October 29, 2020

Rita's Q&A with Industry - GAIN Webinar

Question	Answer
TOPIC: NASA Needs – GAIN Help Recognizing the MOU describing the collaboration between NASA and DOE on October 21st, and that many nuclear company relationships are in the power industry, how might GAIN be a channel to exposing NASA's needs to companies that can contribute value to this area of power system development and research?	GAIN co-sponsored the Fission Surface Power Industry Day Webinar on August 20, 2020. The goals of the meeting were to: (1) Share NASA's vision and needs for surface fission power; (2) Detail the RFI and RFP processes and purpose; and (3) Update government on industry capabilities, readiness, and interest. GAIN is ready and willing to support a focused NASA needs workshop or to use our communication channels with the advanced nuclear industry if requested. Rita - it is a great time to be in the industry and GAIN will be a partner.
TOPIC: GAIN Vouchers It would be of tremendous benefit to allow more than two simultaneous GAIN vouchers to be awarded to developers. The topics that developers pursue are either in the critical path of their technology development plans, or of highest risk to potential investors. In discussion with national lab personnel, it appears that they are both willing and able to participate in additional GAIN awards with developers like us, if funding/policy changes removed the two-award limit.	On May 1, 2020, the GAIN NE Voucher Request for Assistance (RFA) was updated to provide clarification on technical expectations and policies. In addition, allowance was made for a third voucher application in cases where it is expected that one of a company's current vouchers will complete within the ensuing three months. These changes reflect industry feedback and reflect the GAIN principle of rapidly responding in the interest of efficiency and industry needs. These changes will allow industry applicants to continue to effectively leverage the voucher program as a result.
TOPIC: HALEU Several Advanced Reactors will require the use of HALEU in order to operate. Does DOE have a multi-pronged approach to secure a long-term, U.S-based supply of HALEU for future deployment of these Advanced (Gen-IV) reactors?	Rita -DOE does have a multi-pronged approach to secure a long-term US-based supply of HALEU for advanced reactors. in the n**ear-term**, DOE is accelerating treatment of EBR-II SNF to recover limited amounts of HEU to then produce HALEU. We are also looking at feasibility of leveraging some existing stocks of HEU to downblend to HALEU. In the l**ong-term,** a larger more sustainable source will be needed. DOE is working with industry partners to demonstrate enrichment technology by June 2022. There is also a larger department-wide effort to reestablish long-term production capability.

Question	Answer
TOPIC: ARDP The cost-shared partnerships that DOE is awarding in the ARDP is a great step in promoting innovation by helping advanced reactor developers mitigate cost risk during the design and construction process. For recipients of a Risk Reduction award, the period of performance is limited to 5-7 years per the ARDP FOA. Will DOE consider follow-on awards beyond this time scope for successful companies to assist with final design or construction efforts beyond the period of performance? If so, does DOE have a targeted time when this funding opportunity would be announced, and will companies still within the Risk Reduction period of performance be able to apply for funding during or beyond the period of performance?	Rita - DOE just announced two ARDP awards. Those will continue with DOE for 5-7 years. DOE-NE is in the process of identifying 2-5 awards to support the reduction of the technical and licensing risks for less mature AR designs. This will provide a better understanding for follow-on projects; announcement may be in the January-February timeframe.
TOPIC: NRC Licensing A major cost adder to nuclear innovation, especially for smaller companies, is the cost of initial NRC licensing. To further promote advanced reactor innovation, would the DOE consider working with Congress to fully fund all licensing efforts and annual fees for nuclear companies? Given the increased public and Congressional support for combatting climate change, the increased public recognition of the importance of nuclear power in a clean energy transition, and the fact that many politicians have climate plans well in excess of $1T, it seems like federal funding <$1B of annual nuclear licensing costs could a feasible part of energy transition plans.	Rita- DOE-NE provides both private-public cost share and lab-led R&D activities to reduce regulatory risk for industry. This includes development and modernization of advanced reactor regulatory frameworks and technical regulatory gaps. DOE remains committed to industry, stakeholders, NRC and Congress. Happy to consider future pathways to reduce licensing timelines and licensing costs. Will continue to cover up to 50% of licensing costs including NRC review fees that are part of the awards of the ARDP or the iFOA. It is unlikely that we would fully fund licensing fees for NRC. We limited by Energy Policy Act of 2005 which requires not less than 50% of the cost of a demonstration or a commercial application activity be provided by a non-federal source.
TOPIC: Congress What can reactor companies do either through design, outreach, or regulation work that would make it easier for DOE to build the confidence of Congress that nuclear is a necessary part of America's future energy portfolio?	Rita - Congress - 1 year appropriation with specific direction along specific funding lines, such as NEET or FCRD. DOE is limited to Congressional direction on how to disperse funds. Congress needs to hear from you. This is one way for you to impact the way the appropriations are made.

Question	Answer
TOPIC: ARDP Hardware Milestones In the ARDP RFI, DOE mentioned that they were considering using NASA COTS program experience to design the funding opportunity, proposal review and progress reviews. In the FOA itself it was unclear to what degree the NASA COTS program informed the DOE award. One of the most powerful lessons from COTS was the differences in ability to predict a successful project outcome between design, funding, and hardware demonstration milestones. Companies often always achieved the paper milestones(design), almost always achieved the funding milestones, and almost never achieved the hardware demonstration milestones. The most successful company in the program, SpaceX, achieved all of their hardware milestones, and did so mostly on time (although some of their hardware milestone also did have significant delays). · What are your thoughts on hardware milestones being the most accurate predictor and measure of success? · Additionally, has DOE considered using negotiated hardware milestones in its awards to more nimbly reallocate resources towards efforts producing results? · What are your thoughts on these hardware milestones being used as a very clear review tool by the DOE?	Rita - This is something we are looking at - payment for milestones. There are some contracting arrangements that have to be addressed. DOE needs to look at the contracting mechanism they would use. GAIN is looking at streamlining mechanisms as well.

Question	Answer
OPIC: Remote Ops/Licensing Process Some microreactor developers, such as Radiant, are incorporating remote/autonomous operation as a design feature. This is a departure from traditional reactor designs with manned control rooms and constant on-site personnel. Aside from safeguarding the reactor and fuel even with zero on site personnel, does DOE have any other concerns with autonomous operation? How can developers help address these concerns as part of the DOE or NRC licensing processes?	DOE believes that autonomous control and operation for specific reactor designs operating in remote locations will be a key factor in reducing the cost of nuclear power to a competitive level. The Department is supporting research in this area as a part of our microreactor R&D program. As with any proposed change to traditional reactor operational regimes, the Office of Nuclear Energy (NE) supports a systematic approach to engage the stakeholder and regulatory community, identify potential benefits and challenges, and provide technical expertise to resolve gaps. Semi-autonomous operations and remote monitoring capabilities may offer unique opportunities to reduce on-site staffing requirements for microreactors and other advanced reactor technologies. The NE Microreactor Program remains closely engaged with the Nuclear Regulatory Commission (NRC) and microreactor community to identify potential operational and security risks and challenges with implementing innovative regimes that significantly reduce on-site staffing levels. Through recent and planned workshops and industry engagements, the NE Microreactor Program continues to solicit feedback from the microreactor community regarding timelines, plans, and methods for introducing operational regimes reducing staffing levels.
TOPIC: Congressional Funding Between ARDP, VTR, and NuScale, representing about $9B in spend over the next 7 years, what will the impact be on other DOE programs? How likely are congressional appropriations going to keep up with DOE's commitments?	Rita - Congress - 1 year appropriation with specific direction along specific funding lines, such as NEET or FCRD. DOE is limited to Congressional direction on how to disperse funds. Congress needs to hear from you. This is one way for you to impact the way the appropriations are made.

Question	Answer
TOPIC: HALEU Framatome has had previous engagements with DOE concerning HALEU, specifically proposing options for conversion of HALEU UF6. The last engagements indicated opportunity would forthcoming coming but direction from DOE is not clear. Can you give us insight on the intent of the DOE in this area?	Rita - There is an ANSWER working group looking at Advanced Reactor subsets of topics that need to be assessed and addressed. One is on HALEU with Dan Vega (DOE) and Monica Regalbuto (INL) as the leads. There are three working groups on advanced reactors. (1) Fostering Increased Availability of HALEU - NNSA - Jeff Champerain. Looking at facilitating near term supply of HALEU for advanced reactors and reliable long-term supply. (2) Advancing Near-Term Demonstration of New Reactors and Fuel Cycle Technologies. (3) Incorporating Safeguards and Security-by-Design into Fuel Cycle Technologies. **The HALEU Supply Study report will be issued as soon as it completes review.**
TOPIC: VTR – NRIC Framatome has been very active in support for the VTR and continued to identity opportunity to reach back for SFR related technology. We have responded to NRIC and continue to welcome opportunity to be a key collaborator for this project. What more can Framatome do help the DOE meet its commitment to complete the VTR by 2026.	Rita- NRIC is committed to working with industry stakeholders to enable demonstrations of Ars to successfully deploy technologies. Framatome is currently developing the cartridge for VTR. Reach out to the VTR team, Tom O'Conner or Kemal to ensure they are aware of your skill sets.
TOPIC: HALEU What is the DOE strategic plan for high-assay LEU?	Rita -DOE does have a multi-pronged approach to secure a long-term US-based supply of HALEU for advanced reactors. in the near-term, DOE is accelerating treatment of EBR-II SNF to recover limited amounts of HEU to then produce HALEU. We are also looking at feasibility of leveraging some existing stocks of HEU to downblend to HALEU. In the long-term, a larger more sustainable source will be needed. DOE is working with industry partners to demonstrate enrichment technology by June 2022. There is also a larger department-wide effort to reestablish long-term production capability. **The HALEU Supply Study report will be issued as soon as it completes review.**

Question	Answer
TOPIC: ARDP Has DOE received direct feedback from the commercial US utility/IPP industry indicating that successful US completion of an ARDP project will likely result in expansion to the commercial US market.	Rita-we not received feedback from industry on this topic. Applicants provided market information in their proposals.
TOPIC: Significant Factors for New Nuclear Power. Besides seed money for new reactor designs, what does the DOE believe are the most significant factors which influence the eventual building of new nuclear plants (for electricity, industrial heat, or otherwise)?	A key factor influencing the construction of advanced reactors is the need for a regulatory framework that addresses and resolves licensing technical issues that directly impact the critical path to advanced reactor demonstration and deployment. NE remains committed to its continued collaborations with the advanced reactor stakeholder community and the Nuclear Regulatory Commission to reduce regulatory uncertainty and advanced reactor licensing timelines and costs. NE also continues to support the research and development needs of the advanced reactor community, necessary to reduce the technical risks associated with demonstrating new reactor technologies. In the current energy climate, new reactors should be competitive with natural gas and renewables. Construction and fabrication techniques can be optimized to reduce the time and cost of building new reactors. Operations and maintenance costs of existing and advanced reactors have the potential to be reduced through technology innovations like artificial intelligence and automation. Lastly, designing these reactors to be able to produce non-electric products like industrial heat, hydrogen, or battery storage will allow them to better integrate into the current grid.
	Almost all of the applicants to the ARDP identified the need to reduce costs to stay competitive in their target market as the key influencing factor in whether plants could eventually be built. This goes beyond the DOE cost-shared funding for the demo projects. Specifically, reactor vendors need to apply value engineering to identify ways to reduce the cost of component fabrication, plant construction, operations, and maintenance.

Question	Answer
TOPIC: Enabling Technologies What opportunities does DOE/GAIN see or offer for non-reactor designers and/or vendors that are interested in developing generic technologies that support a variety of advanced reactor concepts? ARDP is focused on specific reactor designs, but, similar to LMP which focused on a generic framework for advanced reactors, there might be design optimization, construction planning or digital twin type tools that could support several different advanced reactor designs. Such technologies could provide improved efficiency or cost savings for multiple designs; however, with the aggressive ARDP schedule (which is great!), each designer is laser focused on their own needs and not generally applicable tools.	Rita - we have a cross-cutting set of programs that conduct R&D in support of advanced reactor concepts. These programs are focused on R&D technology to improving efficiency, and reduce cost for existing fleet or the next generation of reactors to be deployed. There are other funding opportunities such as the iFOA, SBIR/STTR, GAIN Vouchers, or CINR program.
TOPIC: Pu/SNF Is DOE-NNSA doing anything to make Plutonium fissile available for advanced reactor fuel. Related, is DOE-EM doing anything to make Stored Nuclear Fuel (SNF) available for Advanced Reactors? Especially, if mixing them to denature the 93% Pu239 with SNF 1% reactor grade plutonium?	Rita- not award of NNSA activities to make PU available for advanced reactors. It does raise Non-Proliferation concerns, but it is worth having the conversations.
TOPIC: DOE's Plan to Fund Programs There are several new initiatives that have been launched in the past several months: VTR, TCR, ARDP demos, risk reduction, etc. What is the Department's plan for ensuring existing, ongoing programs are not marginalized or cannibalized to feed the new initiatives?	The Office of Nuclear Energy will act to execute programs consistent with our budget requirements. We will try to assure that ongoing program activities continue to be prioritized and executed consistent with our Office and Departmental goals.
TOPIC: DOE Funding Spread Thin Through a large number of projects, DOE risks the perception (or reality) of the "peanut butter" approach to applying limited resources to so many different projects that none is funded sufficiently. How will DOE protect against that concern?	The Office of Nuclear Energy will act to execute programs consistent with our budget requirements. We will try to assure that ongoing program activities continue to be prioritized and executed consistent with our Office and Departmental goals.

Question	Answer
TOPIC: ARDP Approach The Congressional mandate to include procurement reform in the ARDP didn't really manifest itself in anything different in the ARDP solicitation, and the "milestone approach" that was included actually increased administrative burden instead of reducing it via a fixed-support approach. The initial enthusiasm we perceived over an approach similar to that descried in the NIA "SpaceX For Nuclear" paper seemed to subside as DOE concluded there was neither sufficient time nor procedural support for such an approach. Does DOE have plans to modify its procurement approach going forward? What is DOE's approach to minimizing the time to get agreements in place after an award?	We believe that the option to utilize milestone payments was an approach that was appreciated by our industry applicants and that should provide for streamlined oversight of the selected projects, and don't see it as adding any administrative burden. Many of the applications took advantage of the opportunity and provided well-thought-out milestone payment schedules that would appear to improve the Government's administrative burden in the review and acceptance of invoices and payment requests. Although the actual FOA approach was not substantially different than other past opportunities, with exceptions such as the milestone payment option, the overall Federal merit review schedule was expedited through a focused and intensive effort to complete the review and selection process. We will continue to consider lessons learned from this FOA process and look for ways to improve our approach in the future.
TOPIC: HALEU DOE's strategy for making HALEU available in the near term is not entirely clear. Longer-term plans also could be clearer. Past discussions, e.g., with INL over cleanup, have not always felt responsive to industry feedback. Please describe what approach is planned and where industry can clearly state what near-term needs are.	Rita - There is an ANSWER working group looking at Advanced Reactor subsets of topics that need to be assessed and addressed. One is on HALEU with Dan Vega (DOE) and Monica Regalbuto (INL) as the leads. There are three working groups on advanced reactors. (1) Fostering Increased Availability of HALEU - NNSA - Jeff Champerain. Looking at facilitating near term supply of HALEU for advanced reactors and reliable long-term supply. (2) Advancing Near-Term Demonstration of New Reactors and Fuel Cycle Technologies. (3) Incorporating Safeguards and Security-by-Design into Fuel Cycle Technologies.

Question	Answer
TOPIC: ARDP Funding With the ARDP program just beginning, what do you see as the most important to communicate to help ensure that there is continuous funding on this program. The government funding stability is so crucial to obtaining funding from potential investors.	We agree that sustained annual Congressional funding is maybe the most critical element in maintaining the momentum on the two reactor demonstration projects, and we acknowledge that signals from the Federal budget will have an impact on private investment. The Office of Nuclear Energy will do its best to assure that budget requests that are consistent with the needs of this program, as well as all of our other program requirements, are effectively communicated to our Administration as a part of our annual budget formulation process. We will also coordinate with Congressional staff, as requested, to assure that the importance of these efforts are understood and treated accordingly in legislative and appropriations processes.
TOPIC: Labs Competing with Industry National labs continue to invest in R&D activities through their lab directed research programs that are competitive with private industry, note the recent announcement from Argonne on small reactors to power electric truck charging, how can DOE help stop those things from happening and avoid future competitive efforts from the labs? Can DOE prohibit certain work scopes from being considered in lab directed R&D?	The Office of Nuclear Energy conducts periodic reviews of lab directed research programs, and considers issues such as duplication of work with industry. We will do our best to assure that duplication such as the example you cite, and assure that any work being performed via lab-directed support avoids any direct competition with industry. The Office of Nuclear Energy (NE) recognizes that domestic industry stakeholders are actively working towards microreactor demonstrations by the mid-2020s and commercial deployments by the end of the decade. To assist stakeholders in meeting these goals, the NE Microreactor Program focuses on cross-cutting, national laboratory-led research and development (R&D) activities that directly benefit the demonstration and advancement of a variety of microreactor technologies and end-user applications. The novel microreactor design and end-user application development activities being performed at Argonne National Laboratory (ANL) are currently funded entirely by ANL through its laboratory directed research and development (LDRD) program and are not funded by NE advanced reactor R&D programs. Given the cross-cutting nature of NE's advanced reactor R&D programs, NE-funded Microreactor Program R&D activities do not explicitly focus on the development of any specific microreactor vendor design.

Question	Answer
	These activities instead focus on maturing technologies and generating experimental validation data relevant to a variety of microreactor concepts representing a broad range of base advanced reactor technologies including: heat pipe cooled reactors, high temperature gas reactors, fast reactors, and molten salt reactors. Similarly, the Microreactor Program does not focus on any specific end-user application and is instead developing experimental test beds that can be used to verify a broad variety of potential end-user applications.
TOPIC: NEAC What will the new NEAC look like and what kind of people will be on it? Will it include industry members or be more academic in makeup? Relatedly, how do you plan to gain industry input on DOE initiatives and programs?	Overall, NE champions the development, demonstration, and deployment of microreactors and other advanced reactor technologies to ensure nuclear continues to remain a vital part of the nation's energy infrastructure. We encourage vendors, laboratories, and other stakeholders to continue their exploration of advanced technologies while we ensure NE R&D program funds continue to support the broader advanced reactor community.

Question	Answer
TOPIC: DOE Support for AR Companies There has been unprecedented private investment in advanced reactor companies over the past 15 years to usher in a new era of advanced reactor commercialization, how do you see DOE supporting those commercialization pathways that are proceeding independent of ARDP? Relatedly how do you see DOE supporting companies that are not seeking direct funding based on lessons learned and progress made so far?	The Office of Nuclear Energy will continue to participate in industry working groups and other industry focused R&D forums to identify technology gaps that are challenging or inhibiting the commercialization pathways of all advanced reactor designs, regardless of whether they are being supported under DOE industry partnerships. We will seek to incorporate appropriate research activities into our ongoing R&D programs to help U.S.-based developers close these gaps, as appropriate. Along with its private-public cost share activities, the Office of Nuclear Energy (NE) supports cross-cutting, national laboratory-led research and development (R&D) activities that directly benefit the demonstration and advancement of a variety of advanced reactor technologies. Given the cross-cutting nature of NE's advanced reactor R&D programs, program activities focus on generating publically available technology development and experimental validation data for use by a broad range of advanced reactor technology developers. NE continues to remain engaged with the advanced reactor community to identify high-priority technical and regulatory hurdles and ensure its R&D programs provide maximum benefit.

Question	Answer
Due to the accumulating and ongoing societal and business demands, options for the long-term future of power generation must be evaluated to ensure a sustainable future of the energy enterprise, including potentially expanding into other lines of business. These evaluations are intended to fulfill selected objectives in overcoming important challenges, including: - Improving the effectiveness of the current and future base-load power generation fleet -Responding to the changing power generation landscape, e.g., increased distributed, variable renewable energy generation; potential deployment of grid-scale energy storage technologies -Diversifying the energy production portfolio further to reduce overall business risk and improve return on investment -Achieving reduced carbon emissions with a goal of net-zero emissions by 2050 -Pursuing public policies and energy market structures that enable the options to become technically and economically viable. **-Has DOE prioritized support for enabling these areas?**	Rita - these are all important to pursue.
I see a pipeline for reactor design/development in ARDP, it seems a similar effort to make sure there is a pipeline of funding for materials and subsystem technology development would be good. Is that a consideration for DOE-NE?	Rita - Absolutely. Those R&D programs are the foundation for us to deploy ARDP types of awards. They are very important. Continued and increase funding for certain programs. E.g, planned PIE activities will require more funding.
Radiant had submitted a question about the value of hardware demonstrations in public/private partnerships including some history in the NASA COTS program which helped create SpaceX, and we wanted some feedback from the DoE on the approach of using hardware milestones as the ultimate predictor of success and metric for periodic funding reviews with the Period of Performance. Rita, thanks for answering my hardware milestone question! I understand the complexity of the contracting and that the COTS program contracting authority was the Space Act Agreement (ca. 1958), which was very lenient and flexible and a critical part of COTS	Rita - this is something we are looking at - payment for milestones. There are some contracting arrangements that have to be addressed. DOE needs to look at the contracting mechanism they would use. GAIN is looking at streamlining mechanisms as well. Duplicate Response to Radiant's early submittal question.

Question	Answer
Is there any plans to increase NSUF budget. The budget for 2019 and 2020 has been reduced from prior years while the need for work under NSUF has greatly increased.	DOE is looking at about the same level of funding as past requests the last two years.
What are some of the proactive steps you are taking to ensure continued bi-partisan support for strategic DOE funded projects? I'm thinking of the current election and the need for continued support during future budget cycles.	Rita - Congress needs to hear from you. This is one way for you to impact the way the appropriations are made.
Thank you for arranging today's Q&A. It speaks volumes for DOE-NE's efforts to keep in touch with industry.	You're welcome. We definitely see value in these forums.
Thanks for the ARDP Risk Reduction update, can you comment on the ARC-20 awards?	Rita - ARC-20, we are working to get them out by the end of December. The team is very dedicated and working remotely doing the reviews. Touch base with GAIN who may be able to provide more information.
Rita, rightfully so there's a lot of energy and excitement currently in the industry - particularly with the Versatile Test Reactor, Demo Program, Risk Reduction Program, ARC-2020 Program, establishment of NRIC, and the recent bi-partisan legislation and appropriations that have enabled each. With that in mind, what are the greatest risks that you see and fear which may stifle or impede the progress of these efforts and the overall mission of DOE-NE? (e.g. is it technology risk, execution and cost risk, political risk, licensing risk, etc.) What do you see as this audience's role in mitigating those risks?	Rita - opinion - the technology will be proven out. It needs to be done. Biggest risk is in the execution. Votgle cost risk - apply lessons learned from that experience. Engage with supply chain vendors as you progress through your designs to ensure your concepts are considering these inputs. Some of you are in the licensing process. Early conversations with NRC, but this is not the biggest risk. Mitigation is to engage the respective parties early, congress, suppliers, licensing. Technical work is important, but the other work is equally important to ensure timely success.

Question	Answer
Rita, could you elaborate on DOE-NE's thoughts on where the NASA COTS program aligns and does not align with the development of nuclear technologies? Could you also elaborate on any consistent messages and/or push-back you've received from the industry on the applicability of COTS and how that input may have influenced DOE's view on how to adapt the program for nuclear technology development?	NASA Commercial Orbital Transportation Services (COTS) program was established to coordinate crew and cargo deliveries to the International Space Station by private companies. The program used a performance based contracting process with a payment for milestones approach. The office of Nuclear Energy applied portions of the approach NASA used as part of the Advanced Reactor Development Program FOA. NE implemented elements of the NASA COTS program such as a payment for milestones approach, Intellectual Property considerations, minimizing required reporting, stopping non-performing projects and potentially reinvesting the remaining resources as examples. The approach solicited feedback from industry and was instrumental part of the development of the FOA. NE ARDP program is investing in technology for the public , this is unlike the NASA COTS program which will continue to purchase the services to support the space station. This difference results in NE forming public/private partnerships with joint funding. The joint funding is important so that the end development and deployment is not solely dependent on the government and is linked to a commercial end use.
	NE has not studied implementing a NASA COTS style approach beyond the ARDP program at this time. Careful consideration will need to be made if it will have benefits to other nuclear technology efforts. The type of approach needs to be tailored to the needs of the programs and take into consideration elements like programmatic goals, the type of research being conducted, the maturity of the technology, and the institutions involved. The NASA COTS approach can be beneficial to projects that need to be demonstrated. However, for programs like materials R&D or facility access such an approach would not necessarily match the program goals or needs. Like in other areas, it is important that the right tool is selected for the appropriate function.
Can you please discuss the future of the I-FOA and related funding?	It will be continued, but only twice a year. Funding will likely be reduced.

Question	Answer
Do you see the priorities for NRIC changing in anyway since the ARDP decision resulted in 2 Advanced Reactors being chosen for demonstration?	Rita - NRIC is intended to be an innovation center. There are plenty of siting areas all over the country. Similar to GAINs focus. Priorities for NRIC should not change. ARDP was not the main reason to establish NRIC.
As a follow-up to the question about the HALEU study . . . we have had previous engagements with DOE concerning HALEU, specifically proposing options for conversion of HALEU UF6. The last engagements indicated opportunity would forthcoming coming but direction from DOE is not clear. Can you give us insight on the intent of the DOE in this area?	Rita- Comments are being addressed. The HALEU Supply Study report will be issued as soon as it completes review.
On the ARDP FOA, Thanks for the first awards. When are the ARC-20 and Risk Reduction awards expected to be announced?	Rita - DOE had an aggressive schedule to get the ARDP awards out on time. Lots of additional time to get it done. Intent on the review process. Thank you for your understanding. ARC-20, we are working to get them out by the end of December. The team is very dedicated and working remotely doing the reviews. Touch base with GAIN who may be able to provide more information.
Spent nuclear fuel is exclusively under government control. Would DOE encourage reactor designs that would consume spent fuel?	Rita - Yes. DOE does support this endeavor.
Are there plans to grow the scope of resources that can be made available via GAIN vouchers? Alternatively, can lessons be applied from the relative ease of GAIN vouchers to make other engagement paths less burdensome?	Lori- Funding level is appropriate. We are color-of -money limited on vouchers. So far, GAIN is doing about two vouchers a quarter. Increasing funding is not a primary discussion. Rita - lessons learned can be used to inform other engagement paths and streamlining the contract process in the larger funded awards. For ADRP applicants, we hope you participated in industry day. This one additional way DOE tried to answer your questions and make the application process less burdensome.

Question	Answer
Could you touch on where DOE-NE is at with respect to re-using spent fuel? Thank you.	Rita- we do have a team to look at the barriers to re-using SNF and what it would look like to recycle fuel outside of the US. Repatrioting the fuel. Just starting to open discussions with NNSA to identify concerns and then to address one at a time.
When will DOE-NE release the HALEU supply study that has been in the works for several months?	Rita - Comments are being addressed. The HALEU Supply Study report will be issued as soon as it completes review.
Can you share some additional detail of what the ADRP is covering for the two awardees. Is it both reactor and fuel development? Does it also include capital expenditure like facilities to fabricate fuel itself? DOE announcement mentioned both the reactors and fuel for each awardee. Can you help clarify what the ADRP is supporting?	Funding under the 2 awards for the demonstration projects will cover all costs associated with reactor design development, engineering, licensing, procurement, construction, and initial operations. The two awardees have also requested cost sharing for capital investment in fuel fabrication capability, which is inherent to the each project's success, and this will also be covered in our funding plans.
Assuming that presidential election doesn't change, how is the department thinking about the FY22 request? Do we think there will be a significantly larger request from the administration for FY22 because of these new projects?	This is not an either/or conversation. It is an "and" conversation. For the US to maintain technology leadership, we need to invest in infrastructure projects, demonstration projects, and early R&D efforts to ensure we remain a global leader. Rita has made the case with OMB and appropriators. We need to add to the budget.
There is a lot of talk about a big stimulus/infrastructure package after the first of the year, and nuclear often gets left out of those conversations. Given the big projects we have on the horizon - ARDP, VTR, NuScale - will DOE be proposing any of those for an infrastructure/stimulus package? If so, how will you prioritize these projects?	Rita - we have provided over the past several months high level efforts to be put into stimulus packages. DOE-NE priorities have not made the cut. Even one on work-force development. This is where industry can provide priorities. House stimulus bill included $700 M for ARDP.

Question	Answer
In hydrogen production others want to call nuclear produced hydrogen as yellow, pink or red rather than green. Since nuclear does not produce CO2, how can DOE-NE help in keeping nuclear a Green technology.	The way you produce Hydrogen can be categorized in different ways (colors). If it is produced by renewables, it is considered green, but nuclear is not included. Working with EERE. More than DOE needs to get in on the conversation. Nuclear should be include in the Green category. Not set in stone. Please continue your efforts. Don't think that DOE has the final voice.

Rita - closing comments. Continue to work with GAIN on contracting needs. New developers as well and current developers with changing needs. Raise issues and concerns with GAIN. GAIN is here for your benefit. Rita has been talking to supply chain companies in the advanced nuclear technology community. Be vocal and make sure your capabilities are highlighted that you connect with folks that need your capabilities and services. ***Thank you for your questions. Provide written responses to all the questions for the GAIN website.***