

## DOE Loan Guarantee Program: Vogtle Reactors 3&4

March 2019

In the latest development for the Vogtle nuclear reactor project, the Department of Energy (DOE) finalized an additional \$3.7 billion in loan guarantees for construction costs in March of 2019, bringing total taxpayer liabilities for the project to \$12.03 billion.

Initially, DOE conditionally offered Southern Company and its partners (the Plant Vogtle owners) a total of \$8.33 billion in taxpayer-backed loan guarantees<sup>1</sup> to build two nuclear reactors in Georgia in February 2010. According to documents obtained through the Freedom of Information Act, the Department of Energy and project partners struggled to reach an agreement on an appropriate credit subsidy cost for the loan guarantees. Southern Company and partners spent four years lobbying policymakers to craft a deal that heavily benefits them, while exposing U.S. taxpayers to even greater risk.



In February 2014, DOE finalized \$6.5 billion of the loan guarantees for two of the project owners – Southern Company subsidiary Georgia Power Company, and Oglethorpe Power Company.<sup>1</sup> In June 2015, DOE issued the remaining \$1.8 billion in loan guarantees to three subsidiaries of the third project owner, the Municipal Electric Authority of Georgia (MEAG power).<sup>2</sup>

While Southern Company and its partners pushed for increasing reliance on taxpayers, and since the loan guarantees were issued, the construction of Plant Vogtle reactors 3&4 has experienced substantial cost overruns and schedule delays. As a result, the riskiness of the project increased. Largely due to the mounting financial liabilities associated with the project and the construction of two other nuclear reactors in South Carolina,<sup>3</sup> Westinghouse Electric Company (Westinghouse), the Vogtle contractor, announced it was filing for bankruptcy on March 29, 2017.<sup>4</sup>

The bankruptcy of the lead contractor introduced significant uncertainty to the project's future and prompted changes to its management. The owners re-examined the project's construction schedule and cost estimate, and a Southern Company subsidiary, Southern Nuclear, assumed project management. Most importantly for taxpayers, after lobbying from the Vogtle owners and their supporters in the aftermath of the bankruptcy, the DOE offered \$3.7 billion in additional loan guarantees for the project in September 2017.<sup>5</sup> The finalization of the \$3.7 billion in new loan guarantees in March 2019 increases total taxpayer liabilities for Vogtle construction to \$12 billion at a time when the project's risks have never been more apparent. If the Vogtle co-owners default

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<sup>1</sup> A loan guarantee is an agreement by the DOE to cover the repayment of a loan, in this case from the Federal Financing Bank to the Vogtle partners, if the borrowers default.

on their DOE-guaranteed loans, the loss to taxpayers would be 24 times greater than the \$500 million DOE lost on the now-defunct solar power company, Solyndra.

## A Project in Trouble

In 2008, Southern Co. and its utility partners<sup>ii</sup> applied to receive a federal loan guarantee to construct two 1,100 MW Westinghouse AP1000 reactors (reactors 3&4) at Southern Co.'s Plant Vogtle near Waynesboro, Georgia. Southern Co. experienced massive cost overruns while constructing the first two reactors at the site in the 1980s. Original estimates for Vogtle reactors 1&2 were under \$1 billion each, but final costs skyrocketed to nearly \$9 billion.<sup>6</sup>

### *Project Cost*

In August 2008, it was originally estimated that Plant Vogtle reactors 3&4 would cost \$14.3 billion and begin commercial operations in 2016 and 2017 respectively.<sup>7</sup> Now, updated estimates put the total project cost at roughly \$28 billion and the completion dates for the two reactors in November 2021 and November 2022. This latest estimate means the project is \$14 billion over budget and more than 5 years behind schedule, compared to initial estimates.

- In a February 2013 report to the Georgia Public Service Commission (PSC), Georgia Power (subsidiary of the Southern Company) requested approval of cost overruns totaling \$737 million, signifying an increase of the initial \$14.3 billion cost estimate to \$15.5 billion (an 8.4 percent increase).<sup>8</sup>
- Westinghouse and the Shaw Group (previously purchased by Chicago Bridge and Iron)—the two contractors hired to construct Southern's two new reactors— filed suit against Southern Co. and its partners in 2012 seeking around \$900 million for the costs of construction design changes.<sup>9</sup> The litigation was settled in December 2015 after Westinghouse acquired CB&I Stone and Webster, making it the sole construction contractor.<sup>10</sup> As prescribed by the settlement, the three project owners were required to pay \$754 million more for the reactors' construction.<sup>11</sup>
- In August and September 2017, Southern and the other<sup>12</sup> owners<sup>13</sup> released new cost estimates and a new timeline for the Vogtle project. The total project cost to all owners, including financing, was increased to more than \$25 billion, nearly double the initial cost projections. The completion dates were also pushed back to November 2021 and November 2022 for the two units. According to Southern Co. filings, if the schedule is delayed another year, its costs alone would increase by \$1.1 billion more.<sup>14</sup>
- In August 2018, Southern Co. increased its estimate of total project cost by \$2.3 billion in filings with the Georgia PSC.<sup>15</sup> Oglethorpe<sup>16</sup> and MEAG<sup>17</sup> subsequently released updated expectations for their portions of the total cost. From the estimates released by the three

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<sup>ii</sup> Georgia Power Company (subsidiary of the Southern Company) (45.7%); Oglethorpe Power Corporation (30%); Municipal Electric Authority of Georgia (22.7%); The City of Dalton, Georgia (1.6%)

**"IN AUGUST 2008, THE INITIAL CONSTRUCTION SCHEDULE PROJECTED THAT PLANT VOGTLE REACTORS 3&4 WOULD REACH COMMERCIAL OPERATION IN 2016 AND 2017. SINCE THEN, SOUTHERN COMPANY AND ITS PARTNERS HAVE FAILED TO MEET MANY OF THE PROJECT CONSTRUCTION DEADLINES."**

companies, it's clear that the total cost to complete reactors 3 and 4 and Plant Vogtle has risen to more than \$28 billion.

#### *Project Delays*

In August 2008, the initial construction schedule projected that Plant Vogtle reactors 3&4 would reach commercial operation in 2016 and 2017.<sup>18</sup> Since then, Southern Company and its partners have failed to meet many of the project construction deadlines.

Today, the reactors are projected to be completed in 2021 and 2022, though Georgia Power admits that could slip to 2022 and 2023.

- This type of reactor, **the Westinghouse AP1000, has never been built in the U.S. before or ever successfully completed anywhere in the world.** Reactor design approval took five years and 19 alterations to meet basic safety requirements set by the U.S. Nuclear Regulatory Commission (NRC).<sup>19</sup>
- In June 2011, the PSC-hired Independent Construction Monitor testified that the construction of Plant Vogtle reactors 3&4 was **two months behind schedule.** A few months later, the project fell to five months behind schedule.
- In April 2012, NRC inspectors reported that the rebar in the "basemat," or **the foundation, for reactor three had been improperly installed.**<sup>20</sup> A proposal to compensate for the faulty rebar and correct foundation unevenness was finally approved by the NRC in October,<sup>21</sup> allowing work to resume on the area after six months of costly delay.<sup>22</sup>
- The Shaw Group—previously purchased by Chicago Bridge and Iron—is responsible for the assembly of many of the key reactor components in Lake Charles, LA. Once assembled, components are transported to Georgia for final assembly. An independent monitor reported in Dec., 2012 that The Shaw Group "clearly lacked experience in the nuclear power industry and was not prepared for the rigor and attention to detail required to successfully manufacture nuclear components."<sup>23</sup> In the period from July 2012 – December 2012, the project contractors were forced to repair "welds on [reactor components] that were found to be the wrong type of weld" according to the most recent IM report.<sup>24</sup> Additionally, **an oversized 300-ton reactor vessel nearly fell off the transport train** while on route to Plant Vogtle.<sup>25</sup> The reactor vessel was returned to the Port of Savannah where it sat for nearly a month before eventually making its way to the site.<sup>26</sup> **By December 2012, the project was more than a year behind schedule.**<sup>27</sup>
- In an August 2013 report, the independent monitor (IM) stated that the construction contractors have "not demonstrated the ability to fabricate high-quality CA20

submodules at its Lake Charles, La., facility that **meet the design requirements at a rate necessary to support the project schedule.**" <sup>28</sup>

- In his testimony before the PSC in July 2017, the IM stated that the project is now more than three years behind schedule, though the schedule is likely to slip further as a result of Westinghouse's bankruptcy.<sup>29</sup>
- In its 2017 second quarter earnings filing, Southern Company released its newest estimate that Unit 3 would be completed in November 2021 and Unit 4 would be completed in between November 2022.<sup>30</sup>
- In testimony provided to the Georgia PSC in November 2018, the Vogtle construction IM stated that meeting the current schedule with in-service dates in 2021 and 2022 would be "challenging."<sup>31</sup>

## Loan Guarantee Issued to Unstable Partners

As a result of the escalating construction costs and continued delays of the Plant Vogtle project, financial rating agencies are downgrading their assessment of the partners involved in the project:

- Standard and Poor's downgraded the Outlook on Southern Company and **Georgia Power's credit ratings from 'Stable' to 'Negative'** in May, 2013. <sup>32</sup>
- Fitch Ratings downgraded the outlook on all of **Oglethorpe Power Corporation's** bonds from **'Stable' to 'Negative'** in August, 2013.<sup>33</sup>
- Moody's has downgraded the outlook on Municipal Electric Authority of Georgia bonds from **'Stable' to 'Negative.'**
- Goldman Sachs and Zacks Investment Research have **rated Southern Company as a "sell."** Golden Sachs cited "accelerating capital spending on Vogtle nuclear project and ongoing litigation with the plant's contractors" as well as the Kemper coal gasification plant and a GA Power rate case that has since resulted in a disappointing ruling for the company.<sup>34</sup> Zacks pointed to weak share earnings, increased expenses, and high risks associated with the construction of reactors 3 and 4 at Plant Vogtle. With the likelihood of additional delays and cost overruns, Zacks states **"the project cost could easily end up around \$20 billion."** <sup>35</sup>
- The bankruptcy of Westinghouse only further decreased the creditworthiness of the Vogtle owners, according to credit ratings agencies. In March 2017, Moody's downgraded the outlook of Georgia Power, Oglethorpe Power, and MEAG's bonds financing the project to 'Negative.'<sup>36</sup> Standard & Poor's did the same for Georgia Power and MEAG, and downgraded Oglethorpe Power's credit rating altogether. <sup>37</sup> Fitch Ratings downgraded the outlook for at least Georgia Power and Oglethorpe.<sup>38</sup>

- In September 2018, Standard & Poor's downgraded MEAG's three series of Vogtle bonds to BBB+.<sup>39</sup> Fitch ratings released its own downgrade of the MEAG bonds to BBB+ on November 28, 2018. The two companies also downgraded Oglethorpe Power to the same rating in September and October 2018.<sup>40</sup> On August 8 2018, Moody's Investor Services downgraded Georgia Power's credit rating to Baa3,<sup>41</sup> the lowest level that qualifies as "investment grade."

## Aftermath of Westinghouse Bankruptcy

On March 29, 2017, Westinghouse Electric Company, LLC and some of its subsidiaries filed for bankruptcy protection.<sup>42</sup> In addition to its construction contract with the Vogtle co-owners, Westinghouse was also responsible for constructing two nuclear reactors at the V.C. Summer plant in South Carolina at the time it filed for bankruptcy. In the ensuing days, the owners of both the Vogtle and Summer plants reached an interim agreement with Westinghouse that would allow construction to continue at both sites. The agreement was extended several times until final settlements could be reached with Westinghouse's parent company, Toshiba, determining how much Toshiba would have to pay for construction costs.

On July 27, 2017, the co-owners of V.C. Summer plant—Santee Cooper and South Carolina Electric & Gas—agreed to accept \$2.168 billion from Toshiba, releasing Toshiba from any liability to pay further costs.<sup>43</sup> On July 31, 2017, the two utilities determined that the sum would not be enough to complete construction on the reactors and that the project should therefore be abandoned.

On July 20, the bankruptcy court handling Westinghouse's chapter 11 filing approved a service agreement which would make Southern Nuclear (a Southern Co. subsidiary) the main contractor on the Vogtle project. The agreement required additional approval from DOE given the department's role in the financing of the project. DOE agreed to the terms of the contract, including Westinghouse's \$3.68 billion payment to Georgia Power to complete the project, on July 27 and construction of the Vogtle project was handed over to Georgia power from Toshiba's Westinghouse.<sup>44</sup> On September 29, the DOE offered the Vogtle owners \$3.7 billion more in loan guarantees.<sup>45</sup> DOE finalized the loan guarantee agreements in March 2019.

### Taxpayers Will Lose

- High costs, construction delays, and technical problems have plagued the nuclear industry since its inception. The Vogtle project is on the same trajectory with multiple delays and technical problems.
- Private rating agencies are reacting to the rising costs and risk of the Vogtle project; the federal government should follow suit.

***Putting the full faith and credit of the U.S. government behind this costly, high-risk project is fiscally irresponsible.***

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