Nuclear Information and Resource Service

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Best of the Nuclear Power Boondoggles: Yesterday and Today

Shoreham nuclear power station on Long Island, New York was ordered by Long Island Lighting in February 1967. It received its commercial operating license from the U.S. Nuclear Regulatory Commission (NRC) on April 21, 1989 at a final cost of $5.5 billion.[1] It was permanently shut down on June 28, 1989 without ever commercially producing electricity, due to the impossibility of evacuating Long Island in the event of an accident. The Long Island Power Authority was created to buy the reactor for $1, and then decommission it.

The Nine Mile Point-2 reactor in Oswego, New York was ordered in September 1971 by Niagara Mohawk and began construction in June 24, 1974. It received its commercial operation license on March 11, 1988 with the final cost of construction at $6.3 billion.[2]

Seabrook nuclear power station in Seabrook, New Hampshire, with its emergency planning zone extending into Massachusetts, was originally estimated at $900 million for two 1150-megawatt units. It was ordered in June 1972 by Public Service Company of New Hampshire. The construction permits were issued on July 7, 1976. Unit 2 was cancelled in 1989 at a sunk cost of $900 million. Unit 1 received its commercial operating license on August 19, 1990 at a cost of $6.5 billion.[3] Four utilities, including Public Service of New Hampshire, entered into bankruptcy as a result of the tremendous cost overruns.

The three-unit Millstone complex in Waterford, Connecticut garnered national news attention as the cover story of *Time* magazine when it was revealed by safety conscious workers that Northeast Utilities violated safety procedures to boost capacity factors by shortening its refueling outage.[4] As an example, NU was sending workers into containment after only 65 hours following shut down for refueling rather than the specified 250 hours. The refueling floor was so hot that the workers' rubber boots melted to the deck. Millstone Unit 1 withdrew its operating license and permanently shut down on July 21, 1998 for failure to reconcile safety significant differences between its as-built and design basis construction.

Industry claims that increased capacity factors underscore nuclear power's viability come at significant risk to public safety. An NRC Inspector General Report documents the failure of NRC oversight of Consolidated Edison's production agenda and deferred inspections that resulted in a steam generator tube rupture accident at the **Indian Point nuclear power station** in Buchanan, New York on February 15, 2000.[5] Similarly, the U.S. Government Accountability Office issued a 2004 report on the failure of NRC safety oversight to capture FirstEnergy Nuclear Company's financial agenda that allowed operation of the **Davis-Besse reactor** near

Toledo, Ohio with severe corrosion of the reactor pressure vessel head as the result of deferred inspections and maintenance procedures in order to maximize its capacity factors.[6]

Washington Nuclear units 1, 3, 4 and 5 were ordered by Washington Public Power Supply System between 1972 and 1974 and were cancelled from1982 through 1995. "In addition to concerns about the safety and cost effectiveness of nuclear power, costs of the four plants grew. By 1979, the plants were 18 months behind schedule and the price had doubled due to mismanagement. In 1982, the WPPSS board suspended work on plants 4 and 5. Plants 1 and 3 were mothballed too, and finally cancelled. WPPSS defaulted on $2.25 billion in bonds. Tacoma paid $40.3 million to settle its share of the debacle. That was passed along to ratepayers in April 1983 as a 15 percent surcharge."[7]

Trojan nuclear power station in Rainer, Oregon was ordered by Portland Gas & Electric in November 1968 and issued its operating license on November 21, 1975. It was permanently closed on November 9, 1992 after Portland Gas & Electrical determined that the capital cost of improvement on extensive age-related degradation of reactor systems, structures and components was too expensive. "The only nuclear power plant in Oregon shut down twenty years early, after a cracked steam tube released radioactive gas into the plant, in 1992. It cost $450 million to build the plant, and it is expected to cost the same amount, at least, to finish decommissioning the plant. In 2001, the 1,000 ton 1,130-Megawatt reactor was encased in concrete foam, and coated in blue shrink-wrapped plastic, then shipped up the Columbia River on a barge to the Hanford Nuclear Site in Washington, where it was placed in a 45 foot deep pit, and covered with six inches of gravel, making it the first commercial reactor to be moved and buried whole. The plant went on line in 1976, and was said to have been built on an Indian burial ground. When it shut down 16 years later, it was the largest commercial reactor to be decommissioned."[8]

Watts Bar nuclear power station units 1 and 2 near Spring City, Tennessee were ordered by the Tennessee Valley Authority in August 1970 and issued construction licenses on January 23, 1973. Construction on Unit 2 ceased without the withdrawal of the construction permit. Construction on Unit 1 was finally completed after 23 years of construction. Unit 1 was issued a commercial operation license on May 27, 1996 with a final price tag of $6.8 billion.[9]

Comanche Peak Units 1 and 2 in Glen Rose, Texas were ordered in October 1972 and issued construction permits on December 19, 1974. Construction was finally completed and the reactors brought into commercial operation on August 3, 1990 and August 3, 1993, respectively, at a total cost of $9.1 billion.[10]

General Electric's Advanced Boiling Water Reactor (ABWR) is currently under construction by Taipower in Lungmen, Taiwan. Construction and financing of the "advanced" design is following a similar trend in failing to meet Time-to-Completion schedules and Cost-of-Completion estimates. General Electric was awarded its contract on May 25, 1996 to begin construction of the two 1300 megawatt electric ABWRs. Originally slated for commercial operation in 2004, early in 2001 the operating date slipped to mid-2006 for unit 1 and mid-2007

for unit 2 due to government procurement problems and the rising cost of raw materials. Taipower recently announced that the anticipated commercial operation dates have again slipped to mid-2009 for unit 1 and 2010 for unit 2. As a result of construction delays, the projected cost has been steadily rising, forcing Taipower to file for an additional U.S $1.5 billion at the end of 2003 and yet another U.S. $1. 5 billion in 2005.[11]

Paul Gunter, May 20, 2005

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[1] Historical Costs of Nuclear Power in the United States, Komanoff Energy Associates, 1992
[2] New York Times, May 28, 1987
[3] Associated Press, May 31, 1990
[4] TIME, March 04, 1996
[5] Office of the Inspector General, NRC's Response to the February 15, 2000, Steam Generator Tube Rupture at Indian Point Unit 2 Power Plant, Case No. 00-03S, August 29, 2000
[6] Government Accountability Office, Nuclear Regulation: NRC Needs to More Aggressively and Comprehensively Resolve Issues Related to the Davis-Besse Nuclear Power Plant Shutdown, GAO 04-415, May 2004.
[7] HistoryLink.org http://www.historylink.org/essays/output.cfm?file_id=5155
[8] The Center for Land Use Interpretation http://ludb.clui.org/ex/i/OR3142/
[9] Washington Post, November 11, 1995
[10] Nucleonics Week, April 19, 1990
[11] Nucleonics Week, May 05, 2005