NEAC REACTOR TECHNOLOGY SUBCOMMITTEE

Plant Closure Report

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December 19, 2014

*Due to organizational conflict of interest issues, participation in discussion on LWRS topics was limited.

Background

Recent LWR plant closures prompted NE leadership to consider contributing factors and what can be appropriately done at national and regional levels.

The NRT subcommittee was asked to consider what can be done in keeping the nuclear power option viable now and into the future and provide initial findings and recommendations.

The subcommittee considered both currently operating plants and future LWR's under construction or planned.

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Topics for Nov. 5th, 2013 Meeting

Clarification of Charge	Corradini/Kelly
Presentation on Kewaunee	D.Stoddard (Dom.)
Presentation on Vermont Yankee	W. Mohl (Entergy)
Nuclear Energy Institute	R. Meyers (NEI)
Discussion and Path Forward	NRT Committee

Slide 3

jlr3 Are you sure that Reister, Beville, and Welling aren't PhDs? You could just deleted all 'Dr.' stuff (most folks don't care...). Also, if you want to be picky.. your spaces are a bit off...

jlrempe, 5/31/2013

NRT Subcommittee Charge:

- Review and identify the circumstances for each plant shutdown, in order to get a common understanding of the situation.
- Have national and regional policies created market structures, which may recognize value in certain clean energy resources, but not in clean nuclear energy, both existing and new? What has changed in this regard, since the existing nuclear fleet came into operation?
- Are current restructured energy markets not appropriately valuing existing nuclear generation, so that some plants may inappropriately appear uneconomic? If so, how can this problem be addressed?
- While the Light Water Reactor Sustainability (LWRS) program may be working on important issues, what may be missing?
- Are there actions/incentives for current plants, for advanced large LWRs and for the planned Small Modular Reactor (SMR) program that need to be considered?

Findings & Recommendations

Finding: There have been five recent nuclear plant closures (or closure announcements): Two @ San Onofre reactors, one reactor at Crystal River, Kewaunee and soon at Vermont Yankee.

All of these closures were business decisions.

Finding: In the longer-term, except for decadal power purchase agreements, the capacity markets as currently structured (to the extent that they exist at all in some regions) do not provide adequate revenues to assure that positive cash flows will be produced for merchant nuclear plant owner/operators.

There is also evidence that some of these markets as currently structured will not support investment in new generating facilities of any fuel source. Combined with the anticipated EPA regulations, regional reserve margins may be projected to shrink in an accelerated manner below that generally regarded as prudent.

Findings & Recommendations

Recommendation: DOE-NE should work with the DOE Secretary to begin high-level discussions to develop a sense of urgency at the federal level within the DOE as well as with other federal agencies (i.e., EPA, FERC) to ensure that electricity markets take into consideration desirable attributes that are not currently reflected in electricity prices. Key attributes include:

- Fuel source diversity: An appropriate balance of more than one type of energy resource within the electricity supply system. Such diversity protects against short-term energy supply scarcity, price volatility, impacts of severe weather conditions, and single-source influence of any single energy resource.
- Electric supply reliability: An electrical power supply that is stable in time and space, and has an adequate capacity margin.
- Environmental sustainability attributes: These include low carbon emissions, small environmental footprints, minimal solid waste requirements and water requirements.

Findings & Recommendations

Recommendation: DOE-NE should assess the amount of nuclear power plant capacity that may be at risk and the time frame and key contributing factors. DOE-NE should work with the Office of Energy Policy and System Analysis on this assessment. Develop a strategy and action plan to address potential near-term loss of generation capacity that otherwise would be retained if restructured electric markets took into account the attributes identified above.

Recommendation: Given the desirability of having an electricity market that takes into account the attributes identified above, an interagency task force should be formed at the federal level to help promote regional and state policy that would influence Public Utility Commissions and Load Serving Entities to create electricity markets that take these attributes into account.

Action Item: We recognize that new nuclear power generation capacity (advanced LWRs such as the AP1000 or ESBWR or future SMRs) will also be influenced by these findings on economics and market structure. NRT will take up this investigation in our future meetings.