

**Ontario Power Generation Inc.
Application for payment amounts for the period
from January 1, 2017 and December 31, 2021**

VULNERABLE ENERGY CONSUMERS COALITION

**(“VECC”)
CROSS-EXAMINATION
COMPENDIUM PANEL 1C**

March 6, 2017

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April 11, 2016

**PRIVILEGED AND CONFIDENTIAL
EMAIL**

Dr. Patricia D. Galloway
President and CEO
Pegasus Global Holdings, Inc.
1750 Emerick Road
Cle Elum, WA 98922

Attention: Dr. Galloway

Re: Ontario Power Generation

We represent Ontario Power Generation Inc. ("OPG") in connection with its pending payment amounts application (the "Application") to the Ontario Energy Board (the "Board"), which Application includes a request for Board approval of certain costs relating to the refurbishment of four nuclear reactor units at the Darlington Nuclear Generating Station (the "Darlington Refurbishment Program").

We confirm that Torys LLP ("Torys") is retaining Pegasus Global Holdings, Inc. ("Pegasus-Global"), effective from April 1, 2016, in order to assist us in advising OPG in connection with the Application. In particular, Pegasus-Global will:

- (a) provide Torys with advice in respect of matters that are at issue in the Application, as requested, including in particular an independent and objective assessment of the degree to which OPG's plan and approach to the execution of the Darlington Refurbishment Program, including the processes in place for management of costs and schedule, program controls and its application of any contingency, are consistent with the way other projects of comparable magnitude, scale and complexity have been carried out;
- (b) prepare a report or reports for filing with the Board as part of the Application, if requested; and
- (c) testify before the Board in connection with the Application, if requested.

Our agreement is subject to the following terms:

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1. Pegasus-Global understands that all work performed by Pegasus-Global in connection with this retainer, including all findings, opinions and conclusions Pegasus-Global reaches in relation to this retainer, and any communications relating thereto, is strictly privileged and confidential and shall not be disclosed to any other person or party without the prior written consent of Torys. Pegasus-Global agrees to designate all written communications and material accordingly. Pegasus-Global further agrees to notify Torys in the event that Pegasus-Global receives a request to disclose information relating to this matter, and agrees to cooperate with us, to the fullest extent permitted by law, to prevent or limit the disclosure of such material or otherwise preserve the privileged and confidential status of such material.
2. Pegasus-Global agrees to hold in confidence: (a) the fact of this retainer, (b) all information provided to Pegasus-Global by Torys or OPG, and (c) Pegasus-Global's opinions to us as they relate to the information, whether the information or opinions are documentary or oral (the "Confidential Information"). Pegasus-Global will not disclose the information or opinions to any person unless Torys authorizes Pegasus-Global in writing to do so, or as may be required for purposes of providing testimony before the Board in which case Pegasus-Global shall identify and only disclose Confidential Information in accordance with the Board's protocols for the treatment of confidential information. All documents given to Pegasus-Global in connection with this retainer remain the property of Torys, and are held in trust by Pegasus-Global as agent. Pegasus-Global agrees to return or destroy these documents on request.
3. Pegasus-Global agrees during this engagement not to provide, directly or indirectly, without the prior written consent of Torys, Pegasus-Global's advisory services to the Board or to any person, corporation or other entity that is a participant in any regulatory proceeding relating to the Application, or to any person, corporation or other entity related to them.
4. Pegasus-Global confirms that it is free to provide services to Torys in connection with Torys' representation of OPG, and that Torys is free to use and disclose such information in any manner whatsoever.
5. Pegasus-Global agrees to refrain from referring to Torys or OPG, directly or indirectly, in connection with the promotion of Pegasus-Global's services, without obtaining the prior written approval of Torys.
6. Pegasus-Global acknowledges and agrees that it has received a copy of Rule 13A of the Board's *Rules of Practice and Procedure* concerning expert evidence, a copy of which is attached as "**Schedule 1**" hereto, and agrees to accept the responsibilities that are or may be imposed on Pegasus-Global by that rule with respect to testimony before the Board, should we request that Pegasus-Global testify before the Board.
7. With respect to Pegasus-Global's advice, Pegasus-Global agrees to provide us with a proposed workplan by April 22, 2016 setting out the activities that Pegasus-Global intends to undertake, including the relevant individuals, estimated timing and estimated costs (the "Proposed Workplan"). Torys will notify Pegasus-Global in writing once it has approved the Proposed Workplan.

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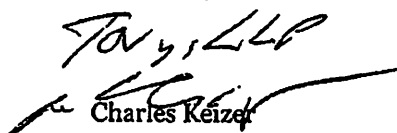
8. With respect to the work described herein, including the preparation of any report(s) and testifying before the Board, Pegasus-Global will be compensated at the following hourly rates:
- (a) Patricia Galloway [REDACTED]/hr
 - (b) Jeremy Clark [REDACTED]/hr
 - (c) William Riggins [REDACTED]/hr
9. Torys will reimburse Pegasus-Global for travel expenses related to this retainer only in accordance with OPG's Standard Form Business Expense Schedule (the "Expense Schedule"), a copy of which is attached as "**Schedule 2**" hereto. Any disbursements for additional incidentals incurred by Pegasus-Global in relation to this retainer must be pre-approved by Torys in writing and in accordance with the Expense Schedule. Torys reserves the right to deduct any applicable non-resident withholding taxes from any amounts owing to Pegasus-Global under this retainer and remit such amounts to the applicable taxation authority. Due to the confidential nature of this assignment, Pegasus-Global agrees to submit:
- (a) a summary sheet only of each account, showing: (i) the fee, (ii) expenses, (iii) all applicable taxes, (iv) a subtotal, excluding taxes, and (v) the grand total;
 - (b) a detailed account which will include at least the following information:
 - (i) identification of the billing period to which the account relates;
 - (ii) an itemized summary of the work that has been undertaken, including a brief description of each service, the date on which each service was rendered, the time spent on each service, the individual who performed the service and the billing rate of such individual; and
 - (iii) an itemization and brief description of all expenses incurred during the billing period, with copies of supporting invoices for any expenses in excess of [REDACTED], unless Torys indicates that such invoices are not required.
 - (c) Pegasus-Global shall direct its accounts to my attention at the address indicated above.

Please indicate Pegasus-Global's agreement to the terms of this retainer as set out herein, by signing a copy of this letter and returning it to me.


Thank you for your assistance.

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Yours truly,


Charles Keizer

Agreed, this 11 day of April, 2016.


for Dr. Patricia D. Galloway
Pegasus Global Holdings, Inc.

CK

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony?

A. Pegasus-Global was engaged by Torys LLP to provide an independent and objective assessment of the degree to which Ontario Power Generation Inc.'s (OPG) plan and approach to the execution of the DRP, including the processes in place for management of costs and schedule, program controls and its application of any contingency, are consistent with the way other megaprojects and megaprograms of similar magnitude, scale, and complexity have been carried out.

Q. Can you summarize how you conducted your review?

A. Yes. Pegasus-Global began its evaluation with a review of the organization established to manage and oversee the design and construction of the Program. We then reviewed the policies, procedures, and other relevant documents used in the planning and execution of the Program. In general, this included evaluating the governance, organizational structure, project controls, estimate, contingency, and schedule, and pre-execution planning of the Program. Once familiar with the processes, policies, and procedures in place and the current status of the Program, I led our team through interviews with key personnel at OPG who have responsibility for the execution and oversight of the Program to gain additional understanding of how key personnel plan to implement the processes, policies, and procedures in place to execute the Program.

Q. Can you summarize the findings of your assessment?

A. Yes. Based on the review of OPG's governance, policies and procedures, and project controls developed and in use for the Program, and interviews conducted with OPG personnel, I found that OPG has reasonably and prudently prepared for its execution of the DRP. My summary findings include:

- OPG's approach for executing the Program is consistent with the approach typically used on other megaprograms and in several areas exceed what I have seen on other megaprograms of similar magnitude, scale, and complexity.
- It is my opinion that the extensive pre-execution planning that was undertaken places OPG in a favorable position to have successful execution of the Program. This pre-execution planning includes: the incorporation of lessons learned from Darlington and other nuclear projects including Point Lepreau Nuclear Generating Station, Bruce Nuclear Generating Station, Pickering Nuclear Generating Station, Vogtle Electric Generating Plant, Watts Bar Nuclear Generating Station, as well as non-nuclear megaprojects such as the London Olympics and Heathrow International Airport; the use of industry best practices for development of the Release Quality Estimate (RQE); and, the policies, procedures, and project control tools that were developed and in use for Program execution.
- By performing a detailed cost estimate and schedule based on a thorough and robust probabilistic risk assessment of the Program, OPG has established a P90 confidence level of the cost to complete the Program and established an appropriate level of contingency, which in my opinion, is a reasonable cost estimate.

VECC Interrogatory #4

Issue Number: 4.3

Issue: Are the proposed nuclear capital expenditures and/or financial commitments for the Darlington Refurbishment Program reasonable?

Interrogatory

Reference:

Reference: D2/T2/S11/Attachment 3 – Pegasus Global Holdings Inc.

- a) Please provide a summary of the past 10 years of projects for which Pegasus Global Holdings, or the noted authors have opined on the robustness of a client's project forecast. For each study please provide the original the project estimate and the actual subsequent in-service cost of the project.

Response

The following response has been prepared by Pegasus-Global Holdings:

The information as so requested is not maintained by Pegasus-Global. As part of Pegasus-Global's performance reviews and assessments, which have been conducted for major capital construction programs, non-nuclear projects, and nuclear projects following the U.S. Government Accountability Office's Generally Accepted Government Auditing Standards (GAGAS, or commonly known as "the Yellow Book"), Pegasus-Global typically reviews the client's and/or project's cost estimating, cost accounting, and forecasting policies, procedures and processes. However, Pegasus-Global's engagements typically examine the information available at the time of the original estimate and the processes used at the time to develop the estimate as well as the process to presenting that estimate to the respective stakeholders for approval and/or decision making. Any subsequent estimates and/or actual costs are reviewed in light of conditions and/or information known at the time, and are absent any comparison that relies on the use of hindsight.

Pegasus-Global does not have copies of all the reports and/or testimony that have been prepared over the past 30-plus years. The volume of the prudence reports prepared over the prior 30-plus years contains thousands of pages and would take weeks to review to ascertain the information sought by this request. The considerations, assessments and analyses requested in this interrogatory were not part of Pegasus-Global's engagement and study respecting the DRP.

UNDERTAKING JT1.24

Undertaking

WITH RESPECT OF THE SCOPE OF WORK THAT MS. GALLOWAY HAD PERFORMED IN THIS PROCEEDING AND OVER THE LAST TEN YEARS, TO CONSIDER THE REGULATORY PROCEEDINGS THAT SHE HAS PARTICIPATED IN AND IDENTIFY THOSE THAT HAVE A COMPARABLE SCOPE.

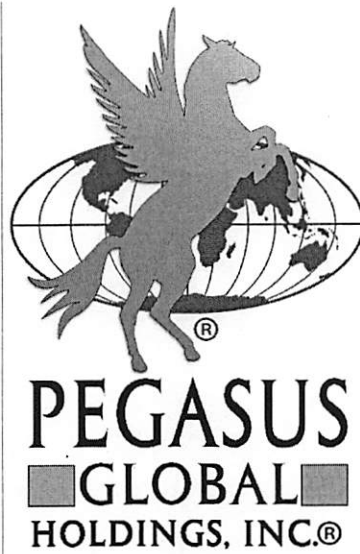
Response

Below is a table provided by Pegasus-Global Holdings (PGH) in response to this undertaking. The table sets out regulatory proceedings within the last 10 years where PGH performed scopes of work that are comparable to the scope of work it performed in this proceeding.

It is noted that it is likely that some of the assignments which PGH has listed in Attachment 1 to Ex. L-4.3-15 SEC-040 also included scopes of work similar to the one performed for OPG in this proceeding. However, such assignments pre-date the last 10 years.

Chart 1

Project	Owner	Regulatory Body	Docket No.
Kemper County IGCC Power Plant*	Mississippi Power Company	Mississippi Public Service Commission	2013-UA-189
Edwardsport IGCC Power Plant*	Duke Energy Indiana	Indiana Utility Regulatory Commission	43114 IGCC-4S1
Levy County Nuclear Power Plant (Units 1 & 2)*	Progress Energy Florida	Florida Public Service Commission	100009-EI
Vogtle Electric Generating Plant (Units 3 & 4)^	Georgia Power Company	Georgia Public Service Commission	29849; 27800-U
Iatan Generating Station^	Kansas City Power & Light	Kansas Corporation Commission	09-KCPE-246-RTS; 10-KCPE-415-RTS
		Missouri Public Service Commission	ER-2009-0089; ER-2010-03551
*-Dr. Galloway filed testimony.			
^~Dr. Galloway participated in the engagement, but did not file testimony.			



PEGASUS GLOBAL HOLDINGS, INC.

KEMPER COUNTY IGCC PROJECT

RESPONSE TO SURREBUTTAL TESTIMONY

May 14, 2015

1 on its face make the decision imprudent and should not be considered as the foundation for
2 disallowing costs.

3 **Q. Dr. Galloway, does your review of the Surrebuttal Testimony of the Staff's witness cause**
4 **you to change any of the opinions contained in your May 23, 2014 Rebuttal Testimony?**

5 A. No. Based upon Pegasus-Global's independent prudence review, which included an evaluation of
6 MPC's management decisions and decision-making processes regarding the costs incurred on the
7 Kemper IGCC Project through March 31, 2013, Pegasus-Global continues to conclude that
8 MPC's management decisions and actions as to the Kemper IGCC Project based on the
9 circumstances faced by MPC at the time decisions were made, as discussed in detail in my May
10 23, 2014 Rebuttal Testimony, fell within a zone of reasonableness and were prudent.

11 **IV. TOPICAL FINDINGS AND CONCLUSIONS**

12 **A. SCOPE OF REVIEW**

13 **Q. BREI noted in its Surrebuttal Testimony that it had been "intimately involved in the Kemper**
14 **Project for approximately 3 ½ years" including having spent, at the time of the Surrebuttal**
15 **Testimony, 21,688 man-hours on review of the Project. Would you agree that this is an**
16 **adequate amount of time and effort to have drawn conclusions on determining the**
17 **prudence of MPC in its execution of the Project?**

18 A. Yes, that is a substantial amount of time and effort put forth by BREI in its review of the Project.
19 As also noted in BREI's Surrebuttal Testimony, it was actively engaged in the monthly project
20 meetings since July 2011 and has received responses to over 350 Requests for Information (RFIs)
21 over the course of its monitoring activities. Despite this vast amount of information available to
22 BREI, it indicated that its findings and conclusions of its Surrebuttal Testimony, presented as an
23 "inefficiencies analysis", were "Based on incomplete information that was available at the time



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KEMPER COUNTY IGCC PROJECT

ATTACHMENT A

REBUTTAL TESTIMONY SUMMARY

MAY 14, 2015

intended to provide additional time for design, procurement and construction of the additional facilities flowing from this design change; and,

- No evidence that Southern Company's financial incentive was a motivator for MPC's selection of TRIG™.

D. ESTIMATING

Pages 135-186

After reviewing the opinions on estimating provided by the witnesses, Pegasus-Global finds they tend to ignore some fundamental industry accepted estimating principles, including; it is highly unlikely that any project of significant size and complexity would actually cost the amount estimated; the fact that the cost of the project has increased does not mean that the estimating processes and procedures developed were flawed; and it is not reasonable to expect the utility undertaking the estimate to accurately foresee what variables will impact the cost of a project.

Pegasus-Global finds that:

- MPC used accepted estimating processes, procedures and practices during the development of the Kemper IGCC Project process cost estimate;
- The certification estimate was very detailed and addressed all of the primary cost elements;
- The accuracy of any estimate and the appropriateness of any contingency amount can only be judged in hindsight; and,
- MPSC exercised its judgment to increase the cost to completion of the Kemper IGCC Project by adding a hard cap total cost of \$2.88B and, in doing so, effectively increased the Certification Estimate contingency amount.

E. MPC CONTRACTING APPROACH AND DELIVERY METHODOLOGY RE PIPE FABRICATION

Pegasus-Global finds that it was reasonable for MPC to select the single pipe fabrication vendor based on its lowest cost proposal which was based on the quantities anticipated at the time of award for this scope was issued. Pegasus-Global also finds that MPC was reasonable in awarding the pipe supports to a single fabricator, based on the estimated quantities at the time that scope of work was awarded and recognizing the complexity of pipe supports.

F. MPC'S ALLEGED MISMANAGEMENT OF PROJECT MANAGEMENT AND CONTROL Kemper IGCC Project Schedule Management and COD Evolution (pages 281-332)

- The scheduling controls used were appropriate for the level of work at the site, and controls evolved as Project work evolved.
- Contractor and project milestones based on critical path schedule 'early dates' ensuring float in the schedule; additionally, schedule based on a single-shift/five-day work week, allowing for an additional buffer.

- Project demands (including ITCs and delay of Certificate) necessitated the use of a fast-track schedule, a common approach on large, complex projects.
- The development of the fully integrated schedule was reasonable and prudent based on the level of project information available at the time (i.e. would not have construction contractor detail available to have completed the integrated schedule earlier).
- SCS reasonably managed labor resources within Excel, based on its experience as well as recognizing the industry was experiencing issues resource-loading in P6.
- MPC was very active in monitoring the schedule and was highly engaged in developing appropriate workaround activities to maintain the COD.
- MPC was reasonable and prudent in its efforts to maintain the May 2014 COD, and regularly evaluated the impacts and benefits of such efforts.

Project Management Tools (pages 332-386)

- MPC used trending and forecasting tools appropriately and within prudent utility industry practice.
- Earned Value Management practices were documented within the E&CS procedures and were utilized on the Project.
- Progress and performance trend and forecast information on the Project was presented in a variety of reports specific to the intended audience.
- MPC completed regular cost reviews and analyses, reporting the results during Production meetings.
- Commodity quantities in the Certification Estimate were prepared in a reasonable manner based on the level of design completed at the time.
- Edwardsport had a number of different characteristics and reasons for its quantity increases that are not applicable to Kemper.
- As detailed design continued on the Project, quantities were identified, verified, estimated and reported, including discussion with the IMs as to quantity status.
- BREI's independent evaluation of quantities over the summer of 2012 did not identify the increase in quantities experienced on the Project.

Risk Management (pages 386-397)

- MPC took appropriate steps in managing risks associated with the Project beginning in 2007, and regularly reviewed and evaluated the risks throughout the Project's execution.

G. PRODUCTIVITY

Pages 397-401

Pegasus-Global finds that BREI did not quantify the costs of extending the COD beyond May 2014, without such calculation the decision to maintain the May 2014 COD cannot be accurately gauged.

H. REWORK

Pages 401-405

Pegasus-Global finds that the level of rework on the Project to be similar or less than the industry norm. MPC did not track rework costs per se and therefore cannot *segregate cost due to contractor error from other costs*. However, it is important to note, MPC did not pay for rework arising from either contractor errors or from equipment delivered to the site not in conformance with the certified drawings.

II. REBUTTAL TO SIERRA CLUB AND BREI REGARDING THE COMPARISON OF KEMPER TO EDWARDSPORT

Pages 419-427

The primary finding is that there are very few similarities between the two projects and the basis for quantity growth were completely unrelated. MPC did apply the applicable lessons learned from the Edwardsport IGCC Project to the Kemper IGCC Project.

III. RESPONSE AND REBUTTAL TO ALLEGED IMPACTS AND RECOMMENDED IMPRUDENCE DISALLOWANCE

Pages 427-431

Pegasus-Global does not recommend that any disallowance be made from the \$2.88B Project Cap and although the final costs are not yet known, MPC has already agreed to a Project cap, with specific exceptions, of \$2.88B. Since the IMs have stated that MPC could not have feasibly built the capped portion of the plant for less than \$2.88B and since the effects of MPC's actions are not quantified in any manner by the witnesses much less tied to any specific imprudent action by MPC, MPC's agreed to cap is more than fair.

The New York Times

<https://nyti.ms/29sl3JH>

Piles of Dirty Secrets Behind a Model 'Clean Coal' Project

A Mississippi project, a centerpiece of President Obama's climate plan, has been plagued by problems that managers tried to conceal, and by cost overruns and questions of who will pay.

By IAN URBINA JULY 5, 2016

DE KALB, Miss. — The fortress of steel and concrete towering above the pine forest here is a first-of-its-kind power plant that was supposed to prove that “clean coal” was not an oxymoron — that it was possible to produce electricity from coal in a way that emits far less pollution, and to turn a profit while doing so.

The plant was not only a central piece of the Obama administration's climate plan, it was also supposed to be a model for future power plants to help slow the dangerous effects of global warming. The project was hailed as a way to bring thousands of jobs to Mississippi, the nation's poorest state, and to extend a lifeline to the dying coal industry.

The sense of hope is fading fast, however. The Kemper coal plant is more than two years behind schedule and more than \$4 billion over its initial budget, \$2.4 billion, and it is still not operational.

The plant and its owner, Southern Company, are the focus of a Securities and Exchange Commission investigation, and ratepayers, alleging fraud, are suing the company. Members of Congress have described the project as more boondoggle than boon. The mismanagement is particularly egregious, they say, given the urgent need to rein in the largest source of dangerous emissions around the world: coal plants.

PAGE 17

The plant's backers, including federal energy officials, have defended their work in recent years by saying that delays and cost overruns are inevitable with innovative projects of this scale. In this case, they say, the difficulties stem largely from unforeseen factors — or “unknown unknowns,” as Tom Fanning, the chief executive of Southern Company, has often called them — like bad weather, labor shortages and design uncertainties.

Many problems plaguing the project were broadly known and had been occurring for years. But a review by The New York Times of thousands of pages of public records, previously undisclosed internal documents and emails, and 200 hours of secretly though legally recorded conversations among more than a dozen colleagues at the plant offers a detailed look at what went wrong and why.

Those documents and recordings, provided to The Times by a whistle-blower, an engineer named Brett Wingo, and interviews with more than 30 current or former regulators, contractors, consultants or engineers who worked on the project, show that the plant's owners drastically understated the project's cost and timetable, and repeatedly tried to conceal problems as they emerged.

The system of checks and balances that are supposed to keep such projects on track was outweighed by a shared and powerful incentive: The company and regulators were eager to qualify for hundreds of millions of dollars in federal subsidies for the plant, which was also aggressively promoted by Haley Barbour, who was Southern's chief lobbyist before becoming the governor of Mississippi. Once in office, Mr. Barbour signed a law in 2008 that allowed much of the cost of building any new power plants to be passed on to ratepayers before they are built.

Seeing so many of the problems from the inside, at least one employee felt the need to speak up.

“I’ve reached a personal tipping point and feel a duty to act,” Mr. Wingo wrote in a 2014 email, which was among several that he sent to officials of Southern Company and Mississippi Power, the state utility that runs the plant, alleging that the company had broken federal law and engaged in corporate fraud. “Hope is not a strategy,” he added. “This is a high-profile project with many misguided enemies, so why give them free ammo?”

In their recorded conversations with Mr. Wingo, at least six senior engineers from the plant said that they believed that the delays and cost overruns, as well as safety violations and shoddy work, were partly the result of mismanagement or fraud.

“It has nothing to do with the design, it has nothing to do with the technology, it just has to do with poor project management,” Landon Lunsford, an engineer at the plant, said during one recorded call with Mr. Wingo last December, when they discussed an email from Southern’s legal department telling senior employees to retain all emails because of a continuing S.E.C. investigation.

The company will never admit the project-management problems because they will attract more scrutiny from regulators, Mr. Lunsford said. “As long as they can talk away the results as attributable to something else other than just poor performance, the other public service commissions can’t hold them over the fire as much,” he added.

Officials from Southern Company and Mississippi Power, which is a Southern subsidiary, said that they could not comment on Mr. Wingo’s allegations but that all decisions about cost and budget projections were made by consensus. They also said that Mr. Wingo’s accusations had previously been investigated by the company and could not be substantiated. Mr. Wingo was fired in February, a move that the Occupational Safety and Health Administration later ruled illegal.

Ed Holland, the former chief executive of Mississippi Power, added that one of the project’s biggest mistakes was to start construction with little of the plant designed. “We still believe that from our investors’ standpoint, this was a wise investment to prove the technology,” he said in an interview.

In the end, the Kemper project is a story of how a monopoly utility, with political help from the Mississippi governor and from federal energy officials who pressured state regulators in letters to support the project, shifted the burden of one of the most expensive power plants ever built onto the shoulders of unwitting investors and some of the lowest-income ratepayers in the country.

Kemper's rising price tag and other problems will probably affect the Environmental Protection Agency's proposed rules on new power plants, and also play into broader discussions about the best way to counter climate change. E.P.A. regulations in effect require new coal plants to have carbon capture technology but are being held up in federal court partly by arguments that the technology is not cost-effective.

The importance of this technology grows, as well, after President Obama said last week that the United States would join Canada and Mexico in pledging to reach a shared goal of generating 50 percent of North America's electricity from zero-carbon sources by 2025, up from 37 percent today, with a power mix that includes wind, solar, hydropower, nuclear energy and coal or gas power paired with carbon capture technology.

"The big question with clean coal has always been whether it's a moonshot or a money pit," said Charles Grayson, the director of the Bigger Pie Forum, which advocates fiscal conservatism in Mississippi and has been critical of the Kemper project for years. "The Obama administration and my state made a really bad wager in trying to use Kemper to make the economic argument for this technology."

High Hopes

Coal represents a conundrum: It is among the dirtiest sources of fuel, producing roughly 45 percent of the emissions that contribute to climate change. And yet the world still relies on it for power, with more than a quarter of the electricity used globally coming from coal plants.

Southern Company proposed a promising idea with the Kemper project. Providing a cleaner way to use coal, which is cheap and abundant in the United States, the plant also offered the means to preserve many coal-mining jobs that are fast disappearing in this part of the country.

Kemper County, with mostly two-lane roads cutting through clay hills and pine forest, has an average per capita income of \$14,837 and an unemployment rate roughly double the national average. To the region, the plant offered more than

clean power: It promised hope, at least 12,000 jobs and long-term savings. As construction ramped up, the county took in over \$8 million annually in extra tax money, which went toward repairing roads, bridges and schools, lowering local property taxes, and clearing debt.

In the summer of 2005, as Hurricane Katrina toppled drilling rigs and uprooted pipelines in the Gulf of Mexico, the price of natural gas rose by more than 40 percent. In Mississippi, utility regulators saw the Kemper plant as a way to diversify its energy options in a state that relies on natural gas for nearly 80 percent of its electricity.

The plant, which broke ground in 2010, would run on lignite, a type of coal that is difficult to process but is plentiful in the region. Most of the carbon dioxide produced by the plant would be captured, compressed, sold and piped to oil fields. There, it would be pumped underground in a process known as enhanced oil recovery, to help push up previously unrecoverable oil to levels where it could be reached.

Though carbon capture technology is proven and widely viewed as a potentially important tool to slow global warming, the question has been whether it can be scaled up affordably.

Before becoming governor, Mr. Barbour helped orchestrate the transfer of about \$270 million in federal subsidies from a canceled coal plant in Florida to the proposed Mississippi plant. As governor, Mr. Barbour then signed the Baseload Act, which shifted much of the cost and risk of building power plants from investors to consumers, and allowed utilities such as Mississippi Power to charge ratepayers for projects before they were completed.

Carbon capture has been considered a holy grail for decades. For Ronald Reagan, it was a solution to acid rain; for Bill Clinton, an alternative to nuclear power. George W. Bush billed his FutureGen project as the world's first zero-emissions coal plant but mothballed it when it became too expensive.

As the emphasis on fighting climate change grew, the Obama administration hung many of its hopes on Kemper. Gina McCarthy, the E.P.A. administrator, cited

federal support for the project as proof that her agency was not anti-coal, despite strict new rules on power-plant emissions. The Energy Department repeatedly wrote state regulators emphasizing the importance of the project.

By 2012, though, “Miss Power,” as locals called the state utility, was facing mounting criticism about the plant. In May of that year, after the utility said that the Kemper project was \$366 million over budget, it announced a plan to raise its customers’ rates by 13 percent.

Campaigning for a seat on the Mississippi Public Service Commission, Thomas A. Blanton, an opponent of the project, ran television ads featuring an older woman eating dog food and warning of sacrifices that poorer people sometimes make to afford electricity. In cramped trailers where some of the poorest people in the state live, summer temperatures topped 110 degrees — potentially deadly for older residents who could not pay to keep their air-conditioning running.

“You don’t want to pay to build my home, and I don’t want to pay to build your plant,” John Gooding, a cabinetmaker from Bay St. Louis, who lost his home in Hurricane Katrina, said during a public hearing about the rate hikes. “Some people are still living in trailers, and now you want to build a plant you can’t guarantee.”

Other critics piled on. Environmentalists called the plant the “Solyndra of clean coal,” a reference to the heavily subsidized but failed federal solar project. They asked whether the plant’s climate change benefits were overstated because the carbon it would capture from coal was going to be used to pump more oil.

Why was Kemper being cited as a model worthy of replicating, they asked, given that other plants would not share one of Kemper’s main advantages: a plentiful supply of cheap coal nearby.

Alleging that Southern Company and Mississippi Power had overstated the plant’s cost-effectiveness, the Bigger Pie Forum sued to unseal project records. To help make their case that the Kemper plant would be competitive with natural gas, which is coal’s main competitor, utility executives predicted to investors and regulators that the per-unit price for natural gas would be higher than \$11 by 2016. But gas remains less than \$2 per unit, undermining the business case for the plant.

The project did create jobs, but Mark Klinedinst, a retired economics professor from the University of Southern Mississippi, said that more were lost in the region as businesses laid people off to pay for the higher electrical bills caused by Mississippi Power rate increases from plant construction. The University of Southern Mississippi also raised annual tuition \$236 per student, partly to offset its additional \$1 million in higher electrical costs, he said.

The Whistle-Blower

Mr. Wingo, 48, had lived paycheck to paycheck for years, working at small, struggling engineering firms. When he was hired in 2007 by a subsidiary of Southern, it was a big step up. He doubled his salary to become a midlevel manager to help oversee scheduling and some design decisions on a project that he believed would make history.

Before long, Southern began flying him around the country to explain the project to others. He received glowing performance reviews and was awarded an annual \$2,000 "Southern Excellence" employee award.

By 2012, though, Mr. Wingo had begun his transition to whistle-blower. About two weeks after state regulators renewed the license for the project to continue, Mississippi Power admitted to regulators that it had concealed cost overruns of about \$366 million.

In increasingly testy meetings and emails over succeeding months, Mr. Wingo told his supervisors that other scheduling information that Mississippi Power and Southern Company were providing to the public was infeasible and misleading.

Ed Day, Mississippi Power's chief executive at the time, tried to tighten control over what was shared. "I would like to remind everyone 'again,' no numbers, schedules, or information in general should be communicated to external parties until I review it/them first," Mr. Day wrote in an Aug. 8, 2012, email to senior staff.

Others shared Mr. Wingo's growing concerns. Tom Theodore, a scheduling consultant who worked on the Kemper project for about eight months in 2012, described the company's stated schedule as little more than "a pretty picture to show

everybody that we're all doing wonderful as opposed to what reality showed on the ground."

His predecessors had altered the software so it no longer automatically adjusted the final price and completion date to reflect problems as they emerged, he said.

Greg Zoll, who had been hired by the state to be the project's independent monitor, also grew skeptical. While engineering expenses and purchases went up, reported construction costs went down and scheduling timelines were shortened.

"These trends are illogical," he wrote in one of a series of highly critical reports that he filed with regulators from 2012 to 2014. Documents show that in a rush to qualify for federal subsidies, Mississippi Power started construction with less than 15 percent of the plant designed, Mr. Zoll told regulators.

Mississippi Power rejected Mr. Zoll's criticism, responding that the delays were caused by glitchy software and shifts in design, and that the company was absorbing most of the additional costs.

But Brandon Presley, now the chairman of the Mississippi Public Service Commission, which regulates utilities, said that the project was troubled from the start and he voted against it. "The train left the station," he said, when, in a rush to qualify for millions of dollars in federal subsidies, the commission approved the project.

He added that the problem was not the federal subsidies, which are necessary to develop innovative technology, but the failure by all parties to slow down and ask enough questions.

On May 20, 2013, Mr. Day abruptly stepped down as chief executive. His replacement, Ed Holland, told regulators that Mr. Day had directed or allowed employees to withhold from regulators documents about cost overruns. That sparked public outcry because the information was withheld from the commission while it was deciding whether to reapprove the project. "I will see that it never happens again," said Mr. Holland, according to news articles at the time.

An Internal Battle

In February 2014, an argument erupted at the plant. Engineers told upper-level managers that the company should not promise to regulators and investors that the project would be done before the end of the year, emails and recorded calls show. Weeks later, the company did so anyway.

The next day, the owner of the project's scheduling firm sent an email saying that he could not in good conscience continue to work on a project that did not "fairly and accurately represent the work that still remains."

Mr. Wingo wrote in a subsequent email to an official at PricewaterhouseCoopers, an auditing firm that was helping to manage the project, "This has really put the entire project at a crossroads." The other engineers in his division were in "utter disbelief" that the company had published a false schedule, he added.

On March 10, Mr. Wingo called Mr. Fanning, the chief executive of Southern Company, to ensure the message reached him. "I'm glad you brought this to me," Mr. Wingo said Mr. Fanning told him. "I plan to get to the bottom of this."

Instead, Southern Company and Mississippi Power focused in subsequent months at least as much on damage control as they did on rooting out wrongdoing.

In meetings, Mr. Wingo and other engineers said that they were told by plant managers that they needed to present an optimistic timetable for the project or the utility risked "financial Armageddon" of lost tax subsidies, spooked investors, possible bankruptcy, and harsh criticism from the news media, regulators and lawmakers.

After Mr. Wingo provided company officials with a binder of documents corroborating his allegations, he said he was ordered to stop sending emails on the matter because they could become public through litigation.

After he told his manager in an email that most project engineers agreed that the plant could not be completed by 2014, the manager continued telling executives that "to a man" all of the plant's engineers thought that finishing by 2014 was

feasible, Mr. Wingo said, and Mr. Lunsford, the engineer at the plant, reiterated in a recorded call that the manager's comment was false.

Mr. Wingo, who began speaking to reporters, refused an offer of roughly \$975,000 from the company to keep quiet, according to interviews and court records related to his whistle-blower claims. Southern was then granted a restraining order, later dropped, forbidding him from speaking publicly about the plant, court records show.

Mr. Wingo said that he began recording his phone conversations in August 2014, hoping to protect himself. During those calls, at least two of Mr. Wingo's colleagues said that they strongly disagreed with what one of them called "his grand conspiracy." A half-dozen other engineers told Mr. Wingo that they shared his views.

The Times contacted each of the engineers whose conversations were recorded and shared by Mr. Wingo. All declined to comment.

The recordings include commiseration among colleagues, and ambivalence from engineers who vacillated between criticizing and defending the project. They include typical workplace grousing about bosses who workers say are in need of "Viagra for the brain" and are incapable of running even a Popsicle stand.

They also reveal an internal struggle that Mr. Wingo faced: While still a believer in the possibility of clean coal, he was uneasy to find himself on the same side as environmental groups that oppose fossil fuels.

"My enemy's enemy is not necessarily my friend," he said in one recorded conversation in February 2015.

What troubled the engineers most was the poor quality of work: leaking gaskets, cracked ductwork, and pipes missing inspection records, valves and supports. Ryan Brown, a plant engineer, said during a phone call that he was having to "go back and do some sort of repair or rebuild" for every piece of work handed to him by the plant's construction teams, which were under intense deadline pressure.

In a call on Aug. 22, 2014, Mr. Wingo confronted one of his superiors, Brett Wingard, about photographs covertly taken by an inspector who was concerned about defective pipes at the plant. Mr. Wingard dismissed the threat, saying that the

pipes were only in a section of the plant not yet in operation (part of the project is running on natural gas already). GPS information in the images indicates otherwise.

Other workers recounted in phone calls to Mr. Wingo that they had discovered a large section of outdoor exhaust pipe that was glowing cherry red one night in September 2014 because 1,400-degree gases were misdirected through it. "That's so bad that it made people all over the company stand up and say this is ridiculous," Mr. Lunsford said in an October call with Mr. Wingo.

Several co-workers warned Mr. Wingo against being "a martyr." One engineer, Donald Falletta, told him in a phone call that jumping on a grenade "when there ain't nobody else in the damn room don't save nobody." In a call six months later, Mr. Falletta added that he too believed that managers were being "told to lie" about the pace of progress.

In February 2015, Southern sued Mr. Wingo, alleging that he had agreed to a settlement but failed to comply with its terms, which included keeping quiet about the plant. Mr. Wingo said that he never signed or agreed to any settlement.

Tim Leljedal, a spokesman for Southern Company, added that Mr. Wingo's allegations had been thoroughly investigated by the company and by outside counsel and were found to be unsubstantiated. He added that with any project of this scope, detractors are inevitable.

Shortly after the lawsuit was filed, Mr. Wingo's colleague, Robert Adams, called him to say that he was leaving the company and to ask whether he would be legally allowed to speak publicly about the plant at that point. "Once we resign, do you think they will try to silence us?" asked Mr. Adams, who left the company shortly thereafter.

In March, the company dropped its case against Mr. Wingo. "Hug that wife," Donald Falletta said in a phone conversation congratulating Mr. Wingo. "She's been through a damn roller-coaster ride."

The utility was on a roller coaster, too. In February 2015, the state Supreme Court ruled that Mississippi Power had to repay ratepayers roughly \$377 million for

increasing rates by 15 percent in 2013 and 3 percent in 2014 without proper approvals. Utility officials responded that the requirement would bankrupt it, and several months later persuaded regulators to approve a new increase, 15 percent.

Meanwhile, engineers discussed the pressure to hurry construction. One of them, Brent Duncan, recounted in a phone call that he told a scheduling contractor how discouraged he was that managers were being allowed to “screw” with the schedule and “then claim they can meet all these dates, and there’s no way.”

The engineers joked that Mississippi Power, eager to show progress to investors and regulators, overstated certain milestones. For example, it bragged of achieving the “first fire,” which involves the lighting of the gasifier, when what they did fell far short of the actual definition, according to Mr. Wingo.

“We burned natural gas in a pilot” light, Brandon Davis, an engineer, said during one phone conversation. “I accomplish that every day in my garage.”

Some engineers wondered aloud whether accurate information was making it to the top. “By the time the message gets to Tom Fanning,” Mr. Lunsford said in a September 2015 call, “it’s so muddled and messed up that he’s not even hearing the truth.”

In March, the Occupational Safety and Health Administration alerted Southern that it had violated whistle-blower protections. The agency rejected the company’s claim that it was justified in firing Mr. Wingo because he could “not be trusted to support the chain of command.”

Mr. Wingo filed his whistle-blower claim against Southern Company under the Sarbanes-Oxley Act. While that law does not lead to paying a cash bounty to successful whistle-blowers, Mr. Wingo declined to say whether he has also filed a claim with the S.E.C. under the Dodd-Frank Act, which does pay awards for successful cases.

In April of this year, Southern informed the S.E.C. for at least the eighth consecutive month of a new delay and cost overrun, this time for \$60 million, bringing the total spent on the Kemper project to about \$6.7 billion. In May, the

Obama administration said that it planned to cut spending on clean-coal technologies by 3 percent in next year's budget.

Supporters of carbon capture say that Kemper's problems are not representative of the entire industry, and that one part of the plant — the gasifier that converts cheap coal into synthetic gas — is primarily causing the delays. But critics say that the principal challenge of carbon capture is cost, and that the gasifier's ability to use cheap coal has always been advertised as key to making the project affordable.

As Mississippi Power and Southern Company have continued struggling to bring the plant online, Southern has repeatedly promoted in calls to investors its plans to help offset the project's cost by selling the carbon-capture technology abroad.

For now, Mr. Presley, the chairman of the Mississippi Public Service Commission, says he is taking a wait-and-see approach, hoping that when and if the plant finally comes online, it works as promised. Mississippi Power has said that every month of delay adds more than \$20 million to the overall cost, but it will charge customers for extra costs from the plant only with approval by the commission.

Mr. Presley will eventually have to grapple with what he called the "awful task" of not pushing the utility into bankruptcy while determining how much electricity customers, taxpayers and investors should pay for the billions of dollars in cost overruns.

Follow Ian Urbina on Twitter and Facebook.

Susan Beachy contributed research.

A version of this article appears in print on July 5, 2016, on Page A1 of the New York edition with the headline: A Model for 'Clean Coal' Goes Awry.

MONEY

The Kemper Plant is '99 percent' complete. Now what?

BY KENDRA ABLAZA OCTOBER 10, 2016

In rural Kemper County, about 20 miles north of Meridian, stands a tangled network of chrome and multi-colored pipeline intertwined into structures as tall as high-rise buildings.

The next-generation coal plant built to produce electricity is under construction, but workers could not be seen from outside the massive structure, nor heard over the loud humming of the plant.

Nearby is a large dome-shaped structure that houses up to 100,000 tons of lignite, a type of coal that is softer and less energy dense than other coals found in the Appalachian Mountains but plentiful in Mississippi.

Lignite is touted by the plant's operators for being an abundant, affordable natural resource not subject to price volatility and transportation costs associated with other fuel sources.

But after delays and cost overruns have kept the Kemper County power project more than two years behind schedule and ballooned the price tag by billions, trust in Mississippi Power Co.'s new technology is wavering in some.

In October, the unit of Atlanta-based Southern Co. said the plant will be fully operational by Nov. 30. That announcement came just two weeks after company officials told Mississippi Today that it would be powered up by Oct. 31, a claim that raised eyebrows from observers of the project, who have seen a slew a deadlines come and go over the years.

Even when the proverbial switch is flipped on, the saga of the Kemper project will not be over.

Once the plant is fully operational, the Mississippi Public Service Commission, which regulates public utilities, will begin holding a series of meetings known as prudency hearings to determine whether the utility company or its ratepayers will be responsible for the plant's added costs over the years.

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The hearings will also determine whether the plant can operate reliably and provide electricity at a reasonable cost.

The ultimate goal of those meetings is for Mississippi officials to confront a substantial question that has been on the minds of many Mississippians for years: Was building the Kemper County power plant the right decision?

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At a recent public-service commission town hall meeting in Meridian, ratepayers raised concerns about the successful completion of the project and associated costs, and wondered aloud what would happen next.

The Public Service Commission said it would use its authority to protect ratepayers but cannot publicly offer their opinions about the merits of the project.

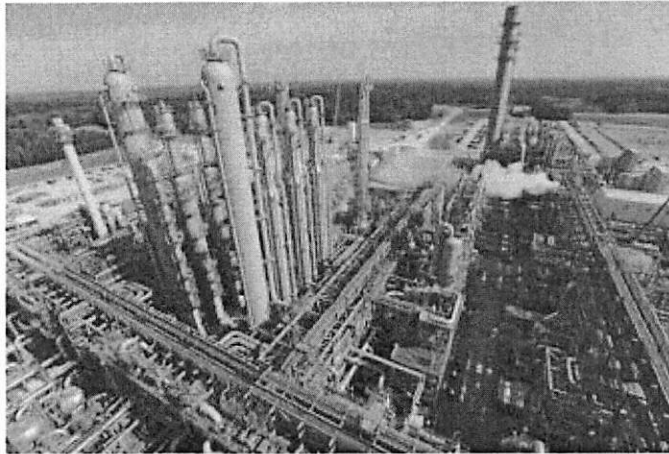
“(The plant’s legality) is not before the commission,” Cecil Brown, a Democrat who represents the Central District, said at the town hall. “Our job is to make sure if the company files a rate case with us ... (ratepayers) have access to power on a reliable and efficient basis and at a reasonable cost.”

A question of prudence

Former Gov. Haley Barbour, whose lobbying firm represented Mississippi Power’s parent company, Southern Co., aggressively promoted the project that broke ground and began construction in 2010.

Under state law, the Public Service Commission is allowed to review whether expenses related to pre-

construction, construction, operating and related costs associated with a generating facility were “prudently incurred” and can make these determinations as often as each calendar quarter.



November 2015 AP file photo

Aerial view of the Kemper County plant

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The plant, which is running on natural gas, was supposed to go into full operation by May 2014. Mississippi Power Co. missed previously self-imposed deadlines due to bad weather, labor shortages, incorrect time and material estimates and other delays.

On Sept. 16, Mississippi Power spokesman Jeff Shepard told Mississippi Today the project was 99 percent complete. The plant’s latest milestones include both of its gasifiers, or devices that promote a chemical reaction that turns a solid into a gas, producing synthesis gas from lignite.

“The next step in the project is producing first electricity,” Shepard said via email. “... We expect to reach that milestone by the end of this month (September). And the remainder of the facility is still scheduled to be placed in service by Oct. 31.”

Weeks later, the utility announced another month’s delay (<https://mississippitoday.org/2016/10/03/kemper-county-plant-start-delayed-again/>) to that deadline plus an additional \$33 million to the price tag.

Robert Wise, a utility attorney in Jackson who has been following the plant's struggles for years, said he's not surprised by further delays given its history.

"It's always been the same: more delays, more expenses and more possible jeopardy to the ratepayer," Wise said.

The attorney said the project can't reach an end date until there has been sufficient testing, and, per a former project manager-turned-whistleblower Brett Wingo, that could be a prolonged period.

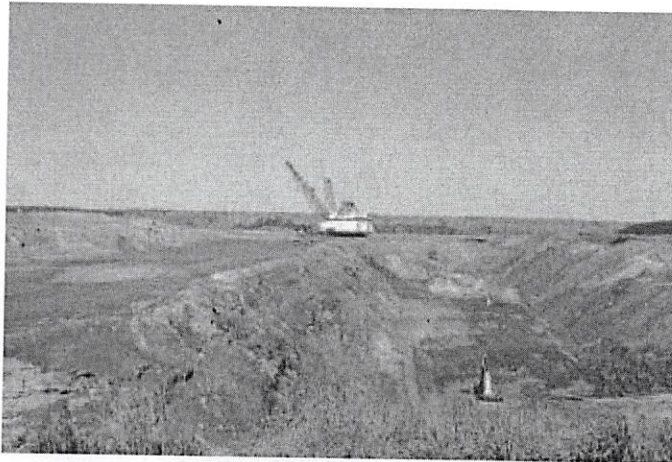
"I have no idea (how long it could take) and I wonder if Mississippi Power has any idea," Wise said.

Mississippi Today recently went on a media tour of the plant. The guided tour included a van ride around the perimeter of the plant and bus ride within its adjacent lignite coal mine.

On the tour around the plant, reporters were not allowed to exit the van, which officials said was for safety reasons and to accommodate construction deadlines. Reporters were also discouraged from capturing smartphone video.

The plant is designed to convert lignite into a gas to create electricity while extracting carbon dioxide and other pollutants.

Since its inception, the project has drawn national attention for promising to be the first of its kind and size to operate commercially in the U.S. The utility has plans to sell the plant's technology to other countries.



Mississippi Power

A dragline excavator seen at Liberty Mine, adjacent to the Kemper County energy facility.

Once complete, the plant would not only produce electricity for Mississippi Power customers but also reduce carbon emissions compared to traditional coal technology, by putting carbon dioxide into a nearby pipeline system. From there, oil companies can purchase the gas to inject into fallow oil fields to bring valuable crude to the surface.

Kemper is also on track to be the most expensive power plants ever built. The project's total cost is now about \$6.9 billion, more than double the original estimate. The plant and nearby lignite coal mine were originally expected to cost \$2.9 billion.

Mississippi Power's position is that the Mississippi Public Service Commission in the late 2000s determined there is a need for a new power facility in Mississippi based on population growth, the age of existing facilities and a need for price stability when it comes to fuel costs. The utility also argues the plant's technology will ensure customers have a reliable source of power in the event of a disaster.

According to the U.S. Department of Energy (<http://www.eia.gov/state/?sid=MS>), last updated in May 2016, Mississippi consumes more energy than it produces. Also, with our long, hot summers, Mississippi's per capita energy consumption in the top third of all states.

The plant is designed to produce 582 megawatts, or power 190,000 homes, once it starts generating electricity from lignite.

Shepard said the commission approved the Kemper project because of its potential for long-term fuel diversity and price to operate the plant while it is running on lignite.

He also said building a new baseload facility, one that has a steady fuel source (unlike wind and solar facilities, where supply fluctuates) always requires an investment.

"This facility, when operating on lignite, will protect customers over 40 to 50 years from price spikes in the commodities that we use as fuel sources: coal or natural gas," Shepard said. "Adding a third fuel mix in there is beneficial to our customers."

The Kemper Rollercoaster

In addition to the hearings, the public can ask the commission questions about the Kemper project's costs and usefulness via a "discovery docket," or electronic file on the commission's website. According to the commission, only Mississippi Power customers may submit information requests and may receive responses related to the project through the docket.

This docket, which launched in early October, will stay open for roughly six months. The commission's responses to those questions will be considered during the hearings.

Meanwhile, the commission also plans to post previously sealed records.

As for what the public pays, there is a \$2.88 billion cap on what Mississippi Power ratepayers can pay for the plant. Any increase beyond that depends on the commission's approval.

Rate increases have also impacted the power company's 186,000 customers in 23 counties from the Gulf Coast to Meridian, seeming at times like a roller coaster for electricity costs.

According to Mississippi Power, the first rate increase related to the Kemper facility went into effect in April 2013. Those increased customers' base rates by 15 percent.

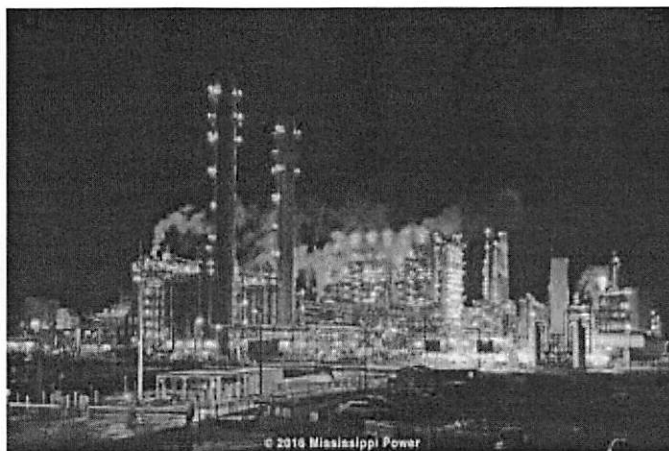
In January 2014, an additional 3 percent increase was added, bringing the total rate increases related to Kemper to 18 percent.

In the summer of 2015, the commission ordered Mississippi Power to rescind the rate increases for one month.

The rate increases were wiped out for one month, then returned to 18 percent through the rest of 2015.

A Mississippi Supreme Court ruling returned the rate increase to 15 percent on a permanent basis, beginning in January 2016.

The Supreme Court also ordered refunds to the utility's customers when it ruled that portions of rate increases imposed between April 2013 and July 2015 to pay for costs associated with the Kemper County plant were illegal.



Mississippi Power

Mississippi Power's Kemper County energy facility on July 14 began producing syngas for the first time. The syngas is being flared as part of the start-up testing operation.

The plant's delays and added costs have sparked lawsuits against Mississippi Power, as well as a U.S. Securities and Exchange Commission investigation into the plant's cost and schedule.

One of them included a six-year battle with the Sierra Club. In 2014, the Mississippi Power and the environmental advocacy group reached a multi-million-dollar settlement.

Per the settlement, Mississippi Power converted to natural gas or retired several coal-fired plants. It also set up a \$15 million fund to help low income rate payers of Mississippi Power make their homes more energy efficient.

Elsewhere in the state, Island View Casino Resort, Biloxi Freezing & Processing Inc. and John Carlton Dean of Gulfport filed a lawsuit against Mississippi Power on March 2, 2016, seeking to have the company refund all charges for the plant, claiming it was a fraud to the two companies and Dean, according to the Biloxi Sun Herald.

On June 9, Treetop Midstream Services, a Mississippi-based oil company (<https://mississippitoday.org/2016/06/21/mississippi-power-sued-for-kemper-plant-delays/>), filed a lawsuit against Mississippi Power Co. and Southern Company over the cost Treetop incurred for building a \$100 million pipeline and other damages. In the suit, Treetop claims fraudulent misrepresentation, concealment, civil conspiracy and breach of contract by the power companies.

"We did everything we were supposed to do. We did it based on a series of lies. We were not told the truth. After we had made the complete investment, and waited for years, they cancelled the contract," George W. Finkbohner III, an attorney for Treetop, told Mississippi Today in June.

The Securities and Exchange Commission also launched an investigation in May into the rising costs of the Kemper project, examining the estimated costs of the project and the expected date that service may begin.

The Southern Co. branch said in its filing that it believes the inquiry is focused primarily on "periods subsequent to 2010 and on accounting matters, disclosure controls and procedures, and internal controls over financial reporting associated with" Kemper, the Associated Press reported.

"While we cannot predict the ultimate outcome, as we have said in our disclosures on this matter, we do not expect the investigation to have a material impact on the financial statements of either Southern Company or Mississippi Power," Shepard said in a statement at the time.

In the meantime, Sam Britton, the lone Republican serving on the Mississippi Public Service Commission representing the Southern District, said it is Mississippi Power's responsibility to get the plant up and operating, and follow all regulations for doing so before the commission can look into the matter.

"They have a tremendous burden on them to fulfill all these requirements," Britton said. "... Whenever they come to us with that, we will look at that and then that is when a decision will be made."

DUKE'S EXPERT WITNESS GETS \$3M

Her verdict: Utility isn't to blame for plant's problems

By John Russell

john.russell@indystar.com

As Duke Energy Corp. defends itself against charges that it failed to keep a lid on costs at its \$3.3 billion Edwardsport power plant, the utility is now spending big bucks in another area: on an expert witness who plans to testify that Duke did nothing wrong.

Duke has paid more than \$3 million to Pegasus Global Holdings, a management consulting firm based in Washington state, to examine how the utility managed the Edwardsport plant, which has become one of the most expensive capital projects in Indiana history.

The consulting firm's chief executive, Patricia Galloway, is expected to tell the Indiana Utility Regulatory Commission this week that Duke acted prudently in the construction project and didn't break any laws, according to her pre-filed testimony.

The huge fee Duke is paying Pegasus dwarfs the amount that any of the other parties in the case are paying their witnesses, and some critics say it calls into question how independent such a well-paid witness can be.

THE CASE

» The Indiana Utility Regulatory Commission is determining whether Duke Energy handled its Edwardsport coal-gasification plant prudently, and whether the company is guilty of concealment, fraud or gross mismanagement on the \$3.3 billion plant.

» Hearings began last week in Room 222 of the PNC Center, 101 W. Washington St., and are expected to stretch through much of November.

» The hearings will determine whether Duke's 700,000 Indiana customers will have to pay for the plant's cost overruns, or whether the utility will have to swallow the higher costs.

» See DUKE, Page A6

Duke

Continued from A1

Duke's critics also say the company grossly mismanaged the construction project and concealed vital information from regulators, and should eat the cost overruns. Duke originally estimated the plant would cost \$1.985 billion, but the price tag has soared much higher as the project ran into numerous construction problems.

Duke insists the problems and cost overruns were not its fault but the result of bad engineering and construction advice from its contractors. It wants to shift most of the cost to its 700,000 Indiana customers in the form of higher electricity bills.

The company also defends the expense for its expert witness, saying the consulting firm worked for thousands of hours to examine every facet of the huge, complicated project.

The IURC will determine how much Duke's customers should pay toward the plant, based in large part on hearings that began last week and could last through most of November.

Duke's opponents, including consumer groups and large industrial customers, are making an issue of Duke's big payments to its chief expert witness. They say they are paying their own witnesses a tiny fraction of that amount.

Tim Stewart, an attorney with Lewis and Kappes, which is fighting Duke's handling of the project on behalf of large industrial customers, said Duke's \$3 million fee is 15 to 20 times greater than the most expensive of his firm's four witnesses in the case.

"It is far greater than we have ever paid a witness to testify and many times more than I've ever heard of (in any previous utility case)," Stewart said.

The IURC declined to say whether Duke's fee is the highest for a single witness in recent years. The agency said it did not keep such records.

David Stippler, Indiana's utility consumer counselor, said he has spent a total of about \$500,000 in the past year or so on outside witnesses in the Edwardsport case. His office has accused Duke of mismanaging the Edwardsport project and concealing key information from regulators.

But he stopped short of criticizing Duke for spending millions of dollars.

"Given the enormity of this case, that's a tough question," Stippler said. "I'm not going to venture a guess if that's a large amount or a small amount."

But another Edwardsport opponent, Citizens Action Coalition of Indiana, called the \$3 million that Duke is paying Pegasus "disgusting" and "obscene." Kerwin Olson, CAC's executive director, said his group has spent only \$400,000 in legal and expert witness fees since Duke first proposed the Edwardsport project in 2006.

An experienced utility witness not connected to the Edwardsport case, John Thornton of Thornton Financial Consulting, based in Phoenix, said the \$3 million fee "raises my eyebrows, but I can't say



Her firm's website calls Patricia Galloway an "internationally recognized leader in the civil engineering and construction arena."

it's outside of the ballpark."

Duke defended paying millions of dollars to Pegasus, saying the consulting firm pored over thousands of pages of Duke's records, made trips to the project site and conducted interviews with key players on the project. All that work required numerous workers, who spent a combined 9,500 hours on the case, said Duke spokeswoman Angeline Protogere.

"There are serious allegations in this case, and we felt we needed a rigorous, independent audit to review the project,"

"There are serious allegations in this case, and we felt we needed a rigorous, independent audit. . . . There are considerable expenses involved."

Duke's Angeline Protogere

Protogere said. "There are considerable expenses involved with doing that."

Duke said it would not pass the cost of the expert's review on to customers.

Galloway, Pegasus' CEO, who is expected to take the stand later this week, is "an internationally recognized leader in the civil engineering and construction arena," according to the company's website. She has worked in more than 60 countries on major construction projects. She has testified as an expert witness in many court proceedings and public utility rate hearings. She holds degrees from Purdue and New York Institute universities and Kochi University of Technology in Japan, her website says.

"She and her firm are as credible and thorough as they come," Protogere said.

Galloway could not be reached Monday for comment.

Pegasus charged Duke \$335 an hour for "key personnel" and \$175 an hour for "support personnel" for its work, according to a copy of the contract between the two that was obtained by The Indianapolis Star.

Duke pointed out that the large industrial customers, public-action groups and the Office of Utility Consumer Counselor paid similar hourly rates for their expert witnesses, and sometimes higher.

For example, two witnesses hired by the consumer counselor's office to testify on whether Duke is guilty of imprudence or gross mismanagement were paid \$450 and \$350 an hour.

Pegasus submitted more than 700 pages of testimony to the IURC. The firm concluded that Duke acted prudently in managing the project.

It also concluded that opposing witnesses "failed to provide any concrete or credible evidence to support their allegations" that Duke concealed material information from the IURC, grossly mismanaged the project or committed any fraudulent act.

Duke also has contracted with several other outside experts, including financial firm Ernst & Young and engineering firm Burns and McDonnell, to review its cost estimate on the project.

★ Call Star reporter John Russell at (317) 444-6283. Follow him on Twitter @johnrussell99.

Duke Energy or Indiana customers: Who should pay Edwardsport's climbing price tag?

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(Photo: Charlie Nye / The Star)

The massive Edwardsport power plant, originally billed as a producer of low-cost energy, has been racked over the years with construction problems and huge cost overruns. The plant, with a price tag of about \$3.5 billion, is one of the most expensive projects in Indiana history.

Now the question is who should pay mounting operating costs: owner Duke Energy or its 780,000 customers across Indiana?

The state's utility regulators will hear testimony starting Wednesday morning on a request by Duke Energy to pass along tens of millions of dollars in extra costs to its customers through higher rates.

The average residential customer would expect to see electricity bills climb by about \$2.40 a month if the Indiana Utility Regulatory Commission approves Duke Energy's petitions.

Consumer advocates object, saying that Duke Energy should swallow those costs, because the company placed the plant in service in 2013 before it was truly ready. They say customers should not continue to pay for a plant that is not up to speed. And some even want Duke to refund money to customers.

The plant has suffered numerous outages and maintenance issues. Last February, the plant's output fell to less than 1 percent of capacity. Duke Energy said the low amount was due to "equipment challenges" and a decision to move up spring maintenance.

The plant has since ramped up to higher levels, but rarely above 50 percent. It generated about 15 percent of capacity in September, 27 percent in October, 71 percent in November and 20 percent in December.

The Indiana Office of Utility Consumer Counselor wants regulators not only to prevent Duke from passing along \$63.2 million in operating costs, but force the utility refund about \$51.6 million to Indiana customers. That reflects fees included in the utility's rates since September 2013.

"While state law allows a utility to recover costs through rates for a plant that is fully operational and providing electricity to customers, these costs do not rise to that level," said David Stippler, the state's utility consumer counselor, in pre-filed testimony.

Document shredding caused fire at Edwardsport power plant

(<http://www.indystar.com/story/news/2015/02/02/document-shredding-caused-fire-edwardsport-power-plant/22770025/>)

A consumer group, Citizen Action Coalition, released a study Tuesday that concludes the plant is the least efficient of Duke Energy's coal plants.

It also said the plant's two gasifiers were operating less than 40 percent of the time during its first 15 months of operation. The company had forecast that the gasifiers would run about 72 percent of the time during the period.

"We strongly believe that ratepayers should not have to pay for Duke Energy's failure to deliver on its promises," said Kerwin Olson, the group's executive director.

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Large industrial customers, who use millions of dollars worth of electricity to power their factories, are also upset by the plant's performance.

"Duke's declaration that Edwardsport was in-service was premature," said Tim Stewart, an attorney at Lewis & Kappes who represents the industrial customers. "The plant was not ready for its intended use."

Under a settlement reached in 2012, Duke Energy agreed to pay for costs related to startup, testing, validation and commissioning of the plant.

The agreement also capped the total construction costs that Duke Energy could pass along to consumers at \$2.595 billion, plus millions of dollars in financing costs.

Duke had originally estimated that the plant would cost \$1.9 billion to build. The total price tag has since soared more than \$1 billion higher, due to wildly wrong estimates on the amount of steel, piping and concrete needed to construct the facility, along with labor issues and a costly, unforeseen water-disposal system.

Duke Energy has repeatedly said it would take time to get the plant's coal-gasification technology operating consistently at a high level.

The company touts the plant as the largest in the world to use advanced technology to "gasify" coal, strip out many of the pollutants and then burn that cleaner gas to produce power. It would replace power-generating units that are more than 60 years old.

"It's important to look at performance over a longer term period, and we're on track to reaching our long-term projections," company spokeswoman Angeline Protogere said.

She said the company was confident it will be one of the lowest-cost energy producers in the system. She also pointed out the company recently reached a settlement with a major coal supplier that could reduce fuel costs for customers by about 4 percent, if approved by state regulators.

Still, the Edwardsport plant now ranks as the company's most expensive project ever built per kilowatt of electricity generated.

The utility regulatory commission will meet at 9:30 a.m. Wednesday in Room 222 at the PNC Building downtown. It will not rule immediately.

The plant is located in a former cornfield in southwest Indiana. Duke, based in Charlotte, N.C., is the largest electric utility in Indiana, serving customers in 69 of the state's 92 counties.

Consumer office opposes Duke Energy's \$1.9B Indiana upgrade plan
(<http://www.indystar.com/story/news/politics/2014/11/18/consumer-office-opposes-duke-energys-indiana-upgrade-plan/19227371/>)

Did Duke Energy mistake hurt your credit worthiness?
(<http://www.indystar.com/story/news/2014/10/07/duke-energy-misreported-credit-information-thousands-hoosiers/16864605/>)

Call Star reporter John Russell at (317) 444-6283 and follow him on Twitter @johnrussell99.

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A banner advertisement for DAVINCI Meeting Rooms & Day Offices. The background is a grayscale image of a modern office interior. On the left, the word "DAVINCI" is written in a large, white, serif font. To its right, the text "Meeting Rooms & Day Offices" is written in a white, sans-serif font, with "Fully Equipped for Success." in a smaller font below it. On the far right, the text "Find Your Space" is written in a white, sans-serif font, next to a large white arrow pointing to the right.

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Regulators OK final settlement over controversial Edwardsport plant

John Russell

August 25, 2016

A bitter, costly fight over who will pay for Duke Energy's \$3.5 billion coal-gasification plant, one of the most expensive projects in Indiana history, is finally over.

State utility regulators on Wednesday approved a settlement that will result in customers paying about 2 percent more a month, or \$1.83 for the average customer, effective in September, and Duke Energy agreeing to swallow \$87.5 million of plant operating costs that have been deferred since the plant went into service in 2013.

Duke Energy said that without the settlement agreement, the increase in monthly utility bills would have been even higher, about 3.6 percent.

The agreement also includes about \$1 million in additional funds for low-income energy assistance and solar grants for communities.

The move ends more than five years of quarreling over the 618-megawatt plant in southwest Indiana that has been mired in one controversy after another, including secret meetings between the utility and regulators and an improper job offer from Duke to a top lawyer at the state commission who was involved in the review.

The actions resulted in an FBI investigation, four high-level firings and resignations, and a public reprimand by the Indiana Supreme Court and the state ethics board against the state lawyer.

Duke Energy had originally described the Edwardsport project as a producer of low-cost electricity. The state approved the plant at a cost of \$1.9 billion but construction costs quickly soared beyond that, due to utility underestimations in the amount of pipe, concrete and other materials needed. A shortage of skilled labor also pushed up costs, and several major accidents shut down work areas for days.

The plant is the largest of its kind that generates electricity by converting coal into a combustible synthetic gas to drive turbines. Several consumer environmental groups, including Citizens Action Coalition and the Sierra Club, called the project a boondoggle and tried to stop it in court, but lost.

In January, those groups dropped their objections and joined a settlement that was reached last fall between the utility and the Office of Utility Consumer Counselor and large industrial buyers of electricity.

The consumer groups were able to get Duke to agree to provide \$500,000 for low-income energy assistance for needy customers and allocate \$500,000 for small-scale solar projects to be installed at churches, schools and other community sites, along with other benefits.

"This settlement is a huge win for Duke's ratepayers and we are grateful that Duke and the other parties opened the settlement up and invited CAC and our allies to the discussions, where we were able to secure additional

benefits for customers,” said Kerwin Olson, executive director of Citizens Action Coalition.”

The agreement is the second major one in four years over the plant's costs. In 2012, many of the parties agreed to cap the amount of money Duke Energy could recover from ratepayers at about \$2.595 billion, plus millions of dollars in financing costs. The company agreed to pay about \$900 million in construction costs.

The Office of Utility Consumer Counselor hailed the state's order, saying it will ensure that nearly \$1 billion in the plant's construction and operating costs will not be passed through to customers in rates.

The utility also agreed to stop burning coal by 2022 at its Gallagher Generating Station in New Albany, in southern Indiana near Louisville. It agreed to pay \$2.5 million in attorneys' fees to an industrial group that was also involved in fighting who would pay for the project.

“This settlement has broad support of Indiana's consumer groups,” said Melody Birmingham-Byrd, president of Duke Energy Indiana in a written statement. “We joined with them in an agreement that limits what customers will pay for Edwardsport's operations while also dedicating funds to help low-income customers with their energy bills and communities interested in solar power.”

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**In re: Nuclear Cost Recovery
Clause**

**DOCKET NO. 100009-EI
Submitted for filing: April 30, 2010**

REDACTED

DIRECT TESTIMONY OF PATRICIA D. GALLOWAY

**ON BEHALF OF
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GCL	1
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CLK	G.P.

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1 construction, engineering, and procurement of large projects with long-lead times.
2 I have an extensive background in engineering, construction, and project
3 management, including controls and scheduling. I have been involved with pre-
4 design, engineering, procurement, construction, and commissioning work for mega
5 and large projects like the development of the Levy Nuclear Plant ("LNP"). This
6 work includes significant experience in bidding and bid solicitation for such
7 projects, procurement, constructability reviews, schedule resource loading and
8 activity evaluation, code and permitting processes, due diligence studies, overhead
9 calculations, quality assurance and control, startup and operations, commissioning,
10 testing and maintenance. I have worked on engineering and construction projects
11 in over 60 countries. My power plant experience includes over 65 power plants.
12 My work experience is described in my curriculum vita, which I have attached as
13 Exhibit No. ____ (PDG-1) to my testimony. My nuclear power plant experience is
14 attached as Exhibit No. ____ (PDG-2) and my non-nuclear power plant experience is
15 attached as Exhibit No. ____ (PDG-3).

16 As a senior Pegasus-Global leader or member on risk management or
17 strategic consulting engagements, I have led management performance and
18 prudence audits, evaluations and assessments of project-specific and corporate risk.
19 These assignments have at times involved testimony in regulatory proceedings.
20 They are identified in Exhibit No. ____ (PDG-4) to my testimony. Other
21 management performance and prudence reviews have not required testimony in
22 regulatory proceedings. These assignments are identified in Exhibit No. ____
23 (PDG-5) to my testimony.

1 Q. DO YOU HAVE ANY EXHIBITS TO YOUR TESTIMONY?

2 A. Yes. I have the following exhibits to my testimony:

- 3 • Exhibit No. ____ (PDG-1), which is my curriculum vitae;
- 4 • Exhibit No. ____ (PDG-2), which is my nuclear power plant experience;
- 5 • Exhibit No. ____ (PDG-3), which is my non-nuclear power plant experience;
- 6 • Exhibit No. ____ (PDG-4), which identifies my prior management prudence reviews
- 7 involving my testimony in regulatory proceedings;
- 8 • Exhibit No. ____ (PDG-5), which identifies my prior management prudence reviews
- 9 that did not involve testimony in a regulatory proceeding.

10 These exhibits are true and correct.

11
12 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

13 A. The Company decided to continue the LNP and focus primarily on obtaining the
14 Combined Operating License ("COL") for the LNP from the Nuclear Regulatory
15 Commission ("NRC"), and other necessary permits and licenses, deferring most
16 other LNP work until the COL is obtained. In my opinion, PEF's management
17 decision was reasonable and prudent based on the information known and that
18 reasonably should have been known by management at the time the decision was
19 made.

20 PEF made a rational, deliberate decision based on an established process for
21 making management decisions within the Company. The Company used this
22 process to collect the best available information, evaluate that information, identify
23 viable alternatives or options including cancelling the project, and make a decision.
24 This was no rash decision, rather, the Company prudently took steps to update

1 information in light of evolving conditions and circumstances affecting the decision
2 with respect to the LNP. The Company carefully considered the estimated costs
3 and potential benefits, both in the short and long term, to the Company and its
4 customers under each alternative or option. This deliberate process produced a
5 reasonable and prudent management decision with respect to whether and how to
6 proceed with the LNP in light of the conditions and circumstances facing the
7 Company.

8 The Company reasonably and prudently implemented its management
9 decision. The Company employed existing terms and conditions of the EPC
10 Agreement that were included to address situations just like the schedule shift the
11 Company faced on the LNP. These particular terms and conditions were
12 reasonable and prudent under the circumstances and they were reasonably and
13 prudently employed by the Company to preserve the contractual benefits under the
14 EPC Agreement while implementing the Company's decision in an amendment to
15 the agreement.

17 III. LNP PRUDENCE EVALUATION STANDARDS AND METHOD.

18 A. PRUDENCE STANDARDS.

19 Q. ARE THERE GENERALLY ACCEPTED PRUDENCE STANDARDS FOR 20 MANAGEMENT DECISIONS?

21 A. Yes. The definition of a prudent management decision is best articulated as follows:
22 *Decisions are prudent if made in a reasonable manner in light of conditions and*
23 *circumstances which were known or reasonably should have been known when the*
24 *decision was made.* This standard is set forth by the Florida Public Service

Tampa Bay Times

WINNER OF 12 PULITZER PRIZES

Duke Energy to cancel proposed Levy County nuclear plant

By Ivan Penn, Times Staff Writer

Thursday, August 1, 2013 12:51pm

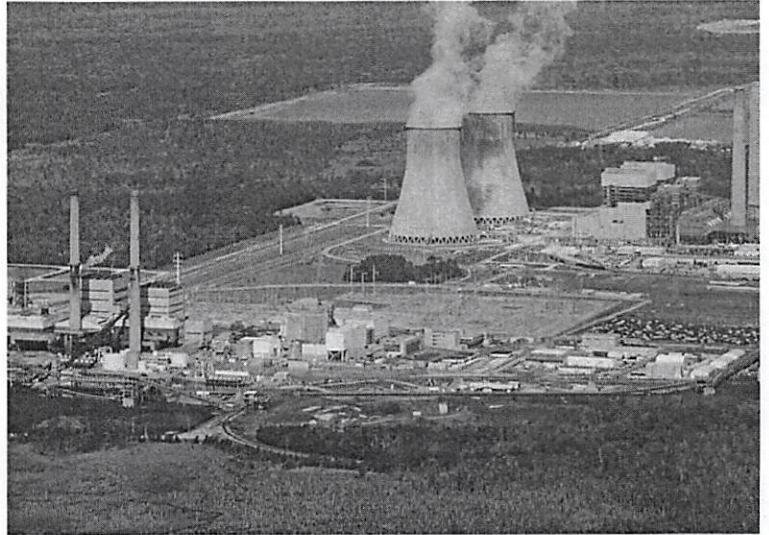
As it turns out, they were all wrong.

Progress Energy insisted its proposed nuclear power plant in Levy County would provide low-cost energy for generations.

The Legislature promised again and again that a new law forcing customers to pay in advance for the Levy project would get the plant built faster and cheaper, even as the delays piled up and the price soared.

On Thursday, the big talk ended.

Duke Energy, Progress' successor company, pulled the plug on Levy. There will be no cheap power. Customers will still have to pay up to \$1.5 billion. And Duke shareholders get to keep \$150 million.



State Rep. Mike Fasano captured a common sentiment when he said:

"Shame on Duke Energy, Progress

Energy for taking the public on this ride knowing that they were never going to build the nuclear plants. Shame on them."

Despite initial appearances, Thursday's news was not all bad — for Duke.

As part of a wide-ranging agreement with the state Public Counsel's Office, the utility avoids potentially embarrassing public hearings on the botched upgrade that crippled the now closed Crystal River nuclear plant and left customers facing a \$1.7 billion bill.

Further, the settlement guarantees Duke a minimum profit margin of 9.5 percent through 2018.

As for Duke's customers, the settlement stems the financial bleeding from the Levy and Crystal River misadventures at up to \$3.2 billion. The PSC will determine how and when customers will pay off that bill.

The deal still must be approved by the five-member state Public Service Commission.

"It's a very fair deal for ratepayers and the company," said J.R. Kelly, the state public counsel, who represents consumers before the PSC. "It's one I support 100 percent. My name is on it."

R. Alexander "Alex" Glenn, president of Duke Energy Florida, called the settlement "an effective balance." He said the utility plans to continue pursuing the operating license for the Levy project from the U.S. Nuclear Regulatory Commission because the process is almost complete.

"We want them to continue to get that license," Kelly said. "To give up now, it doesn't make sense, then you're just throwing all that money down the toilet. Basically, if any additional money is spent on that license, it's on Duke's dime."

But Duke will simultaneously seek to sell off equipment it has acquired for the project to reduce the debt customers must pay for what was spent.

"That will go back dollar for dollar to customers," Glenn said.

...

The Florida Legislature overwhelmingly supported the 2006 law that allowed utilities to collect money from customers in advance to help build nuclear plants. They hailed the law as a way to build the plants cheaper and faster, saving customers about \$300 million.

Critics countered that there weren't enough safeguards in place.

In 2009, for instance, economist Mark Cooper told the PSC that it was "not prudent" to proceed with the Levy project. Cooper, now a senior fellow at the Institute for Energy and the Environment at Vermont Law School, subsequently called the way the law was enacted "the perfect story of crony capitalism."

Now Cooper and others shake their heads.

"If they had taken my advice four years ago, they would have saved 1.3 billion," Cooper said Thursday.

Last year, a *Times* report detailed how Duke would profit from the plant whether it got built or not. Duke would make a fixed percentage of whatever it spent on the project. So, the more it spent, the more it made – whether or not the plant got built.

In May, the *Times* reported that, over a 60 year lifespan, the Levy plant would cost more than an equivalent natural gas plant under any reasonable scenario. The investigation also revealed that Duke would pocket as much as 10 times the profit from the Levy project compared to a natural gas plant.

The *Times* investigation prompted calls from Tampa Bay area lawmakers for the agriculture commissioner and the PSC to look into whether the plant was still in the best interest of consumers.

Arnie Gundersen, a nuclear engineer who also argued against the project, said Duke's decision shows that the nuclear industry is troubled.

"I've got to give Duke a lot of credit for doing what Progress didn't do," Gundersen said. "Progress dug this hole and Duke is digging out. It's the right decision."

...

Thursday's decision still irked some local legislators.

Rep. Dwight Dudley, D-St. Petersburg, who won election largely campaigning to overturn the nuclear advance, still wants the law repealed.

"I don't give a damn how they justify taking our money," Dudley said. "This isn't over yet. We've still got work to do."

During the last legislative session, Sen. John Legg, R-Trinity, sponsored a bill that would have ended the advance fee if utilities failed to obtain a license from the Nuclear Regulatory Commission. He also pushed unsuccessfully to make utilities refund advance fee money to consumers if a project falls apart.

Only a modest revision of the advance fee was passed by the Legislature and signed by Gov. Rick Scott in June.

"It's absolutely infuriating because consumers have basically footed the bill and are now having the rug pulled out from them," Legg said.

The worst part, he said, is that consumers aren't getting any refund from about \$1.5 billion spent on the Levy project so far.

...

So what do customers get from this latest settlement?

Much of their hopes depend on Duke's ability to peddle equipment it has already purchased for Levy and can salvage from Crystal River. Glenn offered no estimate of how much that might be.

Duke also has agreed to write off \$295 million worth of charges that customers would have had to pay for expenses related to Crystal River.

In February, Duke announced the permanent closure of the plant after deciding that it did not make economic sense to repair cracks in the reactor's concrete containment building. The building was damaged during an upgrade and maintenance project in 2009.

Without Thursday's settlement agreement, Kelly, the state public counsel, said the money customers owe to the utility could have continued to grow to as much as \$4 billion.

Said Kelly: "We stopped the bleeding."

...

Levy is dead for now, but Glenn remained resolute that the utility wants nuclear to be apart of its future energy mix.

"We continue to believe," Glenn said, "Levy is a viable site and a good site."

Still, the cancellation of the Levy project adds to the nation's rocky nuclear history.

There hasn't been a new commercial nuclear plant built in the United States in 30 years. Wall Street has lost interest in financing such risky, expensive ventures.

Widespread use of the drilling technique called hydraulic fracturing or "fracking" helps the nation tap what is estimated at a 100-year supply of affordable natural gas.

Within the last decade, more than two dozen nuclear reactors had been proposed across the country, but only two major projects are under construction: one in Georgia and another in South Carolina.

Duke had already informed federal regulators that it was suspending plans for its proposed new reactors at its Shearon Harris plant in North Carolina and delaying plans for proposed reactors at its Lee Nuclear Plant in South Carolina.

The nuclear renaissance "was just this artificial gold rush," said Peter Bradford, a former Nuclear Regulatory commissioner. "And yes, it does show the renaissance is dead."

Times staff writers Jeff Harrington and Drew Harwell contributed to this report. Ivan Penn can be reached at ipenn@tampabay.com.

The backstory

Read our full coverage of the Levy County nuclear plant project, the damaged Crystal River nuke plant and more on our nuclear plants special report page.

.q&a

Four key questions about Duke's decision

What happened Thursday?

Duke Energy announced an agreement to cancel its long-delayed and expensive Levy County nuclear plant project.

What are customers on the hook for?

From \$1.1 billion to \$1.5 billion, depending on how much Duke can recoup by selling now unneeded parts from the Levy project.

Will the cancellation immediately affect power rates?

PAGE 47

No. Duke customers were already paying for the Levy plant. Those rates will likely remain frozen until the end of 2018.

What will they do to replace that power?

Right now, Duke doesn't need the additional power. An agreement with the state Public Counsel's Office streamlines the approval process for the equivalent of two large natural gas plants before the end of 2018, should the need arise.

Duke Energy to cancel proposed Levy County nuclear plant 08/01/13

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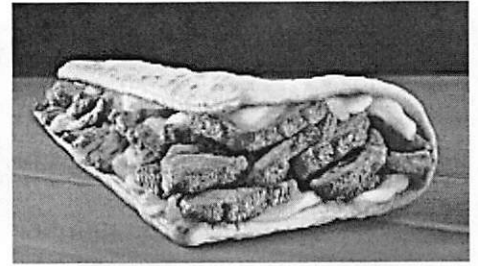
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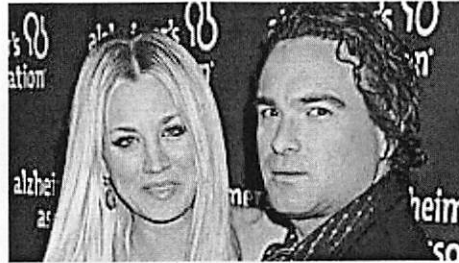
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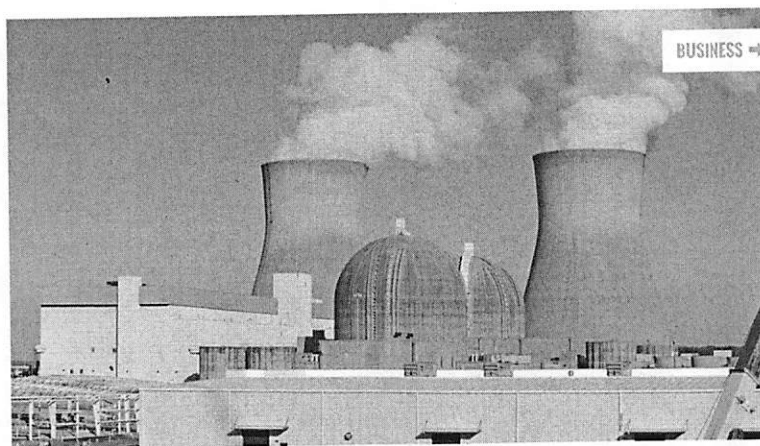


Who pays Vogtle's higher costs? Mostly you, Georgia regulator decides.



Russell Grantham - The Atlanta Journal-Constitution

Updated 9:26 p.m Tuesday, Dec. 20, 2016 Filed in Business and Money news



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Georgia's utility commission approved a settlement Tuesday that will saddle customers with billions of dollars of cost overruns at a much-delayed nuclear plant expansion in exchange for up-front cost savings.

The five-member Public Service Commission, which unanimously approved the pact, said it benefits customers because it avoids potential litigation with Georgia Power over who has to pay for costs overruns, and sets stiff penalties if the Atlanta utility doesn't complete the project by the end of 2020.

"I think what we've done is remove the threat of litigation and front-load a lot of savings," said Chuck Eaton, PSC chairman.

The deal is the result of a settlement the PSC's staff negotiated with Georgia Power, the lead partner in the project to build two new reactors at the Vogtle nuclear plant near Augusta.

The PSC staff and Georgia Power say the Oct. 20 pact will save ratepayers about \$185 million over the next four years.

But critics say the PSC's board, after a one-day hearing earlier this month, accepted a deal that gives scant up-front savings to customers compared to the project's billions of dollars in cost overruns they will eventually have to absorb.

The tentative deal "creates the largest revenue requirement imposed on Georgia Power ratepayers based on the least amount of public review by the commission in its history," said the Southern Alliance for Clean Energy, an

advocacy group, in a filing.

The group said the proposed deal short-circuits the agency's chances to disallow almost \$1.6 billion for Georgia Power's share of the cost overruns under a previously planned "prudency hearing" once the project is finished.

Georgia Power's customers can't be billed for costs that the PSC decides are "imprudent." Georgia Power owns about half of the Vogtle expansion.

The commission had ordered its staff more than 10 months ago to begin meeting with Georgia Power to reach a settlement.

The settlement gives Georgia Power an additional 18 months to complete the first new unit and six months to complete the second one.

However, customers' rates won't go down as a result of the proposed deal. They just won't go up next year, because a surcharge on customers' bills that finances the Vogtle project is expected to stay at this year's level.

As part of the settlement, Georgia Power withdrew a request to increase in the surcharge next year. In another action Tuesday, the PSC board approved an order for Georgia Power to tell customers in their bills next year how much they're saving due to the settlement.

The surcharge typically adds about \$100 a year to most residential customers' bill.

Meanwhile, customers' future rates are still expected to go up once the Vogtle expansion is completed. They just won't go up as much.

In the hearing on the settlement earlier this month, Commissioner Stan Wise noted the Vogtle project is now expected to result in a 6-8 percent increase in customers' rates once the project is done, well below the 12 percent increase that was originally projected.

About 4.5 percent of that increase is already included in customers' bills through the financing surcharges, according to Georgia Power.

The agreement doesn't give "either party everything it wanted (but) is in the public interest and provides (Georgia Power) a clear way forward to complete construction," the company and PSC said in a joint filing.

But in its filing, the Southern Alliance for Clean Energy said the deal is a rush job with little public oversight compared to how the PSC scrutinized the original Vogtle power plant's costs after it was completed almost 30 years ago.

"The prudency review for Vogtle Units 1 and 2 took weeks of public hearings, contained extensive testimony from senior Georgia Power Co. officials, consultants and accounting experts and created an enormous public record on which the commission based its decision," SACE said in a filing to the PSC before the hearing.

The group said the "de facto" prudency hearing, if the PSC approved the deal, effectively gives its blessing for customers to eventually be billed \$8 billion for Georgia Power's share of the project, rather than the currently certified \$6.1 billion.

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