

EXCEL SERVICES CORPORATION

Nuclear Engineering Consulting



Recent Developments in Nuclear Energy in the United States

Virginia Nuclear Energy
Consortium Authority

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Agenda

- I. Introduction/Background
- II. Premature Shutdown of Nuclear Plants
- III. Nuclear Assets Legislation
- IV. Clean Power Plan Implementation
- V. Other Activities



I. Introduction / Background

- Until 2013, the US had 104 operating reactors.
- In December of 2015, the US has 99 operating reactors and 1 in startup (Watts Bar 2) for a total of 100.
- There are 4 AP1000s in construction in Georgia and South Carolina
- There are 5 sites in some level of active decommissioning: Zion, San Onofre 2/3, Crystal River 3, Kewaunee, and Vermont Yankee



Introduction/ Background (Continued)

- Now there are announcements of 2 more premature shutdowns based solely on economic conditions. (Pilgrim & Fitzpatrick)



II. Premature Shutdown of Nuclear Plants

- Two plants have prematurely shutdown based solely on economic conditions: Kewanee and Vermont Yankee
- Entergy has announced two more site premature shutdowns based solely on economic conditions: Pilgrim, Fitzpatrick. Citing poor market conditions, reduced revenues, and increased operational costs → annual loss of \$40 million in revenue for Pilgrim.
- US Energy Market is severely flawed.
- US Energy Market favors subsidized wind and solar.
- US Energy Market recognizes no unique value for Nuclear.



Energy

- Nuclear produces affordable, available, reliable energy 7 days per week/ 24 hours per day as the only environmentally friendly baseload energy supply.



Economy

- Each year, the average nuclear facility generates approximately \$490 million (US) in sales of goods and services.
- The same average nuclear facility will create nearly \$46 million (US) in total labor income
- Operation of the same average nuclear facility generates 700-1200 permanent jobs, which pay 36 to 42 percent more than average salaries in the local area and the state



Economy (Continued)

- Permanent jobs at nuclear plants create equivalent numbers of support jobs locally- grocery stores, restaurants, dry cleaners, car dealers
- Every dollar spent by the average nuclear plant produces \$1.04 in the local community
- Each nuclear plant generates an average of \$16 to \$20 million (US) in state and local tax revenue for schools, roads and similar infrastructure
- And the federal tax payments of each nuclear unit is roughly \$67 million (US)
- The cost of waste is included in nuclear and not in other energy sources



Environment

- Nuclear produces approximately 20% of the US energy but provides over 63% of the carbon free emitting energy in the US.



Actions

- Have reached out to the leadership of Entergy and to the Governor of New York to attempt to broker some agreement to keep Fitz Patrick operating.
- Have also begun discussions with Entergy to keep Pilgrim operating
- Developing generic information to inform State and Federal Government officials about the value of nuclear



III. Nuclear Assets Legislation

- I have proposed legislation that would have the Federal Government/ Congress formally acknowledge our Nuclear power plants as “National Assets”
- 1960’s,
Years of design, licensing and construction to place into operation at cost of hundreds of millions of dollars
- Now,
More years of design, licensing and construction to place into operation at costs of billions of dollars



Nuclear Assets Legislation (Continued)

- Provide a funding mechanism until such time as the plant could economically compete in the region in which it is operating.
- Currently in Senate/House Review.
- Hope for resolution in early 2016.



IV. Clean Power Plan Implementation

- The Environmental Protection Agency (EPA) issued the final Clean Power Plan (CPP) in August, 2015.
- The CPP requires each of the 48 contiguous states (Vermont and DC are exempted) to reduce the carbon emission levels by 32% for the 2005 levels by the year 2030.
- The CPP provides very little guidance how.



Clean Power Plan

Implementation (Continued)

- I am co-chairing the ANS Special Committee on Nuclear in the States, which will engage our members in state-by-state efforts to maintain the current nuclear fleet and support nuclear new builds.
- Intend to provide a consistent and standard approach for each of the states in valuing nuclear energy as an asset in their compliance with Section 111D of the Clean Power Plan.



Clean Power Plan Implementation (Continued)

- We are developing a toolbox tailored for each State administration to appropriately consider and value nuclear in the energy and environment decisions.
- We will have a draft “toolbox” in mid December, 2015 and a final toolbox mid January, 2016.
- We will be presenting to the National Governors Association and I will be personally visiting each governor and his/her staff



Clean Power Plan Implementation (Continued)

- I have met with Virginia, Maryland, New Jersey and South Carolina
- We are now focused on Illinois and New York



Other Activities (Continued)

A. National Governors Association/ Congress

- Interface and presentations on a routine basis to National Governors Association (NGA) regarding value of nuclear
- Presentations and discussions with Congressional staff regarding value of nuclear.