



# Bonneville Power Administration's Power Function Review

Columbia Generating Station O&M

Technical Workshop

March 15, 2005



# BPA's Financial Disclosure Information

1. All FY '05-'09 information was provided in March 2005 and cannot be found in BPA-approved Agency Financial Information but is provided for discussion or exploratory purposes only as projections of program activity levels, etc.
2. All FY '97-'04 information was provided in March 2005 and is consistent with audited actuals that contain BPA-approved Agency Financial Information.



# Columbia Generating Station O&M Agenda

- BPA Introduction
  - PBL Balanced Scorecard
  - Power Rate Structure
  - Background
  - BPA and Energy Northwest accounting differences
  - CGS O&M cost history and forecast
    - Generation
    - Drivers of increases
  - Risks, Opportunities and Benchmarking
    - Uranium Tails Project
    - License Renewal
- Energy Northwest Presentation
- Comparison of Power Function Review forecast to Energy Northwest forecast
- BPA's Financial Disclosure Information



# Power Function Review

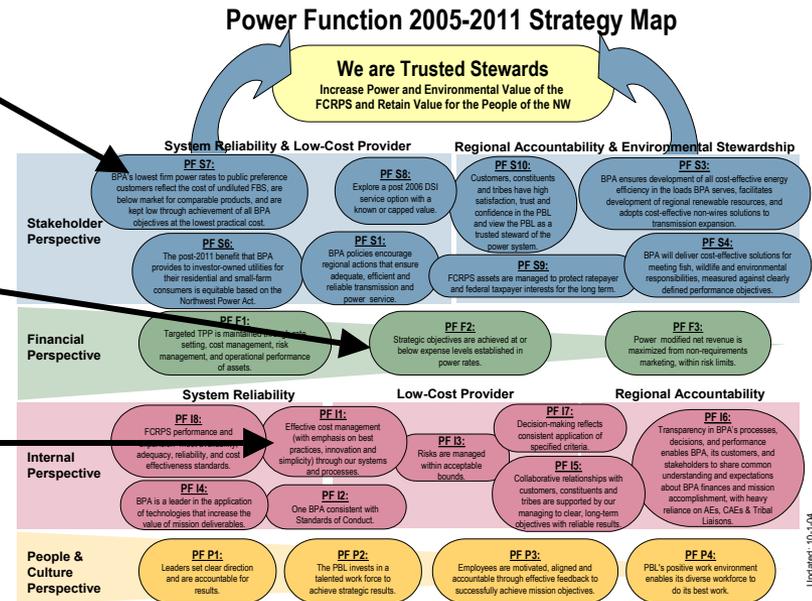
## Columbia Generating Station

### Support of PBL Balanced Scorecard

**PF S7:** BPA's lowest firm power rates to public preference customers reflect the cost of undiluted FBS, are below market for comparable products, and are kept low through achievement of all BPA objectives at the lowest practical cost.

**PF F2:** Strategic objectives are achieved at or below expense levels established in power rates.

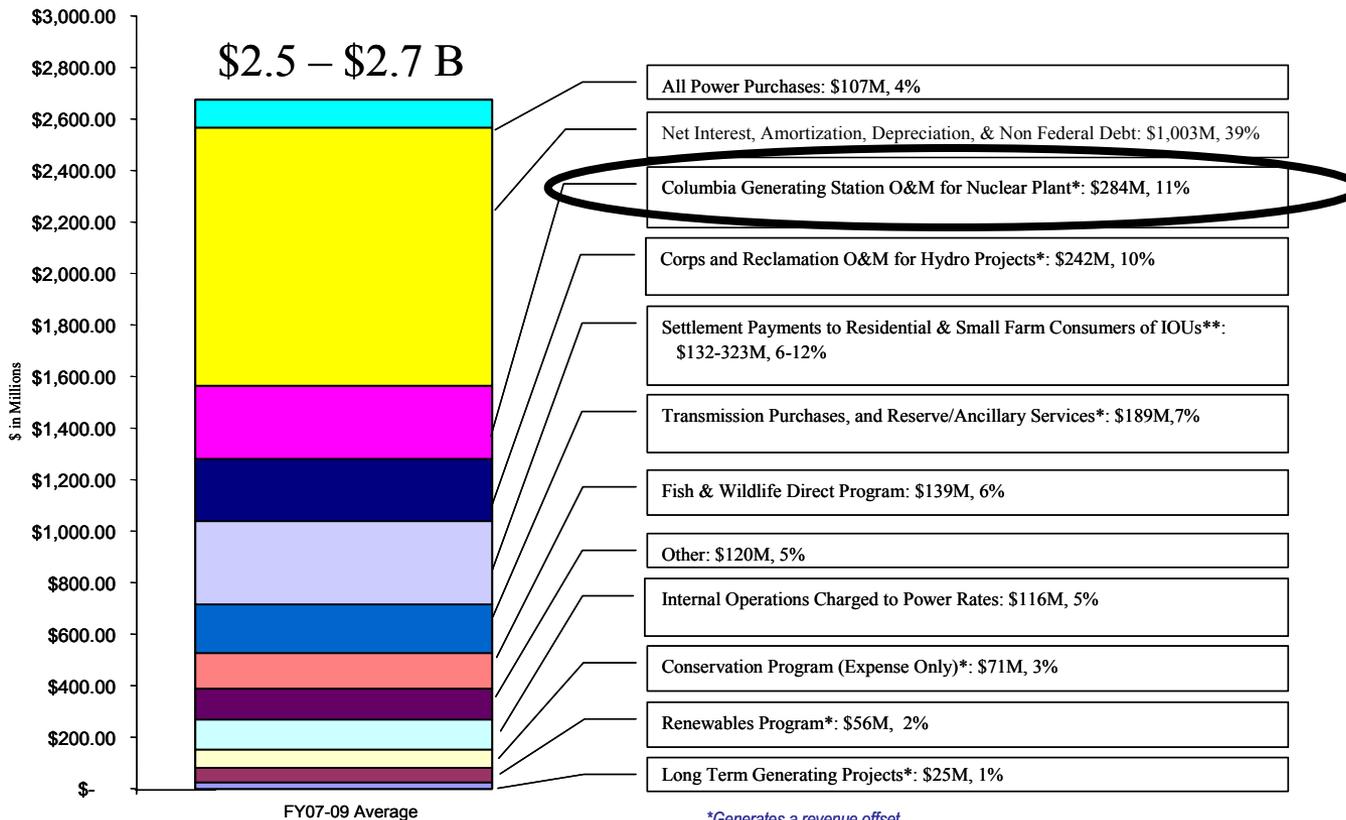
**PF I1:** Effective cost management (with emphasis on best practices, innovation and simplicity) through our systems and processes.





# Power Rate Structure

- The Columbia Generating Station costs are included in the revenue requirement of the PBL rate structure and are tied to operations of the nuclear plant.



\*Generates a revenue offset  
 \*\* This level is heavily dependant on forward market prices  
 Percentages may not add to 100% due to rounding

Note: See BPA's Financial Disclosure Information Page



# Columbia Generating Station O&M Background

- 1,107 MWnet boiling water reactor
- Owned by Energy Northwest
- Located on the DOE Hanford Site
- Began commercial operation in December 1984
- BPA purchases 100% of Columbia Generating Station's (CGS) power and pays all operating costs per the Project and Net Billing agreements.
- BPA's goal is that the plant be operated in a safe, reliable, and cost-effective manner such that its performance is in the top quartile of the industry (technical performance) and top half of the industry (cost performance) relative to its peers on a sustained basis.



# CGS O&M

## Accounting Differences

- Energy Northwest prepares budgets and long range forecasts for CGS on a cost basis.
- Energy Northwest uses the cost basis budget for its accounting and cost control purposes.
- Energy Northwest also prepares a budget based on funding (cash) needs.
- BPA prepares its rate cases and budgets for CGS on a cash basis.
- Energy Northwest and BPA have different FY's:
  - Energy Northwest has a July through June FY.
  - BPA has an October through September FY.
- These differences make a cost to cash and FY conversion necessary.
- Energy Northwest's CGS budget is submitted annually to BPA in late March and non-disapproved by BPA in April.
- The Energy Northwest CGS Long Range Plan is updated annually and presented to BPA.



# CGS O&M

## Accounting Differences (Continued)

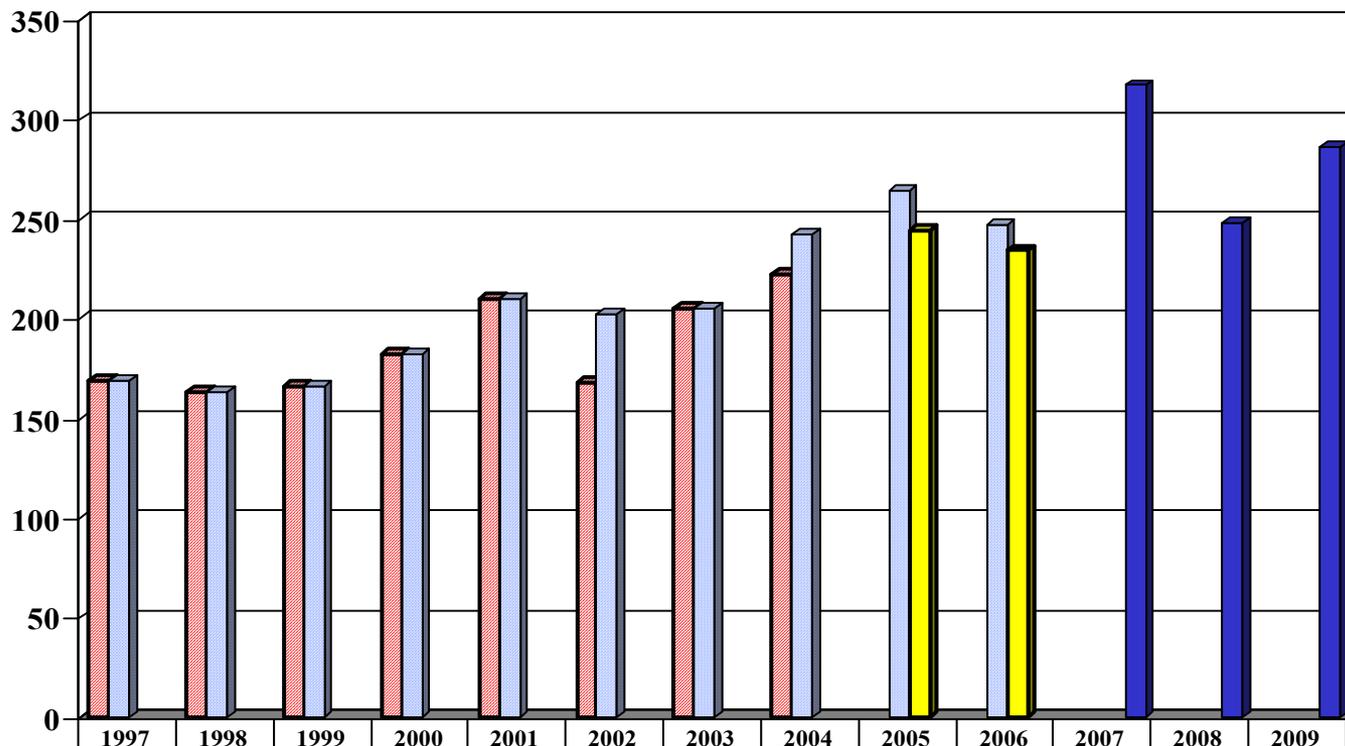
- Differences between cost basis and cash basis:
  - Nuclear fuel burn-up vs. nuclear fuel procurement
  - Timing of spent fuel waste disposal fees
  - Generation Tax
  - Uranium enrichment decontamination and demolition (UEDD)
- Additional funding needs included in BPA's budget for CGS:
  - NEIL insurance
  - Decommissioning Trust Fund contributions.



# CGS O&M

## Cash Basis – BPA Fiscal Years

### Dollars in Millions



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Actual - excludes debt financed capital	169	163	166	182	210	168	205	222					
Actual/August 18, 2004 Estimate- includes revenue financing of capital	169	163	166	182	210	202	205	242	264	247			
August 18, 2004 Estimate- excludes debt financed capital									244	234			
PFR Base - includes revenue financing of capital											317	248	286

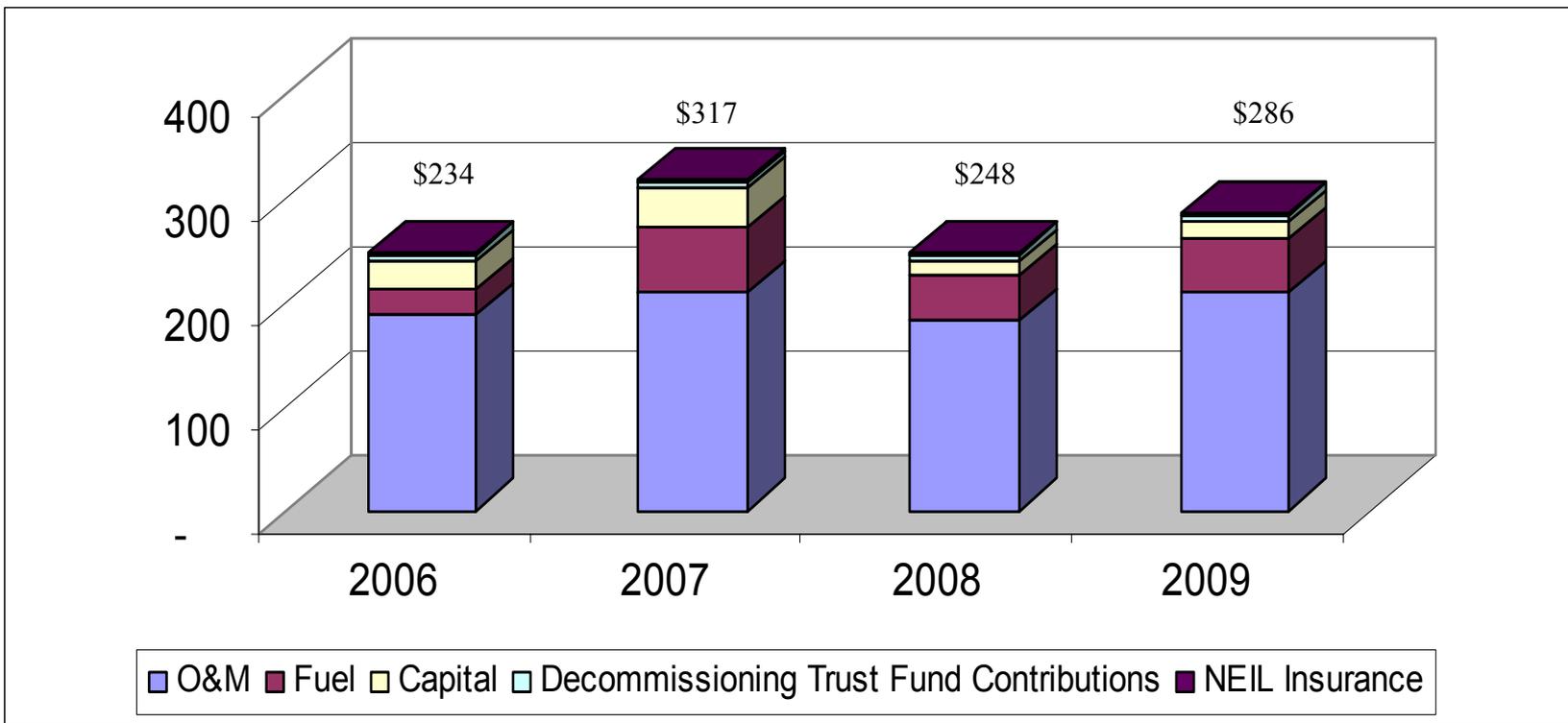
Note: See BPA's Financial Disclosure Information Page



# CGS O&M by Major Category

## BPA Fiscal Years

### Dollars in Millions



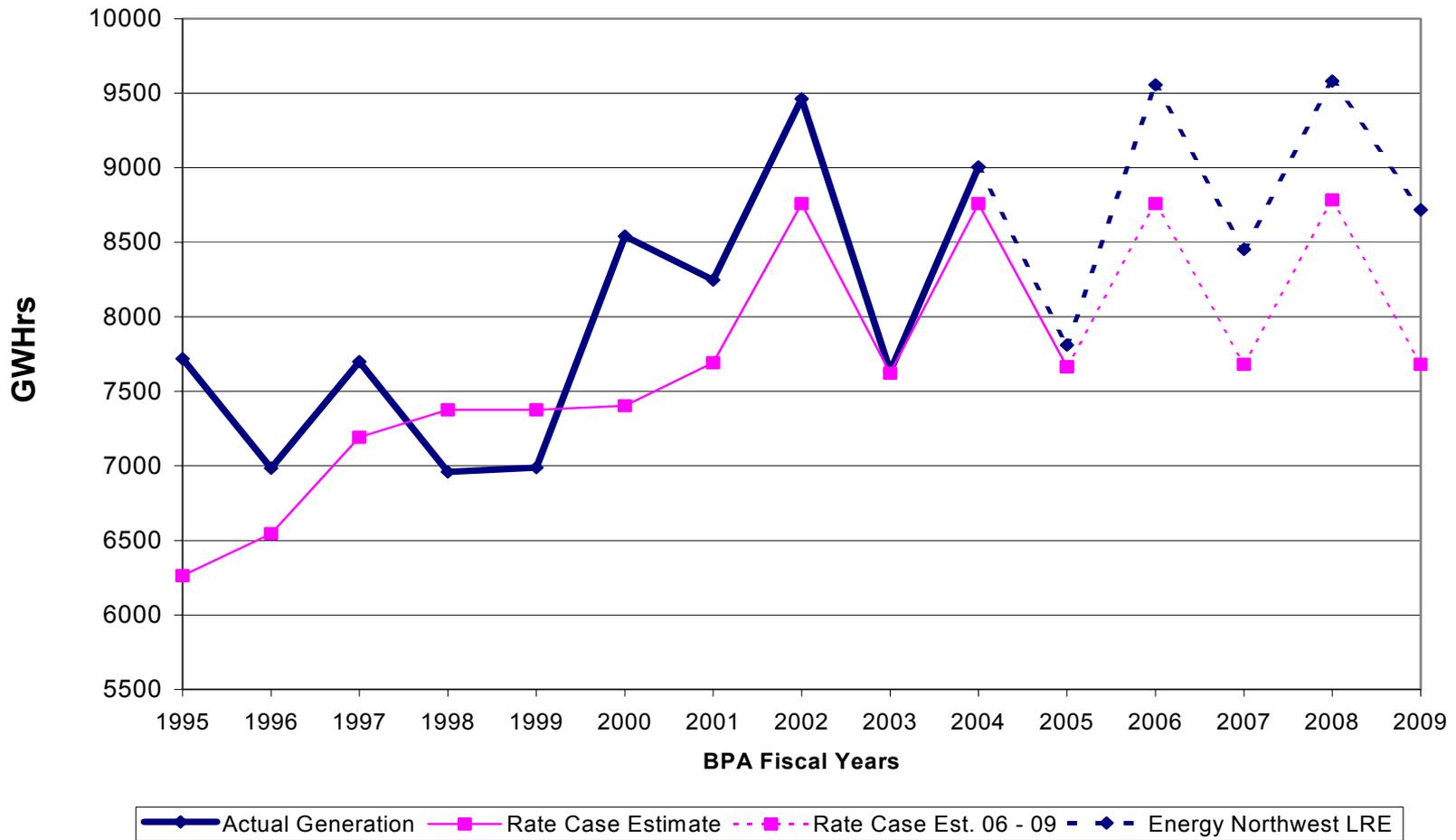
	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
<b>O&amp;M</b>	187	209	183	210
<b>Fuel</b>	24	62	44	51
<b>Capital</b>	15	38	13	16
<b>Decommissioning Trust Fund Contributions</b>	6	6	6	7
<b>NEIL Insurance</b>	2	2	2	2

FY 2006 excludes debt financed capital.

Note: See BPA's Financial Disclosure Information Page



# CGS Generation Actual vs. Rate Case Estimate





# CGS O&M

## Drivers of Increases

- Change in fuel procurement strategy to build up uranium inventory.
- FY02-06 costs include some debt financing of capital. FY07-09 is based on revenue financing the capital.
- Decommissioning Trust Fund contributions are increasing per the Trust Fund Agreement.
- Security increases due to 9/11.
- NEIL insurance increases.
- The age of CGS
  - Plant equipment obsolescence requires equipment updates
    - Difficult to find replacement parts
    - Vender support may no longer be offered
- Previous project deferrals
  - Plant equipment overhauls and in service inspections
  - Puts pressure on future budgets
- ISFSI capital and operations.
- Hydrogen water chemistry implementation.
- Increased employee health costs.



# CGS O&M

## Benchmarking, Risks and Discussion Items

- Benchmarking
  - Energy Northwest's recent Cost Competitive Initiatives
  - Alignment of CGS's costs and benchmarks with BPA's benchmarking activities
  - Economies of scale of fleet plants
- Risks
  - Contributions to the Decommissioning Trust Fund may increase significantly due to NRC regulations
  - Nuclear fuel prices may increase significantly over what is included in the PFR
  - Additional security may be required
  - Increased debt service due to debt financing of CGS capital
- Discussion Items
  - DOE Uranium Tails Pilot Project
  - CGS license extension



# CGS O&M

## Uranium Tails Project

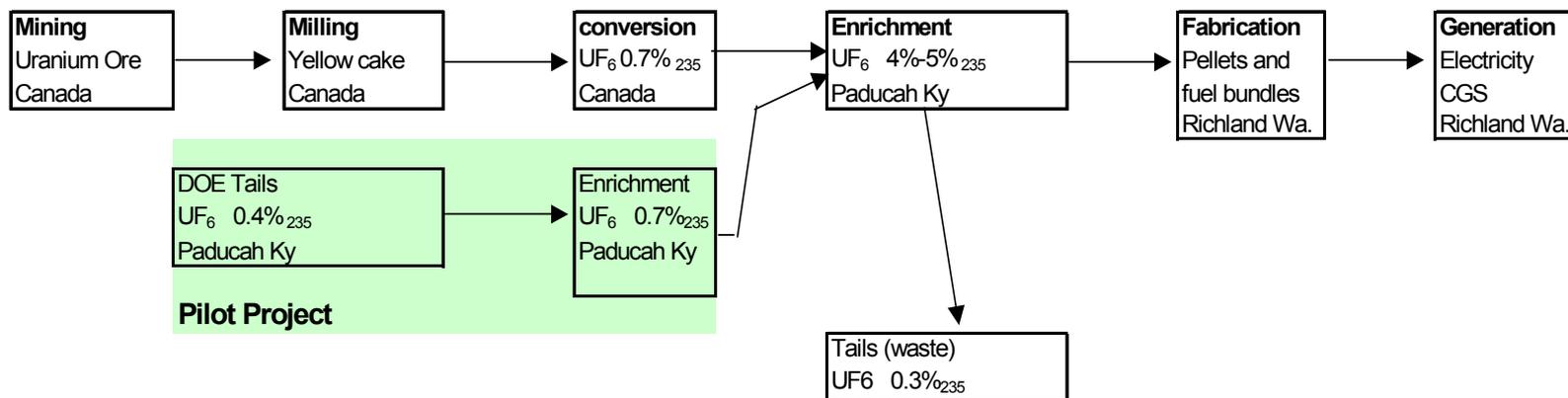
- CGS's nuclear procurement strategy has been to enter into long range contracts supplemented by spot market purchasers to meet its uranium needs.
- Uranium prices have more than doubled from January 2003 to January 2005.
- Energy Northwest has proposed a remedy to this situation which involves recycling DOE uranium tails in a pilot project.
  - BPA could obtain the material from DOE as part of an interdepartmental transfer and pass the material on to Energy Northwest for processing and eventual use in the CGS reactor.
  - The pilot project would be two years in length and could produce enough uranium to support eight years of CGS operation.



# CGS O&M

## Uranium Tails Project

### Nuclear Fuel Process Flow Chart





# CGS O&M

<b>Uranium Procurement Scenarios</b>		
Expected Fuel costs - Prediction		
<b>Energy Northwest FY</b>	<b>8/18/2004 - PFR Base</b>	<b>DRAFT FMP FY 06 Estimate</b>
2005	\$ 8,970,000	\$ 8,288,000
2006	\$ 4,916,000	\$ 4,915,800
2007	\$ 16,214,000	\$ 16,257,669
2008	\$ 10,166,000	\$ 16,748,184
2009	\$ 10,280,000	\$ 17,090,859
2010	\$ 10,432,000	\$ 17,399,829
2011	\$ 10,477,000	\$ 17,675,093
2012	\$ 10,600,000	\$ 17,922,268
2013	\$ 10,600,000	\$ 18,169,444
2014	\$ 10,600,000	\$ 18,169,444
2015	\$ 10,600,000	\$ 18,169,444
<b>Total</b>	<b>\$ 113,855,000</b>	<b>\$ 170,806,034</b>

Uranium Tails Pilot Project has the potential for savings of \$20 - \$30M over the ten year period.



# CGS O&M

## Uranium Procurement Scenarios

Expected Fuel Costs -- Prediction

(\$millions)

Added this page to packet  
which was originally a  
separate handout at  
workshop - page 16a

BPA Fiscal Year	8/18/04 - PFR Base	DRAFT Fuel Mgt Plan FY06 Estimate	Pilot Project Estimates*		Difference Between Pilot Project & PFR Base	
			2006	2009	2006	2009
2005	8.0	7.4	8.5	8.0	0.6	0.1
2006	7.7	7.8	11.8	9.8	4.1	2.1
2007	14.7	16.4	19.6	16.0	4.9	1.3
2008	10.2	16.8	13.4	7.6	3.2	-2.6
2009	10.3	17.2	13.4	15.7	3.1	5.4
2010	10.4	17.5	13.4	15.7	2.9	5.3
2011	10.5	17.7	13.4	15.7	2.9	5.2
2012	10.6	18.0	13.4	15.7	2.8	5.1
2013	10.6	18.2	13.4	15.7	2.8	5.1
2014	10.6	18.2	13.4	15.7	2.8	5.1
2015	8.0	13.6	10.0	11.8	2.1	3.8
<b>Totals</b>	<b>111.6</b>	<b>168.7</b>	<b>143.8</b>	<b>147.6</b>	<b>32.1</b>	<b>36.0</b>

\* The two financing structures included under “Pilot Project Estimates” are examples for illustrative purposes only. Neither of them have been considered in the context of BPA’s total debt portfolio and have not yet been included in repayment model analysis. It is possible that results could change significantly once BPA finalizes its analysis.

- The example called “2006” assumes that principal payments begin 7-1-06.
- The example called “2009” assumes that principal payments begin 7-1-09.
- A change in interest rates from those assumed will affect the results shown.



# CGS O&M

## License Renewal

### BPA Fiscal Years Dollars in Millions

2007	2008	2009
3.9	2.6	2.0

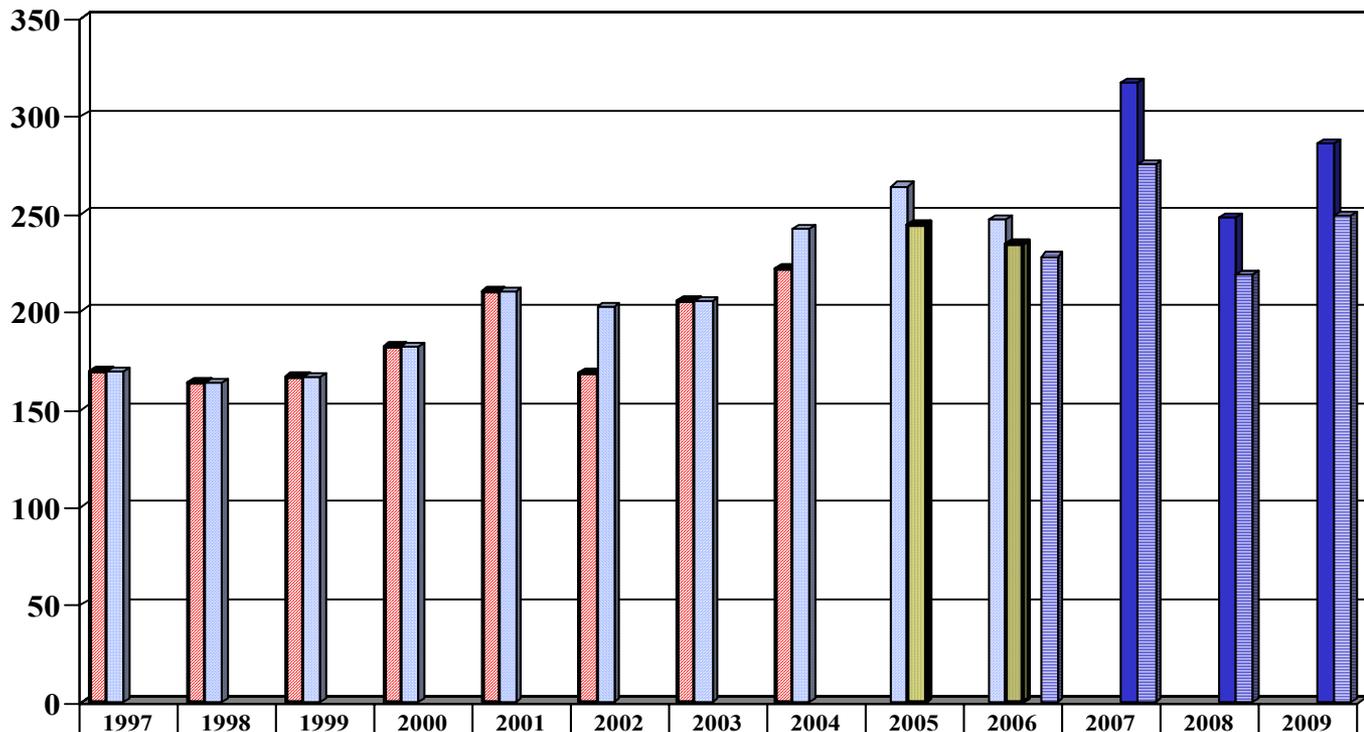
- CGS's current operating license expires in December 2023.
  - A utility can apply for a license renewal (extension) for up to 20 years.
  - CGS's current window for renewal application is from December 2003 to December 2018
- Preparation of the license renewal application by Energy Northwest will take an estimated 3.5 to 4 years and cost approximately \$10.8M.
- NRC review is expected to take 24 months and cost approximately \$3.5M. It will involve NRC onsite inspections and public meetings.
- The total cost estimate to submit the request and receive NRC approval is about \$14M. Other plant costs may be incurred.
- This effort was started in FY-05 but has been temporarily suspended.



# CGS O&M

## Cash Basis – BPA Fiscal Years

### Dollars in Millions



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Actual - Debt financed capital	169	163	166	182	210	168	205	222					
Actual/SNCRAC - Revenue financed capital	169	163	166	182	210	202	205	242	264	247			
SNCRAC - excludes debt financed capital									244	234			
PFR Forecast - includes revenue financing of capital											317	248	286
Energy Northwest Forecast - March 15, 2005 includes revenue financing of capital										228	275	219	249

\*

\* Excludes debt financed capital

Note: See BPA's Financial Disclosure Information Page



# CGS O&M – Comparison of PFR Baseline to March 2005 Estimate

BPA Fiscal Years – Dollars in Millions

	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>PFR Base</b>	317.2	248.3	286.0
<b>Direct &amp; Indirect O&amp;M</b>	(22.8)	(18.8)	(24.2)
<b>Capital</b>	(16.1)	1.4	5.1
<b>Nuclear Fuel</b>	(4.5)	(13.3)	(19.5)
<b>Decommissioning Trust Fund Contributions</b>	0.7	1.1	1.6
<b>March 2005 Latest Revised Estimate</b>	274.5	218.7	249.0
<b>Total Change</b>	(42.7)	(29.6)	(37.0)

Energy Northwest’s Executive Board has not reviewed the basis for the March 2005 estimate.

This information should be considered preliminary and may change.

The Nuclear Fuel latest estimate is based on the Uranium Tails Project. This estimate is expected to change.