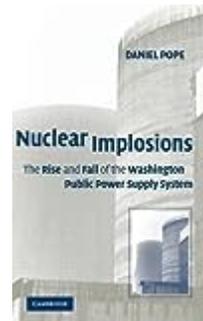


**Daniel Pope.** *Nuclear Implosions: The Rise and Fall of the Washington Public Power Supply System.* Cambridge: Cambridge University Press, 2008. xix + 282 pp. \$85.00 (cloth), ISBN 978-0-521-40253-8.



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## Lessons from a Colossal Energy Planning Failure

In 1983, the Washington Public Power Supply System (the Supply System or WPPSS) defaulted on \$2.24 billion in municipal bonds, the largest bond default in American history. Within ten years, WPPSS had shuttered four nuclear power plants before they had reached completion. Today, environmentalists, energy consultants, and politicians are reconsidering the potential of nuclear energy to provide electricity without contributing to global warming and dependency on foreign oil. In his newly published study, *Nuclear Implosions*, Daniel Pope suggests that the experiences of the Supply System should give pause to energy planners currently promoting nuclear power. He argues that the WPPSS story is one of "misguided planning that exacted a high financial cost and that the lessons are, at best, ambiguous for the future of nuclear power" (p. xv).

In the 1950s, utility districts formed the Supply System and obtained authorization from Washington State to assure a continuous role for public power in the state. The Supply System and member utilities embraced a nearly universal consensus that the region's postwar

growth had resulted directly from access to cheap and plentiful electricity, powered mostly by large federal dam projects and marketed by the Bonneville Power Administration (BPA). By the end of the 1950s, projections that energy demand would outstrip available hydropower in the Pacific Northwest—including Washington, Oregon, Idaho, and Montana—encouraged regional planners to devise strategies for bringing thermal power facilities into the system. With the nearby Hanford Site housing several nuclear reactor piles, and a growing national fascination with a source of power that would be "too cheap to meter," the Supply System planners jumped onto the nuclear bandwagon (p. 37). By 1976, WPPSS, BPA, individual utilities, and political leaders had all endorsed plans to build five nuclear power plants, funded with municipal bonds issued by the Supply System and backed by the utilities and, for three of the plants, the BPA. The financing program entailed "dry hole" agreements by the utilities to pay for the plants whether or not they produced power, and a "take or pay" agreement from BPA offering essentially the same assurance (pp.85, 98).

Like many other nuclear power projects around the country, the Supply System plants suffered numerous slowdowns, cost overruns, and technical setbacks. By 1982, the plants were years behind schedule and projected costs were four times over the original budget. As utilities raised electricity rates to meet their commitments to the financing scheme, ratepayers became angry. At the same time, the growth of electricity demand had slowed dramatically and the region began to anticipate a long-term energy surplus from existing power sources. Nuclear power was falling into disfavor while fossil fuel prices dropped. The Supply System bond default resulted in the shutdown of four of the five plants under construction and led to ten years of complex litigation. Bondholders ultimately received twenty-six cents on the dollar for their investment, and BPA customers are still paying for two of the incomplete power plants. To its credit, WPPSS continues to operate the only nuclear power plant serving the Pacific Northwest, one of the original five planned for the system.

To tackle this complex narrative, Pope takes a primarily chronological approach in which he thoroughly investigates key features of the WPPSS power program. He identifies the Pacific Northwest region's commitment to cheap and plentiful electricity as central to economic growth, examines the early plan to build three large nuclear power plants, describes the decision-making process that led to the addition of two more plants, discusses the characteristics of the agency and the projects that precluded successful outcomes, and delineates the circumstances that led to the termination of two projects in 1982. Pope then skillfully disentangles the intricate and potentially stupefying details of the multiple lawsuits that resulted from the program shutdowns before he concludes with a brief profile of the electricity market today. This approach successfully lays out the events, structural relationships, shifting economic and political demands, and organizational limitations that shaped the Supply System story.

Scholars have attributed the problems of nuclear power plants across the country to a combination of a burdensome regulatory process, the lack of standardized plant designs, citizen protests, and the continuous introduction of new safety and environmental regulations. In addition, high inflation during the 1970s increased the costs of power plants while citizens responded to the energy crisis by slowing consumption and reducing the demand for new sources of electricity. Pope illustrates all of these forces in play in the Pacific Northwest, but further identifies challenges specific to the Supply System.

He invokes the literature of organizational analysis to argue that very large-scale technically complex projects, by nature, run a high risk of failure. This complexity, coupled with the very small, provincial, and inexperienced staff of the Supply System, practically doomed the nuclear projects from the outset. Complex financing arrangements were overwhelmed by ever-increasing debt to pay for ever-increasing costs as delays accrued. As WPPSS approached the decision to terminate the nuclear power plants, the litigation began. Almost every participant, from the utilities to the ratepayers to the banks, was suing or being sued by one of the others. As the author states, "WPPSS misdiagnosed the region's energy problems as a crisis of supply and misprescribed large, capital-intensive generating stations using an uncertain and controversial technology as the solution" (p. 144). Although nuclear power plant failures took place all over the United States during the 1970s and 1980s, Pope helps the reader to understand why this particular set of monumental failures took place.

*Nuclear Implosions* is well grounded in an extensive secondary literature of nuclear energy histories, regional histories, political and economic analyses, and organizational histories. Pope informs his narrative with well-documented references to Supply System minutes, interviews, U.S. census and statistical data, legal records, agency publications, trade journals, and the popular press. As a historian with research interests encompassing advertising, consumerism, nuclear power, and the Pacific Northwest, Pope is well qualified to assess the perspectives of the multiple stakeholders affected by the Supply System failures—the ratepayers, bondholders, utility district directors, BPA and Supply System administrators, politicians, and municipal leaders. As a result, *Nuclear Implosions* is far less polemical than other studies of the WPPSS story and thus more informative. Pope adds an important analysis of one of the country's most dramatic energy planning failures to the broader historiography of nuclear power and electrification in the United States.

Pope delivers more than he promises, for the "ambiguous" lessons of the Pacific Northwest's nuclear implosions are all too clear. There are complex technological, organizational, financial, and political problems inherent in the development of nuclear energy for electrification, as past projects have demonstrated. A deeper contemporary understanding of the environmental and military risks associated with nuclear plant construction complicates these challenges. In our litigious society, mistakes will not pass unnoticed and unchallenged. Pope

concludes that if nuclear power is to be a component of all, open-mindedness and flexibility, not a dogmatic faith in America's energy future, the planning demands, "above in a preordained destiny" (p. 272).

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