has strict limit on attending conference call from office.

Dr. Elia Merzari: The membership committee is not full. Additional members can be added easily.

Dr. Bao-Wen Yang: for international liaison: I also spoke with Chul-Hwa Song (for Asia), Ferry Roelofs (Europe) and Katrien van Tichelen (Europe) and got their agreement to serve as international liaison.

Dr. Yang: Topic of participation and/or sponsoring YPC (Young Professionals Congress). We were approached by YPG/YPC to sponsor their conference next year. We have sponsored student conferences but had not sponsored YPC before. Based on the discussion during our monthly leadership

meeting, if we are to start doing so, and if we have budget to sponsor this, it must be goal driven sponsorship.

Dr. Lane Carasik: Young Professional Congress happens at every ANS Winter Meeting and Tech Expo held in Washington, DC.

Dr. Bao-Wen Yang: Lane – thanks for clarification. If we sponsor this – this must be goal-oriented. Must be with THD's involvement and allow us to setup something related to THD.

Dr. Pointer: They typically reach out to chair for support.

Dr. Bao-Wen Yang: I want input from everyone on that. Based on my conversations with their Chairs (both YPG and YPC) during the PDC meeting this morning, they are very much open to our proposal.

If we do this – our Young Professional may take the lead on this.

Dr. Yassin Hassan: we need a senior professional opportunity, for people who are retired, but still active. They have a lot of knowledge and we do not want to lose it: Inviting them and supporting them to attend the ANS meetings to interact with young professionals.

Dr. Bao-Wen Yang: anyone volunteering?

Dr. Xu Wu: I volunteer.

Dr. Bao-Wen Yang: please talk to them. Based on their flyer, this YPC is more like a social event?

Dr. Pointer: they have some sessions.

Dr. Bao-Wen Yang: we don't need to be too technical but should be THD related.

Dr. Yang assigned Dr. Xu Wu to contact TPC/YPG to work with them, and report back to EC with recommendation for any further actions.

6. Treasurer's report

Dr. Yang reviewed Treasurer's report. Please see attachment (from the newsletter).

7. Technical Program committee

Dr. Shaver reported that everything is moving forward without issues and referred to the minutes of the PC meeting for details.

Submissions statistics is Ok over 10 years, but we are trending down in the last 3 years.

10 topics, 13 sessions, 2 panels for 2022 Winter.

Summaries for the 2023 Annual are due Monday, February 6th.

Questions?

Dr. Kurshad Muftuoglu: Panel organizers should be contacted soon.

Dr. Elia Merzari: NURETH-19 update: 3 special issues on the way. Regarding finances: there has been a hold up at SCK. They have internal difficulties making a donation but that is being worked out.

Dr. Bao-Wen Yang: NUTHOS-13: handout was distributed, part of the fall newsletter.

Took place in September 2022. Last minute was changed to virtual due to pandemic.

132 papers, 228 participants

NURETH-20: Call for papers (abstract submission) was extended till 12/2/2022. We are at 725 abstracts at this point.

Will take place August 20-25, 2023, Washington, DC. Discussion of the hand-out, international participation review. Main concern is the cost – going fully virtual or hybrid is very expensive. Getting them engaged, pre-recorded option? International engagement is critical.

Dr. Wade Marcum: what is the break-even number of registrants?

Dr. Elia Merzari: We estimate it be 500. We would like to receive at least 800 abstracts.

Dr. Wade Marcum: Will there be a full paper deadline extension?

Dr. Elia Merzari: No

Dr. Wade Marcum: Advertise that like crazy... so there are no false abstracts.

Dr. Bao-Wen Yang: push special session papers to get to 800 abstracts. Talking to co-sponsoring societies very actively. We had pushed through many approaches, through co-sponsorship and individual chat groups and distribution lists (including IAEA and previous meeting author lists). Although we had pushed China from 10 to over 130 abstracts, there are only so much we can do. We need every member to think: how to convert more abstracts into full papers and what special topics we can do.

ATH'24 update: Dr. Shaver: calendar placement approved. Call for papers will be posted in Dec. 2023.

Full papers due: 5/31/24. Final full papers 8/8/2024.

Dr. Bao-Wen Yang: questions / suggestions for ATH?

Technical Program Chair: Dr. Shaver; Co-chairs: Dr. Ferry Roelofs and Dr. Victor Petrov. Four assistant chairs.

7. Membership committee report

Dr. Yang did that on behalf of Dr. Zimmer.

8. Division website report

Dr. Trevor Howard: what directions are we taking the website? For people in this room? Should it be more like an ANS website? Updated logos etc... turns out the infrastructure is outdated. So hard to get things done directly. Added the logos. Will be changed from ANS national. Who is using the website – so it reaches the audience. Installed google analytics. See the newsletter. Would be interesting to see this statistics.

Short term – updates for consistency.

Aubrey Whittington (ANS): I'm division point of contact person. We are hoping to get division website internally – so we create the infrastructure for the divisions. Automatic updates for division officers, easier to manage.

Dr. Bao-Wen Yang: when you say internal – what do you mean?

Aubrey: this would be easier with common templates.

Dr. Bao-Wen Yang: we are pushing hard to webinars.

Dr. Trevor Howard: THD website is just an advertising platform.

Dr. Bao-Wen Yang: we are all THD, website and webinar should have a single window for our connection to outside world. We cannot have two windows open that might delivering inconsistent msg. How do we integrate this?

Dr. Igor Bolotnov: can we have separate sections for members only and public.

Aubrey: some divisions want that – so there will be an option

Dr. Piyush Sabharwall: can we charge people for money, or verify the membership to access portions of the website.

Aubrey: please send me e-mail if you require a payment portal. Scholarship forms should not be on PDF etc... Please e-mail me if you have specific desires.

Dr. Yang, since ANS is making a structural change in website platform, and eventually, our webinar might want to start charge non-member for a fee, it is important to incorporate this potential function into the system to allow charging.

Dr. Bao-Wen Yang: Trevor / Marilyn – please look into this.

9. Honors and award committee

Dr. Sun: two TAA recipients for 2022. Details are in the fall newsletter.

Both will be recognized tomorrow afternoon after the TH Issues in Adv. Reactors session.

TAA lectures will occur at NURETH-20 next August in DC.

Committee also selected the recipient for the 2023 Sehgal Memorial award: Prof. Manera.

Committee is also evaluating candidate papers to make the Best Paper award selection.

The Best Paper award will be presented at the June meeting from now on to help with timing of major meetings.

Receiving nominations for the service award. March 1st is the nomination deadline. Please submit nominations. We also have excellence in review awards. Dillon is preparing the nominations.

The Sehgal award is recognized every other year.

Thank you for the service – committee members.

10. Scholarship committee report

Dr. Pointer: 2 scholarships for \$2000. We added some language to the description – first year students.

Both scholarships require standard ANS application + interest in THD.

Live on 11/15, due 2/1 – encourage your students to apply.

Dr. Piyush Sabharwall: only 3 universities participated – more universities should participate.

Dr. Pointer: US university students are eligible, international students are also eligible.

Dr. Bao-Wen Yang: what about undergraduates?

Dr. Pointer: ANS HQ has too many UG scholarships which they have a hard time to give away.

Dr. Bao-Wen Yang: Undergraduates are important to attract to TH area. Make it high value, make it competitive.

Dr. Marilyn Delgado: we already have Young Professionals competition.

Dr. Pointer: we should not use scholarships to attract members to the division, this has not work historically.

Dr. Elia Merzari: I was at ANS Student conference – the division should have an active presence at this meeting.

Dr. Piyush Sabharwall: capstone projects which they sponsor. Small donations for the capstone projects.

Dr. Dave Pointer: ANS already runs the competition for students. They tried to get divisions to support that.

Dr. Bao-Wen Yang: I would like the scholarship committee to look into that. Please.

Dr. Elia Merzari: More participation at the ANS student meeting is important. In my opinion, Chair of THD should always be at that conference.

Dr. Marilyn Delgado: BWXT investing more money to go to the Student Conference.

Dr. Bao-Wen Yang: we should do more than just awards.

11. Conferences Screening committee report

Prof. Cheung is not here. Dr. Bao-Wen Yang is reporting.

NURETH-21 proposal is due Nov. 15 (Tuesday).

12. Nominating Committee Report

Dr. Merzari. Positions were filled, as reported on the newsletter. The committee is currently waiting for PC recommendations. People interested serving on the EC are recommended to get involved with the program committee first. To do so, it is important to contact Dr. Shaver.

13. Webinar Report

Dr. Delgado: idea of the committee back in June. I've been trying to get students involved. Many have not reached out back to me. Three students were identified. They like for the idea to have yearly plans. Highlights of successful career. Give audience the idea why ANS membership is important. Align timewise with job search (e.g. in March) before graduation. If anyone has ideas – please share.

Shaver: do we have the list of volunteered webinar topics. Reaching out to them changed someone's commitment.

14. Old business

No old business to discuss.

New business:

Dr. Caleb Brooks: DOE-NE about workforce development. Do we have any representation on those activities?

Dr. Elia Merzari: Would this be an input to the CINR FOA?

Dr. Caleb Brooks: existing projects funding? Anyone is connected? Are the ANS informing the outcome of those projects?

Dr. Yang assigned Dr. Brooks to take the lead action on exploring and following up on DOE and other government programs.

Dr. Caleb Brooks: I can follow-up on that.

MOTION to adjourn: Dr. Dave Pointer

SECOND: Dr. Xiaodong Sun

All in favor: MOTION CARRIES.

APPENDIX A

PROPOSED AGENDA

American Nuclear Society – Thermal Hydraulics Division
Executive Committee Meeting
ANS Winter Meeting 2022
November 13, 2022, Sunday, 3:00–5:00PM MST
Sierra 2, Arizona Grand Resort, Phoenix, AZ

- | | |
|---|---------------------|
| 1. Opening | Yang |
| 2. Approval of Meeting Agenda | All |
| 3. Approval of Minutes from 2022 ANS Annual Meeting | All |
| 4. Action Items from 2022 ANS Annual meeting | All |
| 5. Chair Report | Yang |
| a. Updates from HQ/Meeting with Craig Piercy | |
| b. Webinars Committee | |
| c. Industrial and International Liaisons | |
| d. THD Membership | |
| e. YPG/YPC | |
| 6. Treasurer's Report | Bajorek |
| a. Budget updates | |
| Program Committee Report | Shaver/ Gutowska |
| a. Update THD Sessions for 2022 ANS Winter Meeting | Shaver/ Gutowska |
| b. Update THD Sessions for 2023 ANS Annual Meeting | Shaver/ Gutowska |
| c. THD Planning for 2023 ANS Winter Meeting | Shaver/ Gutowska |
| d. NURETH-19 Update | Roelofs |
| e. NUTHOS-13 Update | Sun/Yang |
| f. NURETH-20 Update | Bajorek |
| g. ATH'2024 Embedded Topical meeting | Shaver/Yang/Pointer |
| 7. Membership Committee Report | Zimmer |
| 8. Division Website Report | Howard |
| 9. Honors and Awards Committee Report | Sun/Pointer |
| 10. Scholarship Committee Report | Pointer |
| 11. Conference Screening Committee Report
Call for proposals – NURETH-21 | Cheung |
| 12. Nominating Committee Report | Merzari |
| 13. Webinar Report | Delgado |
| 14. Old Business | All |
| 15. New Business | All |
| 16. Adjournment | Yang |

APPENDIX B: NUTHOS-13 update

Number of Participants



Participants (228)

Session Chair Speaker Presenter	Taiwan	37
	International	141
Delegate	Taiwan	35
	International	15
Total		228

- 70% International Participants
- 30% Domestic Participants

Countries (19)

Belgium	1
Canada	1
China	38
Finland	1
France	3
Germany	15
India	2
Iran, Islamic Republic	4
Italy	4
Japan	28
Lithuania	4
Netherlands	1
Poland	2
South Korea	32
Spain	1
Sweden	5
Switzerland	2
Taiwan	72
United States	12
Total	228

Attendees by Sessions



Date	Room	Time (GMT+8)	Session	Attendee
Day I 6-Sep-22	Room 1	13:00-15:20	Opening Session + Plenary Session I – III	138
		15:50-17:10	Fundamental Thermal-Hydraulics - I	66
		17:25-18:45	Fundamental Thermal-Hydraulics - II	47
	Room 2	19:00-20:20	Fundamental Thermal-Hydraulics - III	40
		15:50-17:10	Computational Thermal-Hydraulics - I	64
		17:25-18:45	Computational Thermal-Hydraulics - II	45
		19:00-20:20	Computational Thermal-Hydraulics - III	42
	Room 3	15:50-17:10	Experimental Thermal-Hydraulics - I	42
		17:25-18:45	Experimental Thermal-Hydraulics - II	33
		19:00-20:20	Experimental Thermal-Hydraulics - III	29
	Room 4	15:50-17:10	Safety and Severe Accidents - I	59
		17:25-18:45	Safety and Severe Accidents - II	45
		19:00-20:20	Safety and Severe Accidents - III	45

Date	Room	Time (GMT+8)	Session	Attendee
Day II 7-Sep-22	Room 1	13:00-14:00	Keynote Session 1 & 4	67
		14:15-15:35	Special Session I- Decommission	42
		15:50-17:10	Special Session II- Decommission	36
		17:25-18:45	Special Session III- Spent Fuel Management	26
		19:00-20:20	Computational Thermal-Hydraulics - V	35
	Room 2	13:00-14:00	Keynote 2 & 5	42
		14:15-15:35	Computational Thermal-Hydraulics - IV	35
		15:50-17:10	Fundamental Thermal-Hydraulics - IV	41
		17:25-18:45	Experimental Thermal-Hydraulics - IV	25
		19:00-20:20	Plant Operation, Diagnostics, Monitoring and Maintenance	22
		13:00-14:00	Keynote 3 & 6	44
	Room 3	14:15-15:35	Thermal-Hydraulics and Safety of Advanced Reactors - I	35
		15:50-17:10	Thermal-Hydraulics and Safety of Advanced Reactors - II	36
		17:25-18:45	Small Module Reactors and Micro Reactors - I	42
		19:00-20:20	Small Module Reactors and Micro Reactors - II	40
		14:15-15:35	Safety and Severe Accidents- IV	59
		15:50-17:10	Safety and Severe Accidents- V	36
		17:25-18:45	Safety and Severe Accidents- VI	30
Room 4	19:00-20:20	Safety and Severe Accidents- VII	27	

Date	Room	Time (GMT+8)	Session	Attendee
Day III 8-Sep-22	Room 1	13:00-15:00	Special Session-Development and Prospect of Nuclear Backend	60
		15:20-18:00	Panel Discussion-SMR and Micro Reactors + Closing Session	87
	Room 2	13:00-15:00	Fundamental Thermal-Hydraulics - V	33

Oral Presentation



Track	Theme	Full Paper	Technical Session
1	Fundamental Thermal-Hydraulics	23	5
2	Computational Thermal-Hydraulics and CFD Method	24	5
3	Experimental Thermal-Hydraulics	17	4
4	Safety and Severe Accidents	32	7
5	Thermal-Hydraulics and Safety of Advanced Reactors	9	2
6+7	Plant Operation, Diagnostics, Monitoring and Maintenance	4	1
8	Small Module Reactors and Micro Reactors	10	2
9	Special Sessions- Decommission and Spent Fuel Management	13	3
TOTAL		132	29

Country	Author
Belgium	1
China	27
Finland	1
France	3
Germany	12
India	3
Italy	3
Japan	19
Lithuania	3
Netherlands	1
Poland	1
South Korea	24
Spain	1
Sweden	3
Switzerland	2
Taiwan	25
United States	3
Countries Total	17

APPENDIX C: NUIRETH-20 poster



20th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-20)

August 20-25, 2023 | Washington, DC, USA | Washington Hilton



EUROPEAN NUCLEAR SOCIETY



한국원자력학회
Korean Nuclear Society



Sociedad Nuclear Mexicana

CNS TFD
中国核学会核反应堆热工流体力学分会

CALL FOR PAPERS

EXECUTIVE CHAIRS

General Chairs

Raymond Furstenau, USNRC
Bao-Wen Yang, DEQD
Elia Merzari, Penn State University

Honorary Chairs

Yassin Hassan, Texas A&M
Hisashi Ninokata, Politecnico di Milano

ANS Local Section Chair

John Kelly, ANS President (Emeritus)

Technical Program Committee Chair

Stephen M. Bajorek, USNRC

Technical Program Committee Co-Chairs

Igor Bolotnov, North Carolina State University
Annalisa Manera, University of Michigan

Steering Committee Co-Chairs

John Luxat, McMaster University
Sofiane Benhamadouche, EdF
Chul-Hwa Song, KAERI
Thomas Fanning, USDOE
Yanping Huang, NPIC

ABSTRACT DEADLINE: NOW December 2, 2022

OCTOBER	SUBMISSION OF ABSTRACTS: December 2, 2022
NOVEMBER	AUTHOR NOTIFICATION OF ACCEPTANCE: December 5, 2022
JANUARY	FULL PAPER SUBMITTED FOR REVIEW: January 13, 2023
MARCH	REVIEW NOTIFICATION: March 10, 2023
APRIL	FINAL FULL PAPERS DUE: April 14, 2023

GUIDELINES

The limit for abstract submissions is 250 words. The limit for full-paper submissions is 14 pages. Papers exceeding 14 pages will be rejected. If an exception is made and a paper over 14 pages is accepted, page charges are \$100/page for p. 15 and above. The conference proceedings will be distributed digitally. Selected papers will be published in the special issues of *Nuclear Technology*, *Nuclear Science and Engineering*, *Fusion Science and Technology*, and *Nuclear Engineering and Design*. For authors who are unable to travel to NURETH 20 because of country-wide travel restrictions, we will provide a remote-presentation opportunity. Further details will be forthcoming.

ABOUT THE MEETING

NURETH is the premier gathering for experts in nuclear reactor thermal hydraulics and related topical areas. This meeting is held every two years. The Washington DC ANS Section is pleased to host NURETH-20 in Washington, DC, USA. Washington, DC is more than the capital of the USA—it is the center of both support and regulation of the nuclear industry. Washington DC is not only a center of government but also a tremendous visitor center with cultural attractions for all.

NURETH-20 HOSTS

Raymond Furstenau, USNRC
Yassin Hassan, Texas A&M
Stephen M. Bajorek, USNRC



SUBMIT AN ABSTRACT

epr.ans.org/meeting/?m=381

PROGRAM SPECIALIST

Janet Davis
708-579-8253



20th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-20)

August 20-25, 2023 | Washington, DC, USA | Washington Hilton

TECHNICAL TRACKS

HIGH-QUALITY PAPERS (14-PAGE MAXIMUM) ARE SOLICITED IN THE FOLLOWING AREAS:

1. FUNDAMENTAL THERMAL HYDRAULICS

- 1A. Two-Phase Flow and Heat Transfer
- 1B. Boiling and Condensation
- 1C. Interfacial Area Transport
- 1D. Critical Heat Flux and DNB
- 1E. Natural Circulation in Reactor Systems
- 1F. Thermal Hydraulic Scaling
- 1G. General

2. COMPUTATIONAL THERMAL HYDRAULICS

- 2A. Thermal Hydraulics System Code Development and Analysis
- 2B. Computational Fluid Dynamics (CFD)
- 2C. Multiphase CFD
- 2D. Multiphysics Development and Applications
- 2E. DNS for Model Development
- 2F. Multiscale CFD and Coupling with System Codes
- 2G. Subchannel Thermal Hydraulic Analysis
- 2H. General

3. EXPERIMENTAL THERMAL HYDRAULICS

- 3A. Experimental Methods and Instrumentation
- 3B. Integral and Separate Effects Tests
- 3C. Tests for Assessment of CFD
- 3D. Experimental Databases and Preservation
- 3E. Experiments for Advanced and Special Purpose Reactors
- 3F. Rod Bundle Experiments
- 3G. Critical Heat Flux and Post-CHF Experiments
- 3H. UQ Methods and Best Practices for Experiments
- 3I. General

4. VERIFICATION, VALIDATION AND UNCERTAINTY QUANTIFICATION (VUQ)

- 4A. Verification and Validation of Systems Codes
- 4B. Verification and Validation of Subchannel Codes
- 4C. Best Practices in CFD
- 4D. Uncertainty Methodology Development
- 4E. BEPU Analysis and Challenges in Licensing
- 4F. General

5. WATER-COOLED REACTOR OPERATIONS AND ANALYSIS

- 5A. LWR Operation and Safety Analysis
- 5B. HWR Operation and Safety Analysis
- 5C. VVER Operation and Safety Analysis
- 5D. BWR Instabilities and Nonlinear Dynamics
- 5E. Small Modular LWRs
- 5F. General

6. SEVERE ACCIDENTS

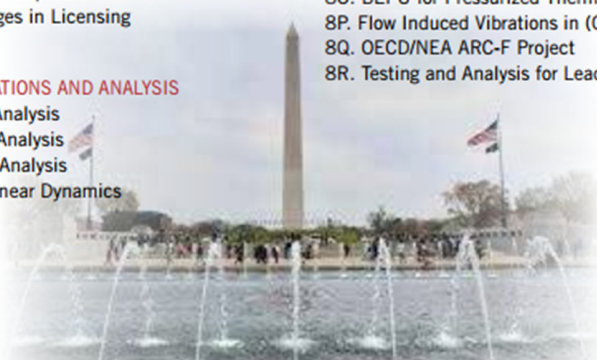
- 6A. Severe Accident Scenarios and Source Term
- 6B. In-Vessel Corium and Debris Bed Coolability
- 6C. Ex-Vessel Corium Interaction and Coolability
- 6D. Containment TH, Hydrogen and Fission Product Behavior
- 6E. Design Features to Prevent Severe Accidents
- 6F. Uncertainty in Severe Accident Modeling
- 6G. Severe Accidents in Advanced Reactors and Nuclear Installations
- 6H. General

7. NEW AND ADVANCED REACTORS

- 7A. High-Temperature Gas Cooled Reactors
- 7B. Liquid Metal Cooled Reactors
- 7C. Molten Salt Reactors
- 7D. Supercritical Water Cooled Reactors
- 7E. Microreactors
- 7F. Reactors for Space Applications
- 7G. Offshore Nuclear Platforms
- 7H. Advanced Reactor Fuel
- 7I. General

8. SPECIAL TOPICS

- 8A. Hydraulics in Medical Isotope Production
- 8B. Fluid-Structure Interactions
- 8C. Accident Tolerant Fuel
- 8D. Machine Learning and Artificial Intelligence for TH
- 8E. Test and Prototype Reactors
- 8F. Thermal Hydraulics of Fusion Reactors
- 8G. International Benchmarks
- 8H. Reliability of Passive Systems
- 8I. Post-Fukushima Thermal Hydraulic Research
- 8J. Integrated Energy Systems
- 8K. Decommissioning
- 8L. NEAMS Thermal-Hydraulics IRP
- 8M. Memorial Session in Honor of Prof. Peter Griffith
- 8N. Liquid Metal Heat Transfer
- 8O. BEPU for Pressurized Thermal Shock
- 8P. Flow Induced Vibrations in (GO-VIKING)
- 8Q. OECD/NEA ARC-F Project
- 8R. Testing and Analysis for Lead Fast Reactor Development



APPENDIX D: Attendance sign-up

ANS Winter Meeting & Expo

November 13-17, 2022 | Phoenix, AZ | Arizona Grand Resort

2022



attendance.

Name / Affiliation	EC wants?	e-mail:	Phone number
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APPENDIX E. Newsletter



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