Colorado Springs Utilities
It's how we're all connected

Utilities Policy Advisory Committee (UPAC)
Wednesday, October 2, 2024
8:00 a.m. – 10:00 a.m.

Blue River Board Room
121 S. Tejon Plaza of the Rockies or Microsoft Teams
Click here to join the meeting

8:00 a.m.	**1.**	**Call to Order**	
8:05 a.m.	**2.**	**Approval of September 4, 2024 UPAC Meeting Minutes**	Decision
8:10 a.m.	**3.**	**Grant County Public Utility District**	Discussion
9:20 a.m.	**4.**	**Public Participation Data**	Discussion
10:40 a.m.	**5.**	**Citizen Comment** Citizens can provide comment in person, by joining the meeting from computer or by phone using the link above. If you would like to speak during the citizen comment period, please sign up to speak through BoardSubmissions@csu.org prior to the meeting.	Discussion
10:40 a.m.	**6.**	**Committee Member General Discussion**	
11:00 a.m.	**7.**	**Adjournment**	

Next meeting: November 6, 2024

Note: UPAC Bylaws, Rule 6: Customer and Public Comment: (b) At the discretion of the Chair, or the majority of the Committee Members present, customers and members of the public will be allowed to comment or ask questions concerning items discussed at regular meetings or concerning matters discussed at special meetings. Comments or questions by individuals will be limited to five minutes each, and all customer or public comments will not exceed twenty minutes on any agenda item unless time is extended by the Chair or majority of the Committee Members present.

Colorado Springs Utilities
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Minutes
Utilities Policy Advisory Committee (UPAC)
Wednesday, Sept. 4, 2024
Rosemont Conference Room
5th floor, 121 S. Tejon Street
Colorado Springs, CO
and Microsoft Teams Virtual Meeting

Committee members present in the Boardroom or via Microsoft Teams:
Chair Larry Barrett, Scott Smith, Gary Burghart, Michael Borden, David Watson, Katherine Danner, Chris Meyer, Tom Carter and Albert Badeau

Staff members present in the Boardroom or via Microsoft Teams: Kaitlin Haslam, Natalie Watts, Bethany Schoemer, Amy Lewis, Renee Adams, Jay Anderson, Tristan Gearhart, Al Wells, Travas Deal, Christian Nelson, Andy Colosimo, Somer Mese, Nicole Means, Dan Hodges, Heather Tocci, Fadil Lee, Leslie Smith, Gabe Caunt, Kathryn Rozwod, Steve Berry, Kerry Baugh, Matt Duddon and Tyrone Johnson

Utilities Board members present in the Boardroom or via Microsoft Teams:
Chair Dave Donelson

City of Colorado Springs staff present in the Boardroom or via Microsoft Teams:
David Beckett

Citizens present in the Boardroom or via Microsoft Teams:
Samuel Owen and Keith Hay

1. **Call to Order**
   Chair Larry Barrett called the meeting to order at 8:00 a.m. and called the roll.

2. **Approval of July 3, 2024, UPAC Meeting Minutes**
   Committee Member David Watson made a motion to approve the Aug. 7, 2024, meeting minutes and Committee Member Katherine Danner seconded the motion. The motion passed unanimously.

3. **Intro to UPAC Alternate Members**
   Chair Barrett introduced two new UPAC alternate members: Mr. Tom Carter and Mr. Albert Badeau. Mr. Badeau shared that his background is in biomedical engineering, environmental health, and safety. Mr. Tom Carter's background is in energy conservation and solar energy.

4. **Colorado Energy Office presentation**
   Mr. Keith Hay, Senior Director of the Colorado Energy Office, presented on pathways to decarbonization in Colorado's electric sector by 2040.

   Energy scenario modeling results reveal a variety of approaches, including optimized 100% clean energy, wind/solar/battery-only, geothermal, demand-focused strategies, Small Modular Reactors (SMR), and hydrogen-limited scenarios. The business-as-usual scenario achieved a 97% reduction in emissions by 2040 at no additional cost, with wind, solar, and batteries providing approximately 71% of energy by 2030.

   In this scenario, gas units transitioned to a capacity role, operating 3% -5% of the time by 2035. The economic deployment scenario also reached a 97% emissions reduction by 2040 but with the lowest net present value cost. However, the wind/solar/battery-only scenario was the most expensive and failed to meet reliability standards, while the SMR scenario indicated a $35 billion capital cost for 320 megawatts (MW) of nuclear capacity.

   Nuclear and SMR considerations showed that SMR technology was only included in scenarios where the model was forced to do so and was not cost-competitive with other technologies in most cases. The earliest possible deployment of SMR technology is estimated around 2034-2035. Renewable energy challenges included high curtailment rates in the wind/solar/battery-only scenario and the need for a $4.5 billion transmission build-out for additional capacity. Policy implications suggest a focus on outcome-based approaches rather than specific technologies, with plans to mirror 2030 targets for 2040, emphasizing reliability and affordability.

   The state is exploring joint procurement strategies for long lead-time resources and prioritizing affordability to promote consumer adoption of clean technologies. Future technology options include geothermal, hydrogen, and carbon capture as alternatives to nuclear, with ongoing considerations of land use and environmental impacts, including responsible development of renewable energy infrastructure and potential use of highway rights-of-way for transmission through the Next Gen Highway initiative.

5. **American Public Power Association Presentation**
   Mr. Samuel Owen, American Public Power Association, presented details on Congressional and nuclear policies at the federal level.

   Congress is currently focused on the upcoming election, which is expected to limit legislative activity until the post-election session. The ongoing battle over government funding is anticipated to extend into 2025, though nuclear energy policy remains a rare area of bipartisan agreement. The Advance Act, signed into law on July 9, 2024, aims to streamline the Nuclear Regulatory Commission's

(NRC) regulatory processes and stimulate the development of advanced nuclear technology. The Act, which passed with overwhelming bipartisan support in both the Senate and House, introduces several key changes: updating the NRC's mission statement to ensure efficient licensing, fast-tracking licensing for nuclear facilities on brownfield sites, expediting the timeline for combined license applications at existing sites, developing performance-based guidance for micro-reactor licensing within 18 months, and reducing licensing fees for advanced reactor applicants.

In terms of nuclear appropriations, the House Energy and Water bill proposes $9 billion for advanced nuclear programs, while the Senate Energy and Water bill has passed with unanimous support, though final appropriations may be deferred to the lame duck session or the new Congress. Permitting reform efforts include the Energy Permitting Reform Act of 2024, introduced by Senators Joe Manchin and John Barrasso, which aims to shorten judicial review timelines and address electric reliability.

The American Public Power Association recognizes the potential of SMRs, although no specific projects are currently underway, with Grant PUD in Washington identified as a potential contact for exploration.

Developments in nuclear technology include collaborations such as TerraPower and GE Hitachi in Wyoming, and the X-Energy project with Dow Chemical in Texas for process heat and power generation.

The committee is also interested in customer preferences for nuclear energy, with plans to survey public opinion in Colorado Springs. Additionally, there is interest in exploring the potential for nuclear energy at local military installations and discussing creative incentives for SMR deployment beyond tax credits at the October meeting.

6. **Committee Member General Discussion**
   Chair Larry Barrett will not be present at the October Meeting. Committee Member Gary Burghart will chair the October meeting. Ms. Bethany Schoemer, Strategic Planning and Governance Specialist Senior, will work with Committee Member Burghart to prepare the agenda for the October meeting, focusing on internal discussions if external presenters are available.

7. **Adjournment**
   Chair Barrett adjourned the meeting at 10:30 a.m.

   Next meeting: Wednesday, Oct. 2, 2024, at 8:00 a.m. in the Blue River Board Room

Small Modular Nuclear Reactors

Grant PUD
Colorado Springs Utility

Bryce Greenfield
Nuclear Engineer

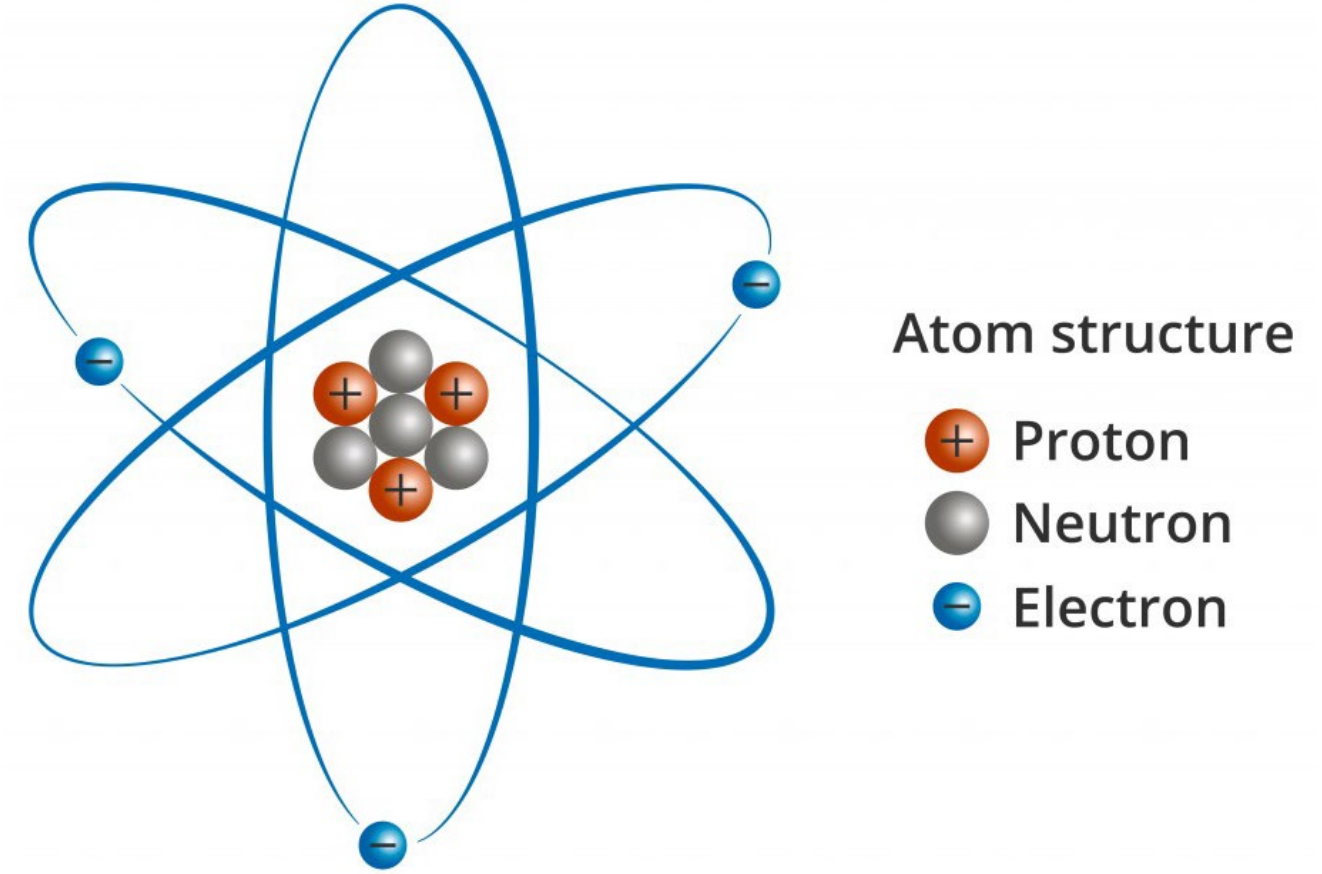
Octoboer 2024

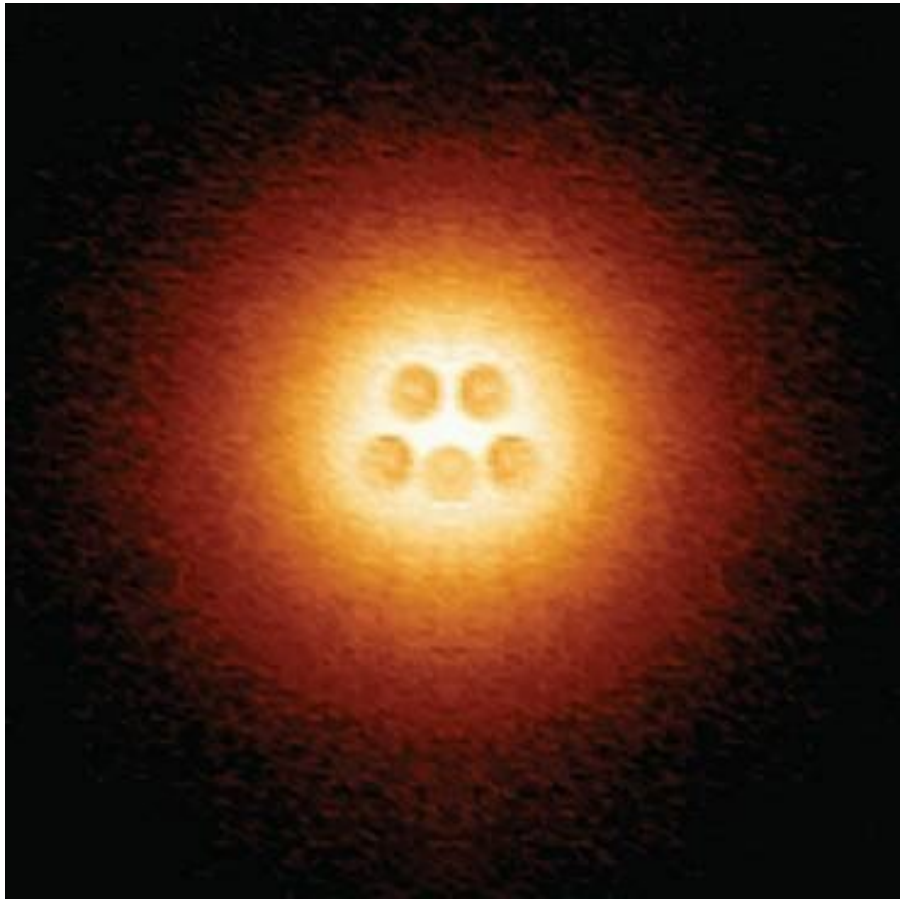
Grant PUD

Powering our way of life.

Neutrons

A neutron and a proton walk into a bar…

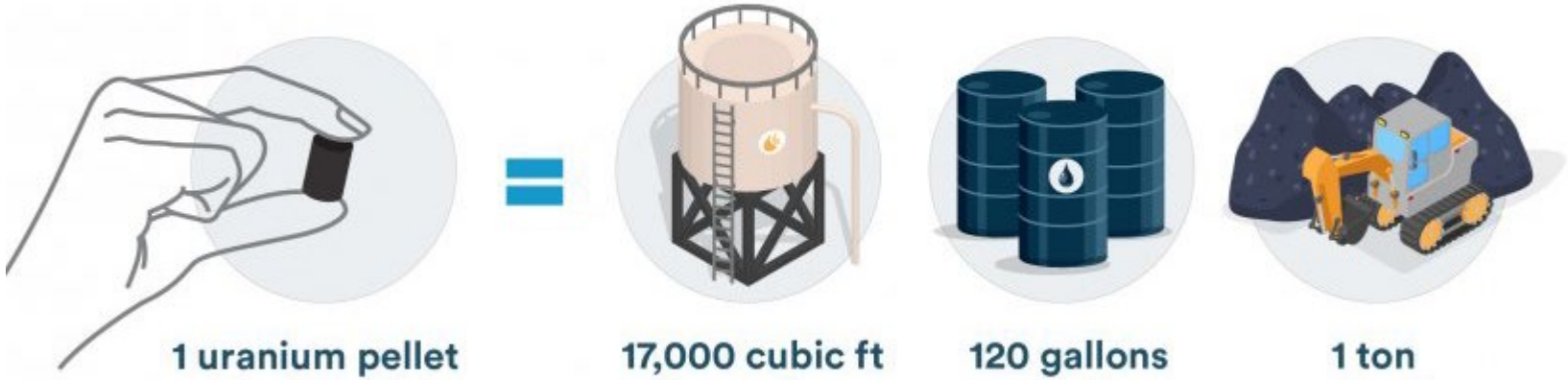




Fission

Fast Facts on NUCLEAR ENERGY

Nuclear fuel is **extremely energy dense.**



1 uranium pellet
(~1 inch tall)

=

17,000 cubic ft
of natural gas

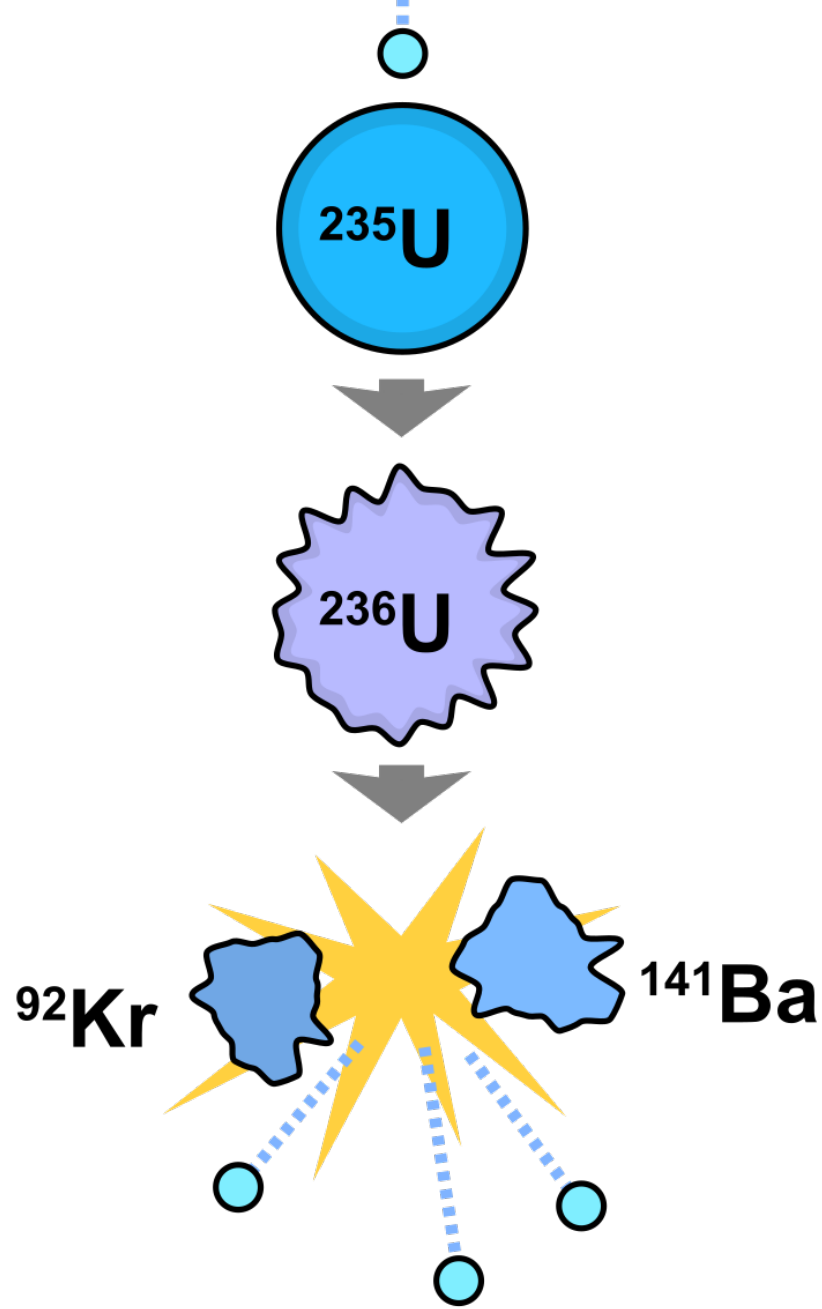
120 gallons
of oil

1 ton
of coal

U.S. DEPARTMENT OF ENERGY | Office of NUCLEAR ENERGY

LEARN MORE energy.gov/ne

Data source: U.S. Energy Information Administration



SMRs Estimated Timeline of Deployment

IAEA 60 Years Atoms for Peace and Development

Immediate Deployable

CAREM — Argentina

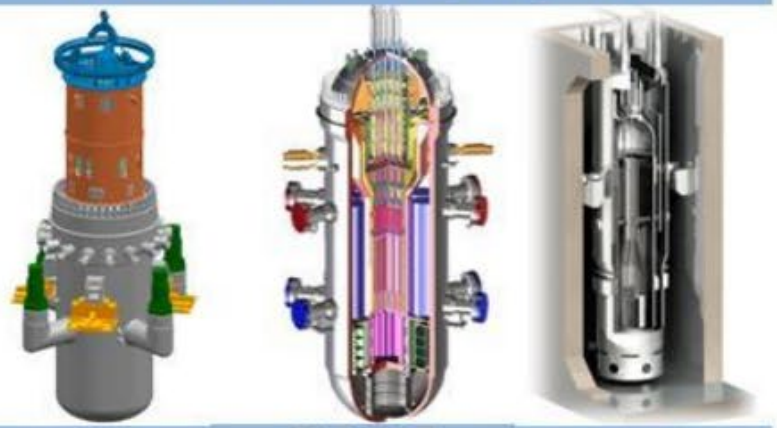
HTR-PM — China

KLT-40S — Russian Federation

Under Construction

- **CAREM-25**
  CNEA, Argentina
- **KLT-40S**
  OKBM Afrikantov, Russian Federation
- **HTR-PM**
  INET, China

Near-term Deployable



ACP100 — China

SMART — Republic of Korea

NuScale — USA

Certified or at Advanced Design Stage

- **SMART**
  KAERI, Republic of Korea
- **RITM-200**
  OKBM, Russia
- **PRISM**
  GE-Hitachi, USA
- **PBMR-400**
  PBMR, South Africa
- **BREST300-OD**
  NIKIET, Russia
- **4S**
- **ACP100**
  CNNC, China
- **NuScale**
  NuScale Power, USA
- **mPower**
  B&W, USA
- **GTHTR300**
  JAEA, Japan
- **SVBR-100**
  AKME Engineering, Russia
- **ABV-6M**

Mid to Longer-term Deployable

UNITHERM — Russian Federation

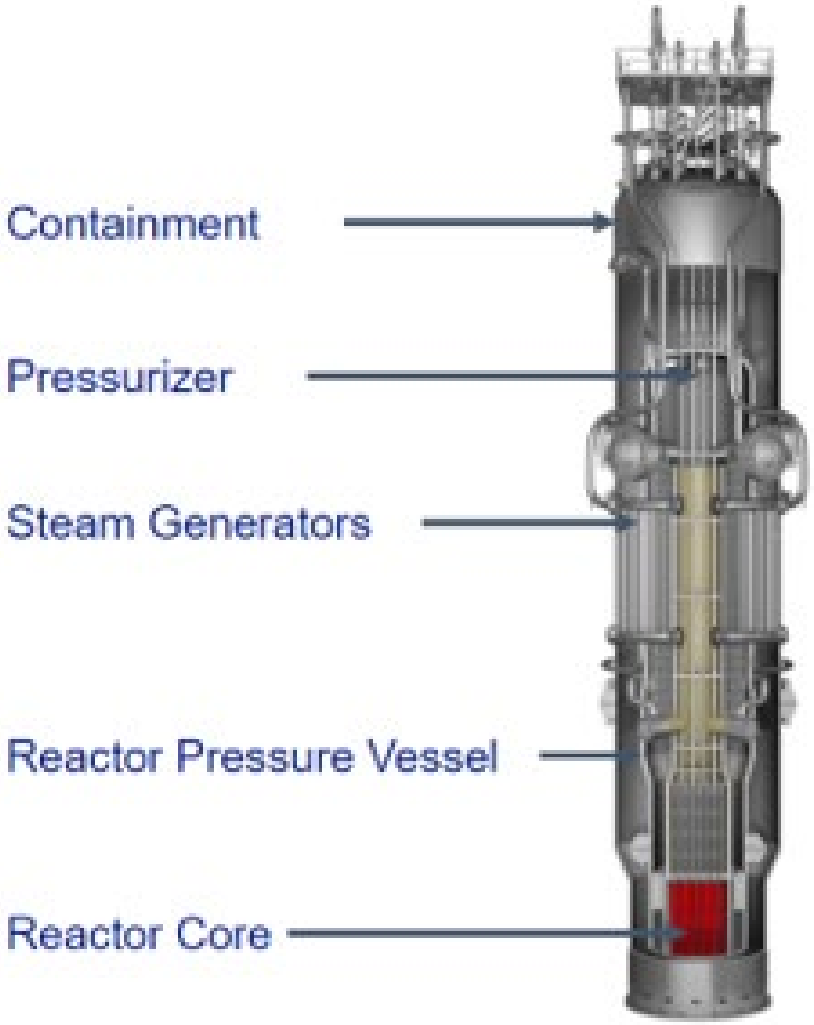
HTMR100 — South Africa

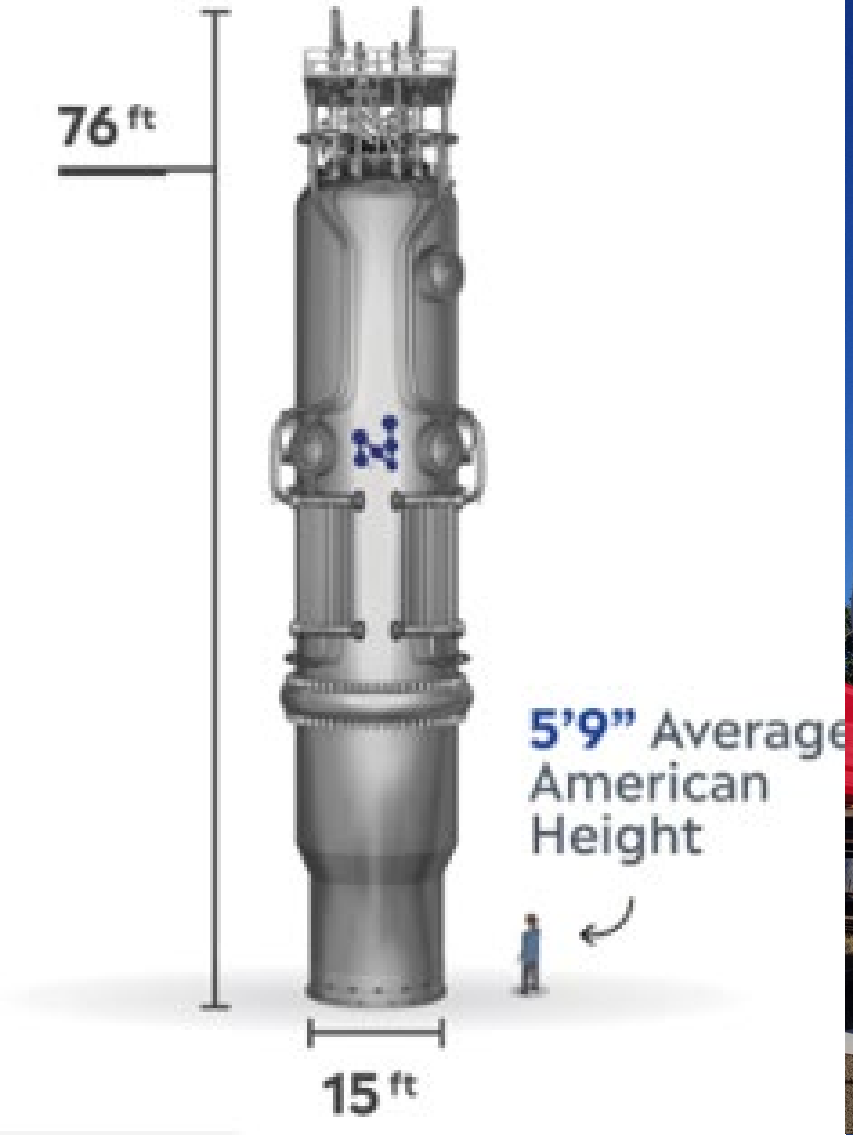
SMR160 — United States of America

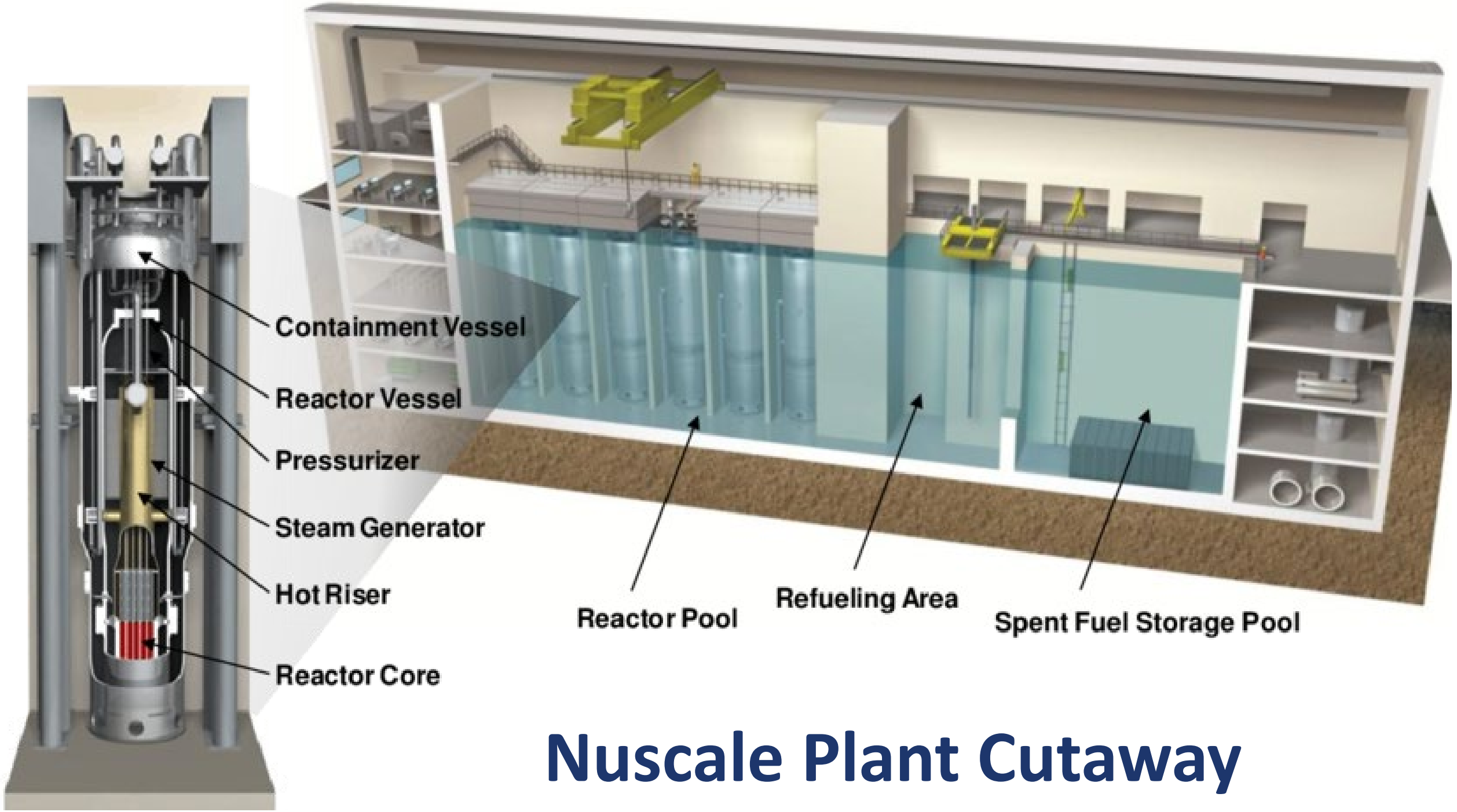
Conceptual Design for Future Deployment

- **AHWR300**
  BARC, India
- **Flexblue**
  DCNS, France
- **IRIS**
  IRIS International Consortium
- **DMS**
  Hitachi-GE, Japan
- **IMR**
  MHI, Japan
- **VVER-300**
- **Westinghouse SMR**
  Westinghouse, USA
- **SMR160**
  Holtec, USA
- **VK-300**
  NIKIET, Russia
- **Th-100**
  STL, South Africa
- **SC-HTGR**
  AREVA, France
- **G4M**

Nuscale - Nuclear Power Module

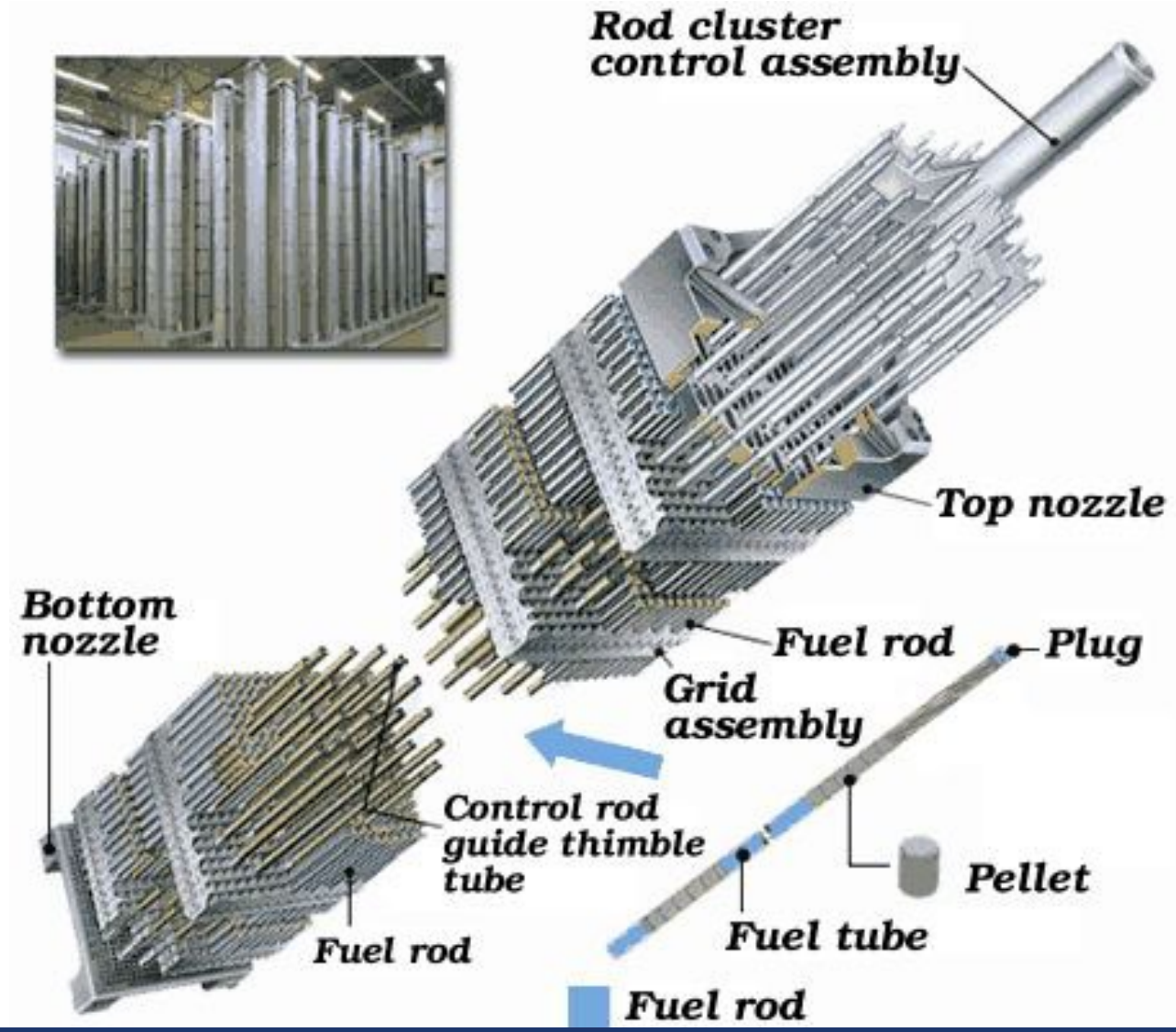






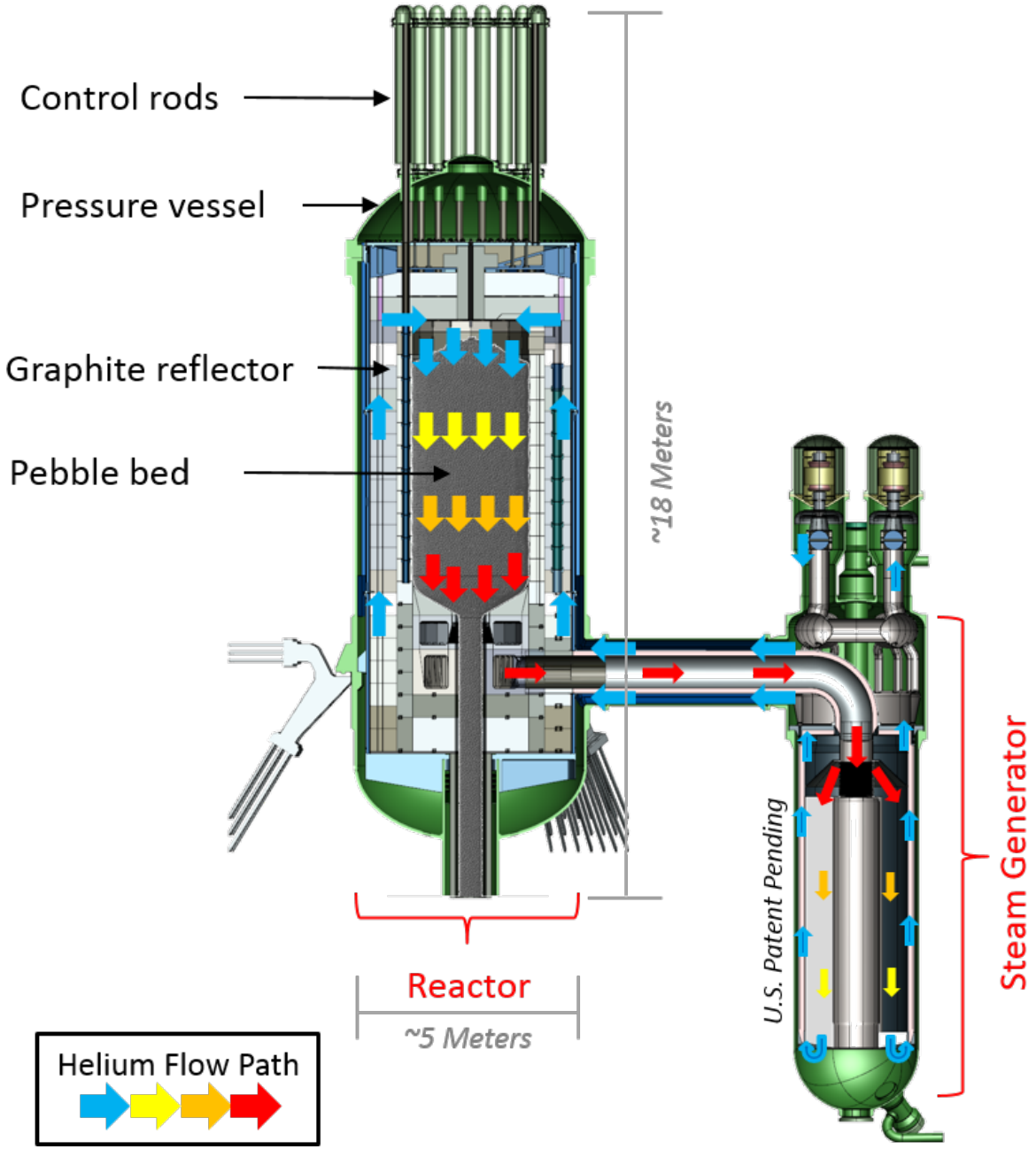
Nuscale Plant Cutaway

Nuclear Fuel – Nuscale

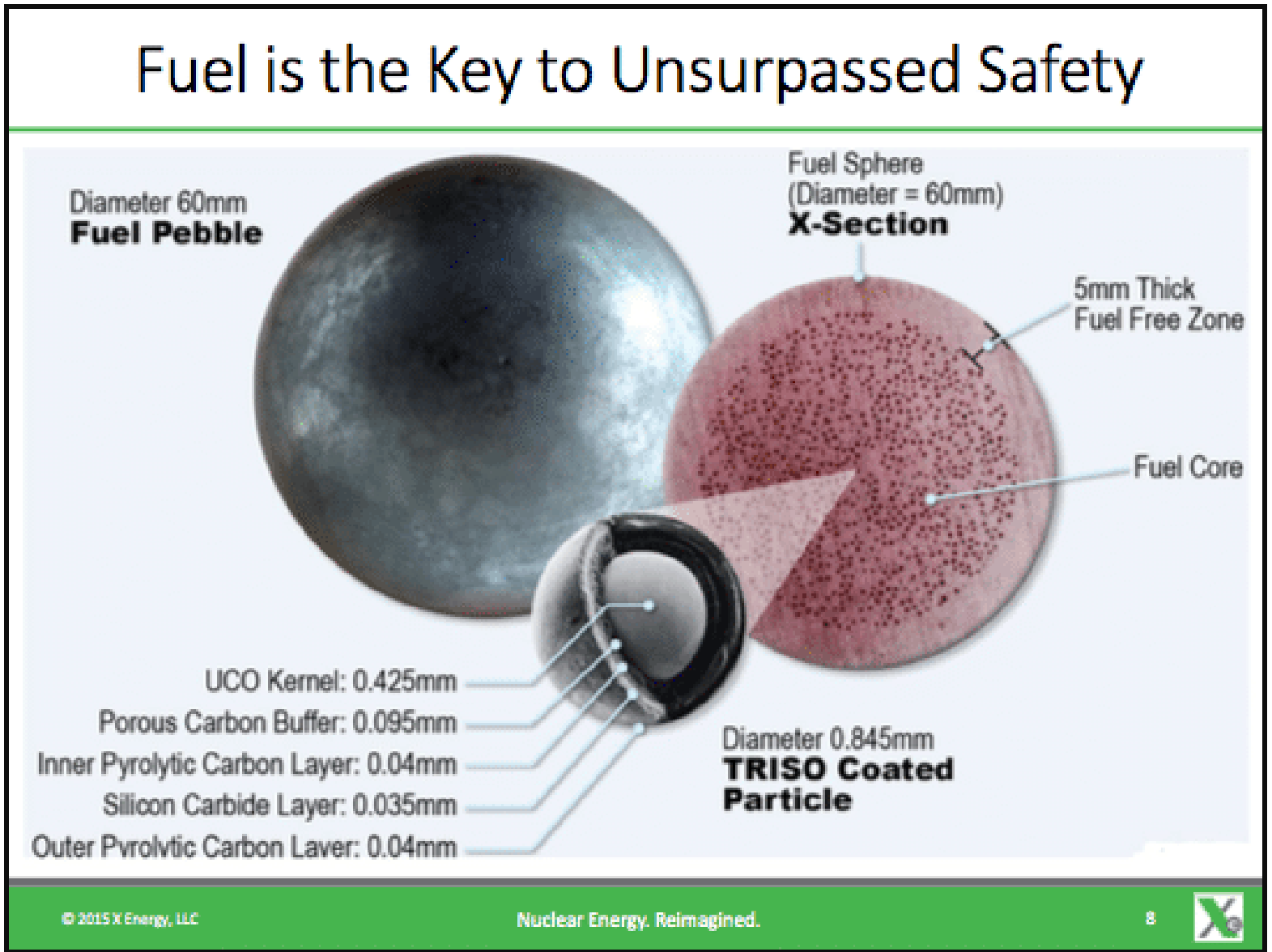


XEnergy

XE100



Nuclear Fuel – XEnergy TRISO



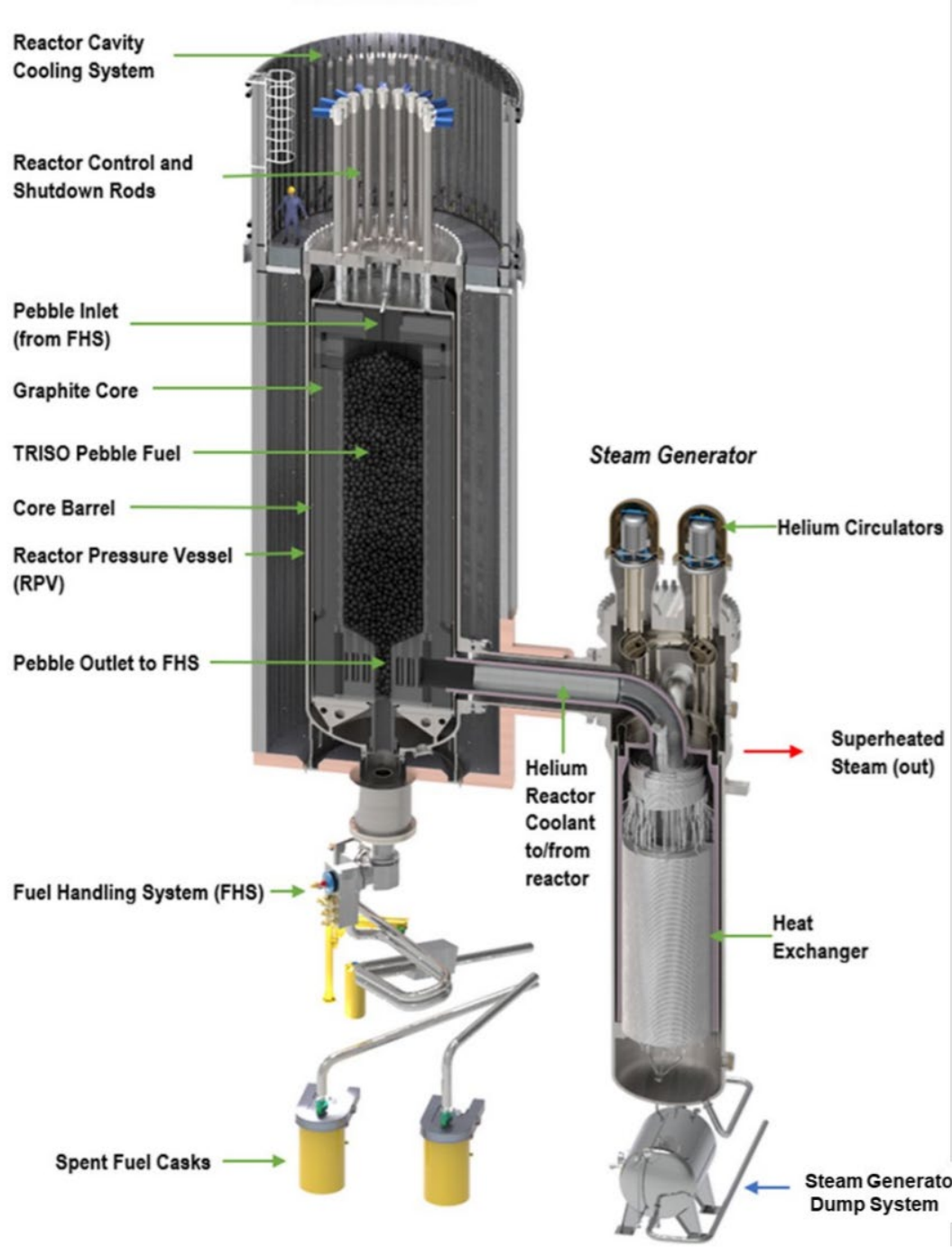


Figure 5 Rendering Showing the Xe-100 Reactor System and SGS Major Components.

Control Room

Current nuclear reactor control rooms are so old, some require routine oil changes


H 41


08:08:25
Monday , Aug. 30, 2021
925MW
UNIT 07
77.1MW

Honorable Mentions

TerraPower MCFR & Traveling Wave Reactor

GE-Hitachi BWRX-300 & S-PRISM

It’s Over!

Grant PUD

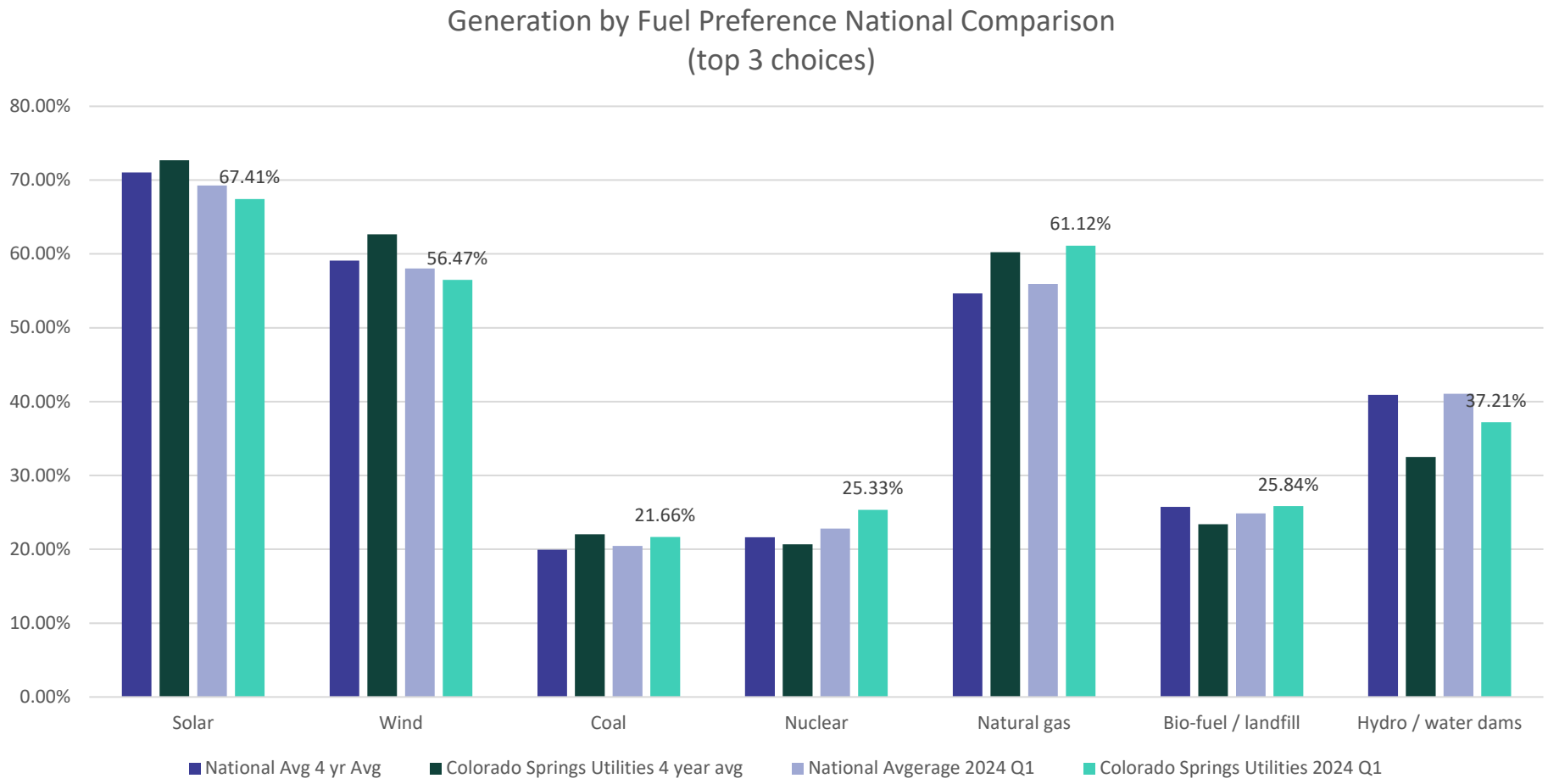
Powering our way of life.

Colorado Springs Utilities
It's how we're all connected

Public Participation Data

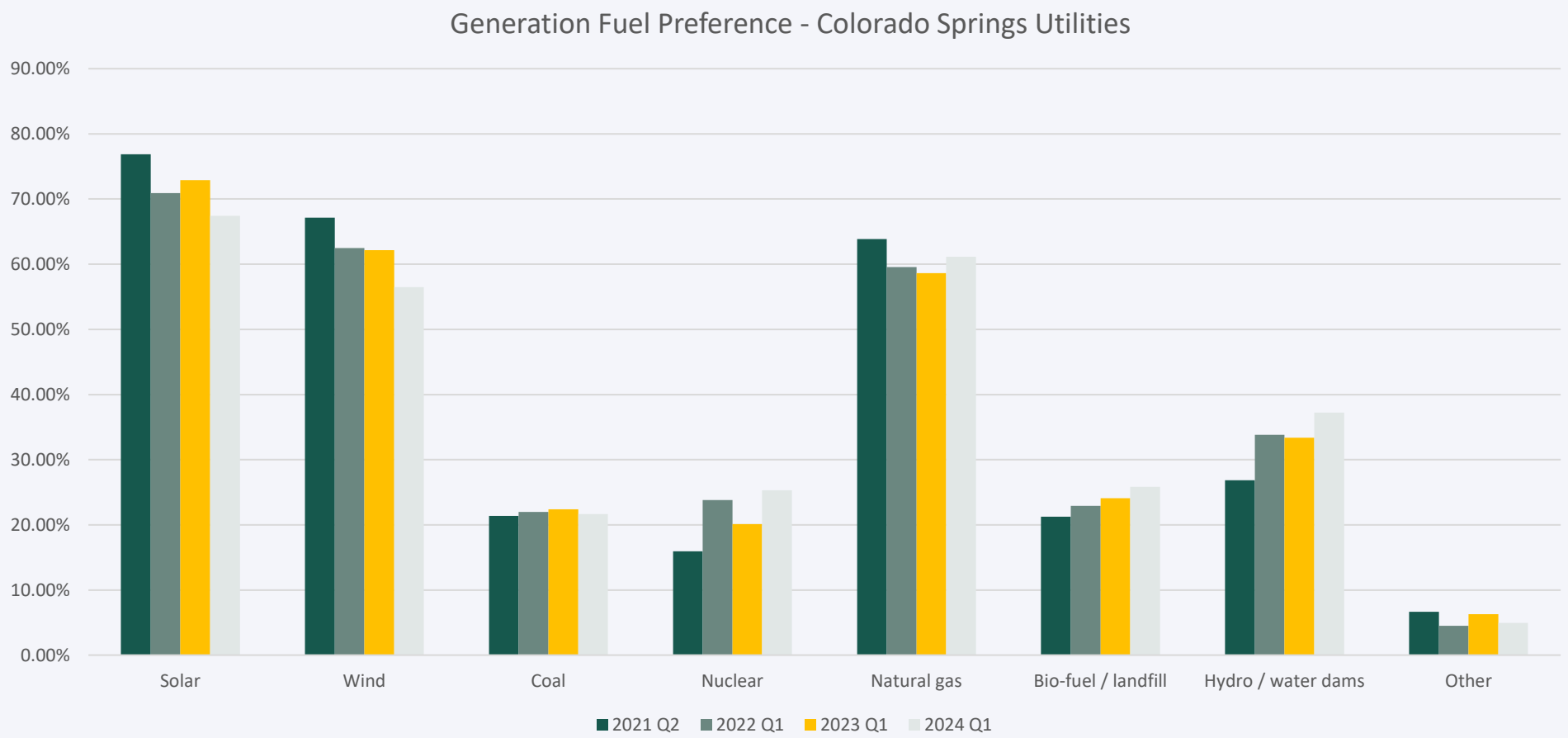
Leslie Smith, Analyst Supervisor

Residential



Question: Which fuels would you prefer Colorado Springs Utilities to use to generate the power your community uses? Select 3

Residential



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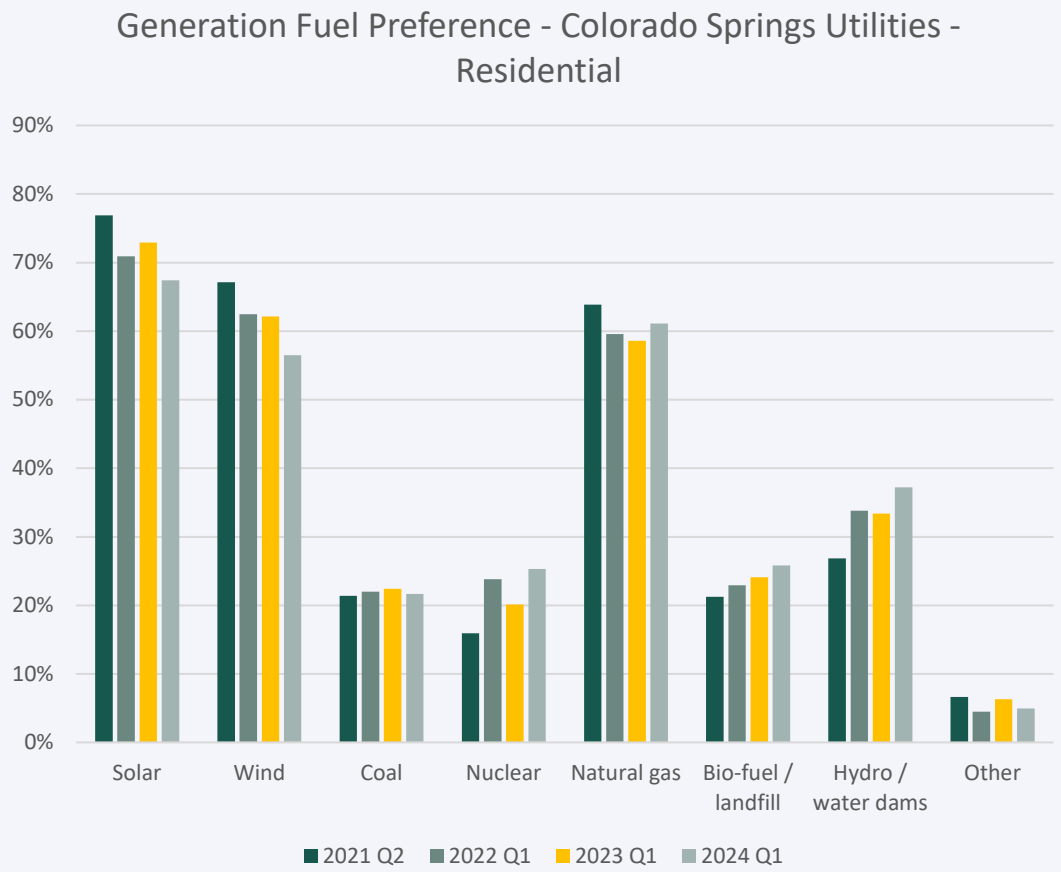
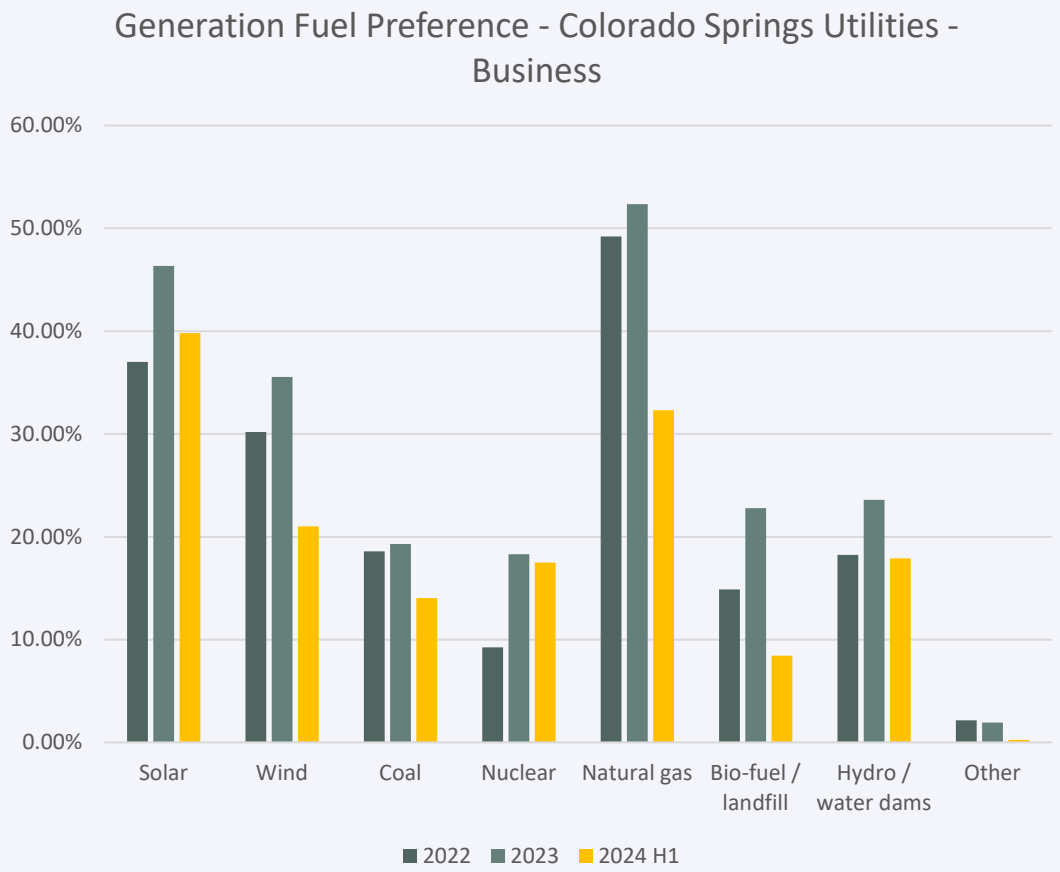
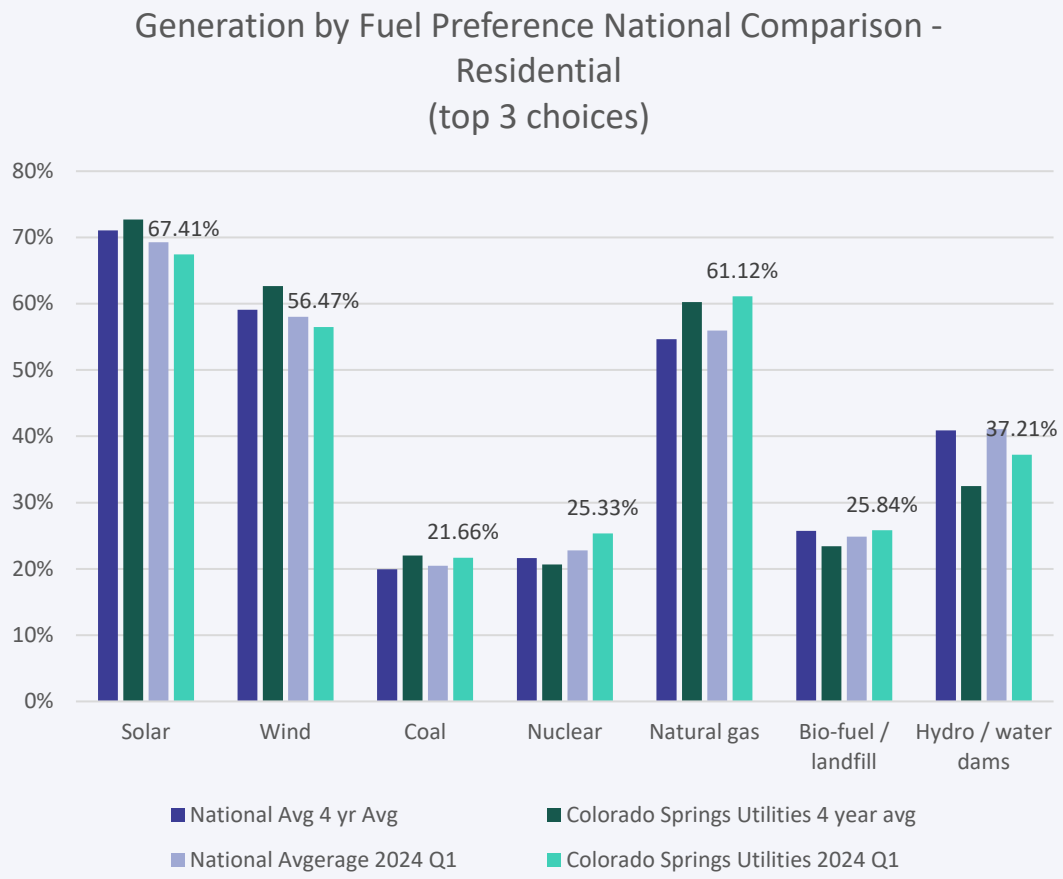
Colorado Springs Utilities Trend

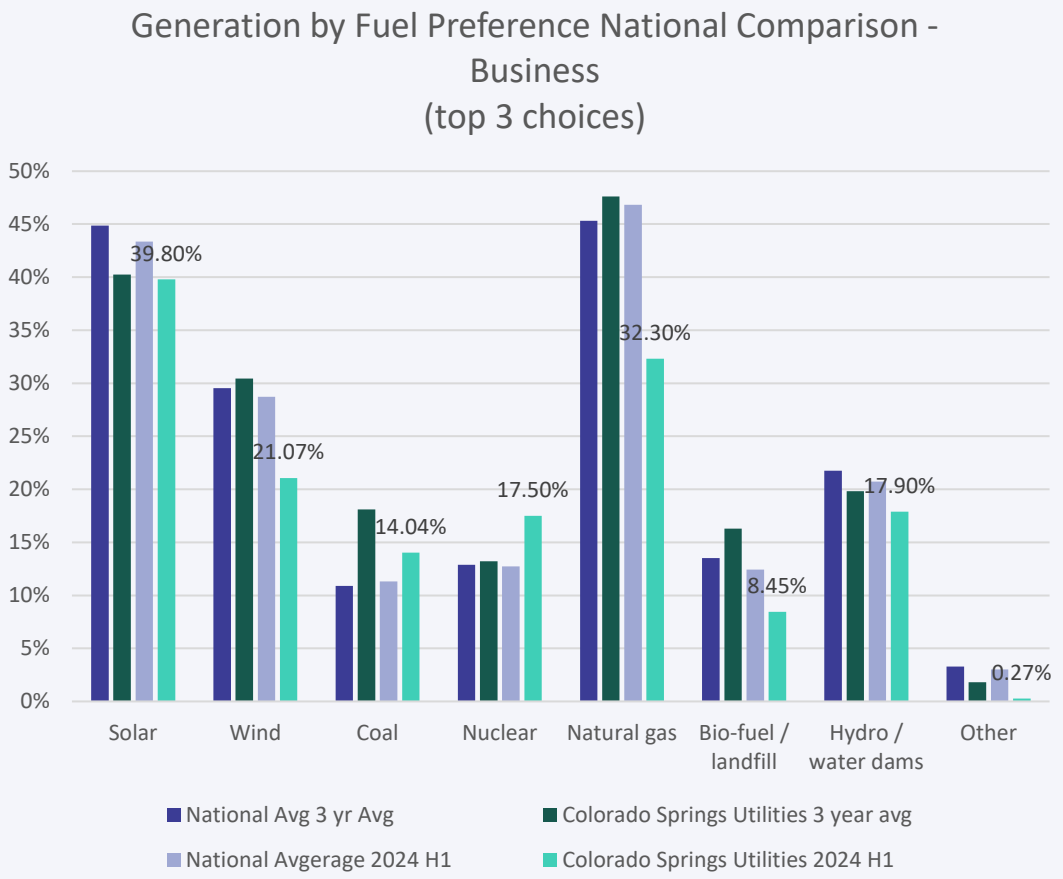




Question: Which fuels would you prefer Colorado Springs Utilities to use to generate the power your community uses? Select 3

Colorado Springs Utilities vs National Average





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