



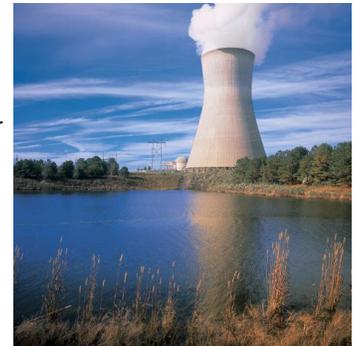
POWER NOTES - DUKE ENERGY CAROLINAS EDITION

SUMMER 2017 ISSUE - POWER NOTES

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Nuclear Industry Update

There are 61 nuclear power plants, with a total of 99 nuclear reactors, commercially producing electricity in the U.S. Before the 2012 nuclear disaster in Fukushima, Japan, there were 30 new proposed nuclear reactors in the U.S. in various stages of planning and development. Most have since been canceled or postponed indefinitely.



Shearon Harris Nuclear Plant Cooling Tower
Duke Energy (Progress)
Photo from Duke Energy Website

Vogtle & Summer Nuclear Power Plants

Four nuclear reactors at two plants in the U.S. were well underway before the Fukushima disaster. They are at Georgia Power's Vogtle Plant and South Carolina Electric & Gas' Summer Plant.

Westinghouse Bankruptcy

Westinghouse was the provider of the nuclear reactors and the general contractor hired to build the Vogtle and Summer plants. They were providing two AP1000 nuclear reactors for each of the plants. Both projects are dramatically behind schedule and over budget. The plants have already gathered a staggering **\$13 billion** in cost overruns and it's likely that more losses are on the horizon.

So far, Westinghouse incurred **\$9 billion** in losses while constructing these plants. These losses drove them to declare bankruptcy in March 2017; **they will not complete the plants.**

Who Pays?

SCE&G has announced that they will not be completing the new nuclear units at the Summer Plant. The initial estimate to build was \$11 billion, but recent estimates were as high as \$25 billion. A total of \$9 billion was spent on the new units. That money will likely be paid for by customers of SCE&G.

Georgia Power announced that they will try to finish construction of the Vogtle units on their own. The original estimated cost for these units was \$14 billion, while the current cost projections are around \$25 billion and call for the units to come on line at least five years later than originally planned. At UMS, we predict that neither of these units will ever be completed.

Duke Energy - Nuclear Power

Duke Energy spent \$1.5 billion for construction and operating licenses for four new Westinghouse AP 1000 nuclear generating units between North Carolina and Florida. Due to the Westinghouse bankruptcy, cost overruns and schedule delays in Georgia and South Carolina, Duke has just announced they are canceling these plans.

Duke will need to build other generating units to make up for the power that they planned to receive from the nuclear units, but it is very fortunate for Duke's customers that these plants were canceled after only \$1.5 billion in losses. It could have been much worse.

Have Cost Overruns & Construction Delays Happened Before?

Yes. Unfortunately, dramatic cost overruns and schedule delays are common. Google these stories:

- **Shearon Harris Plant (NC)** - \$1 billion budgeted for four units. Only one unit was constructed at a cost of \$4 billion.
- **Shoreham Plant (NY)** - \$75 million projected; \$6 billion spent and the plant never went on line - a total loss.
- **San Onofre Plant (CA)** - Closed permanently in 2013 after failure of newly installed steam generators. Now a multi-billion dollar storage facility for spent nuclear fuel; no power being produced.
- **Crystal River 3 (FL)** - Permanently closed due to construction failures in the containment building; multi-billion dollar loss.
- **North Ana Plant (VA)** - Closed for one year after an earthquake struck near the plant that was greater than what the plant was designed to withstand. The NRC later allowed it to re-open.



Janessa Goldstein Promoted to Vice President of Financial Operations



Janessa Goldstein
Vice President of Financial Operations
Corporate Counsel

Utility Management Services, Inc. (UMS) announced the promotion of Janessa Goldstein to Vice President of Financial Operations on June 1, 2017.

Goldstein joined UMS in January 2010 as Office Manager, handling collections, accounts receivable/payable and general administrative duties before taking on additional human resources responsibilities of benefits and payroll in June of the same year. In July 2011, she began handling collections and several HR duties remotely and on a part-time basis while pursuing a law degree.

After earning a Juris Doctorate from the Charlotte School of Law, Goldstein returned to the firm on a full-time basis in 2014 as Corporate Counsel, and was promoted to Director of Financial Operations in early 2015.

As a licensed North Carolina attorney, she plays an integral role in negotiating and advocating for better rate structures for UMS clients in various administrative proceedings, and is a two-time recipient of the CALI Excellence for the Future Award for Lawyering Processes I & II.

Goldstein also holds a degree in Business Administration with a concentration in Human Resources Management from the University of North Carolina at Wilmington. She will continue serving in the role of Corporate Counsel as she takes on additional responsibilities in the area of financial operations.



Lightning season is here! Protect your Electronic Equipment

Protect your server(s), computers and other electronic equipment by installing surge protection at your facility. A variety of options are available.

Power Strips

These are inexpensive, easy to use and provide power and surge protection for multiple devices. We recommend having one of these for each of your computers or other pieces of electronic equipment.

Electrical Panel Surge Protection

A variety of surge protection devices are available to be installed at your electrical panel. They provide protection for your entire facility, as well as a higher level of protection than single-device power strips. These protectors are more expensive and must be installed by a licensed electrician. We recommend this type of protection be used in conjunction with power strip surge protection.

Electrical Grounding

Surge protection equipment is only effective when used with a high quality, low impedance grounding system. If you install surge protection at your electrical panel, we suggest you also install additional ground rods bonded to your existing grounding system. This will reduce the impedance of your grounding system and improve your overall level of surge protection.



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