Questions and Answers
Topic: Corps & Reclamation Program
Power Function Review Meetings
March 15 & 16, 2005

Q. Please provide the data for the seven years performance indicators referenced on page 18 of the Corps/Reclamation presentation.

A. See attached end of fiscal year slides for 2001-04 (PFR Attachment #1a-d). We have summary results back to FY 2001.

Q. Provide more detail on the assumption that without the O&M program increases the estimated rates would be between 1.78 mills and 2.15 mills higher in the next rate period.

A. The rate effect analysis assumes a decline in revenue of 1% per year based on declining availability due to generating units not being returned to service. The assumption is driven by the average unit age of 48 years and the large non-routine extraordinary maintenance resource requirements of the O&M program. For the 209 units comprising the FCRPS, for an average water year, a 1% decline in revenue is equivalent to an initial 5% decline in availability. The value of energy is assumed to be $38.

Q. There are front-end costs associated with irrigation modernization programs, and there are few incentives to improve efficiency. Are there other programs through which we can make money available to the end-use customers?

A. We do not know of any.

Q. Can the drawdown schedule at Grand Coulee for a headgate repair be revisited? Could it be shifted to this fall?

A. No. Current projected operations for fish to meet Chum and minimum Vernita bar flows will put the elevation of FDR below the maximum elevation required for the drumgate maintenance for at least 6 weeks. In the fall, the elevation for resident fish in FDR is 1283 feet, well above the 1255 elevation required for drumgate maintenance.

Q. What are the alternative sources where money for these projects could come from?

A. We do not know of any.

Q. Please correlate page 10, average program cost, with the forced outage factor graph on page 56.

A. Forced outage rate is only one indicator of program performance, and is a lagging indicator as well. One cannot make a direct correlation between average program cost and forced outage factor.

Q. Does the presented information cover the proposed actions for BiOp implementation and how that compares to "a reference operation?"

A. Yes.

Q. How much lower would this budget be if it were inflated at a 3 percent rate starting with 2003 actuals instead of 4%?

A. Projecting a 3% increase in program from FY 2003 actuals produces a 2007 to 2009 average of $212.4M. This is $29.7M less than the $242.1M average forecast in the PFR.

Q. What is the estimated cost of spill this year?

A. Information on the estimated cost of spill is managed in another part of BPA.

Q. What would the effect be of capitalizing federal FTE costs?

A. Labor costs incidental to capital replacement work are capitalized and labor costs associated with expensed work (maintenance and repairs) are expensed in accordance with generally accepted accounting principles and FERC guidelines. Therefore the way FTE costs are accounted for cannot be changed from current accounting practices.

Q. For the budget on page 35, provide more information on what drives the efficacy of the investments.

A. The decisions to invest for specific power generation equipment in the system are guided by individual evaluations of criteria based on the type of investment proposed, as categorized on this page (page 35 of the packet).

Under Generation Reliability, Generation Equipment Upgrades, Replacements and Refurbishments, our first priority is to repair or replace equipment that has failed. In all cases, returning the generation unit to service is economic because it restores generation capacity that would otherwise be lost to the system forever. An example is the replacement of the station service system at Grand Coulee that resulted from the fire in the left powerhouse.

Our second priority in this same category is to anticipated replacements or refurbishments of equipment that is near or at the end of its useful life or is considered to be a poor condition, and has a high risk of failing and thereby causing an unplanned/unscheduled outage. An example is the generator rewind at The Dalles.

Our third priority is an outgrowth of the second and usually involves the decision to replace a series of similar equipment across many plants due to age, condition, or risk. For example, the main unit circuit breakers at the larger Corps of Engineer plants were approaching the end of their life (a large number of them are over 50 years old and the book life is 40 years) and the number of breaker operations recorded was in most cases over 5000. A decision was made to begin a systematic replacement of all breakers using a new upgraded technology (i.e., changing out air blast breakers going to SF6 type). The full replacement would take over 5 years with the individual units among the plants prioritized based on condition.

Our fourth priority is to opportunities to upgrade generation equipment when the plant may be out of service for reasons other than a generation outage. For example, the Cougar plant was taken out of service for over three years for an installation of water temperature control intake structure (i.e., an environmental improvement). A decision was made to piggy back on this outage and refurbish a portion of the generation equipment that was nearing the end of its useful life or had other reliability concerns.

In all of the above cases, there is an economic evaluation performed that contrasts the total investment costs against the projected benefits, usually the restoration of generation capacity, avoidance of lengthy outages at unscheduled times, reduction of operation or maintenance costs, or increase in generation efficiency. In addition, we have begun an equipment condition assessment process for the major equipment types (e.g., turbines, generators, transformers, etc.) that also helps to identify replacement needs and justifies the timing for investment.

Under the Powerhouse Auxiliary Equipment Upgrades, Replacements and Refurbishments, our first priority is to manage the level of investment to be an appropriate percentage of the total budget while replacing critical equipment that supports, but does not directly affect, the generation capacity within the plant. For example, a number of heat pumps replacements have occurred which are necessary to maintain sensitive electronic equipment and provide suitable environmental conditions within the structure generally. The heat pumps were failing and used older style ozone-depleting refrigerants. Another example is powerhouse roof repairs that are critical to protecting the generation equipment. One more example is needed repairs or upgrades that improve worker safety and access.

Our second priority in this category is to upgrade auxiliary equipment that will be needed for future maintenance or investment activity. For example, powerhouse crane refurbishments are completed in anticipation of major generation equipment replacements (e.g., turbine or generator windings – both requiring large equipment lifts).

The last category under Generation Reliability is Operations and Maintenance – Small Capital. Investments in this category are managed by the operations and maintenance program and are directed toward small-dollar capital replacements necessary in the execution of the O&M program. For example, it might include replacement of motors or pumps that have failed in service, refurbishment of equipment that is not a "unit of property" in the accounting sense, and other small capital needs.

Under the Generation Efficiency category, our priority for investments is to increase current generating capability or reduce operating costs. We pursue these opportunities if they provide a positive net economic benefit against a risk-adjusted hurdle rate (13%). Investments fall into three subcategories – turbine runner replacements, hydro operation optimization, and remote powerhouse operation. Turbine runner replacements improve unit generation efficiency by capturing advances in runner design. Such replacements also have some reliability benefits since we are often replacing runners that are 50 to 60 years old, have higher cavitation repair requirements, and may have cracking concerns. Hydro operation optimization involves testing of units and installation of sensing equipment on the units that allows for more efficient operation of the units (e.g., operate at peak turbine efficiency more often thereby squeezing more overall power from the available water). Lastly, remote operations is the largest single opportunity to reduce operation costs for our system. While not strictly a unit or equipment efficiency measure, remote operation represents a consolidation of plant operation and provides for the same level of power production at less cost – an efficiency measure.

Finally, AFUDC (allowance for funds used during construction) is the interest on debts issued to finance construction work-in-progress, normally financed through borrowing and eventually paid by ratepayers after projects are completed and placed in service.

Q. How many contract employees do the Corps and Bureau have (i.e. those who function like full time FTE, not short-term contractors)?

A. The Corps uses contract employees for security guards, and centralized Information Technology support, which is part of the overhead cost. Generally, the Corps requests services to be performed and not the number of FTE's to perform the services. The Corps also contracts with companies to provide janitorial services, but does not hire specific workers to do so. Reclamation contracts for services such as grounds maintenance, janitorial, etc., and does not specify the number of staff.

PFR Attachment #1a

FY 2001 Performance Summary

	Material Condition	Reliability				Cost			Environment		Safety	Partnership			Aggregate Rating
Project	Scheduled Outage Factor	HLH Availability	Forced Outage Factor	PSS/AVR Compliance	Control Area Support	O&M and Small Cap Expenditure Rate	Large Capital Expenditure Rate	Net Operating Margin (Millions)	Fish and Wildlife	Cultural Resources	Lost Time Accident Rate	Performance Tracking and Reporting	Subagreement Routing Process	Weekly Conference Call (missed) Participation	Project Score
FCRPS	9.3	2.7%	2.4	13	0	97%	82%			100%	1.3	83%	30%	54	69%
Grand Coulee	10.2	0.3%	1.5	0	no info	89%								0	89%
Chief Joseph	4.9	2.8%	2.4	0	no info	106%								0	69%
John Day	8.3	2.4%	1.2	0	no info	100%								3	50%
The Dalles	14.0	7.9%	6.9	13	no info	94%								3	33%
McNary	4.4	-1.2%	0.6	0	no info	124%								1	78%
Bonneville	15.6	1.3%	0.4	0	0	100%								4	56%
Lower Granite	17.1	15.7%	12.6	0	no info	99%								1	33%
Little Goose	9.5	0.3%	0.4	0	no info	119%								5	56%
Lower Monumental	13.2	-0.6%	0.5	0	no info	115%								1	67%
Libby	9.1	-3.8%	0.2	0	no info	101%								15	67%
Dworshak	4.1	-1.1%	0.0	0	no info	99%								1	89%
Ice Harbor	7.7	5.3%	3.3	0	no info	86%								0	56%
Hungry Horse	21.7	16.4%	7.5	0	no info	89%								0	44%
Palisades	4.1	-3.1%	0.2	0	no info	96%								1	89%
Detroit	2.4	1.2%	0.5	0	no info	92%								1	94%
Big Cliff	5.8	-1.0%	0.0	0	no info	92%								1	94%
Green Peter	7.5	10.9%	9.0	0	no info	106%								1	33%
Foster	1.1	6.8%	6.5	0	no info	106%								1	44%
Lookout Point	1.5	0.5%	0.1	0	no info	100%								1	78%
Dexter	8.4	-0.3%	0.0	0	no info	100%								1	72%
Lost Creek	2.4	-1.4%	0.0	0	no info	94%								8	83%
Anderson Ranch	10.5	-13.7%	0.1	0	no info	71%								1	100%
Minidoka	11.0	2.3%	0.4	0	no info	96%								1	67%
Cougar	0.6	-3.0%	0.0	0	no info	80%								1	100%
Albeni Falls	5.8	2.4%	0.1	0	no info	99%								0	89%
Hills Creek	4.8	6.2%	4.2	0	no info	78%								1	67%
Black Canyon	5.8	1.8%	0.0	0	no info	71%								1	100%
Green Springs	2.7	0.2%	0.1	0	no info	53%									100%
Chandler	4.2	-4.2%	0.0	0	no info	75%									100%
Roza	1.6	-7.1%	0.0	0	no info	75%									100%
Boise Diversion						71%									100%

no info = No data turned in
= PI not Reported at This Level

= Exceptional Performance
= Satisfactory Performance
= Below Target Performance
= Off-Plan Performance

Business Sensitive - For FCRPS Distribution Only

PFR Attachment #1b

Hydropower Performance Indicators

System Overview — November 2002

Program Indicators

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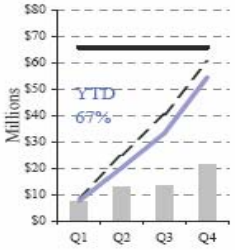
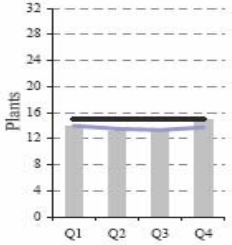
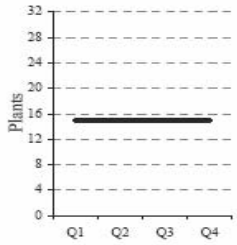
Capital Execution (YTD Accumulative)



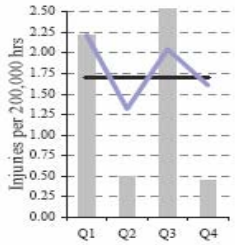
Capital Management (YTD Average)



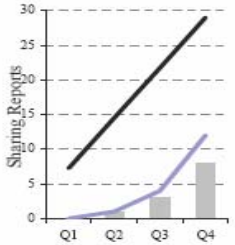
O&M Management (YTD Average)



Lost Time Accident Rate (YTD Average)



Best Practices (YTD Accumulative)

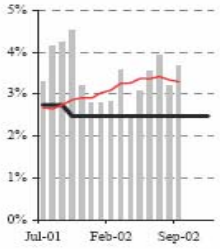


——— Planned Expenditure

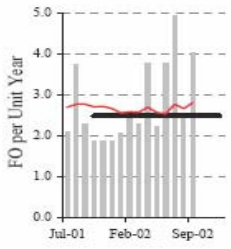
Plant Indicators

☐ ☐ ☑ ☑ ☐

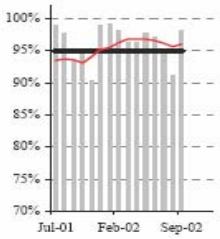
Forced Outage Rate (12 month rolling average)



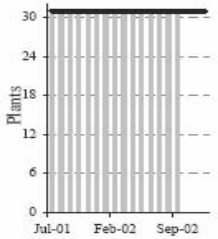
Forced Outage Frequency (12 month rolling average)



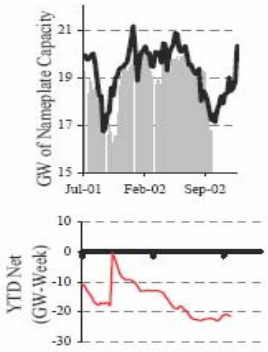
Thursday Call Participation (12 month rolling average)



PSS/AVR Compliance



HLH Availability



✓ Currently Meeting Target — Target — Trend — Current Period

PFR Attachment #1c

System Overview

FY 2003 FCRPS Performance Indicators

November

	Status (YTD)	Indicator	Measure	Rating Thresholds		
				Stretch	Expected	Minimum
Production	97.1%	HLH Availability	Actual HLH MW available divided by HLH MW planned	100%	97%	94%
	99.2%	Thursday Call	Percentage of weekly calls attended	100%	95%	90%
Financial	90.9%	Base O&M Expenditure Rate	Actual expenditures divided by the sum of the latest Annual Power Budget plus FY02 unliquidated obligations	94%	96%	100%
	93.0%	Base O&M Obligation Rate	Actual obligations divided by latest Annual Power Budget	95%	97%	100%
	81.6%	Large Capital Expenditure Rate	Actual Large Capital expenditures and subagreement expenses divided by forecasted expenditures	85%	80%	75%
Safety	1.56	Lost Time Accident Rate	Lost time injuries per 200,000 hours	1.5	1.7	2.0
Transmission Support	100.0%	PSS/AVR Compliance	Number of units in compliance	N/A	100%	N/A
	Process in Place	WECC Requirements	Number of logs maintained	N/A	100%	N/A

Contact **Performance Committee - Clune, Krahenbuhl, Kent**

Year-to-Date Thru September

PFR Attachment #1d

System Overview

FY 2004 FCRPS Performance Indicators

Year-to-Date Thru September 2004

	Status (YTD)	Indicator	Measure	Rating Thresholds		
				Stretch	Expected	Minimum
Production	99.7%	HLH Availability	Actual HLH MW available divided by HLH MW planned	99%	97%	94%
	97.5%	Thursday Call	Percentage of weekly calls attended	100%	95%	90%
Financial	95.7%	Base O&M Expenditure Rate	Actual O&M expenses divided by planned O&M expenses for the latest Annual Power Budget	94%	96%	100%
	97.8%	Base O&M Obligation Rate	Actual obligations divided by planned obligations for the latest Annual Power Budget	95%	97%	100%
	89.4%	Large Capital Expenditure Rate	Actual expenditures divided by planned expenditures	90%	85%	80%
Asset Condition	93%	Maintenance - Corps	Percent of required, Critical Preventative and/or Predictive Maintenance (PM) plans, that have been established, including estimated person-hours,	Developed and being tracked by October 2003	Developed and being tracked by January 2004	Developed and being tracked by April 2004
	96%	Maintenance - Reclamation	Percent of mission essential preventative maintenance work orders completed	95%	90%	85%
Safety	1.57	Lost Time Accident Rate	Number of lost time accidents per 200,000 person-hours	1.5	1.7	2.0
Transmission Support	100%	PSS/AVR Compliance	Number of units in compliance with WECC operating standards	100%	N/A	N/A
	Under Development	WECC Requirements	Procedures in place and information and records are available at each plant for the WECC planning standards applicable to generators	100%	N/A	N/A
Stewardship	Stretch Target met	Cultural Resources Stewardship	The four Project Definition tasks outlined, completed by September	More than one indicator developed and being tracked from each subcommittee by April 2004	At least one indicator developed and being tracked from each subcommittee by April 2004	At least one indicator developed and being tracked from one subcommittee by April 2004
			Baseline data collected for the 14 reservoirs by September			
	Expected target met	Fish and Wildlife	Major Fish Passage Systems Reliability (Percent of time available)			

Contact **Performance Committee - Clune, Kent, Krahenbuhl** **November 2004**