



Interview with EPRI nuclear VP

EPRI, DOE Coordinating Plans To Extend Reactor Operations By 20 Years

DOE and the electric power industry's non-profit research arm, the Electric Power Research Institute (EPRI), have initiated talks on coordinating industry and government research aimed at extending the safe operation of the nation's current fleet of 104 nuclear reactors an additional 20 years, according to EPRI's newly appointed nuclear power sector vice president, Neil Wilmschurst, in an exclusive interview with EnergyWashington.

EPRI believes the coordination is necessary as industry and DOE develop separate light-water reactor "sustainability research and development plans," or "road maps," says Wilmschurst. Coordination would ensure better resource use and avoid overlapping research to define key technical risks that industry will have to evaluate as companies make investment decisions to keep their fleets running beyond the 60-year limit for license renewal, according to Wilmschurst.

DOE and EPRI want the current fleet of reactors to both augment new reactor builds and to complement renewables as part of the nation's clean-energy portfolio beyond mid-century, according to Wilmschurst and the DOE plan. Extending the life of these reactors beyond their 60-year licensing period is considered by DOE and the industry to be essential if the nation expects to meet the 20 to 40 percent increase in U.S. electricity demand expected by 2030, when most of the current fleet is scheduled for retirement, according to Wilmschurst.

The nuclear industry will be hard pressed to meet the demand for low-carbon generation beginning in the next two decades without extending the existing nuclear fleet's lifetime from 60 to 80 years, given that the current fleet represents 20 percent of the nation's total generation capacity and 70 percent of current U.S. low-carbon power generation, according to Wilmschurst and program documents from DOE's nuclear energy office. Most of the new reactor builds will not come online soon enough to fill the gap left by the current fleet's retirement, according to DOE estimates underscored by Wilmschurst.

It will be important to keep these plants producing electricity as the new fleet is ramping up, he says. Industry and DOE need to examine how to "maximize" the current fleet "to complement the new nuclear build, the wind build, all the other renewable activity going on as a portfolio of activities to address climate change," says Wilmschurst.

"It's not that we don't believe the new reactors are coming," he says. "Absolutely, there is a strong case for new nuclear build. Our perspective for long-term operation is, if we can make the safety and business decisions to run the fleet for longer than 60 years we can substantially reduce the carbon footprint for the electricity sector by continuing to run those assets."

EPRI will use the development of its reactor sustainability plan, that Wilmschurst refers to as a 60-to-80 year reactor "roadmap," to help frame the EPRI-DOE relationship under the agency's Light Water Reactor Sustainability Program, and prevent DOE and industry from conducting duplicative research, according to Wilmschurst. "We all fully recognize the need for this tight coordination," he says. "The important thing we need to do this year-and it's a discussion that is happening now [with DOE] — is developing a coordinated industry road map . . . [that defines] who's doing what for the life-beyond-60, long-term operation, light-water sustainability [program]," he says.

"Clearly, there is no net benefit to anyone if EPRI and DOE are duplicating research," says Wilmschurst. "So we work very close with DOE and others, both nationally and internationally, to ensure that a clear picture [emerges] of the technical issues that need to be addressed" and to develop a clear understanding of "who is doing what and how they build up each other and connect," he says. "So, that is going to be a big focus of the EPRI nuclear program going forward."

He expects the road map to be completed sometime this year, but could not be more specific about the date.

"[DOE's] light-water reactor sustainability [program] is a parallel kind of activity with a project at EPRI we call 'long-term operations,' where we're looking at what research is needed to understand technical issues that will confront us operating the current fleet from where we are today out to 60 years . . . and potentially . . . out to 80 years," says Wilmschurst. "Understanding potential technical challenges and characterizing them to assure the continued safe and economic operation of the current fleet" will be the focus of the DOE-EPRI coordination, he says. "We just need clarity on what technical challenges we will face."

Wilmschurst says the industry needs to understand the technical risks in order to make the investment decisions

necessary to keep the fleet operational for 80 years. An investment decision will need to be made in the next 5 to 10 years, depending on where plants are in their life cycle, he says.

Some examples of areas where EPRI and DOE will coordinate efforts in identifying technical risks is concrete and concrete aging, says Wilmshurst. "For example, As a plant goes to 40, 50, 60-plus years, is there an aging effect on the concrete structures?" he asks. "We are trying to characterize what aging effects we need to look for as we make these technical and safety decisions."

A DOE source says EPRI is part of a DOE steering committee that oversees development and implementation of the agency's reactor sustainability plan for 2009-2013 that was released last year.

DOE wants Congress in its FY 2011 appropriation to more than double the amount of money the department received for the Light Water Reactor Sustainability Program in last year's budget. The funding request for FY2011 is \$25.8 million compared with the current fiscal year appropriation of \$9.8 million for the program, according to DOE.