Nuclear’s Unfulfilled Promise: Dumping Bellefonte’s Four Unbuilt Reactors

By Peter A. Bradford

Even as Energy Secretary Ernest Moniz in May convened a “summit” to discuss more governmental assistance to the nation’s troubled nuclear power industry, the recent announcement by the Tennessee Valley Authority (TVA) that it is selling its northern Alabama site, where plans for the unbuilt Bellefonte reactors should have sobered the summiteers. Even if the site’s appraised value of $36 billion in customers’ money spent on them in addition to some sweeteners from US taxpayers. But the talking shop turns out to be this warworks of misallocation and waste. And the two original Bellefonte reactors were the last ordered from Babcock & Wilcox—designers of the once heralded mixed-oxide (Molten Island) (TM) in 1979. They therefore received special scrutiny following the TMI accident. Even before TMI things went wrong, construction percentages had greatly delayed. By 1984, eight units—ranging from 44 percent to 3 percent complete—were cancelled.

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The TVA reunited with Babcock & Wilcox to pursue yet another new nuclear idea in a 2011 “letter of intent” with Generation mPower (a joint venture of Bechtel, Babcock & Wilcox and AREVA) to build six small reactors at Clinch River, in Oak Ridge, Tennessee, the site of TVA’s multibillion dollar fission fuel effort to build a breeder reactor—a proposal by President Carter and terminated as unnecessary and wasteful by Congress in 1983. The Clinch River reactor’s cost estimate rose from $500 million in 1972, to $41 billion in 2014, with the original schedule due to a lack of investors or customers.

The TVA resource plan showed no need for baseload capacity beyond what could be supplied by the existing 2 to 20 years. Hence, the decision to terminate Unit 1 and sell the site.

Meanwhile, meanwhile,fossil-fueled waste swept over Bellefonte. In 2002, the Bush Administration announced its “Nuclear 2010” program, designed to produce at least two new plants by 2010 and to demonstrate that the new licensing process and advanced designs would bring an end to the cost overruns and delays that had plagued US nuclear power since the mid-1970s. “Nuclear 2010” was to have a $10 billion in customers’ money spent on them in addition to some sweeteners from US taxpayers.

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The Energy Department announced Generation mPower’s $79 billion intention toward completion of its small modular reactor design. In 2014, Babcock & Wilcox announced that it had lost interest in proceeding with the project on anything like the original schedule due to a lack of investors or customers. The company’s continued support as the enabling lead of Washington’s nuclear innovation pork barrel, the TVA has formally killed the project for an early site permit (but not a construction license) for up to 800 megawatts worth of small modular reactors at Clinch River. At his May 19 nuclear “summit,” Energy Secretary Moniz had pledged his department’s continuing support—meaning that US taxpayers will pick up a substantial share of the TVA small modular reactor’s permitting costs. Congress is seeking to add additional support.

At the same “summit” many in the nuclear industry complained that renewable energy enjoys disproportionate federal support and dysfunctional markets. Secretary Moniz promised that his fellow longtime MIT nuclear cavalryman John Deutch would soon produce a report on how best to “incentivize continued operation” of endangered reactors because they are essential to low carbon reliability. The role the regulation will be familiar is to Deutch Carter Administration Undersecretary of Energy who has presided over his share of meetings at which dozens of subsequently cancelled reactors were wrongly forecast to be essential for: 1) freeing the electric sector from oil dependence; 2) keeping the nation’s lights on; and 3) lowering energy costs.

Closing reactors abruptly with no measures in place to assure that their replacements will be within acceptable CO2 limits is indeed no way to protect against climate change, but Secretary Moniz isn’t holding summits to figure out the best ways to choose among available electric resources. Instead, it has aligned itself with the political pull on the powerful industry front-group “Nuclear Matters” parades through state capitals—demanding fresh markets and determined to avoid competing head-to-head with other low-carbon alternatives for that support.

While these plans show on roll, actual experience suggests the wisdom of a more competitive path. Other power options supply are rapidly falling in cost, and large-scale power systems are starting in many countries. Even new combinations of existing resources are proving competitive in low-carbon contexts. In New York State, for example, wind energy is competitive in low-carbon contexts. In New York State, for example, wind energy is competitive in low-carbon contexts.