Issues Related to Decommissioning Funding

March 2, 2011

Presentation of the State of New York

"Despite the expressed view of many on Wall Street and in Washington that the crisis could not have been foreseen or avoided, there were warning signs. The tragedy was that they were ignored or discounted."

-Conclusions of the Financial Crisis Inquiry Commission, xvii

Commercial Nuclear Reactors in New York

- Fitzpatrick – Oswego County
- R.E. Ginna – Wayne County
- Indian Point Unit 1 – Westchester County
- Indian Point Unit 2 – Westchester County
- Indian Point Unit 3 – Westchester County
- Nine Mile Point 1 – Oswego County
- Nine Mile Point 2 – Oswego County
- Shoreham – Suffolk County

West Valley

- Former commercial nuclear fuel reprocessing facility that operated from 1966 to 1972
- Produced approximately 600,000 gallons of liquid high level radioactive waste
- DOE's 2010 Environmental Impact Statement estimated that the total cost of cleanup and complete removal of all contamination from reprocessing may exceed $9.3 billion
- GAO 2001 West Valley report estimates more than 40 years for clean up

Lessons from the Financial Crisis

- Listen to those who identify risks
- Identify unintended consequences, contingencies
- Ensure transparency
- Avoid unnecessary complexity

Each of these applies to Decommissioning Funding

Warning Signs and Complexity

- Parent companies minimize accountability
  - at-risk subsidiaries
  - net present value
  - inadequate reporting
  - conversion of funds
- SAFSTOR extends risks by decades
  - statistical techniques hide risk
- Funding formula ignores site-specific contamination

Parent Guarantees

- If a parent or self guarantor falls out of conformance with 10 CFR 30 Appendix A requirements, it is unlikely that the guarantor will have the financial capacity to fund any shortfall.

- At-risk subsidiaries
  - Corporate re-organization
  - "Merchant" plants pose additional risks
  - Bankruptcy
  - Will they still be there 60 years after cessation of power generation?

Net Present Value

The State does not support the use of net present value

$$\text{Present Value} = \text{Final Value}(1+r)^{-t}$$

None of the variables in the equation is known variables at the time of calculation.

1) The date when the parent guarantee may be paid to decommissioning fund is unknown.
2) The amount which will finally be required to make up a shortfall is unknown.
3) The discount rate is based on the fallacious assumption of 2% growth above inflation in costs of decommissioning.

Net Present Value

1) An assumption about the time horizon for accumulation of value

   (unplanned shutdown)

2) An assumption about the proper rate at which money can grow

   (constant 2% real growth)

3) An assumption about the final magnitude of decommissioning shortfalls

   (minimizing projected shortfall minimizes current guarantee)

Reporting

The State supports the recommendations of RIS-2010-XXX and further cautions:

- "Repo 105" Risks – NRC should move from snapshot fund reports to averages
- Licensees must account separately for NRC minimum funds and State "green-fielding" funds
- Funds spent prior to shutdown should be reported separately from funds to be spent in post-shutdown decommissioning

Reporting

- Current standard means that licensee may be non-compliant for up to three years
- Absolute transparency:
  - Service on States and localities
  - Immediate posting on *Public* ADAMS

Conversion of Funds & Depletion of Accounts

- Radiological and non-radiological cleanup funds
  - State-regulated site restoration funding
- Use of Decommissioning Trust Funds for spent fuel maintenance
  - 10 CFR 50.82(a)(8) exemption

"These models purported to predict with at least 95% certainty how much a firm could lose if market prices changed. But models relied on assumptions based on limited historical data; for mortgage-backed securities, the models would turn out to be woefully inadequate."

-FCIC Report, at 44

Monte Carlo Probability Techniques

"Monte Carlo simulation is useful only when nothing else will work."

-David Nawrocki, The Problems with Monte Carlo Simulation

The State asserts that if Monte Carlo techniques are employed:

- The particular model and all its assumptions must be publicly available so that interest parties may test its conclusions
- The NRC and an outside auditor should perform the evaluations
- The licensees and investment managers have a vested interest in demonstrating a high probability that a fund will meet funding goals

"SAFSTOR"

"History tells us [regulators] cannot identify the timing of a crisis, or anticipate exactly where it will be located or how large the losses and spillovers will be."

-Alan Greenspan in comments to the FCIC, at p.3 of the Final Report

"SAFSTOR"

- The State does not support the use of "SAFSTOR" to accrue funding
- Time Horizon magnifies risk
- The Use of "SAFSTOR" is contrary to NRC Guidance
  - The reason for assurance is that "funds for decommissioning will be available at *end of operation.*" - SG-1229, 4 (2011)
  - Pursuant to 10 CFR 50.75(e)(1), funding assurance should be "sufficient to pay decommissioning costs at the time permanent termination of operations is expected."
  - "SAFSTOR" is meant to minimize exposure to radioactivity

Accurate & Honest Assessment of Risk

Risk Must Be Acknowledged

- Host communities
- States
- Investors, Rating Agencies, and Financial Markets
- Licensees

Inadequacy of Pro Forma Funding Formula 10 CFR 50.75(c)

	Millions
(1)(i) For a PWR: greater than or equal to 3400 MWt	$105
between 1200 Mwt and 3400 Mwt	$(75+0.0088P)
(For a PWR of less than 1200 Mwt, use P=1200 Mwt)	
(ii) For a BWR: greater than or equal to 3400 MWt	$135
between 1200 Mwt and 3400 Mwt	$(104+0.009P)
(For a BWR of less than 1200 Mwt, use P=1200 MWt)	

Adjustment factor: 0.65 L + 0.13 E + 0.22 B

Site-Specific Contamination

- Contamination at Indian Point 3 adds at least $132 million to the cost of cleanup - (Table 1, TLG Report E11-1583-006)(December 2010)
- Yankee Rowe - $120 million to more than $750 million
- Connecticut Yankee $410 million to $1.2 billion.
- 2006 – Indian Point – leaks to groundwater and Hudson River
- 1995 – R.E. Ginna – leak to groundwater
- 1991 – Fitzpatrick – leak to Lake Ontario

CONCLUSION

The State of New York requests NRC strengthen the decommissioning funding assurance process in order to avoid the choice between two stark and painful alternatives: forcing States to pay millions to clean-up reactor sites or leave them as contaminated wastelands.