Decommissioning Funding Assurance – An Assessment of Net Present Value and Parent Guarantees

March 2, 2011

Rejji Hayes

Assistant Treasurer and Director of Corporate Finance & Financial Strategy

Net Present Value Calculation Overview

- ✓ Conceptually, a net present value (NPV) calculation is the estimated current (or present) value of a future payment, or stream of payments, discounted at an appropriate compound interest rate (or "discount rate")

- ✓ Mechanically, the NPV calculation estimates the value of a series of cashflows by dividing each future cash inflow/outflow by the discount rate while taking the time period in which the cashflow takes place into account

$$\frac{R_t}{(1+i)^t}$$

R_t - the net cash flow at time t
t - time of the cash flow
i - discount rate

- ✓ The calculation is widely used in the business world to account for investments, long-term projects, mergers & acquisitions and select obligations, among other uses

Exelon®

Rationale for Using NPV Calculations

- ✓ NPV is the preferred valuation methodology for a variety of assets and liabilities primarily for the following reasons:
  - Proxy for fair value: NPV calculations are often used as a proxy for the fair value of an asset or liability in the absence of a readily available market price
  - Reflects economic reality: a dollar today is worth more than a dollar tomorrow since a dollar received today can be invested and earn a return; therefore valuing an asset or liability by its future (or nominal) value can be misleading
  - Avoids overstating assets and liabilities: Stakeholders rely on information in a company's financial statements (e.g., investors, creditors, regulatory and rating agencies, etc.); thus using NPV reduces the likelihood of overstating the value of assets and liabilities
  - Consistent with U.S. Generally Accepted Accounting Practices (GAAP) which is the standard for reporting financial statements for a wide variety of entities, including public/private companies, non-profit organizations, and governments
- ✓ Exelon utilizes an NPV calculation to estimate the future obligations for Pension and Asset Retirement Obligations, as well as OPEB and Capital Leases

Exelon.

Relevance to Exelon Generation Company (EGC)

- ✓ EGC has a legal obligation through the NRC to decommission its nuclear plants after the termination of operations
  - To estimate the NPV of the nuclear decommissioning obligation for accounting purposes, EGC uses a probability-weighted, discounted cash flow model
    - Consistent with U.S. GAAP
    - Conforms with methodology used by other companies in the power and energy sector
- ✓ NRC regulations (10 CFR 50.75) allow nuclear operators to establish and maintain decommissioning trust funds to fund future obligations
  - Trust funds must be in an amount sufficient to perform decommissioning after the termination of operations and through termination of the license
  - Requires biennial reporting for operating plants (annually for retired units)
- ✓ The NRC Staff has proposed minimum funding assurance requirements using parent company guarantees (PCGs) based on a future (or nominal) value approach
  - Assumes plant is retired at the end of the initial operating license (with no extension)
  - Assumes minimum funding assurance in future dollar cost estimates that are neither escalated through the anticipated period of decommissioning, nor discounted
  - Allows a 2% after-tax rate of return on any existing decommissioning assets

Exelon®

Concerns Regarding Future Value Methodology

- ✓ In light of the broad usage of NPV calculations to estimate the values of assets/liabilities, EGC's position remains that utilizing future values to estimate the shortfall in NDTs ignores economic reality and may materially overstate a liability
  - By overstating this liability, we strongly believe that we are at risk of significantly over-collateralizing the asset retirement obligation in the near-term which may prove unnecessary if a plant's license is extended
    - 59% of commercial nuclear units in the U.S have received license extensions in the past 11 years; the balance have either filed for extension and await outcomes or are planning to file
    - 21 commercial nuclear units have been shut down prior to the expiration of their respective licenses to operate in the past 45 years, including our Zion (1&2) units
  - No retired plants are or have been at risk of not meeting their decommissioning obligations
  - Biennial reporting of shortfalls provide sufficient transparency as to whether a future decommissioning obligation is appropriately funded
- ✓ The primary risk of accepting the NRC's requirements for decommissioning obligations is the artificial inflation of our guarantee requirements which may impact our business as follows:
  - Guarantee capacity constraints
    - Exelon Corporation must issue a guarantee on behalf of EGC given EGC's credit ratings
    - Subject to six times tangible net worth (TNW) test[1]
    - Limits operational and financial flexibility
  - Potential credit ratings pressure by one or more of the rating agencies and subsequent letter of credit costs

1) Defined as shareholder equity less goodwill, intangible assets and net book value of the nuclear unit.

Exelon®

New Nuclear Build Case Study

- ✓ Using a 2004 DOE study, Exelon estimates an NRC minimum funding assurance requirement in 2011 dollars for a dual unit decommissioning of $~1.5B
  - If we assume the units are decommissioned at the end of the 40-year licensing period and using 3% cost escalation, then the decommissioning costs grows to ~$5.1B
  - A guarantee of that size would not only significantly breach the TNW test (as defined by the NRC) but would also be incremental to the estimated cost to construct a dual-unit site[1]
  - For illustrative purposes, we contrasted the NRC's methodology with a net present value estimate

Est. Decommissioning Costs (Current $)

Decom. Year	Dual-Unit Cost (2003$)	Dual-Unit Cost (2011$)[2]
1	$120	$152
2	210	266
3	296	375
4	173	219
5	164	208
6	133	169
7	44	56
	$1,141	$1,445

Est. Decommissioning Costs (Post-Licensing)

	Future Value[3]	Net Present Value[4]
2011		
2012		
.		
.		
.		
2051	$497	$69
2052	893	118
2053	1,296	163
2054	781	93
2055	764	87
2056	639	69
2057	219	23
Total Est. Costs:	$5,090	$623
Implied TNW Requirement:	$30,538	$3,736

1) Source: Moody's June 2, 2008 Investor Services Report, "Costs for nuclear increase."
2) Assumes 3% cost escalation from 2003 to 2011.
3) Assumes 3% cost escalation from 2011.
4) Assumes 2% after-tax discount rate over relevant time periods.

Exelon®

Financial Implications of Using Future Value

- ✓ EGC must use guarantees from Exelon Corporation, its parent company, to collateralize any NDT shortfalls; however, in the event Exelon can no longer issue guarantees then we would have to pursue more costly means of financial assurance
- ✓ In an attempt to highlight the potential magnitude of the Staff's position, we have quantified the potential financial impact if EGC is required to use the future value method for valuing potential shortfall in NDTs (without access to PCGs)

NDT Shortfall Sensitivity ($ in MM)

	% Change in NDT Value			
	-5.0%	-10.0%	-15.0%	-20.0%
Braidwood #1	($29)	($78)	($125)	($172)
Braidwood #2	($21)	($76)	($130)	($183)
Byron #1		($3)	($56)	($107)
Byron #2	($47)	($99)	($149)	($199)
Total Shortfall	($97)	($255)	($461)	($662)

Shortfall Range vs. Potential LOC costs (per annum)

		Size of LOC				
		200mm	350mm	500mm	650mm	800mm
LOC Costs	150 bp	$3.0	$5.3	$7.5	$9.8	$12.0
	200 bp	$4.0	$7.0	$10.0	$13.0	$16.0
	250 bp	$5.0	$8.8	$12.5	$16.3	$20.0
	300 bp	$6.0	$10.5	$15.0	$19.5	$24.0
	350 bp	$7.0	$12.3	$17.5	$22.8	$28.0
	400 bp	$8.0	$14.0	$20.0	$26.0	$32.0

Note: Calculations are based on minimum funding assurance requirements as defined in 10 CFR 50.75. Numbers may not add due to rounding.

Exelon

Appendix

SFAS 143 & 157 – Overviews

- ✓ Overview of SFAS No. 143, Accounting for Asset Retirement Obligations
  - Effective 1/1/03
  - Applies to legal obligations associated with the retirement of tangible, long-lived assets
  - Requires that the fair value (FV) of a liability for an asset retirement obligation be recognized in the period in which it is incurred if a reasonable estimate of FV can be made
- ✓ Overview of SFAS No. 157
  - Effective 1/1/08
  - Applies to accounting standards that require (or permit) FV (i.e. SFAS 143)
  - Clarifies how FV is determined
    - In the absence of quoted market prices in an active market, the most appropriate technique for determining the fair value (FV) of asset retirement obligations is using an expected present value

Exelon®

Rating Agency Treatment of Guarantees

- ✓ S&P typically excludes guarantees from the balance sheet when:
  - Guarantees are used to support borrowings of unconsolidated affiliates
  - Guarantees are used to support third parties
  - Used as performance guarantees
- ✓ S&P has used a probability of payment test in the past for third party payments
- ✓ S&P considers the possibility of support of an affiliate for the borrower's debt even absent a formal guarantee
- ✓ Performance guarantees are added as a liability if the company's track record gives S&P specific reason for concern
  - S&P could attempt to estimate the liability and add it to debt for ratio calculations
- ✓ Moody's will factor guarantees into its debt calculations if a subsidiary is close to default and there is a parent guarantee in place

Exelon®

EGC 10-Year Bond Financing Overview

- ✓ In September 2010, Exelon Generation issued $550M of 10-year bonds
- ✓ In accordance with U.S. GAAP, EGC recorded the liability at its par value (or present value at issuance) of $550M to reflect the present value of the total future interest payments and the return of principal in 2020
  - Had EGC simply recorded the sum of the future cash outflows underlying the obligation then the value of the bond would have been $770M which materially overstates the liability
  - Said differently, bondholders will ascribe a higher value to the near-term interest payments they will receive since they can re-invest that cash upon receipt.
  - If all cash flows were of equal value, then the implied return on investment would be 40% (or $220M of aggregate interest payments / $550M investment)

ExGen 4% Bond due 2020 - Cashflow Summary
($ in millions)

# of periods	Date	Interest Payment (a)	Funds Paid Back (b)	Future Cashflows by period (a + b)	**Aggregate Future Value (Sum of periods)**	Discount Factor (d)	Present Value of Cashflows by period (a + b * d)	**Aggregate Present Value (Sum of periods)**
1	4/1/2011	($11)	$0	($11)	**($770)**	0.98	($11)	**($550)**
2	10/1/2011	(11)	0	(11)		0.96	(11)	
3	4/1/2012	(11)	0	(11)		0.94	(10)	
4	10/1/2012	(11)	0	(11)		0.92	(10)	
5	4/1/2013	(11)	0	(11)		0.91	(10)	
6	10/1/2013	(11)	0	(11)		0.89	(10)	
7	4/1/2014	(11)	0	(11)		0.87	(10)	
8	10/1/2014	(11)	0	(11)		0.85	(9)	
9	4/1/2015	(11)	0	(11)		0.84	(9)	
10	10/1/2015	(11)	0	(11)		0.82	(9)	
11	4/1/2016	(11)	0	(11)		0.80	(9)	
12	10/1/2016	(11)	0	(11)		0.79	(9)	
13	4/1/2017	(11)	0	(11)		0.77	(9)	
14	10/1/2017	(11)	0	(11)		0.76	(8)	
15	4/1/2018	(11)	0	(11)		0.74	(8)	
16	10/1/2018	(11)	0	(11)		0.73	(8)	
17	4/1/2019	(11)	0	(11)		0.71	(8)	
18	10/1/2019	(11)	0	(11)		0.70	(8)	
19	4/1/2020	(11)	0	(11)		0.69	(8)	
20	10/1/2020	(11)	(550)	(561)		0.67	(378)	

Note: Analysis assumes 4% 10-year bond with interest paid semi-annually. Discount factor reflects the following calculation: 1/(1+4% interest rate / 2) ^ time period.

Exelon®