Construction Schedules May Be Delayed – excerpted from:

Business Risks and Costs of New Nuclear Power

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Business Risk #2: Construction Schedules May Be Delayed

The capital cost estimate above assumed the same beginning and ending dates as the most optimistic schedule put forth in new U.S. nuclear plant applications. It is therefore still a very conservative cost estimate.

If the project were to be delayed for any reason, "brick & mortar" costs would rise significantly, as every year that goes by brings more increases in construction costs, and these cost escalations have been running very high for power plant construction costs. As noted by CERA in its May 2008 Press Release on the PCCI data, "a power plant that cost $1 billion in 2000 would, on average, cost $2.31 billion today."

The Costs of Capital for funds used during construction (financing costs) would also dramatically increase, as each year of delay involves more financing costs, for a project that is still unproductive until it comes on line.

As overall costs spiral upward, they may materially exceed available funding lined up to finance a project. It could then become impossible to raise enough funds to complete the project, and the project may need to be abandoned partway after billions have already been spent. This actually happened with several nuclear projects in the last generation.

History of Nuclear Construction Delays

The nuclear industry's long delays in the 1970's and 1980's are legend. Nuclear plants typically took at least 10 years and in some cases almost 15 years to complete. A classic example was the Vogtle facility near Augusta, GA whose 2 Westinghouse plants (2400 MW total) took over 14 years to complete, and cost $8.87 billion by the time they were finished in 1989.[36]

Many utilities did not even finish their projects. After literally spending billions, those utilities abandoned or suspended their nuclear projects, as allocated funds ran out, and it proved more feasible to find alternatives than to finish the nuclear projects. The worst example was the Washington Public Power Supply System (WPPSS) which experienced massive cost overruns and scheduling delays. At the same time, load growth came in lower than projected. WPPSS abandoned construction on 4 of the 5 reactors it had begun, and defaulted on $2.25 Billion in bonds, the largest default in the history of the municipal bond market.[37]

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[36] *New York Times*, "Atomic Balm?", 16 July 2006.
http://www.nytimes.com/2006/07/16/magazine/16nuclear.html

[37] HistoryLink.Org, "Washington Public Power System"
http://www.historylink.org/index.cfm?DisplayPage=output.cfm&File_Id=5482

A Bad Start for New Generation Nuclear

Will it be any better for new generation reactors? Current experience with projects now underway indicates the nuclear industry's pattern of extensive delays may be repeating itself. Finland's effort to build the world's first new generation nuclear reactor at Olkiluoto is now over 2 years behind schedule after beginning in 2005, and construction cost estimates have already overrun by at least one billion euro. The recently-released "2008 World Nuclear Industry Status Report – Global Nuclear"(16 Sep 2008) surveyed the current global status of all new nuclear projects, and states "two thirds of the under-construction units have encountered significant construction delays, pushing back officially announced start-up dates."[38]

The Wild Card: Organized Opposition

An unpredictable but highly significant factor that has historically affected nuclear plant construction schedules is the existence of organized opposition. Moody's Investor Services has stated "We believe the first COL filing will be litigated, which could create lengthy delays for the rest of the sector." If organized opposition once again uses all available avenues to try to stop nuclear power, this may pose a highly significant Business Risk of delay in project schedules.

Theory Vs. Reality When Sunk Costs are Massive

Economic theory says when making a decision about what to do next (e.g when you realize the project is coming in much more costly than planned), you should ignore "sunk costs" because regardless of what you do now, you cannot "unspend" those monies. The reality, however, is that abandoning a project you have already spent a lot of money on can be next to impossible. As a nuclear reactor is all one unit, you cannot build 'half a reactor" and ever get any electricity. Pressure to continue the uneconomical course is therefore intense, precisely because so much money has already been spent which will all be wasted if the project is not finished.

Contrast this to a Demand Side Management/Renewables scenario, whose costs are modular and short-term. If course corrections are needed, it is possible to quickly change course, without abandoning an expensive asset that will never produce any electricity. A utility might build 100 MW of solar, which will produce electricity whether or not the utility builds another 100 MW.

Nuclear power's greatest costs are its capital costs, which are highly sensitive to construction delays. The prospect that nuclear construction schedules will prove to be optimistic therefore poses a significant Business Risk. If delays or other reasons cause significant cost overruns, the cost to complete a nuclear project may materially exceed funds lined up to finance the project. Yet, an unfinished reactor produces zero kWh's. A utility may not be able to withstand the impact of such a failure and remain a viable business entity.[39]

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[38] 2008 World Nuclear Industry Status Report, 16 Sep 2008, Bulletin of Atomic Scientists http://www.thebulletin.org/web-edition/reports/2008-world-nuclear-industry-status-report

[39] "Bankruptcy Filed by Leading Utility in Seabrook Plant", *NY Times*, Jan 29, 1988