

Correcting Miss-statements about Pay-As-You-Go Nuclear Power Plants

In recent guest columns, an anti-nuclear activist and a politician have promoted miss-statements about clean, cost-effective new nuclear energy for Florida. As a Floridian, nuclear engineer, and former Deputy Director of the U.S. National Nuclear Security Administration, I offer these corrections.

Florida's Alternative Cost Recovery (ACR) method for nuclear power plants does not allow "pre-payment" or "payment in advance". It simply requires that costs are paid as the costs are incurred. ACR is not a "blank check". The costs are added to the rate base only after a public hearing by the Florida Public Service Commission ("PSC") which can reject any costs that are not shown to be prudent.

Although some say that the recent false messaging about this topic is politically motivated, it is possible that much of it flows from miss-understanding the history of how we, as Floridians, pay for large power plants.

In 2005 the Federal Energy Policy Act (EPACT) was adopted with a bipartisan majority of 75%, including then Senator Obama, and signed by President Bush. Together, they encouraged development of new nuclear plants, recognizing that nuclear serves as America's largest source of emission-free energy, providing 73% of all the electricity that is carbon-free.

One year later, by a bipartisan vote (including 158 of 159 members of the House and Senate), Florida's Legislature adopted a 2006 bill to allow nuclear plants to be financed like other major infrastructure, by paying for the plants as costs are incurred. Our Public Service Commission will now apply this law to specific costs necessitated by development of proposed nuclear plant expansion.

This logical "pay-as-you-go" method is necessary if we are going to capture the benefits of nuclear power and save millions of dollars we ratepayers would otherwise have to pay for long term financing. Without it, activists will once again have killed off America's new nuclear plants.

Here's why.

First, remember that nuclear energy itself is necessary.

Efficient electricity supply requires a combination of small, intermittent "peaking" power plants (such as solar when the sun shines), combined with "base-load" power – very large plants with lower operating costs running continuously 24/7 providing the bulk of the electricity we need.

The only energy forms that can be operated continuously in such large quantities with fuel costs that remain low and stable over long periods of time are coal and nuclear. That's why America has 104 nuclear plants supplying 20% of its electricity... and coal supplying 52%.

The only way to build nuclear plants is to pay for their cost as it is incurred.

Large, complex infrastructure such as aircraft carriers, airports, water treatment plants and nuclear plants take a long time to construct. (Such plants take much longer and cost much more than three decades ago when America built its current fleet.) The cost must be either 1) Paid as it is incurred; or 2) Financed over time, with huge interest payments being paid later.

Under our regulated utility system for electricity, we customers pay a capped fee to government-regulated private utilities that operate the power plants. We reimburse the utilities for the cost of building the plants, which is a feasible model for those private companies when building small power plants that have low *construction* costs. But, if private utility companies were forced to front *construction* costs for a large nuclear plant throughout that long construction period, the financing itself would be cost-prohibitive.

Moreover, that finance cost would still have to be paid by the ratepayer later. But, we would be putting the costs on a credit card and paying “interest on interest” until the costs are put into the rate base far into the future. The overall cost would then be greater than if we, the ratepayers, had simply paid for the development costs as they were incurred (as we do with construction of schools, water plants, sewer plants and other large infrastructure serving society).

This is why Florida changed its law in 2006 to allow pay-as-you-go financing for new nuclear plants. Other states followed, bringing about proposed new plants, such as Georgia where similar legislation has ushered in new nuclear plant construction already creating thousands of jobs. The Georgia ACR allows ratepayers to avoid paying \$300 Million in interest on interest and a total in-service plant cost savings of \$2 Billion over the life of the plant. This is good sense for those of us fiscally conservative Florida ratepayers who do not want to waste our money on unnecessary financing charges.

Some opponents of nuclear power have mischaracterized this as “pre-paying costs”. Instead, it is “pay-as-you-go” financing. It is a well-recognized alternative to costly debt.

When local governments upgrade from septic systems to central sewer, they typically offer a “sign-up-and-save” program. This allows homeowners to save money by paying into the system early, in return for a fixed lower amount, rather than paying the large financing charges later. Most homeowners wisely choose this option.

It’s human nature to want to delay payment for purchases. That’s why retailers lure buyers by offering “*No-Payments for Six Months*” and the U.S. Census Bureau reports that the amount of U.S. citizens’ credit card debt is expected to rise to a whopping \$1.77 trillion this year. Some politicians exploit this psychology, swaying voters to think that it’s easier to defer payment for the power plants we need. But smart, mature buyers (and voters) know it is better to pay-as-you-go.

Recent columnists have claimed that nuclear costs have “escalated 3-4 times ...since 2006”. This is simply not true although the costs for constructing all base load power plants has

increased significantly due to rapidly rising costs of labor and materials worldwide. For example, a natural gas power plant completed in 2006 in Miami-Dade cost about \$500 per installed kilowatt but a similar plant completed in nearby Palm Beach County just 4 years later cost \$900 per KW.

I remember that in 2006 when the ACR legislation was being discussed, the projected costs for new nuclear plants was approximately \$3000-\$4000 per kilowatt and now those estimates are around \$5000 per kw installed. The 2007-08 cost projections filed with the Florida Public Service Commission for the proposed nuclear plants are generally consistent with this.

It is true that, because nuclear plants are large and complex, they are expensive to build. But, because they operate around-the-clock at 91% capacity for 40-60 years with very high output. Because the cost of nuclear fuel is cheaper than any other source, the low operating costs soon overcome the construction costs so that nuclear becomes the cheapest component of our electricity mix.

As Floridians, we've benefitted from this for years. Without the 5 nuclear plants operating here for the last 4 decades, our electric bills would be much higher. France figured this in the 1970's and built nuclear plants comprising 79% of their electricity. France now has the cheapest electricity (and cleanest air) in Europe.

It's true that, if government decides to not move forward with a project, we taxpayers do not receive a refund of our taxes. So too, as a ratepayer, I understand there's always a chance of this with a larger power plant, especially with well-funded anti-nuclear organizations attempting to kill off needed plants.

Nuclear power is an investment in our future energy supply... an investment in lower electricity rates and an investment in clean air. We should hold the utilities accountable and ensure that the costs they seek to recover are prudently incurred. Financing these large plants requires that we pay for the development cost as it is incurred. It's well worth it.

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