

Watts bar 2 description report examples

[Environment](#), [Plants](#)



\n[[toc title="Table of Contents"](#)]\n

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1. [Report: Tennessee Nuclear Power Plant – Watts Bar 2](#) \n \t
2. [Introduction](#) \n \t
3. [Power Generation Today](#) \n \t
4. [Watts Bar 2 Costs](#) \n \t
5. [Construction](#) \n \t
6. [Support for the Project](#) \n \t
7. [Conclusions](#) \n \t
8. [References:](#) \n

\n[/toc]\n \n

Report: Tennessee Nuclear Power Plant – Watts Bar 2

Report: Tennessee Nuclear Power Plant – Watts Bar 2

Introduction

This report covers the Watts Bar 2 nuclear power plant currently nearing completion at Spring City in Tennessee. The interesting aspect of its construction is that it was started way back in the 1970s, at a time when electricity demand was rising and the future of coal supplies for coal-fired power plants was viewed as problematic (Wald, 2014). The Tennessee Valley Authority (T. V. A.) began its construction as part of a plan for 17 nuclear reactors in total. However, in the 1980s, at around the time that its predecessor (Watts Bar 1) was subject to mandatory modifications to rectify regulatory deficiencies, T. W. A. decided to suspend the construction of Watts Bar 2 (“ History of Watts Bar Unit 2 Reactivation” updated 2012).

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Watts Bar 2 is a pressurized water nuclear reactor. In that design, fuel rods heat pressurized water to generate steam, which is used to drive a turbine that generates electricity. Projected to go online late in 2015, its output of almost 1200 megawatts will be sufficient to provide the power for circa 650,000 homes (“Watts Bar Completion: Tennessee, USA (2007-2015)” n. d.). It is named after a sandbar, formerly an obstacle to navigation on the Tennessee River, until the area was flooded, creating a reservoir (“Watts Bar Nuclear Plant” n. d.).

Power Generation Today

In his New York Times article, Wald points out that the current situation with regard to energy sources is quite different to that prevailing when Watts Bar 2 was originally started. Whereas at that time “The mercury, soot and acid rain that coal produced were simply accepted as the way things were”, nuclear is seen as a cleaner source of energy and – even though there are ample coal supplies and the increase in demand for electricity has slowed – the mostly aging generating plants powered by coal are viewed as polluting, and expensive to maintain or replace (Wald, 2014).

Watts Bar 2 Costs

When construction was halted in 1988, T. V. A. had expended around \$1.7 billion on the project, which it said was 80 percent complete. When construction restarted in 2007 – at a time when electricity demand appeared to be on the rise once again – consultants engaged by T. V. A. projected that it could be brought online at further costs of \$2 billion. However, the latest projection is that by the time commercial operation commences near the end

of 2015, the costs from construction restart will have amounted to over \$4 billion (Wald, 2014).

Construction

According to Wald, “Watts Bar 2 is something of an oddity.” He is referring to the fact that instead of using the latest computerized controls technology, its instrumentation is hard-wired “in the style of the 1970s” in part because the T. V. A. management wants its control systems to be as similar to Watts Bar 1 as possible, so that operators working in the common Watts Bar control room could operate either reactor and be licensed for both.

Furthermore, when construction was restarted in 2007, the as yet unused mechanical switches in the control room were nonetheless deemed to be too old. However, because they were no longer in production by any manufacturer, they were returned to the original manufacturer to be reconditioned (Wald, 2014). Whilst the matching of the control systems for the two reactors seems sensible on the grounds of operational safety, one wonders if the better solution might have been to upgrade Watts Bar 1 systems to the latest technology, and then make Watts Bar 2 identical to that new standard.

Construction is now nearing physical completion, although mandatory testing means that commercial operation is still some way off. On 30th September a full pressure test of the reactor systems was successfully completed, which according to the construction general manager validates the quality and methods of construction utilized in this project. The current projection is that loading of the nuclear fuel rods will begin in the spring of 2015, but it was stressed by the project manager that the importance of the construction

quality overrides that of any schedule (Flessner, 2014). That is indeed comforting to hear – particularly for people living anywhere near the Watts Bar plant.

A further safety feature at Watts Bar – learning a lesson from the Fukushima nuclear disaster – is an immensely strong building housing backup pumps and other equipment that could be used to cool the reactors in the event of systems failures caused by an earthquake or similar. Describing this in his “TVA adds secured backup” article, Flessner reports that similar facilities will be required at most nuclear plants. This one at Watts Bar is the first in the US, at the first new US nuclear plant to be completed this century (Flessner, 2014).

According to Barber (2014), the Watts Bar 2 project is currently providing over 3, 000 jobs, which is clearly good news for the local economy (Barber, 2014).

Support for the Project

As Wald mentions in his article, not everyone is supportive of the Watts Bar 2 completion project. Even the former T. V. A. chairman, S. David Freeman, claims that the current T. V. A executives are “ nuke-aholics.” He has written a book which claims that almost all the nation’s energy requirements can be satisfied by renewable energy sources. He states in the Introduction that “ The essential truth documented herein is that the United States can move swiftly to a predominantly renewable energy future” (Freeman, 2007 p. xi).

Conclusions

The article by Wald reveals that there is not universal support for the Watts Bar 2 project, although if more electricity is needed, it is probably preferable to more fossil-fuel-powered plants. On the other hand, as Freeman suggests, we should perhaps be focusing on renewable energy sources as the preferred option. One point: this reviewer felt that the Watts Bar 1 controls should have been updated rather than using “old technology” for Watts Bar 2. Overall though, the Wald article was informative and thought-provoking.

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