Leading the way in Nuclear Information and Records Management



# NASA is One Step Closer to Deploying Fission Reactors on the Moon

The ViewScan, Platinum Strong for a Decade The multi-year award winning ViewScan from ST Imaging

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Chronicles of NIM: A metrospective on Information Management in Nuclear Power ssue # 19, Spring 202





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On the Cover: An artist's concept of possible nuclear fission reactors on the Moon. Credit: NASA

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#### **Letter from the Editors**

We at *Inside NIRMA*, value your opinion and are always looking to improve our magazine. Let us know what you like and dislike and what you'd like to see more of. Share your thoughts with our Communication Team at DevereauxInc@outlook.com.

If you haven't already done so, please take a moment to follow NIRMA on X (formerly Twitter) and Instagram, like NIRMA on Facebook, and connect with NIRMA on LinkedIn.

Thanks for reading. Please keep in touch!

#### Neal and Sandra Miller

Editors

In addition to our own articles, *Inside NIRMA* publishes guest articles from agencies and vendors. Please be advised that the views and opinions expressed in these articles are those of the authors and do not necessarily reflect the opinions of NIRMA or its Board of Directors.

# MESSAGE FROM THE BOARD

our newly formed Board of Directors met in January for the annual Winter Board meetings. Through sharing and discussion, we learned there is **a lot** going on in NIRMA and the outlook is very bright for our organization.

We are a young Board, but one with great aspirations for NIRMA. Our senior member is in her sixth year on the Board, with one member in her second year and two brand new members. While individuals with historical knowledge have finished their terms of service, we know how to reach out to them for advice. We are going to be respectful of the traditions of NIRMA and at the same time, asking if new perspectives are possible. Why must we do ABC and why can't we do XYZ? We have no plans to change things just to change them; there will need to be a purpose. We have had high energy over the past few years with new ideas and we plan to continue down that line of thinking. Fresh thoughts are refreshing.



(L-R) Lou Rofrano (Director of Technical Programs), Sheila Pearcy, CRA (Director of Infrastructure), Bruce Walters, CRM/NS (President), Stephanie Price (Secretary), Kathi Cole, CRM (Vice President). Inset: Tammy Cutts (Treasurer).

We have many things on our plate. What is next for SIGET? What tool can we adopt for a membership Q&A resource? Can we affordably host a Symposium in the eastern USA? What TGs need Board approval for their reaffirmation? How can we support the Business Units who are the lifeblood of NIRMA?

2023 Was another great year for NIRMA and the Board is pleased to share the following accomplishments with our membership:

- Approval of **Dan Cassity** as the new Technical Specialist to the Board.
- Approval and roll out of the new NIRMA logo.
- Creation of a "terms of use" for the NIRMA Technical Guidelines (TGs).
- Approval to change symposium refund policy verbiage All money paid will be returned; however, NIRMA will retain \$400.00 (\$325 for the membership fee; \$75.00 for administrative fees).
- Approval to assess Board of Director nominations based on a personal commitment letter.
- Updated AD03, Application and use of the NIRMA Logo to add the new NIRMA logo and remove addresses where necessary.
- Updated AP02, Annual Election and Board of Directors Reorganization Process to include new requirement for a personal commitment letter from board nominees and a sample letter. Added wording regarding board candidates' attendance at the board meeting following the Annual Business meeting.

We have new leadership in each of the Business Units and we can tell that progress is being made in each one. Lots of great ideas coming from them. And our ANSI Standard on Configuration Management has completed its last audit hurdle and is officially, finally, final.

Personal growth comes from stepping outside of our comfort zone and reaching a little bit higher. Each of

us should be considering that since this is a very successful volunteer organization, because of the activity of our members, and we want to grow in knowledge and abilities, what first or next step can we take to learn more, to help more, to grow more? Each current Board member has spent time in the Business Units, learning and growing. You might be good at writing ... or want to learn to be a better writer. You might have a marketing degree or want to learn about the process. You might love to help educate others or want to be educated. There's a place for each of us, from brand new to the field (needing education) to being around the block a few times (need to share with or mentor others). NIRMA is our organization ... your organization. Get active. Get involved. Ask questions. Grow. Teach. Become a better you! Even the savvy old members still learn things ... and can learn from the newbies. You need coaching, we have many coaches. You like to coach, we always need more coaches. Everyone knows something, but no one knows everything.

We hope you take your opportunity as a NIRMA member (or your desire to be NIRMA member) as an opportunity to grow in our wonderful and necessary profession. Many of us are here to help you in your process. You just have to hit the Activate button.



is our organization ... *your* organization. Get active. Get involved. Ask questions. Grow. Teach. Become a better you!



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# The ViewScan, Platinum Strong for a Decade

The multí-year award winning ViewScan from ST Imaging

his past January, ST Imaging's line of ViewScan microfilm scanners received its 10th consecutive Modern Library Award (MLA). While the library and nuclear industry are vastly different, they share many things in common. Librarians and Record Managers both know where information is located, how to access it, and what to do with it once found.

Over the past ten years, librarians microfilm equipment, even firstfrom all over the country have evaluated different equipment they use daily. Time after time, they ranked the ViewScan microfilm scanner with the highest remarks, top of the class, the Platinum award. No other microfilm scanner has been awarded the Platinum distinction for ten consecutive years.

"We went from the "stone age" to [ViewScan] scanners and never looked back!"

Each librarian is invited to provide additional feedback. One such comment this past year was, "The ST-ViewScan scanner is very simple to use and has great quality, plus the Service is excellent on them." Another librarian remarked, "We went from the "stone age" to these scanners and never looked back!"

By replacing old and outdated generation digital microfilm scanners, an organization will be able to work at a quicker pace and on a more secure setting. The modern ViewScan 4 microfilm scanner offers features such as auto-focus technology, the ability to combine scans into one image, OCR, and more to streamline the microfilm data retrieval process.

Modern equipment is essential in today's computer-based world. Security threats are a constant focus of almost every organization. Old micrographic scanners are not designed for modern Windows 11 Operating Systems. Replacing old equipment with current models is important for a secure working

#### By Matt Anderson

environment.

Today, ST Imaging is producing the ViewScan 4 microfilm scanner. Over the last 20 years, through the advancement of technology, the ViewScan has continued its own development. Those years have seen the camera evolution from a 5megapixel camera to a 14-megapixel camera to the 18-megapixel camera in use today.

Additionally, the connection between not only the camera and scanner, but also the scanner and computer has changed. Early digital models utilized SCSI connectors. Next was the age of the FireWire. Then came the two waves of USB drives, 2.0 and 3.0 SuperSpeed. The current ViewScan offering will always be compatible with the latest operating systems and computers.

ST Imaging strives to deliver the best-in-class equipment for those using microfilm and microfiche. Year after year, the judges have agreed that ViewScan is an award winner.



NIRMA.org

# NASA IS ONE STEP CLOSER TO DEPLOYING FISSION REACTORS ON THE MOON

By Carolyn Collins Peterson



hat's the most important thing you need to live and work on the Moon? Power. For NASA's upcoming Artemis program, getting power to lunar bases is a top priority. That's why the agency created its Fission Surface Power Project. The idea is to develop concepts for a small nuclear fission reactor to generate electricity on the lunar surface.

The project just finished its initial phase (which began in 2022), which consisted of three \$5 million contracts to commercial partners to develop fission reactor designs. NASA selected Lockheed Martin in Bethesda, MD, Westinghouse of Cranberry, PA, and IX of Houston, TX each for a 12-month Phase 1 award to further develop preliminary designs. Each partner was tasked to offer a design of the reactor and systems for power conversion, heat rejection, and power management and distribution. Of course, the partners needed to provide estimated costs for their systems and development plans. The ultimate goal was to create a system that could support lunar bases for a decade. The designs would also serve as pathways to plan and build similar systems on Mars.

Power systems spell the difference between success and failure in any mission. For the Moon and Mars, it's the difference between life and death. Nuclear power is the most likely route to service long-term power needs. "A demonstration of a nuclear power source on the Moon is required to show that it is a safe, clean, reliable option," said Trudy Kortes, program director, Technology Demonstration Missions within NASA's Space Technology Mission Directorate at NASA Headquarters in Washington. "The lunar night is challenging from a technical perspective, so having a source of power such as this nuclear reactor, which operates independent of the Sun, is an enabling option for long-term exploration and science efforts on the Moon."

#### WHY FISSION REACTORS?

Let's face it—living and working on the Moon presents a lot of challenges. Safe, clean power helps overcome many of the dangers that lunar explorers will face. Solar power provides a dependable source of



Nuclear fission power plants like these could enable long-term exploration of the Moon for both humans and robotic probes. Credit: NASA

power to keep things going. But, at least half of the time, solar power grids will be in darkness during the lunar night. That's not to say solar power won't be used. But, another power source is important to have. That's where fission reactors come in handy.

NASA and other agencies could put nuclear reactors in places that spend their time in partial or full shadow. In many cases, *in situ* reservoirs of ice exist in the same regions. The advantage of nuclear reactors is that they can operate full-time, regardless of whether there's sunlight or not. That's a big plus for power needs during the 14-night-long lunar night.

Note that NASA isn't saying that ONLY nuclear fission generators will be used on the Moon. A combination of solar and nuclear installations will likely supply the electricity needs of habitats and science labs.

#### REACTOR SPECS FOR THE MOON AND BEYOND

In its solicitation for further work

on the designs, NASA wanted to see plans for reactors that would last at least a decade without human intervention. This reduces any threats from accidental radiation exposure and allows lunar explorers to focus on their primary science and exploration tasks.

The specs for the reactor design specify that it be under six metric tons and produce 40 kilowatts of power. That is enough to demonstrate the capability of the system and provide power for habitats, grids, and science experiments. If you put the same reactor on Earth in a typical neighborhood, it would be enough to power 33 homes.

The agency designed the requirements to be open and flexible so that each company could feel free to explore new directions when it came to the designs they submitted. "There was a healthy variety of approaches; they were all very unique from each other," said Lindsay Kaldon, Fission Surface Power project manager at NASA's Glenn Research Center in Cleveland. "We didn't give them a lot of requirements on purpose because we wanted them to think outside the box."

Now with feedback from the commercial partners, NASA begins working on a Phase 2 solicitation for 2025. After that, the agency expects delivery of a system for use on the Moon in the early 2030s. In the distant future, after the systems have gone through their "baptism by fire" on the Moon, NASA will likely redesign a nuclear fission reactor specifically for use on Mars.



#### For More Information, click on the links below:

NASA's Fission Surface Power Project Energizes Lunar Exploration

NASA Fission Surface Power Project



Not a NIRMA Member? Click <u>here</u> and join TODAY!

# SYMPOSIUM CORNER

reetings everyone. In less than six months, we will be gathering again for the 2024 Nuclear Information Management Symposium (August 5-7), now to be referred to as NIRMA 24 SYMPOSIUM, at the JW Marriott Resort and Spa in Las Vegas, Nevada.

Symposium registration fees, which include the 2025 membership fee, did not change from last year's pricing.

The Call for Papers has been published in a special edition of our monthly email in January and is also available on our NIRMA website (click here). I encourage you to register as a Speaker for a discount, share vour experiences, and educate the rest of us. As we witnessed in 2023, we have a lot of knowledgeable members in NIRMA, with some new folks coming from as far as Japan, Korea, and the United Arab Emirates. As a speaker, you will have an audience who will appreciate you taking that leap of faith. Give being a teacher and a learner a try this year. A list of possible topics is included on the Call for

Papers. Case Studies are fantastic because they are actual experiences that colleagues are sharing, whether a project or process went quite well or horribly wrong. We can always learn from each of our successes and failures. Please share yours.

We plan to continue offering a Fundamentals track for newbies, advanced tracks for the seasoned vets, and breaks for short networking opportunities, all in order to incorporate what you have come to expect educationally at the symposium.

We have invited nearly two dozen of our exhibitor contacts to attend the Symposium and will have an Exhibitor Hall just as we have had in past years. Last year, you may recall, we had 13 exhibitors participate and with your input, we may have more this time. And as is routine, we will host a Networking Reception with them at the end of the day on Tuesday. If you are an exhibitor and want this opportunity, please contact Sarah at nirma@nirma.org to register.

We continue to look for companies to sponsor events such as meals or after-hour receptions. Your company will be recognized on our website and at the symposium.

> For planning purposes, know that Business Unit meetings, including a SIGET working group, will be all day Thursday, August 9th. RIMBU may likely continue on Friday morning, August 10th. Please schedule your trip to Las Vegas to include an extra day (plus) to attend these important meetings.

On the NIRMA website under the Annual Symposium tab are links to register for the Symposium, to Speak, to Sponsor, and to reserve your hotel room. The Marriott offers a limited number of rooms at the discounted Symposium rate,

so you might want to reserve your room soon

The Board is also working on a pre-Symposium Sunday Outing, so you may want to arrive in time to join in.

Last year was a spirited event, as colleagues got to reconnect and learn, plus we had 37 first-timer attendees who jumped right into it. We are working to improve upon the experience and to offer more opportunities for our attendees, exhibitors, and sponsors for NIRMA 24 Symposium. You really will want to join us. The entire Board plans to be there in August and can't wait to greet you in person.



# NIRMA's Power of Giving

It has come to our attention that NIRMA members not only excel in the records management, document control, information management arena, but also are generous with their time and give back to their communities in many ways. One of our new features for 2024 will recognize NIRMA members and their volunteer efforts.

If you volunteer, we'd love to hear from you. Just send us a paragraph on what you are doing and why it is important to you, along with a photo and a description

and we will use your write up in a future edition of *Inside* NIRMA.

Special thanks to **Eugene Yang** for sharing this wonderful story of love, compassion and giving back and for helping us kick off this new feature.

Neal and Sandy Miller

Inside NIRMA Editors DevereauxInc@outlook.com Neal.F.Miller@gmail.com

# Sharing the Good News

ugene Yang, NIRMA Lifetime Member and Principal Consultant of KISMET Consulting, Inc., took the opportunity this past January to go on a mission trip to Ethiopia. He is passionate about meeting the physical needs of impoverished communities and relating the Good News of Jesus Christ. There, he helped to distribute shoes provided by his church, as well as participate in teaching math and English to children who live at the city dump. Eugene also attended a meeting with church leaders in a predominantly Muslim area of the country to encourage



their work in spreading the gospel, as well as helping with math and english to children attending a Muslim school.



- ↑ Handing out a pair of shoes to an incredibly happy child.
- Listening to a child read John 3:16 in his native language (Amharic).



## CHRONICLES OF NIM A RETROSPECTIVE ON INFORMATION MANAGEMENT IN NUCLEAR POWER By



By Eugene Y. Yang, Principal Consultant KISMET Consulting, Inc.

One of the best things in my career has been crossing paths with great people who have a passion for information management. In this issue, you folks are in for a treat, as I've invited **Ellen Ryan**, co-founder of Docuvela, to be my guest in this column. Ellen has consulted and implemented in the content services industry for over 25 years, having previously worked with Hyland, Alfresco, Technology Services Group, and Accenture.



KISMET Consulting

### What's Next for Content and Records Management?

By Ellen Ryan

hanges in the technology we have used to manage content and records are more frequent than many of us might wish for. Image and Document Management, a term initially coined in the mid-1990s, became Enterprise Content Management (ECM) in the late 1990s, and eventually morphed into Content Services Platform (CSP) around 2017 when Gartner declared the "Death of ECM and Birth of Content Services." For years, vendors and many end users wished to consolidate their content and records in one single repository. Despite this desire, the "enterprise-wide" consolidation failed to materialize (for many reasons), and Gartner's post turned out to be very predictive of the industry demands we see today.

#### Gartner defines Content Services as:

"A set of services and microservices, embodied as an integrated product suite and applications that share common APIs and repositories. A CSP exploits diverse content types and serves multiple constituencies and numerous use cases across an organization." The key phrase in the definition above is "sharing common APIs and repositories." This means that records are easily accessible by your records management (RM) components and other services such as Asset Management Suites, manufacturing systems, and ERP Systems. Content and records management solutions are increasingly becoming "headless repositories" — with a focus on serving other applications rather than being the tool of choice for most users. As a result, what customers need from a content or records management system is pivoting. For a majority of implementations, the key components of any solution are very simple and include:

- **Governance** A secure repository that is searchable, controls revisions, manages retention, offers granular access permissions, and provides compliant auditability.
- **ROI** Most content and records management systems are expensive and complex to maintain.

Customers are looking for ways to simplify their IT stack, reduce costs, and limit their dependency on expensive vendors and consultants.

• Integration - Any modern system needs to support ingestion from a variety of sources and allow easy, compliant access to multiple applications.

Many vendors claim to provide "content services" in their ECM and RM offerings. However, the technology provided by these vendors has often not changed architecturally in the past twenty years. The content, records, and associated metadata continue to reside behind proprietary databases and locked-down API layers. What's more, these legacy vendors are not motivated to innovate and provide open platforms focusing rather on keeping their platforms sticky (aka hard to leave) with software and services provided only by them and their chosen partners.

This tide is turning! The functionality offered by cloud vendors, coupled with the services offered by vendor-neutral consulting firms, is revolutionizing how content and record service offerings are built. But, innovation of this nature will not come from legacy vendors. The technology innovations of the last 5 years all run in the cloud: artificial intelligence (AI), language translation, natural language processing, image analysis, sentiment analysis, predictive analytics, and more. This trend is not going to change, meaning that all systems will need to be open and able to integrate into this growing ecosystem. The next-generation of Content and Record Management will be services-driven and will include as a minimum:

- Open access to content and associated data
- Flexible architecture that is easy to maintain and support
- Baked in cloud scalability and durability
- Flexible, clear costs with faster ROI

These changes are not going to happen overnight. Initial iterations will no doubt focus on managing simple content and records scenarios; however, from day one, the new platforms will be open and accessible through cloud-native APIs or via streamlined, configurable interfaces. The objectives are clear: to provide a simpler, more affordable way to manage and access content and records. The technology already exists to make these objectives a reality, and we can't wait to join you all on the journey as we reap the benefits of a truly modern, nextgeneration content and records management world.

Eugene has been a member of NIRMA for over 37 years. At the time he joined, NIRMA had only been in existence for 11 years. He would love to hear about stories and anecdotes from others, so please email him at eugene.yang@kismetconsulting.com.



<b>Treasurer Report</b> Tammy Cutts, NIRMA Treasurer	
NIRMA's Financial Holdings as of February 15, 2024	
Checking Account	\$ 46,912.85
Debit Account	\$ 307.64
Investment Account	\$100,674.25

# **Professional Development Business** Unit (PDBU) News



Jessica Jones **PDBU Director** 



Christine Spring **PDBU Co-Director** 

#### Self-Awareness is the Key to Self Development



t the beginning of every new year, new quarter, and sometimes new day, the questions arise: What are my goals? How can I improve? Where

am I going in my professional development? The first step to answering these questions is becoming more self -aware.

So, let's define self-awareness – Oxford Dictionary defines self-awareness as, "the conscious knowledge of one's own character, feelings, motives, and desires." Often people start by looking at themselves and simply listing their strengths and their opportunities for growth. This list can help us find qualities we need to work on, or traits that we can leverage to help others in our workplace.

Now we have our list. Ask yourself, what do I need to improve on? Public speaking, using upgraded technology, researching, or some other trait? That is now a new goal for you to achieve. Search out someone in your workplace, friends, or a mentor and ask for help. Tell them your goal and decide to achieve it!

Using that same list, you have now discovered your strengths! Don't be surprised at your abilities - you know more than you think you know! Reach out to your co-workers or someone in NIRMA and offer your knowledge and expertise. There is someone out there who has a question, and you have the answer. When you share your knowledge, you might be surprised that you will learn some things along the way yourself!

PDBU offers several opportunities for you to gain and share knowledge, whether you want to develop your presentation skills and present at a monthly webinar, or you want to participate in the NIRMA mentorship program as a mentor or a mentee. As you make your list and think of your goals, keep in mind the opportunities you have available to you. A beautiful aspect of NIRMA is that you can engage at a level that works for you - attend the NIRMA symposium, attend webinar meetings, or join one of NIRMA's business units (PDBU comes to mind!). Become an active participant in your professional development; you are capable of doing great things.

"You have brains in your head. You have feet in your shoes. You can steer yourself any direction you choose. You're on your own. And you know what you know. And YOU are the one who'll decide where to go..."

- Dr. Seuss, Oh, the Places You'll Go!



# MEMBERSHIP & MARKETING BUSINESS UNIT (M&MBU) NEWS



he primary purpose of the M&MBU is to provide information on NIRMA to the current NIRMA membership. We are currently working on providing a means for the membership to share real time information, which will help members with benchmarking, discussing lessons learned, sharing experience, and overcoming obstacles.

Another purpose of M&MBU is building the NIRMA organization by bringing on new members from every avenue, making the NIRMA organization robust and diverse with the knowledge each member brings on board to share with the whole NIRMA organization. We have been successful in increasing the membership and are taking actions to reach out to more companies and organizations to continue our growth.

An area we are trying to improve, which will help us grow membership and enhance our ability to share information, is our presence in social media. To improve our reach and performance on social media, we need your support. If you are not



already, connect to NIRMA on all social media platforms that you use; LinkedIn, Facebook, X (formerly Twitter), or Instagram.

The 2024 NIRMA Symposium is scheduled for August 5-7 followed by the Business Unit meetings on August 8. All are welcome to join our M&MBU meeting on August 8th. We are still aways away, but it is not too early to start planning and getting your approvals to attend this year's symposium in person.

#### Stephen Fleshman, M&MBU Director



If you have any vendors or partners that you work with, please check with them to see if they would be interested in participating with NIRMA or joining us at the Symposium.

Finally, for those that are interested in joining our meetings and adding value to the mission, we meet on the first Wednesday of the month at 1PM ET. Please reach out to Stephen.Fleshman@bentley.com for the invite or for additional information. Thank you!



NIRMA.org

# Regulations and Information Management Business Unit (RIMBU) News

#### By Rhonda Redding, RIMBU Director



#### New Technical Guide Published

he RIMBU team successfully completed and published Position Paper - PP08 – "Electronic Signature" this month. The new Position Paper addresses implementing electronic authentication methods which may be in digital signature format or electronic signature format. This information supports TG-11, "Authentication of Records and Media" and TG-15, "Management of Electronic Records".

A lot of work went into the creation of this document which is aimed at helping those in the industry with electronic authentication. PP08 is now available on the SharePoint site for use by the NIRMA membership.

#### **RIMBU 2024 Spring Meeting**

The RIMBU team will hold our annual Spring meeting on April 9th and 10th in Fort Worth, Texas. A Survey Monkey went out to all members to identify inperson attendance. Please take the time to answer the Survey so we can plan accordingly.

**CLICK HERE TO REGISTER** 

The Spring meeting is open to everyone. RIMBU is a great opportunity to benchmark with others in the industry, share valuable operating experience, and have the opportunity to influence industry standard guidance in records management. If you're interested in joining, please reach out to me at <u>rhonda.redding@evergy.com</u>.

#### **RIMBU Secretary Role**

I would like to thank both Amy Odom for volunteering to fill the Secretary role and Jordan Locke for all she did for the RIMBU team during her time as Secretary. Appreciate you both!

#### **RIMBU Co-Director Needed**

Please submit your name, by March 29th, to <u>Rhonda.redding@evergy.com</u>, if you would be interested in filling the Co-Director position.

NIRMA 24 Symposium

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With all this buzz around nuclear deals and country agreements, you may be wondering, "What is driving demand for new nuclear?" Well, the answer is simple: customers. They come in all shapes and sizes from all over the world, just like the nuclear reactors themselves, but they all have one thing in common-they need energy and lots of it.

#### The Market

With global carbon emissions reaching more than 37 billion tons in 2022, greater attention is being placed on their source. Any individual or corporation that uses electricity, heat, or other forms of energy to fuel their day-to-day activities has a role to play in global emissions targets.

And projections on energy demand are growing at a staggering pace. In the U.S. alone, electricity usage by 2050 is expected to increase by nearly 27 percent. Large energy consumers like data centers—the backbone of our internet-and

industrial companies require massive, to fuel their operations with clean reliable amounts of energy to power their operations.

If the source of that energy is unexpectedly unavailable, it's bad for business-and, more often than not. it's bad for all of us.

On top of addressing emissions and meeting power demands, customers are also concerned about affordability. Together, these factors make up the energy trilemma.

#### The Buyers

When it comes to nuclear energy and its customer base, it's probably easier to ask, "Who isn't interested?" Ultimately, it's all about what the customer is looking for-and nuclear checks a lot of boxes.

AI and machine learning require large amounts of always-on electricity. Chemical processing and metal refineries require a steady source of heat to power their manufacturing needs. Agriculture and transportation giants are looking resources. Remote and disaster relief areas need clean, reliable alternatives to diesel generation.

And that's just a small taste of the full customer buffet. Military bases, utility companies, and whole countries are looking at nextgeneration nuclear for its versatility, reliability, and affordability.

#### The Deals

Given the wide range of customer types, it's not surprising how many moves are being made.

Countries like Bulgaria and Poland are signing agreements for both small and large reactors to fulfill their power needs. And Europe's not the only region showing love to large nuclear reactors. Late last year, Westinghouse CEO Patrick Fragman said, "There are some American utilities which are very seriously talking with us about new AP1000s."

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In a landmark agreement, Microsoft agreed to buy nuclear energy from Constellation to power one of their data centers in Virginia. And Microsoft is building a team to help integrate SMR and microreactor technology into their business plans.

They're not the only customer taking a serious look at smaller reactors. Dow Chemical chose their Seadrift, Texas, manufacturing facility to house their first SMR project with X-energy. Standard Power announced an agreement with NuScale to provide their SMR technology to two data center facilities in Ohio and Pennsylvania. And Westinghouse announced their microreactor design and secured their first customer all in the same year.

Utility companies are including SMRs in their resource planning while also looking to extend the life of their current nuclear power plants. For example, Duke Energy recently proposed a plan that includes 600 MWe of new nuclear by 2035 and supports the license

extensions of eleven existing reactors. Dominion Energy's recent plan outlines five scenarios, four of which include the development of SMRs.

States are also indicating their support, with both Minnesota and Michigan passing ambitious Clean Energy Standards that include nuclear, while Idaho, Tennessee, and North Carolina passed measures to define nuclear as clean generation resources.

A recent report documented findings from conversations with members of the financial community, and the role next-generation nuclear will play in "industrial decarbonization" was listed as a major benefit.

This sentiment was echoed at NEI's second Nuclear Financing Summit in New York last week, which brought together customers, investors, technology providers, and Wall Street analysts. A recurring statement throughout the event was, "It's a matter of when and not if."

And a lot of that optimism is thanks to the tremendous customer interest emerging for nuclear energy.

By Kaley Deaton



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Operators have safely started the nuclear reaction at Vogtle Unit 4, according to an announcement from Georgia Power.

This step, known as initial criticality, happens when the nuclear fission reaction becomes self-sustaining and is necessary to generate enough heat to produce electricity. Operators will now continue increasing power through multiple steps, ultimately raising power to 100 percent.

Startup testing will continue at Unit 4. This includes demonstrating the integrated operation of the primary coolant system and steam supply system at design temperature and pressure with fuel inside the reactor.

Georgia Power recently said because of vibrations in the reactor's cooling system, Unit 4 would not start commercial operation until sometime in the second quarter of 2024, or between April 1 and June 30. The company said its construction budget won't be affected if Unit 4 starts by June 30 but it would have to pay \$15 million a month in extra construction costs if the project extends into July.

The utility said in a filing to investors that the vibrations "were similar in nature" to those experienced during startup testing for Unit 3, which began commercial operations last summer.

Vogtle Units 3 and 4, two AP -1000 reactors each with a capacity of approximately 1,100 MW, are the first new units to be built in the U.S. in more than 30 years. Cost overruns and construction problems have long delayed the project.

The new Vogtle reactors are currently projected to cost Georgia Power and three other owners \$31 billion, according to calculations by The Associated Press. Add in \$3.7 billion that original contractor Westinghouse paid Vogtle owners to walk away from construction, and the total nears \$35 billion.

The reactors were originally projected to cost \$14 billion and be completed by 2017.



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NIRMA 24 Symposium SAVE THE DATE: August 5-7, 2024



## Lawmakers Seek Nuclear Solutions to Hawaii Energy Issues

New legislation being considered could make Hawaii the 29th state to produce nuclear power—although the proposal faces an uphill battle. Two bills introduced in the state legislature would pave the way for nuclear power production in Hawaii:

- H.B. 1741 proposes a constitutional amendment that would allow for construction of a nuclear power plant without prior legislative approval.
- H.B. 1516 would establish a nuclear energy commission within the state's Department of Business, Economic Development, and Tourism to study potential benefits of nuclear energy.

The cost: Hawaii is currently the most expensive state in the union for electricity, averaging 30.3 cents per kilowatt, according to a report from the American Legislative Exchange Council, a nonpartisan, voluntary membership group of state legislators.

"Hawaii suffers from a geographical problem compounded by policy issues," according to report author Joe Trotter. "The state is wholly reliant on importing the materials and fuels needed to generate its electricity and fuel its vehicles, putting the state at an immediate affordability disadvantage," he added. "But the state's push to renewables in lieu of proven, available alternatives drives up prices far beyond where they should have settled. This push came at the expense of delaying upgrades to current infrastructure that could have helped prevent the wildfires that devastated the state earlier this year."

Hawaiian Electric, which serves nearly all of the state's 1.4 million residents, is careening toward insolvency, much like Pacific Gas & Electric did in California in 2019. Investors in the company are scrambling to sell their shares, and bond rating agencies are downgrading the Hawaii utility's ratings because of its role in potentially causing or contributing to the most deadly U.S. wildfire in a century.

Michael Wara, an energy scholar at Stanford University's Woods Institute for the Environment, told the *Washington Post* last year that "there is no reason utilities have to cause fires in in high-wind events," Wara said. "The thing that would've kept people alive is a power shut-off program. . . . Yes, it is inconvenient when they turn off the power for safety reasons . . . . But we need to break this cycle where in order to do the right thing a utility must first burn down a community."

What's next: The nuclear bills have been referred for legislative committee review, but even the sponsors conceded it will be tough for either piece of legislation to get a hearing. "I honestly think it's a fear of nuclear energy," state Rep. Cory Chun (D., Dist. 35), H.B. 1516's sponsor, told the Honolulu *Star-Advertiser*.

The paradox: Meanwhile, the Aloha State is dealing with rolling blackouts and is facing the reality of the rising demand for electricity on the islands and globally. Then governor David Ige signed a bill in 2005 committing Hawaii to generate 100 percent of its electricity from renewable, carbon-free sources by 2045.

At the time, Ige said, "As the most oil-dependent state in the nation, Hawaii spends roughly \$5 billion a year on foreign oil to meet its energy needs. Making the transition to renewable, indigenous resources for power generation will allow us to keep more of that money at home, thereby improving our economy, environment, and energy security."

Petersen said it would be wise for Hawaii to consider small nuclear reactors "sized for islands"—as an option to produce sizeable amounts of carbon-free, reliable electricity.

#### **Nuclear**Newswire

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