MURRAY CITY MUNICIPAL COUNCIL
SPECIAL MEETING
April 16, 2020

The Murray City Municipal Council met on Tuesday, April 16, 2020 for a Special Meeting held electronically in accordance with Executive Order 2020-5 Suspending the Enforcement of Provisions of Utah Code 52-4-202 and 52-4-207, due to Infectious Disease COVID-19 Novel Coronavirus issued by Governor Herbert on March 18, 2020 and Murray City Council Resolution #R20-13 adopted on March 17, 2020.

Council Members in Attendance:

Dale Cox - Chair	District #2
Rosalba Dominguez – Vice Chair	District #3
Kat Martinez	District #1
Diane Turner	District #4
Brett Hales	District #5

Others in Attendance:

Doug Hill	Mayor's CAO	Janet Lopez	City Council Director
Jennifer Heaps	Mayor's CCO	Pattie Johnson	City Council Office Admin.
Danny Hansen	IT	Blaine Haacke	Power – General Manager
G.L. Critchfield	City Attorney	Greg Bellon	Power – Assist. General Manager
Jennifer Kennedy	City Recorder	Jackie Coombs	UAMPS
Mason Baker	UAMPS	Mike Squires	UAMPS
Danny Astill	Public Works Director		

Call to Order – Council Chair Cox called the meeting to order at 2:00 p.m. and welcomed all with the following statement:

> Welcome to the Murray City Council Special Meeting. We are glad you are viewing our discussion.
>
> Because of the current health pandemic, and in order to comply with the Governor's Directive to "Stay Safe, Stay Home," and the Public Health Order issued by the County Health Department and County Mayor, we have determined that an in person meeting, including attendance by the public and the Council is not practical or prudent. Therefore, this meeting will be held remotely through electronic means.
>
> Each person is participating from a separate location. We are totally dependent upon the internet and technology to broadcast this meeting and to ensure that the public has an opportunity to view the proceedings, however, there could be a malfunction that is totally out of our control. We don't expect any issues but want you to be aware of that possibility.

Overview - Blaine Haacke, General Manager, Murray City Power.

Mr. Haacke encouraged Council Members to learn more about small nuclear energy, in hopes of them deciding that the new resource fits in Murray. He noted the City's mix of power options that included; two hydro resources, three gas turbines, access to three coal plants, landfill/methane, market purchases; and most recently, large scale solar. He said Murray Power is always looking for new options, so suggestions made by UAMPS (Utah Associated Municipal Power Systems) are examined annually, as to whether new resources should be pursued.

Years ago, UAMPS looked at SMR (small modular reactors) that morphed into a nuclear plant the world is watching in Idaho. Mr. Haacke said addressing concerns and questions at this time was important, because the City must decide if nuclear should be necessary to meet Murray's needs in the future. He urged Council Members to fully understand, weigh all factors, and consider the advantages of the new resource for themselves. He said there is an abundance of power in uranium at the SMR plant, and stressed the following to make valid comparisons:

- Magnitude: As a visual example, Mr. Haacke used one NIB, (a small piece of candy) to convey nuclear energy; one NIB equals one pellet of uranium; and one pellet of uranium relates to 150 gallons of oil, one ton of coal, or 17,000 cubic feet of gas; and five pellets would meet energy needs for one household for one year.

- Carbon footprint: Windfarms require 175 square miles of generators to emit the same amount of electricity, as the proposed SMR plant. Mr. Haacke hoped when efficiency, reliability, cost, cleanliness, safety, and redundancy are weighed comparatively; the Council would conclude that SMR be included in the City's portfolio.

- Cleanliness: To produce electricity for citizens, Amsterdam, Holland uses SMR. In comparison, they produce 30 tons of nuclear waste per year; whereas, one coal plant produces 300,000 tons of ash the same year.

- Capacity: Mr. Haacke said Murray residents should be able to turn a switch at any hour of the day and get power. Capacity is the percentage that a plant, or load is available for use. Because electricity cannot be stored, and current renewable energy sources do not have good capacity, the City needs a new resource to generate power 24 hours a day, seven days a week to meet load requirements. For example, wind capacity is on 25% of the time, and off 75% of the time; large solar, or roof top solar is only on 30% of the time; capacity of hydro energy is 40%; coal plants 80%, and gas turbines are flexible from 40% to 80%. Nuclear capacity is significant at 90% on and is most available as a backup resource. He told the Council to not let pricing of the SMR project be the sole determining factor, because capacity factors are more important and the City must ensure efficient power, not only to homes, schools and retail, but hospitals, and grocery stores at all hours.

Mr. Haacke discussed many times that Murray needs a long-term resource because contracts with coal plants would expire. He said Murray would not run out of power over the next couple of years, and although it is not an urgent need right now, every month they fall short the deficit must be met; a 50MW (megawatt) shortage is experienced mostly during summer months. He explained when possible, loads are covered by the City's base loads due to cost; they are: CRSP (the Colorado River Storage Project), coal plants, and the landfill, and because these resources are all reliable 24-seven. He noted in review; the San Juan coal plant closes in 2022, where 1.6MW of Murray's entitlement will be lost forever; and the Hunter

coal plant will close in 2040. However, he is hopeful legislation and politics will remain as is, so energy can be utilized until coal is completely phased out. The Hunter, San Juan, and IPP coal plants are currently considered the City's workhorses, which must all be replaced by something else. He expressed responsibility in his job to ensure the City has reliable capacity and capability, so the SMR must be heavily considered.

CFPP (Carbon Free Power Project) Discussion - Mike Squires, Mason Baker – UAMPS.
(See Attachment #1)

Mr. Squires shared a power point to discuss CFPP details consisting of three elements: renewable energy, energy efficiency, and the SMR (small modular reactors). He confirmed capacity factors, and that as part of the process, UAMPS thoroughly evaluated the value of the SMR. Benefits of nuclear energy were noted, such as, cost competitiveness, zero carbon emission, safety, environmental impact and reliability. He said the ability to ramp-up energy quickly, is what allows integration of more renewables, as will be necessary in the future.

By partnering with other interested utility companies in a joint operation, better management at the command center, and multiple deployments of SMR technology would occur. Mr. Squires reported growing challenges related to renewable energy, with regard to tracking and studying legislation, and adhering to regulations. An increased number of states are pursing 100% "renewable only" and aggressive clean energy bills; standards include carbon free energy goals, and nuclear energy. Half of the states that took action are located in the west, which is why UAMPS experienced a good market response due to expected future federal regulation, as all utility companies need to be prepared. Last year nuclear plants across the country experienced on average, a 93.4% capacity factor. This confirms great capacity, and the ability of nuclear energy for attaining clean carbon free power, 24-seven.

To convey the new approach to construction and operation of nuclear power, conceptual drawings of the SMR, and the plant site were reviewed; differences were noted between SMR, and large traditional nuclear plants. Mr. Squires explained factory fabrication, where modules would be constructed in a factory on site, parallel to the construction of the reactor building. Modules and reactor vessels are housed in a 12-module reactor building, containing six modules on each side; the outside looks similar to a big box store. In contrast, carbon footprints were compared; windfarms require 17,000 acres of land to produce 57MW of energy; and the SMR would be constructed on 34 acres to produce 720MW of low carbon, secure electricity/energy. A review of the following occurred:

Safety. The SMR design stands out with a passive feature for cooling nuclear waste with no pumps, no external power, and no external water. A timeline was reviewed to reflect that process, confirming enhanced safety designed for one modular unit to provide maximum safety. Mr. Squires stated this process provided the NRC with confidence, as the DC (design certification) process moved forward to limit the emergency planning zone and reassure UAMPS, and UAMPS members that extreme safety measures were taken according to the NRC.

Process for NRC Licensing. Noted as the biggest concern, Mr. Squires confirmed the DC approval process is currently on schedule, and underway, by the NRC, which means a very rigorous, and highly monitored and evaluated procedure would be completed by the end of 2020. DC approval signifies that the design is certified for production, and the following steps occur:

- NuScale to submit an SDA (Standard Design Approval) application by Q4 of 2021, which will permit capacity to be enhanced from 50MW to 60MW, also requiring NRC approval.
- NuScale to pursue options for additional potential deployment that includes other power companies to help mitigate risk with cost.
- After DC and SDA approval by the NRC, UAMPS will submit a COLA (Combined Operating License Application) in mid-2023.

Cost Competitiveness/Funding. The SMR project receives valued support from the DOE (Department of Energy); and if not for that support, UAMPS would not be at the $55 MWh (per megawatt hour) cost point. As the plant came into being, and moved forward, UAMPS attained a 5-year cost sharing arrangement with the DOE, through 2024. To find additional support the element JUMP (Joint Use Modular Plant) was formed, which is a program popular with members of congress who continue to appropriate project funding. Financial backing involves a PPA (Power Purchase Agreement) with the INL (Idaho National Laboratory) (plant location) that authorizes one modular be leased back to INL for further and continued study; a second modular leased back to the DOE to provide the INL with its own power source. The DOE is working with UAMPS on site support, and to provide additional site care work at INL. NuScale was also the recipient of a cost share award that benefits UAMPS, overall, but the project that requires federally appropriated funds, also needs continued financial support.

Phase Development. Mr. Squires discussed this approach to illustrate great measures taken by UAMPS to mitigate risk, and balance cost for members and for residents. He explained this was achieved by actively looking at other nuclear facilities built throughout the Country's history. He confirmed off-ramp opportunities at the end of each phase provides cities the opportunity to approve budgets before moving to construction. Off-ramps also provide checks and balances in a governmental sense, to help oversee that the project moves forward successfully, and that the ECT (Economic Competitive Test) is met and completed; the test keeps the cost at $55MWh. He reported UAMPS staff is constantly reviewing all related matters and they feel the phase development approach protects the financial interests of all members and those of UAMPS.

Current Status of Phased Development Approach. The last off-ramp was in 2019. Mr. Squires reported all participants elected to stay in the project to keep their allocations. The prioritization of securing DOE support of the CFPP is a large component to the success of the project.

He explained UAMPS thoroughly evaluated and explored the cooling decision, which is how modular units would be disposed of. The cooling method requires water, but the question was how much water would be necessary. After detailed studies about whether to utilize wet cooling, or dry cooling methods- the dry cooling method was chosen, which was found to be most positive and results in a less water intense usage overall. The decision was an interesting milestone, related to environmental impact, and they will do their best to ensure the method would be sustainable, and not affect the overall functioning of the plant.

Mr. Squires noted other "near-term" work, such as, finalizing contract and furthering shared services models for operations. As nationwide interest grows, UAMPS is discovering how to optimize the shared services model, by relying on the expertise of other utilities and those who have gone through the licensing process before. This would provide added value to the project overall, making it more efficient and more cost effective; he anticipates shared services could result in a $5 MWh savings.

Legislative Support. A table reflecting the overall support of congress was reviewed. Mr. Squires noted appropriations since FY 2017 and pointed out significant growth of support across the board, where both the House and the Senate want to contribute in a bipartisan manner; for example, appropriations of $100 million came most recently from both chambers. Also noted was the Nuclear Energy Leadership Act, which was endorsed by both parties, and legislators in both Utah and Idaho were noted as having great support.

Questions

Ms. Turner said her biggest concern was the financial impact to Murray. She requested clarification about each stage of the project, regarding refunds of the City's future finance commitment at each phase; in addition to a timetable, and conditions for all future off-ramps and a plan to keep all that information updated for Council Members and constituents.

Mr. Baker explained the current budget they are operating under was approved late last year. The next off-ramp is scheduled for mid-to-late summer of 2020 to approve a subsequent budget. He confirmed part of that process is to provide a detailed packet explaining the budget through to commercial operation, including the construction phase. Upcoming revised information would address her concerns, and provide more detailed information, like summaries of contracts between UAMPS, NuScale and Flor; and DOE support.

Mr. Turner reminded the group it was after the 2019 November off-ramp opportunity, when Mr. Haacke asked for an additional $40,000; prior to that the Council was not aware of the additional cost. She said there was no public hearing, which concerned her, and they were only told about it during a council meeting. She stressed the importance of that not happening again and requested something be put in place to better advise the Council, and to be more forthcoming in terms of costs and off-ramps. She asked at this point, what the cost would be to take the next off-ramp opportunity.

Mr. Baker assured there would be more opportunity for briefing prior to the next off-ramp. He said those discussions occurred with all participants who agree enough time should be built into the schedule to provide governing bodies time to vet. The hope is to provide information 60 days in advance. He explained if Murray were to take an off-ramp at the end of this budgetary period, it would be specific to the entitlement share, assuming the rest of the project moved forward. He said there would be a cost responsibility to Murray, which was provided in past documentation, but currently he did not have that exact total.

Mr. Haacke said money for the exploration of licensing, was not expended yet. If Murray proceeds to the Construction Phase of the project, the cost to that point would be built into the bond. He said no money was expended by Murray– in theory; the cost of the project is not affecting the budget; and if involvement continues through to completion, all costs are part of the megawatt price.

Mr. Cox affirmed the Council voted to stay in the project and rejected the off-ramp opportunity during a public council meeting in November of 2019. He confirmed the added request for money came later.

Ms. Turner said the Council was not notified in a timely manner, when Mr. Haacke had only 10 days to inform the Council; she said there was not a public process, which was concerning to her. Mr. Cox reiterated Council Members voted against the off-ramp, overall.

Mr. Hales asked if it was UAMPS that delayed the request for $40,000 or was it an oversight of the City. Mr. Hill said the request was placed on the council meeting agenda, as soon as Mr. Haacke became aware of it. Mr. Haack confirmed there was a slight financial weakness in the original signed contract; so, another budget amendment was needed, and he received that notification in mid-October. This gave him very little time to react; so, he presented the request in early November. He did not blame UAMPS for the timing and confirmed contract notices would be watched more carefully; he and UAMPS are committed to giving the Council ample time in the future.

Ms. Dominguez asked how the City's relationship by contract with UAMPS affected the City's budget next year. She asked if the City would be obligated to put x amount dollars down to make up for budget cuts in other areas, and if so, how did this affect other cities, and Murray moving forward.

Mr. Baker understood those budget concerns and explained the UAMPS approach in moving through development and construction phases, was not to bill participants for costs incurred. Murray would be billed when the plant was in full operation- by way of the megawatt cost for energy. He explained the $55 MWh accounts for UAMPS conducting the financing for development and construction costs; he said billing for those costs would begin once the project becomes operational, and the project would not have a current budgetary impact on Murray.

Mr. Cox affirmed the project would never have impact on Murray's budget; it would have impact on Murray rate payers, as Murray Power Department customers. Mr. Hill agreed the Murray Power Department is an enterprise fund, so any costs associated with the power department are offset by revenue from rates; and rate payers of Murray power would bear the cost of the expense. He clarified for Ms. Dominguez; there is no budgetary impact to Murray Power Department's budget, unless the City were to back out or stop moving forward with the project. He said there is no cost to the City, unless the Council votes not to go forward at the next off-ramp. The Murray would be obligated to pay the costs to date.

Ms. Dominguez inquired about other cities taking off-ramps; and asked if Murray would be obligated to pay more in the end or would the MW rate increase. Mr. Baker explained if other cities decide to take an off-ramp, all remaining participants would assess at that time, to determine what the impact would be moving forward. However, it is dependent on the circumstances. He thought the effect could be minimal, but if significant- remaining member cities would reevaluate moving forward. He said there is great flexibility built into contracts, so if cities decide to drop out, or reduce entitlements, other participants are notified to ensure accountability; the budget is balanced with the number of participants at the end of each budgetary phase. He said the Project Management Committee has authority to assess any event that comes up, whether it is a withdrawal of a participant, or new information that impacts the project itself; monthly meetings provide accountability to ensure things are being assessed dynamically.

Ms. Martinez asked when Logan City changed their agreement did that shift affect Murray's initial buy in cost. Mr. Baker explained it was a reduction of Logan's entitlement that occurred at the end of the last budgetary phase, which meant they would stay in the project, but utilize less energy. He noted this as an example of flexibility within contracts for participants, the ability to increase or decrease entitlement

shares at the end of a budgetary phase. Ms. Martinez asked if Logan's decision affected Murray' budgeted assessments and financial responsibilities for the project. Mr. Baker confirmed all participants are responsible only for their own entitlement shares throughout the end of a budgetary phase, so cost responsibly is not reallocated during a phase. Adjusted entitlement shares are accounted for again in the next subsequent budget.

Ms. Martinez led a discussion about concerned residents who asked how CFPP is different from UTOPIA, as a huge project undertaken by the City, with a huge financial obligation, and a looming eventual bond to be paid. She knew CFPP would be paid for differently but wanted to ensure citizens the financial situation was not the same. Mr. Baker explained CFPP was structured initially with cost in mind, so good checks and balances were put into place long before proceeding with decisions that incur more costs, by approving subsequent budgets at each phase. He said UTOPIA did not take this approach, nor did they spend five years refining project cost estimates before preceding to construction. He noted there are still several opportunities with CFPP between now and construction, to reassess the project with the support of owners, and engineers. He said UAMPS staff believes it is critical to have independent assistance along the way with a very measured process; so unlike CFPP he thought UTOPIA did not seek external help.

Mr. Hill agreed UTOPIA did not take this approach and shared his opinion that when UTOPIA first got started, 1) They did not systematically phase-in the project after bonding for $185 million. Instead, UTOPIA quickly spent the $185 million, without first having a good customer base. He thought even UTOPIA would agree that a phase-in plan to get the subscription basis before building infrastructure would have be better, and 2) He said UTOPIA overestimated the percentage of people who would subscribe. The take rate was only 15-20%, instead of their anticipated 30%; therefore, they did not have incoming revenue to cover ongoing costs. He said the difference is that CFPP is not attaining upfront long-term commitments, obligations come in phases; they are not spending funding all at once, and they are offering on and off-ramps, unlike UTOPIA.

Mr. Cox noted the customer base, and infrastructure was already here for CFPP, as well as, an off-ramp opportunity, should the cost reach a certain level; he noted this as a guaranteed power cost.

Mr. Baker confirmed the ECT is part of the process arranged with NuScale; so, if the target price ever exceeds $55 MWh, an opportunity is provided to terminate the project, and a percentage of development costs are reimbursed from NuScale. However, that percentage declines the longer the project proceeds toward construction.

Ms. Turner requested information previously given. Mr. Baker confirmed the *Budget and Plan of Finance* document was provided at the initial presentation and conveyed cost estimates for each phase of the project. He explained the past information was specific only to that current budgetary period, and all data was revised in November. The intent of the next budget would incorporate a full adjustment for all subsequent phases of the project moving forward. This would include Murray's exposure. An updated informational packet would be sent to the Council next month.

Mr. Hill recalled the first UAMPS presentation when a spreadsheet was provided showing estimated costs related to every off-ramp opportunity; he thought a small cost of $10,000 was required at the very beginning with the original agreement; Murray did not actually pay this, but funds were allocated. This was followed by a first off-ramp opportunity in December of 2019, which was not taken, but later required

an additional $40,000. He thought the next off-ramp would be this summer, which involved a greater cost of $800,000 –but only if the City backed out and took the off-ramp. He agreed the spreadsheet was worth remembering and confirmed this was the information Ms. Turner was looking for.

Ms. Turner agreed the initial spreadsheet was helpful in detailing all specifics; she understood everything had now changed, and requested it be updated to provide a better sense of future commitments, off-ramps schedules, and current associated costs for taking off-ramps. Mr. Baker said UAMPS would provide the same information with the latest refinements.

Mr. Haacke clarified Murray Power originally invested in just 1MW of the project, at a cost of $15,000, which was later increased to 10MW. The first financial commitment was $240,000 last fall, to get to the first off-ramp; but the off-ramp was not taken, and that was followed by the additional request of $40,000 for the study phase. He said the total commitment currently, is approximately $280,000 so far – but only if the City walks away from the project. He confirmed the next off-ramp is this summer, with an $800,000 commitment – but only if the City walks away. The next off-ramp would come two years later, with a greater commitment of seven to eight million dollars.

Ms. Turner appreciated clarification and expressed concern about a brand-new technology. She said the SMR was a new application of an old technology, so there was no way of knowing what could happen. By not using external water, she said safety issues were speculation, which was more concerning because that is a new method; and therefore, she is uncertain about having the City involved in the project overall, which she expressed many times in the past.

Mr. Haacke thought her concerns were valid and said UAMPS and others involved shared those concerns too; everyone is asking the same questions related to water usage, and safety. He said Ms. Turner was correct – CFPP is the virgin plant, however, a very slow, methodical approach was taken at all turns. He said CFPP would benefit the City by providing a $55 MW resource- as a first partner, because partnering later would result in a $100 MW price range. Therefore, it was important to weigh all options of either joining now, or later as UAMPS provided the option to be one of the first cities involved.

Ms. Martinez noted a power shortage in the future, once coal plants are shut down; and states like California moving to a cleaner approach to energy. She asked if power sold to California, could instead be called-back to meet the City's shortages during summer peaks. Mr. Haacke explained whether Murray has surplus or deficits, it is the UAMPS pool of 40 cities that utilizes excess energy. For example, if Murray Power ordered too much energy, the unused power goes into a pool, where another UAMPS member city like Logan could purchase it for their own use.

He confirmed energy is sold to California, due to California State regulations; California cannot buy just any form of kilowatt hour; renewable energy, must be tagged as "green" to attain the REC (renewable energy credits) they must have. As a result, approximately 3MW is sold to California by UAMPS, from the Trans Jordan landfill, which is methane gas and meets that criteria. He said 3MW would not be enough to cover the 10MW shortage Murray experiences. In addition, even though call-back power from the landfill could be used, it is 15% more expensive than SMR. He agreed call-back power could be used for shortages during other months that often reach up to 50MW, but those loads are currently met with other resources. During April and May, shortages range from 7MW to 8MW, and he prefers to purchase energy

from the market because purchasing is less expensive than call-back energy. Ms. Martinez stated she was not against selling energy to California but was glad to have answers needed for those who ask**.**

Ms. Dominguez noted the overall concern from her constituents about safety; she shared their concerns after learning about injuries and deaths occurring at other nuclear facilities and asked how the SMR plant would be different from existing nuclear plants in the country.

Mr. Squires said by virtue of design the technology developed by NuScale is much different and incorporates many safety features. Unlike Fukushima, the SMR would not loose cooling power capabilities- this is what happened when Fukushima lost power to reactors, meaning they were unable to run cooling pumps. Therefore, having access to additional power has always been an issue at other plants. By alleviating that need, the SMR design is different, because it does not require additional AC/DC power, or water, or human input for the cool down process. The 'Walk Away Safe' method means operators do not ensure the cool down – it is time only that cools waste. Other distinctive differences were noted, such as, a smaller emergency planning zone, and evacuation area- because a large radius of 200 miles common to most nuclear plants is not required; but overall, manufacturing at the plant, is a significant offset to the overall cost.

Mr. Hill thought citizens' collected concerns from organizations like HEAL Utah, related to the disposal of radioactive waste, and from fears and notions portrayed in movies like *Three Mile Island,* and *Chernobyl* with visions of radioactive rods being transported across America's highways to be disposed of. He said the CFPP handles waste completely different.

Mr. Squires confirmed the CFPP would use normal enriched uranium, unlike more advanced nuclear plants that require a higher grade of uranium. CRPP waste is not reprocessed, or recycled; therefore, waste would be stored onsite inside a facility for an indefinite amount of time, as per NRC policy. He agreed this raises long-term questions, and congress is also feeling pressure from constituents, and the nuclear industry, to find some other solution other than onsite storage. Currently, two legislative bills are underway that would allow for interim sites to be located throughout the country for storing the nuclear waste, which UAMPS highly supports. Mr. Squires said waste generated by the CFPP is intended to fit within the overall design of the plant, using dry cast storage at the plant. Mr. Baker confirmed waste would be stored within the fence line of the property with capabilities for storage up to 60 years.

Ms. Turner noted the CFPP plant would consist of 12 independent SMRs in a shared pool – and reactors were described as small; she asked the dimensions of one modular. Mr. Haacke said one modular is 65 feet tall contained in a 20-foot round cast, producing 60MW each. Ms. Turner reiterated the technology had never been done before. Mr. Baker agreed the CFPP was the first of its kind to be deployed.

Mr. Cox stated the City needs some form of generated power to aide renewable energy, because wind and solar require other means of energy to push it to electrical lines. Mr. Baker agreed UAMPS hopes to utilize the CFPP, as part of a larger de-carbonization effort for that very reason and is the most cost-effective possibility for members utilizing renewable energy resources. He noted the Red Mesa Tapaha Solar Resource, a 66MW solar facility, is easier to forecast than wind, which tends to be more variable, however, all renewable energy is very intermittent. The SMR would allow access to flexible generation as power, when renewables don't function. Currently, the best way of dealing with intermittency is through natural gas; but natural gas is associated with carbon emissions. Therefore, the SMR fits well with the

future to decarbonize city portfolios, and can act as either a base load, or a resource to ramp up renewables very quickly when necessary.

Mr. Haacke noted Murray as small-scale city compared to the UAMPS group overall, so power is purchased for summer loads. However, with the high use of air conditioners during summer months, additional generation is controlled by using the City's natural gas turbines. The SMR would be utilized in that similar fashion when there is a lack of sun and wind. He said coal fired plants, and other resources do not operate as fast as the SMR, which would meet those needs, and provide a large financial savings.

Mr. Cox called for on-line public questions and comments posted on Facebook. Ms. Heaps monitored the activity and reported several comments and concerns related to: proper disposal of nuclear waste; other power options like geothermal energy; the overall cost of the CFPP to the City; precautions taken related to earthquakes near the plant site, the coronavirus situation, and toxicity levels and radiation dangers. Responses were documented.

Mr. Cox thanked all participants for the informative discussion, called the meeting to a close; and noted the council would stay well informed, as the project moves forward.

Adjournment: 3:41 p.m.

Pattie Johnson
Council Office Administrator II

UAMPS
Utah Associated Municipal Power Systems

SMARTENERGY

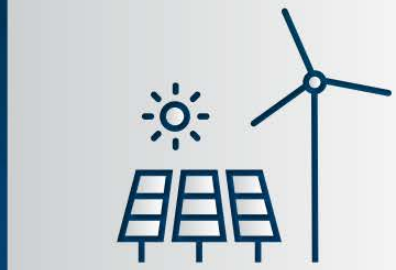
Mike Squires
Government Affairs Dir.
mike@uamps.com

Mason Baker
Chief Legal Counsel
mason@uamps.com

MURRAY CITY COUNCIL PRESENTATION

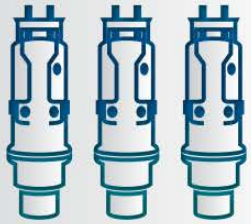
APRIL 16, 2020

CARBON-FREE ENERGY SOLUTION FOR THE FUTURE



Renewable Energy

Energy Efficiency



Small Modular Reactors

LAMPS

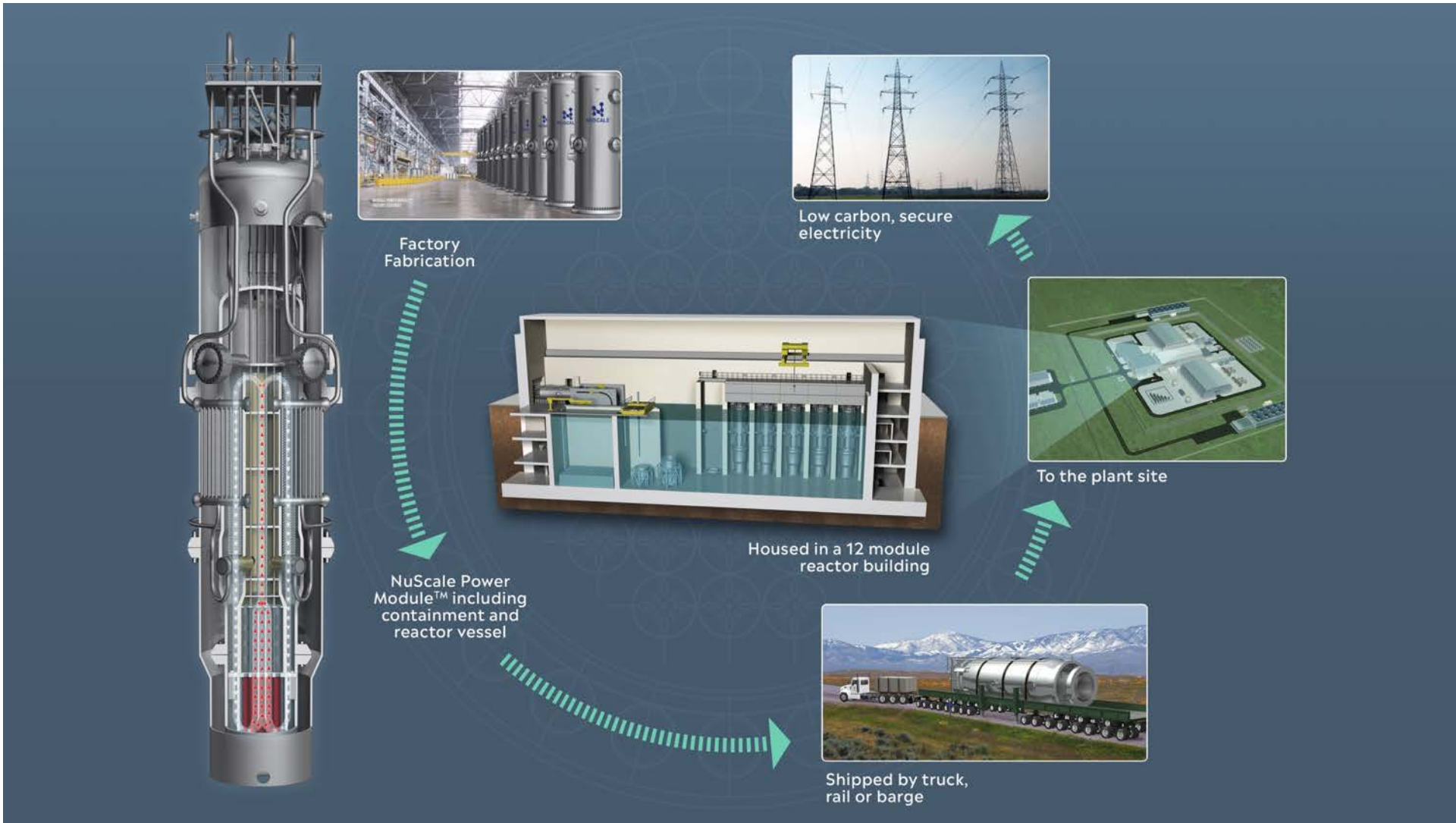
SMARTENERGY℠

CARBON FREE POWER PROJECT VALUE PROPOSITION

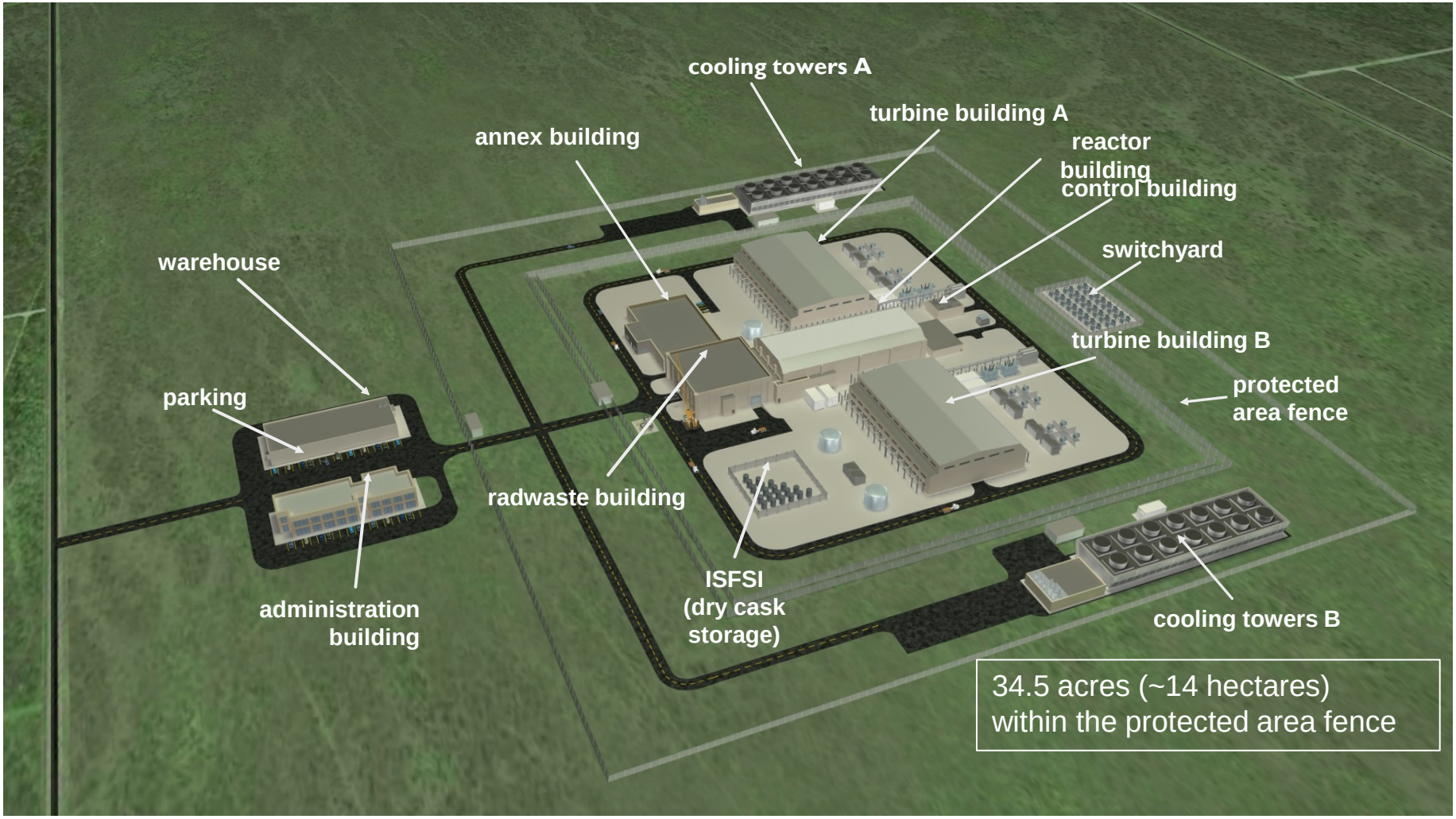
- 40-year LCOE, on to the grid, equal to or less than $55/MWh
  - Cost shared among UAMPS, DOE & NuScale
- Flexible & resilient carbon free resource to integrate renewables
- Fleet managed operations
  - Approximately $5/MWh savings
- Fits within the 100% clean power generation bills passed by California, Colorado, Nevada, New Mexico and Washington
- Market based response to GHG, tempers need for Federal Regulation
- Complements Electric Market Regulation (ISO/RTO)
  - Capacity adequacy
  - Energy Imbalance Market
  - Resiliency on ramp rate

UAMPS SMARTENERGY

A NEW APPROACH TO CONSTRUCTION AND OPERATION

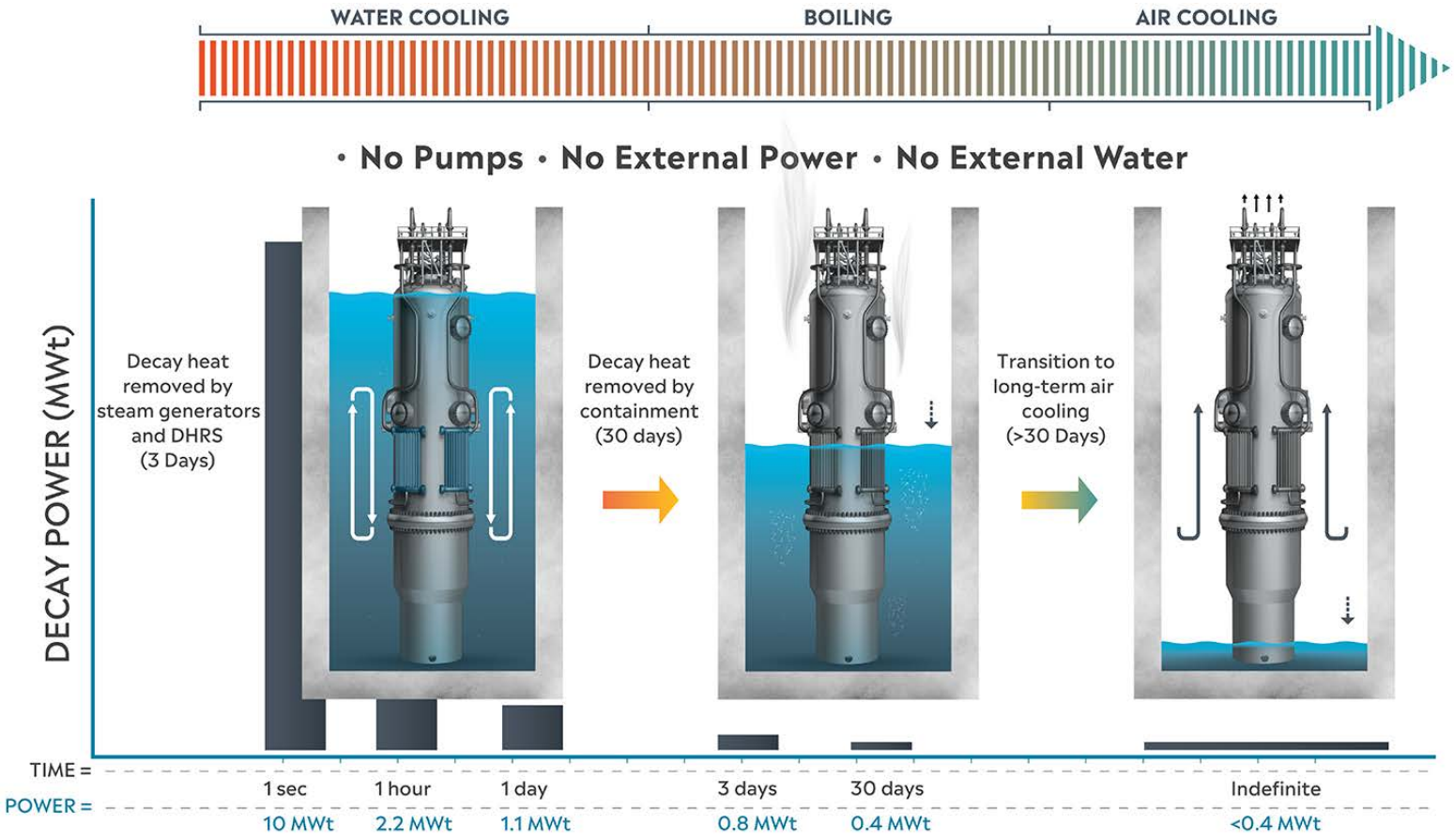


SITE OVERVIEW



Innovative Advancements to Reactor Safety

*NUCLEAR FUEL COOLED INDEFINITELY WITHOUT AC OR DC POWER**



Alternate 1E power system design eliminates the need for 1E qualified batteries to perform ESFAS protective functions – Patent Pending

NUCLEAR REGULATORY COMMISSION (NRC) LICENSING

- NuScale pursues
  - NRC Design Certification (DC) & Standard Design Approval (SDA)
    - DC on schedule to be completed by end of 2020
    - SDA to be submitted by Q4 2021
  - Potential Additional Deployment
    - Ontario Generation Power, Energy Northwest, Tennessee Valley Authority, etc.
- UAMPS pursues
  - NRC Combined Operating License Application (COLA)
    - Submittal in mid-2023

UAMPS SMARTENERGY

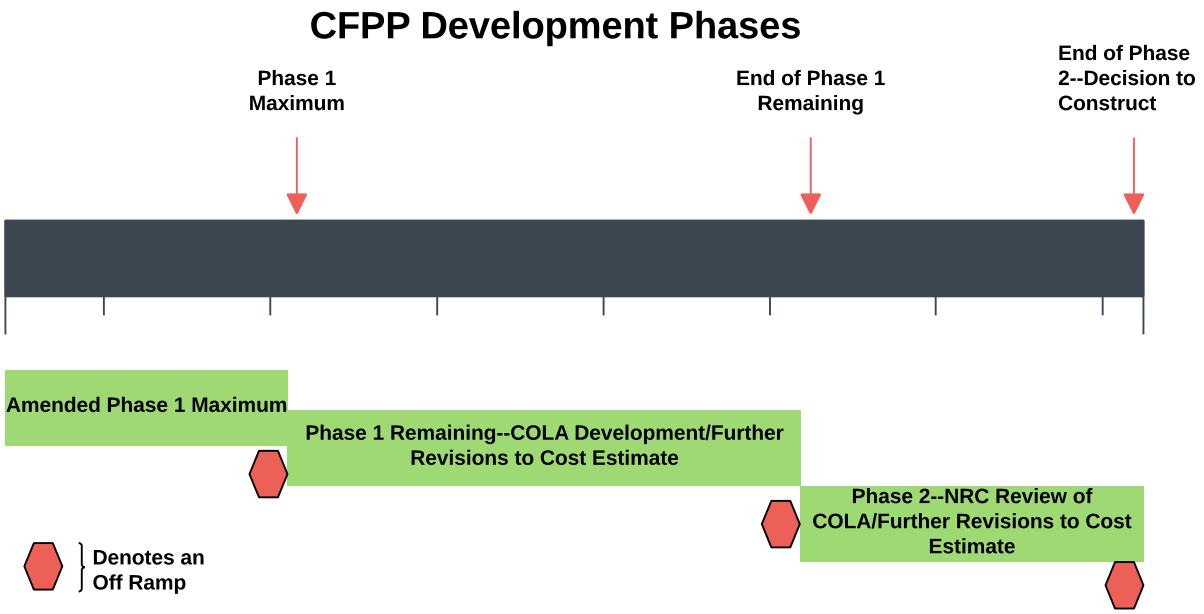
DEPARTMENT OF ENERGY (DOE) SUPPORT

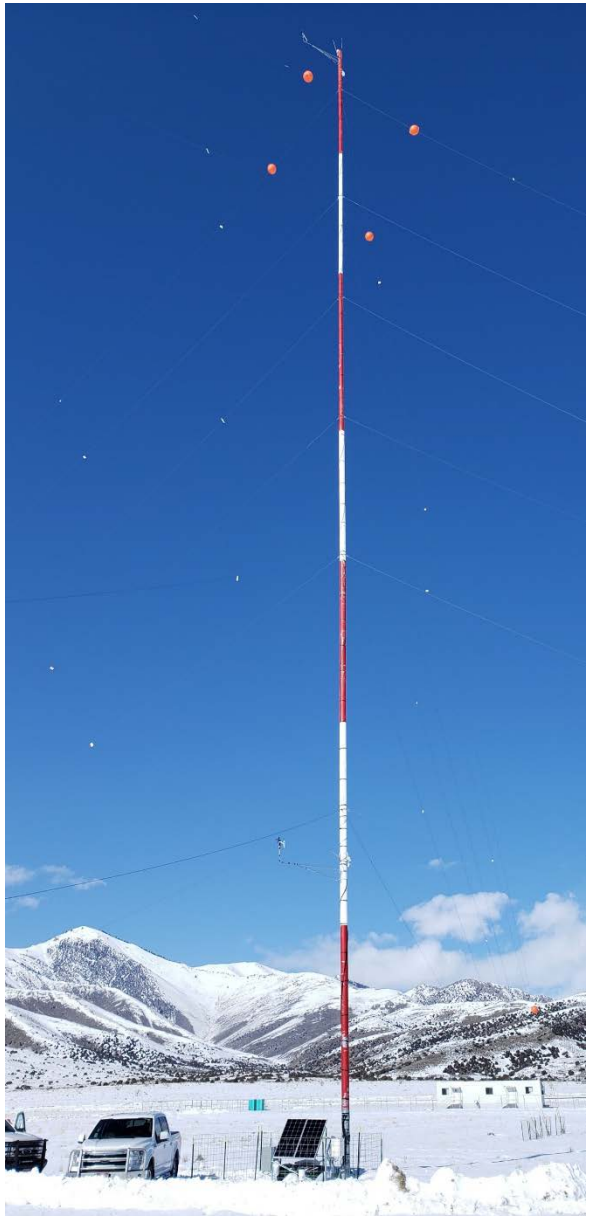
- **UAMPS Existing Cost Sharing Arrangement**
  - 5-year term through 2024
    - $59.5M UAMPS and $59.5M DOE
  - UAMPS is working with DOE on additional cost sharing support through commercial operation date
- **UAMPS, INL and DOE Memorandum of Understanding**
  - Joint Use Modular Plant (JUMP)
    - FY20 Appropriations allocated $10M to JUMP
  - Power Purchase Agreement
- **UAMPS Site Support**
  - Site Agreement
  - Seismic Study (SSHAC)
- **NuScale Design**
  - $226M under original DOE award
  - $90M under recent awards
  - New $525M Award (50/50 cost share)

UAMPS SMARTENERGY

PHASED DEVELOPMENT APPROACH

- Phased development approach
  - Budget monetary caps for each phase
  - Revisions will be made to cost estimate
  - Run ECT
- Each participant has a unilateral right to exit the project at the end of each phase
- Budgets for each phase will be approved by the PMC before proceeding to the next phase
- Each participant's governing board approval is required to proceed to construction
- November adoption of Amended Phase I Maximum budget





CURRENT STATUS OF PHASED DEVELOPMENT APPROACH

- Navigated an off ramp for the Participants in November 2019—all Participants elected to stay in the project and keep their output allocation
  - Small budget to secure finalization of the Development Cost Reimbursement Agreement with NuScale; EPC Development Agreement with Fluor, and agreements with the DOE
- Prioritization of Securing DOE Support for the CFPP—finalizing this support necessary before approving a new budget
- Cooling decision
  - Decision made for dry cooling
- Other Near-Term Work:
  - Finalizing contracts between UAMPS and NuScale and Fluor and UAMPS
  - Shared Services Model for Operations
  - Pre-engagement with NRC on UAMPS NRC permit application—initial site characterization has begun—data collection will feed into UAMPS NRC application
- Two independent owners engineers provide UAMPS project oversight

LEGISLATIVE SUPPORT

U.S. CONGRESS

Recent Advanced SMR R&D Appropriations. Award History				
Year	President Request	House Mark	Senate Mark	Approps/Omnibus Conference
FY 2017	$89.6 M	$96.6 M	$95 M	$95 M
FY 2018	$20 M	$60 M	$0	$60 M
FY 2019	$54 M	$100 M	$90 M	$100 M
FY 2020	$10 M	$100 M	$100 M	$100 M
FY 2021	TBD	TBD	TBD	TBD

- Nuclear Energy Leadership Act
  - Bipartisan bill endorsed by Republicans in the Senate and the New Democrat Coalition in the House

STATES

- Idaho
  - Sales Tax abatement for JUMP module
  - Cap on ad valorem taxes
  - H.C.R. 31 Concurrent Resolution Recognizing Nuclear Power as a Significant Emissions-Free Energy Source
- Utah
  - S.C.R. 6 Concurrent Resolution in Support for Advanced Reactor Technology

QUESTIONS