

# ***Nuclear Engineering Division All-Member's Meeting***

***A forum for all of us to learn what the NED is doing, to learn to work together, and to expand our technical involvement as individuals and as an organization.***

***Sponsored by the NED Executive Committee***

***July 30, 2022***

# Meet today's speakers and NED Executive Committee...

**Bob Stakenborghs: Senior Vice President, F. ASME...  
ASME Technology & Engineering Community (TEC) Sector**

## **NED Executive Committee\*:**

**Asif Arastu: Secretary**

**Leon Cizelj**

**Yassin Hassan: Treasurer**

**Rosa Lo Frano**

**Niko McMurray**

**Shripad Revankar**

**Jovica Riznic: Vice Chair**

**Richard Schultz: Chair**

**Clayton Smith: Past Chair**

**Guoqiang Wang**

\* For brief bios—see [https://asme.zoom.us/webinar/register/WN\\_hbHy1Th9Sw6mIldbJ59x4Ng](https://asme.zoom.us/webinar/register/WN_hbHy1Th9Sw6mIldbJ59x4Ng)

# *Nuclear Engineering Division All-Member's Meeting*

**Thanks for answering our call for an All-Member's Meeting (AMM)...**

***The objectives of our meeting are to:***

- 1. Open a dialogue between us***
- 2. Learn about what's going on in the NED***
- 3. Build a division that has something for all of us and***
- 4. Adapt our division to the nuclear world of today.***

# The Meeting Plan...

**Opening address: Bob Stakenborghs...**

**Topical areas:**

- 1. What is going on in the NED...**
- 2. What's going on in the nuclear world of today...**

**Approaches for better aligning NED with current events...**

- 3. Technical committees**
- 4. NED internal workings**
- 5. Path-forward committee**
- 6. Young members & early career group...**
- 7. White papers, ASME position papers & focus areas, additional visibility, and public awareness...**
- 8. Updated NED—a place for turning visions into reality**

**Question, answers, and discussion...**

# The Q&A Process

- ***Submit questions by typing them into the Q&A box within your Zoom screen***
- ***Submit questions throughout the presentations as you think of them***
- ***Raise your hand for an opportunity to ask your question live.***

# Opening Address: SVP Bob Stakenborghs...

## *Topics...*

- *Welcome to all-member's meeting.*
- *Overview of ASME and the Technical & Engineering Community*
- *Relationship between NED and the other ASME divisions*
- *The ASME vision...*

# What's Going on in Present-Day NED...

## ***Mission/Vision Statement:***

***NED focuses on the design, analysis, development, testing, operation and maintenance of reactor systems and components, nuclear fusion, heat transport, nuclear fuels technology and radioactive waste. Presently NED is stressing the carbon-free characteristics of nuclear power in the context of it being a prime source of power as the global community develops power sources/grids that are environmentally-friendly in an effort to prevent/reduce climate change.***

# What's Going on in Present-Day NED...

## ***NED in brief...***

- ***Approximately 6000 members,***
- ***Sponsors the International Conference on Nuclear Engineering (ICONE) in conjunction with the Chinese Nuclear Society and the Japan Society of Mechanical Engineers.***
  - ***ICONE is held once yearly in the United States, Japan, Europe, and China respectively over a 4 year cycle.***
  - ***This year is the 29<sup>th</sup> ICONE—and it is being held in Shenzhen, China beginning on August 8, 2022. In 2023 ICONE-30 will be held in Kyoto, Japan***
- ***Sponsors 2 summit meetings each year:***
  - ***Advanced Clean Energy Summit and***
  - ***Conference for Advanced Reactor Deployment (CARD) formerly SMMR***
- ***Responsible for creating and sponsoring the ASME Journal of Nuclear Engineering and Radiation Science.***

# What's Going on in Present-Day NED...

## **Historically significant events: NED...**

- **Traditional alliances with French Nuclear Society (inactive after 2001), Japan Society of Mechanical Engineers, and Chinese Nuclear Society.**
- **Regularly underwrite and sponsor ICONE in Europe every 4 years, e.g., Brussels, Prague, London, etc**
- **Have an active student program that fosters student participation and attendance at technical meetings. Also, supports students via scholarships.**
- **Response to significant events, e.g., Fukushima incident, March 2011: Formed ASME Presidential Task Force on Response to Japan Nuclear Power Plant Events; Chair Nils Diaz (former US Nuclear Regulatory Commission Chair & Member) and Vice Chair Regis Matzie (former Chief Technical Officer @ Westinghouse). Produced ASME position report: Forging a New Nuclear Safety Construct.**
  - **One important outcome: formation of the Accident Tolerant Fuel (ATF) Committee**

# *Summary of past year's (2021) ICONE*

- *ICONE28, based in the U.S. (ASME) and held virtually, had:*
  - ✓ *Number of Full conference attendees: 488*
  - ✓ *Number of student attendees: 137*
  - ✓ *Total attendance: 663*
  - ✓ *Number of authors: 830*
  - ✓ *Number of abstracts submitted: 954*
  - ✓ *Number of abstracts accepted: 656*
  - ✓ *Number of papers: 355*
  - ✓ *Number of presentations only: 50*
  - ✓ *Exhibitors: 2*
  - ✓ *Sponsors: 3*

# ***Status of this year's ICONE— ...Sponsored by CNS, ASME, and JSME...***

- ***ICONE29 is a virtual conference hosted by China Nuclear Society***
- ***Based in Shenzhen, China***
- ***From August 8 to 12, 2022...***
- ***Number of approved papers: 932 (China, Japan, USA, Canada, France, Germany, Italy, Iceland, UK, Chile, Malaysia, Hong Kong, Afghanistan, UAE, Morocco, Pakistan, Cameroon, Zimbabwe)***
- ***3 plenary session, 12 panels, 4 workshops***

# *Summary of future plans...*

- *Resume in-person conferences and summit meetings*
- *An expansion of the NED committee structure designed to engage more NED members and enlarge the division footprint.*
- *Collaborate closely with other ASME divisions—closely related to reducing emission and minimizing climate change.*
- *Initiate summit meetings or conferences closely related to climate change and reduction of CO<sub>2</sub>*

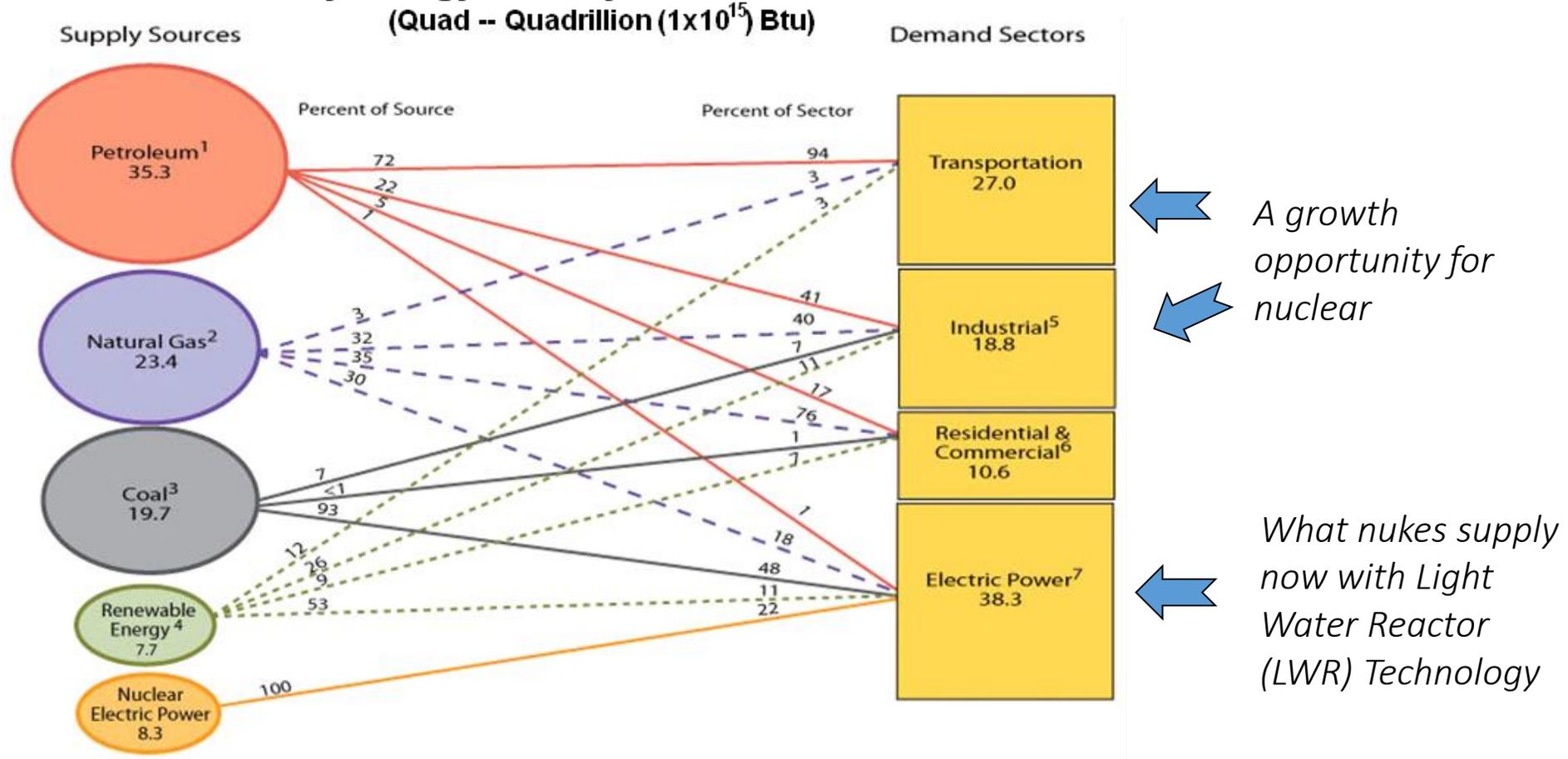
# What's Going on in the Nuclear World of Today...

***Advanced reactors, advanced reactors, advanced reactors!!***

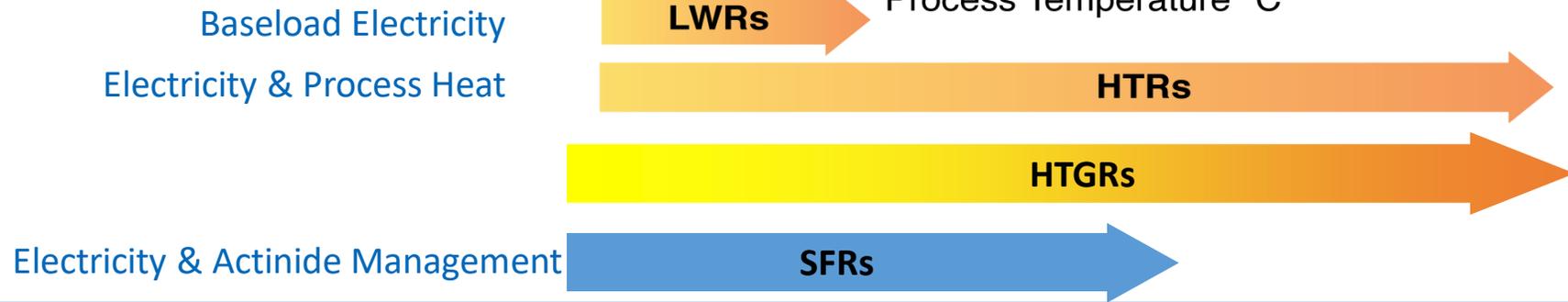
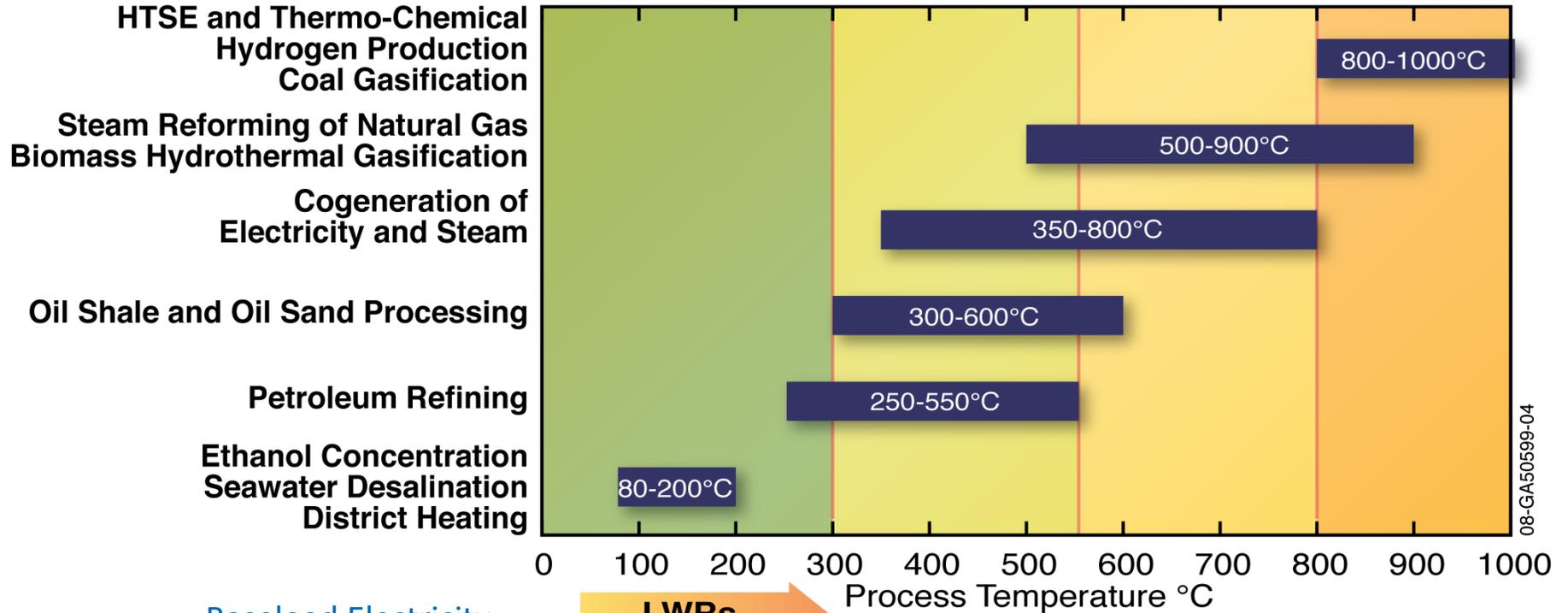
- ***Full-sized NPPs, SMRs, micro-reactors***
- ***Types (examples):***
  - ***Liquid metal fast reactors***
  - ***LWRs***
  - ***High temperature gas-cooled reactors***
  - ***Molten salt reactors***

# Energy Production and Consumption in U.S.

U.S. Primary Energy Flow by Source and Sector, 2009



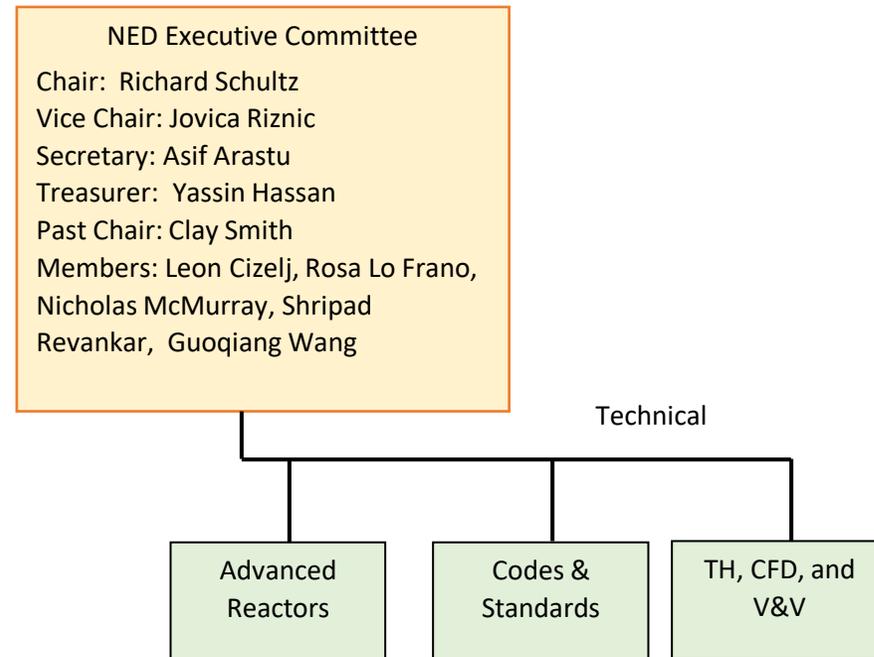
# Industrial Heat Requirements...



# Updating NED: Technical Committees...

## Topics...

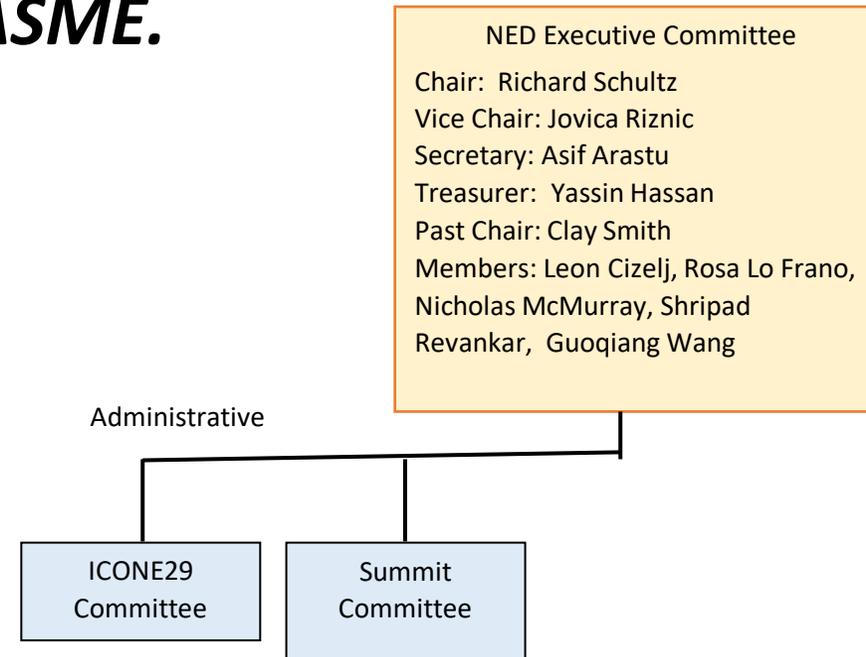
- **Technical committees are focus areas for addressing technical issues, gathering research input/output, and providing material for organizing conferences.**
- **With expansion of NED, support for technical committees will be a primary focus area.**
- **Member time requirement: ~2 to 4 hours per quarter.**



# Updating NED: Internal Workings...

## Topics...

- **Internal workings has to do with ongoing inter-ASME activities (division-to-division) as well as the NED's interactions with the public and groups outside of ASME.**
- **Organizing meetings & conferences (ICONE, summits.**
- **Newsletter (~2/year) (position open!)**
- **Committee of finance.**
- **Honors & awards**
- **Membership Committee**
- **Nomination Committee**
- **Program Committee**

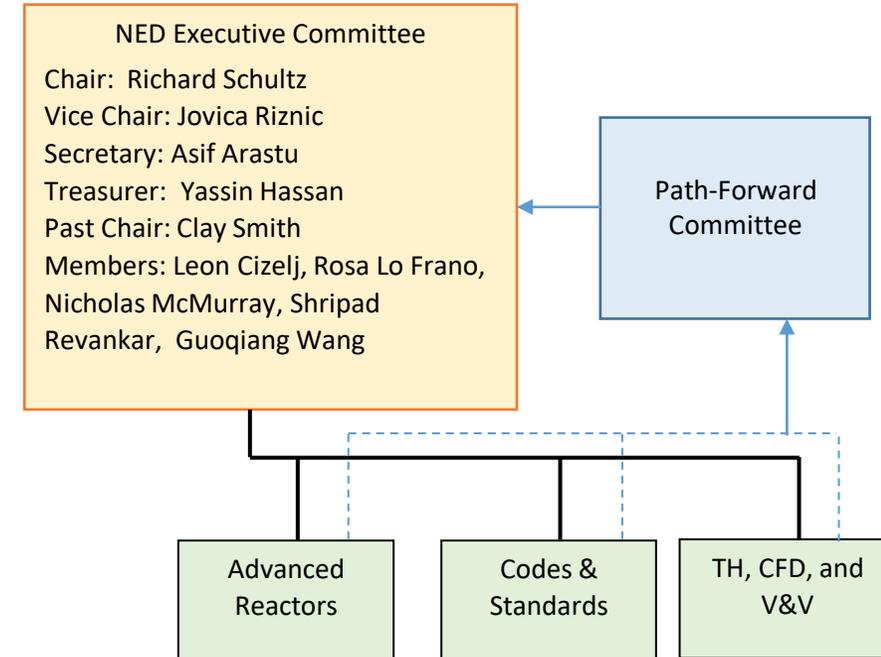


# Updating NED: Path-Forward Committee...

## Topics...

- ***The need to identify key issues and topics that NED should focus.***
- ***Such topics should be tailored to meet needs for (a) promoting reactor designs, concepts, and/or solutions to open engineering problems, (b) respond to events that are clearly important to the nuclear industry.***
- ***Example: The European Parliament decided to keep nuclear in the list of clean energy technologies.***

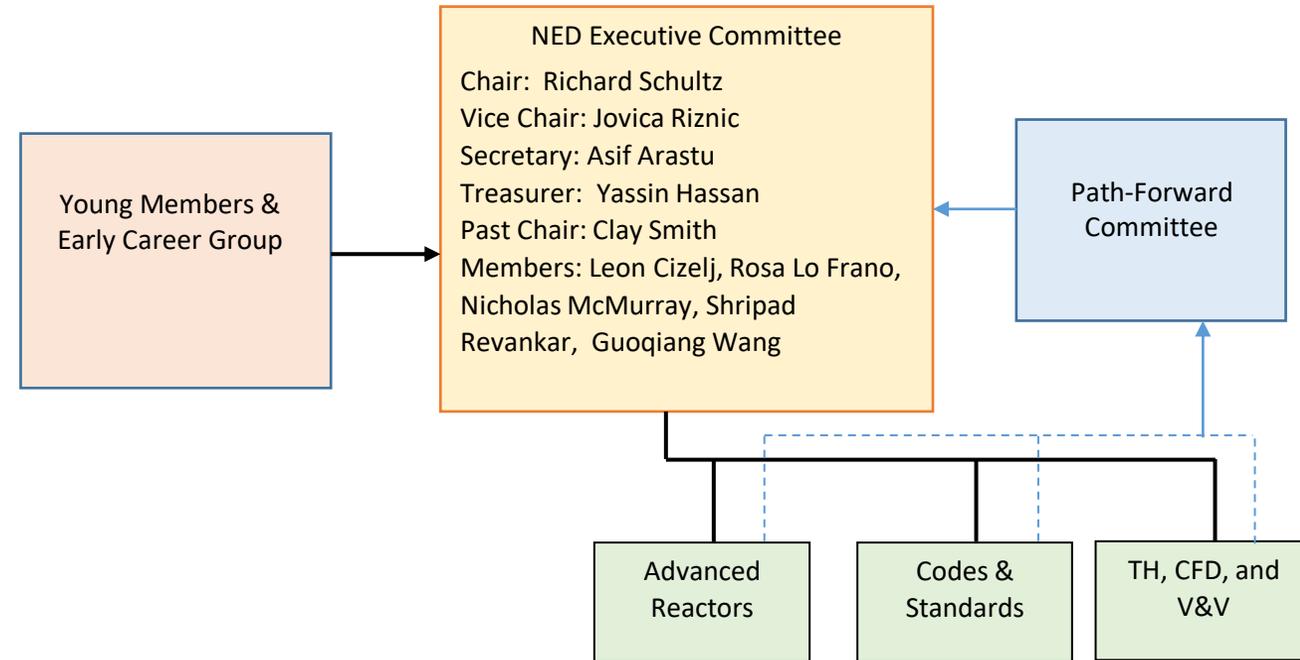
***Candidate topic: The US should also add nuclear power to the list of clean energy technologies that are clean energy candidates for N. America... perhaps ASME NED can act to help achieve this goal!***



# Updating NED: Young Members & Early Career Group...

## Topics...

- ***Tailored to early career and/or young engineers.***
- ***Young members & early career individuals provide input and participation in conferences, summits, and meetings...***



# Updating NED: White papers, position reports, focus areas, Additional visibility, public awareness (1)...

- **Immediate white paper for public release presenting**
  - **Position of NED on issues, etc**
  - **Future events...**
- **Social media: website...Facebook...LinkedIn...twitter**
- **NED calendar that is readily accessible to public**
- **Additional visibility: Briefing events (e.g., Congressional), Student & Young Member Meetings, IMECE, cooperation with other divisions, e.g., Power Division, etc.**

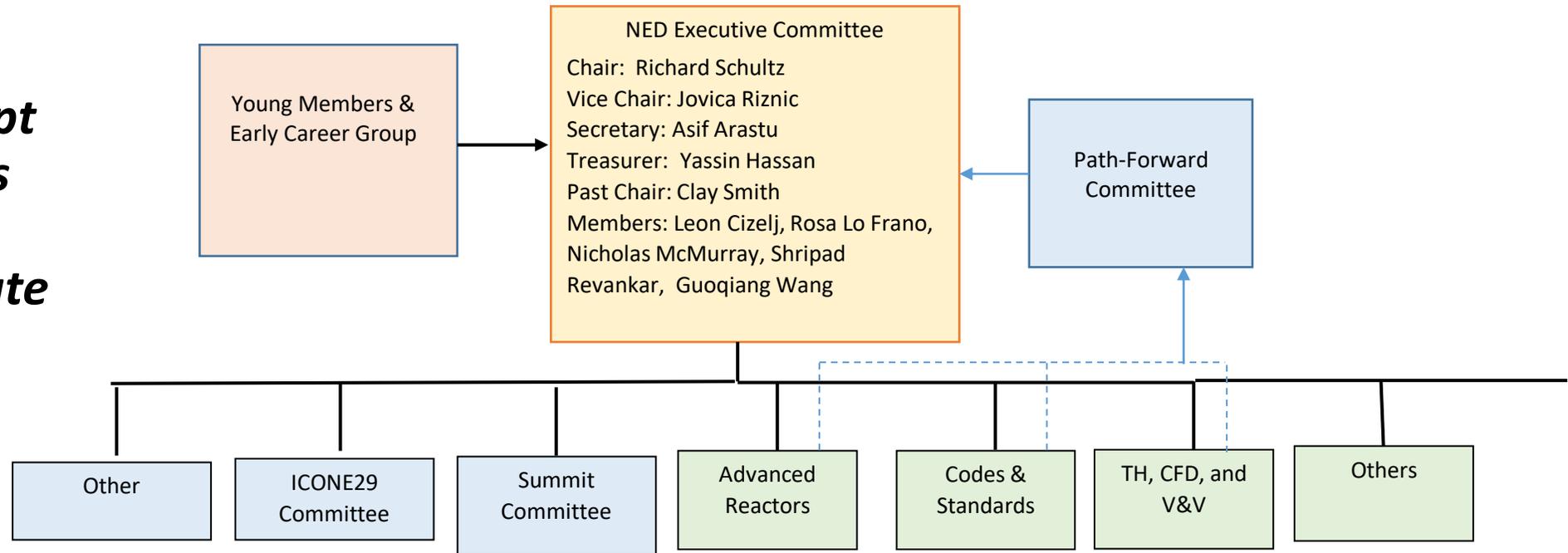
## **Updating NED: White papers, position reports, focus areas, Additional visibility, public awareness (2)...**

- ***Activities & programs: Webinar series, podcasts, professional development workshop & activities.***
- ***Publications: Annual reports, News from industry included in Newsletter, technical and opinion articles, abstracts/articles summarizing recent important events.***
- ***Expansion of journal: ASME Journal of Nuclear Engineering and Radiation Science***

# Updated NED: A place for making visions a reality...

## Topics...

- **Voila: An org that is**
  - **Flexible**
  - **Able to adapt to our needs**
  - **Able to accommodate all of us.**
- **Your thoughts...**



# *Questions, Answers, Discussions...*