America's Eggshell Nukes

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The US Nuclear Regulatory Commission has made it clear that America's 104 licensed atomic power reactors are not accidents waiting to happen.

They are accidents in progress.

And proposals to build a "new generation" of reactors are not mere scams. They comprise a predictable plan for permanent national bankruptcy.

On November 10, the USNRC delivered a stunning reprimand to Japanese-owned Westinghouse, which proposes building new atomic reactors here and around the world. The Commission warned that the containment design for the new AP1000 did not include a "realistic" analysis of its ability to withstand a jet crash.

An NRC rule introduced in 2009 requires that the integrity or cooling of used fuel, the containment and the cooling of the reactor core on new reactors must be able to withstand the impact of a large passenger jet. The failure of Westinghouse to explain its case amounts to a violation of that requirement.

New AP1000 reactors are proposed for numerous sites in the US, including Georgia's Vogtle, which has received $8.33 billion in loan guarantees from the Obama Administration. Site work has begun at Vogtle, which already houses two licensed reactors. But the new designs still lack final approval. At least one AP1000 plant is already under construction in China. Similar concerns about the AP1000 design (as well as France's EPR) have been raised by regulators in the UK.

The hotly debated ability of proposed new commercial reactors to withstand a jet crash underscores a stunning reality: not one of the 104 old ones now operating in the US has the proven ability to do so. The reactor industry successfully fought off such requirements, complaining they would make the plants too expensive to build. More than two dozen US General Electric Mark I containments are rated as weaker than the structure that blew off Chernobyl Unit Four during its 1986 catastrophe.

Owner-operators now want license extensions that would keep those same reactors going for 20 or more additional years. Under intense multi-decade stress from heat and radiation, all suffer dangerously from embrittlement of critical metals and degradation of structural concrete.

Because spent fuel pools are overflowing, thousands of tons of highly radioactive fuel rods now sit in "dry casks"---concrete boxes with vent holes. Neither the pools nor the casks can withstand a jet crash, or even a low level terror attack.

"In 2003, my colleagues and I reported that the drainage of a spent fuel pool by a jet crash could lead to a catastrophic spent fuel radiation fire that could render a 27,000 sq mile area uninhabitable. This is larger than the combined states of Maryland, Massachusetts and New Jersey," says reactor expert Robert Alvarez, Senior Scholar at the Institute for Policy Studies and former Senior Policy Advisor to the US Secretary of Energy, 1993-7.

"A year later the National Academy panel, convened to address our study, warned that reactor ponds were vulnerable to terrorist attack and catastrophic radiological fire," Alvarez continues. "In particular, there are 35 Boiling Water Reactors in the U.S. that have elevated spent fuel pools several stories above ground. The pools are not protected by thick concrete containment as are the reactors. They currently hold about four times the amount of highly radioactive spent fuel than their original
designs."

At Vermont Yankee, New York's Indian Point and other aging reactors, underground pipes are known to be leaking significant quantities of tritium, cesium and other deadly isotopes. Health researcher Joe Mangano has linked such emissions to serious human health problems at nuke sites throughout the US.

Meanwhile, new reactor pushers want Obama to cave on minimal financial requirements for federal loan guarantees. According to Alvarez, the General Accounting Office and Congressional Budget Office have both estimated that at least half the loans given for new nuke construction will fail.

But even marginal fee requirements for a proposed project at Calvert Cliffs, Maryland, has prompted Constellation Energy to back out. Michael Mariotte of the Nuclear Information & Resource Service, among others, has speculated that Constellation wanted out of a plant it knew to be a loser, and used the loan fee as an excuse.

If Obama slashes builder-owner loan liability, the virtually certain failure of new reactor projects will dump billions of dollars of liabilities onto taxpayer and ratepayers.

The plants are also primarily insured against accidents and terror attacks by the public. The industry's liability---which could be in the trillions---is limited to $11 billion.

So continued operations at old reactors, or construction of new ones, could plunge the United States into permanent bankruptcy.

Reactor owners are now constantly pushing for license extensions. And Obama is soon expected to try to ease the loan guarantees for new ones.

Our economic future and physical health depend on stopping them both.

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