

Credit Rating Issues Associated With Nuclear Investment

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Major Topics

- > Risks that companies have faced over the life span of their nuclear investments
- > How Fitch incorporates nuclear ownership risks into its credit analysis
- > Future nuclear investments and the impact on credit quality

Credit Rating Overview

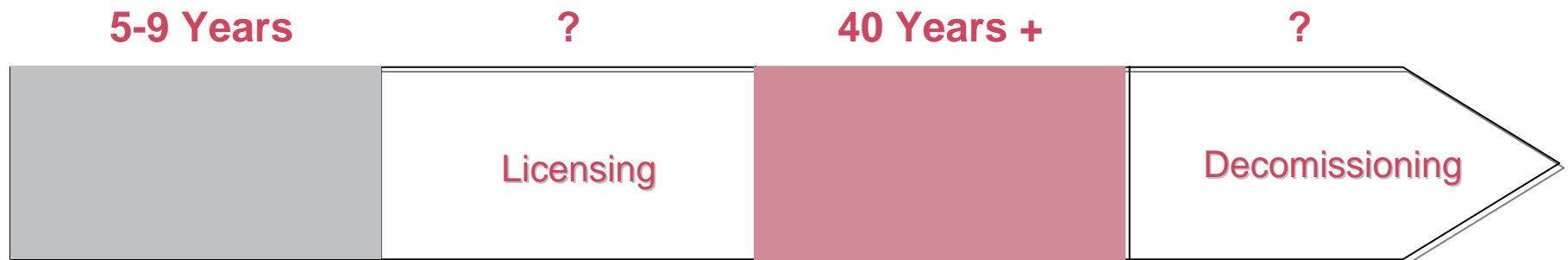
- > Fitch is neither pro nor anti nuclear ownership
- > Nuclear investment is evaluated in a similar fashion to other long-lived assets or capital outlays
 - > Adequacy of cash flow relative to debt and interest expense are key financial measures
- > Unique operating and regulatory risks must be managed through capital structure, liquidity facilities and risk management systems
 - > Additional business risk requires a greater degree of financial protection

Credit Ratings of Selected Nuclear Plant Owners

<u>COMPANY</u>	<u>Fitch Rating</u>
> Exelon Corp.	> BBB+
> Exelon Generation Co.	> BBB+
> Constellation Energy	> A-
> Dominion Resources	> BBB+
> FPL Group, Inc.	> A
> Entergy	> BBB (Indicative)
> First Energy	> BBB-

Credit Rating Overview

- > Nuclear power risks are viewed on a continuum over the life cycle of the plant that extends from permitting and licensing through decommissioning
- > Each phase of the life cycle has a different set of risk factors that impact credit ratings



The New Landscape

- > Lessons learned and Energy Policy Act (1992) are likely to reduce the regulatory and construction risks
- > License extension reduces uncertainty regarding adequacy of decommissioning funds
- > Operating risks continue to be the primary concern
 - > Severe cost of a prolonged outage
 - > NRC approval required for restart
- > Spent nuclear fuel storage remains unresolved

Licensing Risks

Past Problems

- > **At risk for design changes**
- > **Two stage licensing process**
 - > Construction permit followed by operating permit
- > **Emergency preparedness determined post-construction (Shoreham)**
- > **Inadequate documentation (Zimmer)**
- > **Community opposition**

Future Mitigants

- > **Standardized Design**
- > **One Step licensing**
 - > Completed plants operate if construction criteria met
- > **Pre-approval of emergency preparedness**
- > **More experienced owners**
- > **Still an issue**

Construction Risk

Past Problems

- > Construction delays/Out of control budgets
- > Prudence disallowances
- > Rate shock
- > Entire construction cost borne by owner

Future Mitigants

- > Standardized design/Fixed price construction contracts
- > Pre-approval of rate treatment
- > CWIP in rate base; lower financing costs (AFUDC)
- > Federal subsidies

Operating Risks

Past Problems

Future Mitigants

Extended Outages

Same

Replacement Power Costs

Same

Regulatory Oversight

Same

Guilt by Association

Same

Operating Risks

Concerns

- > Potential for extended outages far greater than for other generating units
 - > Equipment failure
 - > Operator/human error
 - > NRC safety standards
- > Replacement power costs
- > Regulatory oversight
 - > Restart decisions are not always within managements control
- > Guilt by Association

Operating Risk Mitigants

- > Concentration of ownership and operating skills reduces overall operating risk
- > Shared best practices has positively impacted nuclear performance
- > More consistent NRC regulation focused on safety issues
- > Reserve margin or unit contingent contracts can limit financial exposure
- > Fuel/Purchased power adjustment clause
- > Benefits of standard design outweigh contagion risk

Analytical Methodology

> Capital adequacy and liquidity

- > Credit ratings incorporate Fitch View of the probability of paying debt and liabilities
- > Investment grade ratings signify a very remote likelihood of default
- > Cash and access to funding must cover needs in stress cases, not just the expected case
- > Ability to access bank credit lines and fund in capital markets varies over time and by industry

> Target Financial Ratios

- > Integrated Utilities, Distributors, Diversified Co.'s and Groups
- > Peer analysis

Capital Adequacy and Liquidity

Access to sufficient cash to cover:

- > Variations in operating cash flow
 - > Outage of key facilities
 - > Change in sales volume
 - > Counterparty default
- > Working Capital
- > Collateral
- > Debt maturities
- > Capital expenditures
- > Dividends



Nuclear Outages
and Replacement
Power

Replacement Power Cost Example

> 1,000 MW XYZ Nuclear Unit

Estimated cost of 1 year outage

$1,000 \text{ MW} \times 8,760 \text{ (hours)} \times 90\% \text{ (capacity factor)} \times \$50 \text{ mwh (spot market price)} = \394.2 mil.

Compared against the marginal costs of generating power from that plant.

Estimated Costs of \$18 per mwh

$1,000 \text{ MW} \times 8,760 \text{ (hours)} \times 90\% \text{ (capacity factor)} \times \$18 \text{ mwh (spot market price)} = \170.3 mil.

Differential is **\$223.9 mil.**

Approximately \$4.3 mil. per week

First Energy Case Study

> Davis Besse Outage

- > 883 mw nuclear unit
- > 2 Year outage (Feb. 2002 – April 2004)

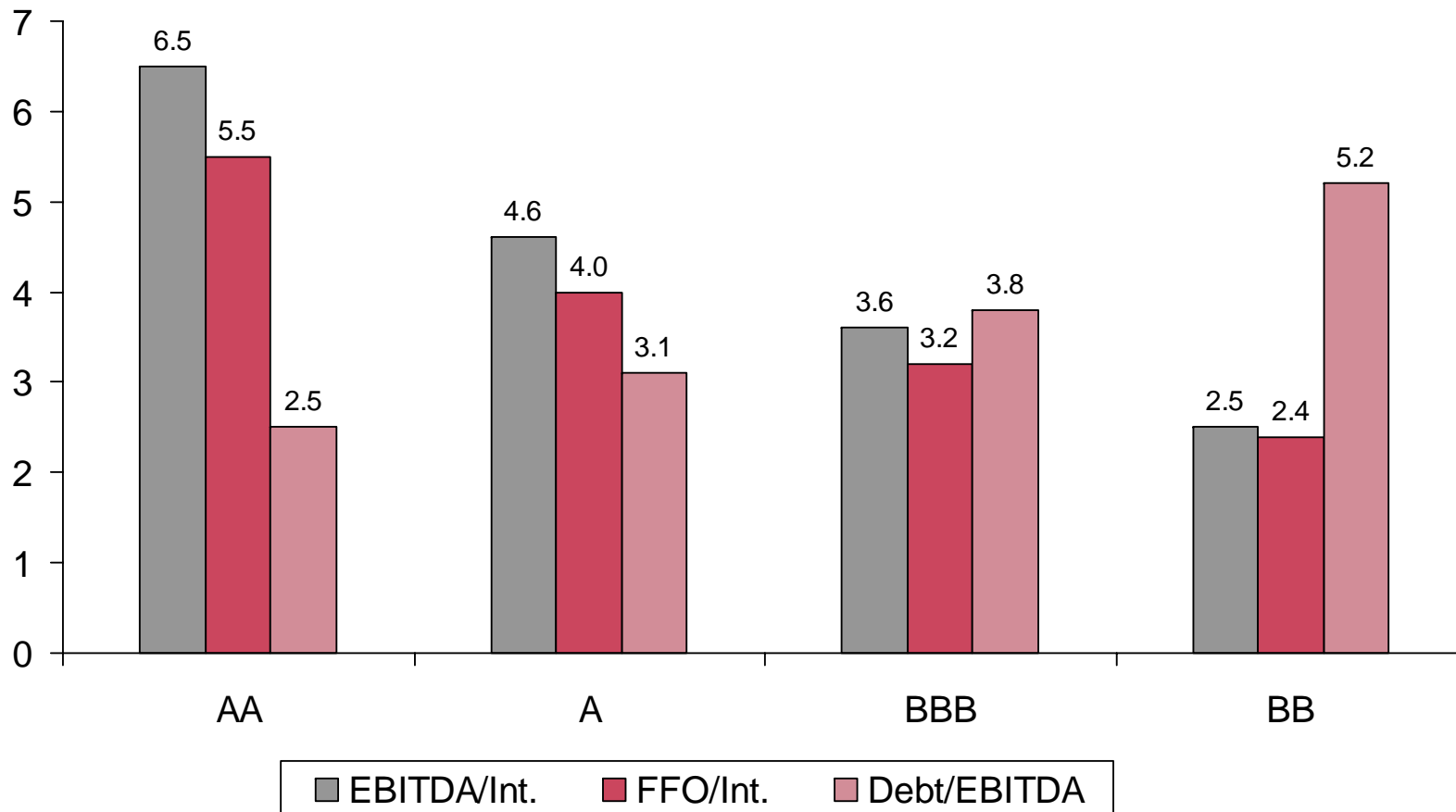
Outage Costs (\$ Mil.)

	<u>2002</u>	<u>2003</u>	<u>2004</u>
Capital	63	21	0
O&M	115	93	1
Replacement pwr.	<u>120</u>	<u>196</u>	<u>64</u>
Total	298	310	65

> Ratings Impact

- > July 2002 - Rating Outlook revise to Negative from stable
- > September 2003 – Ratings lowered to ‘BBB-’ from ‘BBB’

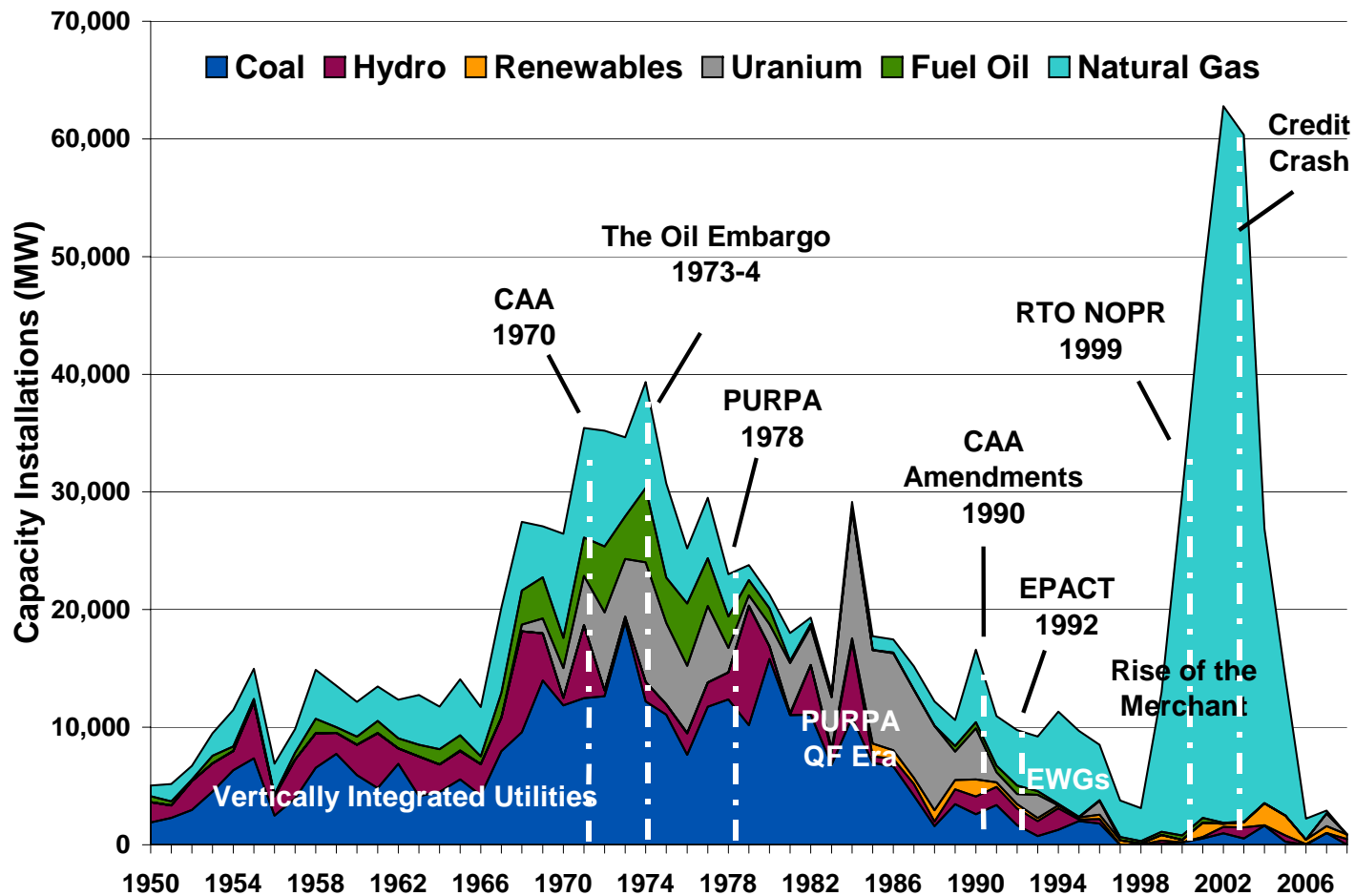
Target Financial Ratios (Medians)



Credit Impact of Nuclear Outage

<u>XYZ Company Financial Summary</u>	2004	2004 w/Nuclear Outage
Revenue	6,011	6,011
Expenses	<u>5,031</u>	<u>5,255</u>
Operating Income	980	756
Depreciation	<u>751</u>	<u>751</u>
EBITDA	1,731	1,507
Interest Exp.	375	384
Debt	5,366	5,512
FFO	1,125	979
EBITDA/Int.	4.6x	3.9x
FFO/Int.	4.0x	3.6x
Debt/EBITDA	3.1x	3.7x
Rating	A	A-/BBB+

U.S. Power Capacity Additions



Source: Henwood Energy Services, Inc.

Conclusion

- > Nuclear construction and licensing risks are likely to be less onerous than in the prior construction cycle
- > License Extension reduces decommissioning risk
- > Operating risks continue to be the primary credit concern
- > Liquidity must be sufficient to meet stress scenarios
- > Stronger credit measures are needed to offset higher business risk
- > Nuclear ownership is not inconsistent with investment grade ratings

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