

Public Invited to Informational Meeting on Small-Scale Nuclear Power

Local News

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GRAYS HARBOR COUNTY, Wash. - Grays Harbor PUD Board of Commissioners will hold an informational work session on small-scale, modular nuclear power plant technology and the potential development of a project using this technology in Washington State.

The Grays Harbor PUD is looking toward the future, planning now for the energy we will need to serve our customers tomorrow. That means looking at different types of technology for clean energy resources. Monday, August 24, 2009, during the regularly scheduled work session, the Grays Harbor PUD Board of Commissioners will learn more about a new type of nuclear power plant design, which uses small pre-fabricated modular 45 Megawatt units that allow the plant to be scaled to a size based on energy needs.

When: Monday, August 24, 2009 at 3:30pm.

Where: Nichols Building, 220 Myrtle Street, Hoquiam

Energy Northwest, a joint operating agency made up of public utilities, will provide information to the Board of Commissioners on modular scalable nuclear plants. Energy Northwest is seeking potential participants in a proposed project using this new technology in Washington State. Those interested in learning more about this technology and the opportunity to develop a project in Washington State, are welcome to attend the work session at 3:30pm on Monday, August 24th in Nichols Building located at 220 Myrtle Street, Hoquiam.

Interest in Small-Scale Nuclear Power is on the rise:

A company called NuScale Power, Inc., is commercializing, a modular, scalable 40 Megawatt electric Light Water Reactor nuclear power plant. Each NuScale module has its own combined containment vessel and reactor system, and its own designated turbine-generator set. NuScale power plants are scalable, allowing for a single facility to have just one or up to 24 units. In a multi-module plant, one unit can be taken out of service without affecting the operation of the others..

NuScale plants are compact. Each component is modular and is designed for fabrication off-site at numerous existing facilities in the USA and around the world. Construction is less complex, lead times shorter, and costs more predictable and controllable. The NuScale containment and reactor vessel measures approximately 60 feet in length and 14 feet in diameter. It and all other modular components are transportable by barge, truck or rail.

In a NuScale system, the reactor pressure vessel contains both the nuclear fuel, or reactor, and the steam generators. Water in the reactor circulates using a convection process known as natural circulation. This is also described as a passive safety system because no pumps or other mechanical devices are required to circulate the water.

NuScale secured rights to the design through a technology transfer agreement with Oregon State University. OSU developed a one-third scale, electrically-heated, fully integrated test facility that replicates the entire NuScale system at temperature and at pressure. The tests in this facility have confirmed the operation of the natural circulation cooling system and have demonstrated the effectiveness of the NuScale passive safety systems.

Off-the-shelf technologies

simplify systems and design

The nuclear reactor and steam generator, also known as the Nuclear Steam Supply System (NSSS), is a self-contained assembly of reactor core and steam generator tube bundles within a single pressure vessel. Throughout the design, every effort was made to employ existing off-the-shelf technologies to minimize, and in many cases eliminate, the need for additional research and development. The primary coolant (water) is moved by natural circulation, eliminating the need for primary coolant pumps and external power. The NSSS and the passive safety heat removal systems are housed within the compact steel containment.

U.S. fabrication helps accelerate

modular manufacturing time

The reactor module, consisting of the containment and its contents, can be entirely fabricated at existing manufacturing facilities in the U.S. As a result, construction can be done on a significantly

compressed schedule. Compared to a typical PWR plant, the NSSS parameters are much lower. Thermal rating of the reactor is several times smaller. Coolant pressure and steam pressure is about 50% lower than that of a typical PWR. The power generation system is greatly simplified. It implements a turbine-generator set and condensate/feedwater pump. The entire turbine-generator can be replaced with a spare unit for overhaul. Additionally, NuScale plants will use nuclear fuel assemblies similar to those in today's commercial nuclear plants. The only difference is the length of the fuel assemblies (6 feet for a NuScale system instead of the traditional 12 feet) and the number of assemblies in the reactor.

Regulatory procedures and timeline

Licensing – Requires federal U.S. Nuclear Regulatory Commission to approve Design Certification for reactor and Construction & Operating License prior to construction. Initial pre-application review meeting was held with the NRC in July 2008. NuScale anticipates filing Design Certification application in 2010.

Initial Operations – NuScale forecasts the first plant can be online producing electricity from 2015 to 2016.