

## → NuScale Leading the Way in Advanced, Scalable SMR Nuclear Energy

NuScale Power is developing game-changing nuclear technology to produce electricity and also process heat for a variety of industrial applications, including desalination for the production of clean water, to improve the quality of life for people around the world. At the heart of NuScale Power's technology is the NuScale Power Module™ (NPM). The fully-fabricated small modular reactor (SMR) brings together traditional components – the reactor vessel, steam generator, and high-pressure steel containment – into a single, simplified unit. When coupled to its factory-fabricated power generation equipment, each module can produce 50 megawatts of electricity. A NuScale power plant can house up to 12 of these modules for a total output of 600 megawatts. The scalability of the modular design allows customers to increase facility output to match demand. The NPM builds on proven nuclear technology with a focus on integration, simplification, and elimination of systems. The end result is a low cost, highly reliable, and an extremely safe design offering unparalleled asset protection. Once approved, a NuScale plant can be sited closer to electricity or process heat needs.

## → Steady Progress on the U.S. NRC Design Review

The U.S. Nuclear Regulatory Commission (NRC) is actively reviewing NuScale Power's Design Certification Application (DCA) – the first ever submitted for an SMR in this country. Design approval within the targeted 42 months will support the first NuScale deployment by the mid-2020s. As the only SMR technology under review by the NRC, we are well ahead of our nearest rivals. NuScale also prepared for and addressed potential regulatory questions early, including the site boundary Emergency Planning Zone (EPZ), no need for class 1E power systems, and NuScale's proprietary digital instrumentation and control system. The DCA review is proceeding well, with the first phase timely nearing completion.

On January 9, 2018, NuScale announced the NRC's approval of its electrical classification licensing topical report which established the bases of how a design can be safe without reliance on any safety-related electrical power, a design feature required of all operating U.S. nuclear plants. The company received very significant coverage from both traditional news and social media over the announcement of this finding, a first for the U.S. nuclear industry, as well as increased domestic and foreign customer interest. As reported in Forbes magazine, "This is a big deal. It means the reactor just won't melt down or otherwise cause any of the nightmares people think about when imagining the worse for nuclear power. It just shuts down and cools off".

In a related matter, NuScale has informed the Canadian NuScale Safety Commission (CNSC) of its intention to submit an application under the CNSC's pre-licensing vendor design review process. The scope and schedule of this review is under discussion, with a goal of reaching agreement by the end of the second quarter of 2018.

## → Making Good on Federal Commitments and Establishing a Track Record

In 2013, NuScale Power was selected as the sole winner of the second round of the Department of Energy's (DOE) competitively-bid, \$226 million, five-year, financial assistance award to develop nuclear SMR technology.

In 2015, the DOE awarded a \$16.6 million award to NuScale Power for the preparation of a combined Construction and Operating License Application (COLA) for NuScale's first customer, the Utah Associated Municipal Power Systems' (UAMPS) Carbon Free Power Project (CFPP). Work under this award continues.

## → Making Good on Federal Commitments... (cont.)

More recently, NuScale Power timely responded on January 31, 2018 to the DOE's funding opportunity announcement (FOA) issued on December 7, 2017, which supports innovative, domestic nuclear-industry driven designs through cost-shared, cross-cutting demonstration/commercial application R&D activities for all aspects of existing and advanced reactor development. An award under this program, which we expect to be announced in March, will continue our momentum and accelerate development of our revolutionary U.S. SMR technology. These public-private partnerships help to accelerate completion of design, licensing, first-of-a-kind engineering, testing, and deployment.

## → Our First Customer is Moving Forward on the Carbon Free Power Project

UAMPS is planning to develop a NuScale 12-module reference plant in Idaho with commercial operation of the first module in 2026. UAMPS has selected a preferred site at the Idaho National Laboratory through a site-use agreement with the DOE.

UAMPS is a political subdivision of the State of Utah that provides comprehensive wholesale electric-energy, transmission, and other energy services, on a non-profit basis, to community-owned power systems throughout the Intermountain West. Its 46 members include public power utilities in six states: Utah, California, Idaho, Nevada, New Mexico, and Wyoming. The CFPP plant will offer immediate advantages to UAMPS members through safe, carbon-free energy which will replace retiring coal generating assets. The project will provide high-quality jobs and economic development to the region. It will demonstrate the operation and benefits of SMR technology and will also act as a catalyst for subsequent SMR projects throughout the West.

In December 2017, UAMPS approved distribution of power sales contracts to the 34 UAMPS members participating in the CFPP. NuScale will support UAMPS throughout the first quarter of 2018 as it seeks sufficient commitments to move into the next phase of CFPP project development. So far we have supported 34 member public meetings with a further 16 planned. Two members have executed the power sales contracts and six more members have publicly noticed votes to approve execution. UAMPS has requested its 34 participating members to approve execution of the power sales contracts by April 1, 2018, although we expect May 1, 2018 is more likely.

## → Ready to Deploy the Facility

### ***Supporting Project Development and Building the Supply Chain***

NuScale continues to support the Tennessee Valley Authority's (TVA) Early Site Permit application, which seeks NRC approval to deploy an SMR at the Clinch River Site in Tennessee. NuScale provided the technical basis to seek approval of a site-boundary EPZ through an NRC exemption request to the standard 10-mile EPZ requirement. TVA used the NuScale Power SMR design as the basis for this exemption because it is the only SMR design with this level of detailed technical information available.

NuScale Power is working to extend its supply chain network. Recently, NuScale signed the first contract with Concurrent Technologies Corporation as the operator of the newly established Center for Advanced Nuclear Manufacturing (CANM).

The contract covers prototyping advanced manufacturing processes for NuScale's innovative helical coil steam generators. The concept for CANM, located in Johnstown, PA, was endorsed by a working group of the U.S. Nuclear Infrastructure Council as an advanced manufacturing research center. The Center's mission to apply advanced manufacturing approaches to SMR innovations fills an important gap needed to transition research and development to the shop floor, both cost effectively and at the highest quality standards.

In addition to this prototyping effort, NuScale has actively been working towards selecting a NPM fabrication partner. After launching a request for proposal in June 2017, five companies, both domestic and international, have submitted interest. NuScale expects to make a selection by mid-2018.

## → **Readying the... (cont.)**

Finally, NuScale is using its Concept of Operations to inform the design through the performance of Integrated Systems Validation (ISV) tests in the fall of 2018. This will be the first time a U.S. nuclear plant supplier has performed an ISV during the design certification phase, and it will contribute to NuScale's strategy of providing customers with a mature design prior to procurement and construction.

### ***Ensuring Cost-Effective Resiliency***

NuScale Power study results indicate impressive resilience to a variety of events, including loss of off-site power

and ability to provide first responder power, earthquakes and other natural phenomenon, aircraft impacts, and cyberattacks. NuScale is working to reduce the cost of its reference facility. We are actively examining opportunities to reduce the Levelized Cost of Electricity (LCOE), including reductions in control room and security staffing, a reduction in the size of the EPZ, and lowering capital cost risk through value engineering driven design and innovation. Success in these areas will save plant owners hundreds of millions of dollars over the life of a plant.

## → **Meeting the Needs of an Emerging Global Market**

Conservative estimates predict approximately 55-75 GW of electricity will come from operating SMRs around the world by 2035. That's the equivalent of more than 1,000 NuScale Power Modules. In addition to focusing on other business development in the U.S., there are promising opportunities internationally. NuScale has become a leading contender for bringing its SMR to the United Kingdom (UK) market and recently responded to the Request for Information issued by the Expert Finance Working Group, which has been tasked by the Government to advise on how "small and advanced reactor projects" could raise investment in the UK. NuScale Power is also exploring opportunities in Eastern Europe, Southeast Asia, and the Middle East.