



Project Proposal

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**PACIFICORP ENERGY**

**Plant:** Huntington

**Proposal Date:** 01/23/2012

**APR#:** 10015760

<b>TITLE:</b>	U2 Duct Replacements
<b>OBJECTIVE:</b>	Repair and replace all components damaged in Unit 2 coal mill explosion.

**Decisions Required:** This proposal is to obtain approval for the expenditures to replace all components damaged in Unit 2 mill explosion.

**Executive Summary:** Unit 2 had a failure of all five coal pulverizers. An explosion completely destroyed all the primary air inlet ducts and associated dampers/valves, approximately 80% of the grating and handrail, approximately 50% of all instrument air and electrical lines and other such located auxiliaries, approximately 90% of all wall sheeting and associated lagging and insulation on south and west walls, and 100% of all steam inerting tie-ins. Also, all repairs and replacements need to conform to new updated plant standards such as painting (see attachment), labeling (see attachment) guarding all moving/rotating equipment, stairway sloping and tread standards (reference OSHA 1910.212(a)).

**Key Issues:** This work must be completed to bring the unit back on-line and to deem work area to be a safe working environment.

**Investment Request:** \$1,952,082 Capital \$1,903,475 Direct (without AFUDC)  
\$ 0 OMAG  
\$1,952,082 TOTAL

**PVRR(d) Benefit:** \$52,714,237 Benefit to customers for completing the project compared to not doing the project.

**OMAG Budget Status:** OMAG budget is not affected by this project.

**CAPEX Budget Status:** The total capital cost is \$1,952,082 which has not been budgeted and included in the ten year plan. This is an

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emergent project of which the funding will come from the fleet. The CY2012 dollars came from the Huntington projects SHTN/2012/C/001 - U1 Air Compressor Replacement and SHTN/2012/C/002 - U0 Dozer Overhaul D-10R-1 - CY2012, both of these projects had money accelerated in 2011 totaling a reduction of \$475,000 for 2012.

**CAPITAL EXPENDITURES - \$000**

<b>PACIFICORP Share</b>	<b>PRIOR</b>	<b>CY12</b>	<b>CY13</b>	<b>CY14</b>	<b>FUTURE</b>	<b>TOTAL</b>
Budgeted (without AFUDC)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Escalation (2)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Escalated Budget (without AFUDC)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Requested (without AFUDC)	\$ 1,434	\$ 469	\$ -	\$ -	\$ -	\$ 1,903
Difference (+/-)	\$ (1,434)	\$ (469)	\$ -	\$ -	\$ -	\$ (1,903)
Requested AFUDC	\$ 5	\$ 44	\$ -	\$ -	\$ -	\$ 49
<b>TOTAL Requested Funds *</b>	<b>\$ 1,439</b>	<b>\$ 513</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,952</b>

**Final Approver:** Mike Dunn – President, Generation

**Sponsor:** Darrell Cunningham – Managing Director, Pacificorp

**Author:** Will Lester – Engineer, Huntington Plant

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### **1. Introduction**

Unit 2 had a failure of all five coal pulverizers. An explosion completely destroyed all the primary air inlet ducts and associated dampers/valves, approximately 80% of the grating and handrail, approximately 50% of all instrument air and electrical lines and other such located auxiliaries, approximately 90% of all wall sheeting and associated lagging and insulation on south and west walls, and 100% of all steam inerting tie-ins. Also, all repairs and replacements need to conform to new updated plant standards such as painting (see attachment), labeling (see attachment) guarding all moving/rotating equipment, stairway sloping and tread standards (reference OSHA 1910.212(a)). A total of \$1,952,082 capital is requested.

### **2. Description and Strategic Fit**

This project will cost \$1,952,082 and is required in order to bring the unit back on-line.

### **3. Benefits**

This project will bring the unit back on-line.

### **4. Alternatives Considered**

There have not been any other alternatives considered. Leaving the unit off-line is not considered an option, but is used as a basis for economic evaluation as the next best alternative.

### **Present Value of Revenue Requirement (PVRR) Analysis:**

PVRR of Project Presented	(\$ 2,218,811)
PVRR of Next Best Alternative	<u>(\$54,933,048)</u>
PVRR(d) Benefit	<u>\$52,714,237</u>

### **5. Risk Factors Evaluated**

Some of the risks evaluated for include:

Performance short falls - Replacement like in kind.

### **6. Retirement and Removal Information**

This project will replace 100% of existing duct work that was installed in 2009 from Hot Air Gates to Pulverizers, PRU# PCPULM04 and 100% of Hot Air Gates, PRU# BDPRIM19

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## 7. Financial Analysis

The financial analysis summary presented compares the case of completing the project to the case of not completing the project. Because the case of not completing the project would mean leaving the plant completely idle, the benefits are very large. These benefits are calculated on leaving the plant idle for only one year, the analysis did not continue the benefits beyond the first year as it is unrealistic that the company would leave the plant idle.

### Project Name: U2 Mill Bay Repairs

(In Thousands of Dollars) --- The financial information presented here is a comparison of the proposed project vs. the next best alternative.

#### Project Economics:

	Customer Revenue Requirement	Cash Flows Prior to Regulatory Adjustment	Cash Flows After Regulatory Adjustment *
<b>PVRR Benefit or (Cost) Total Project</b>	\$52,714		
<b>PVRR Benefit or (Cost) PPW Share</b>	\$52,714		
<b>Project NPV</b>		\$32,816	\$102
<b>Project IRR</b>		>100% MultiSol	8.3%
<b>Discount Rate Used</b>		7.2%	7.2%
<b>Capital Productivity Ratio</b>		19.8	1.1
<b>Payback Period (years)</b>		1.0 Years	10.4 Years

	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
<b>Capital Spending w/o AFUDC</b>	\$1,434	\$469	\$0	\$0	\$0	\$0
<b>Capital Spending w AFUDC</b>	\$1,439	\$513	\$0	\$0	\$0	\$0
<b>Net Cash Flow Without Regulatory Recovery</b>						
Annual	(\$890)	\$37,312	\$2	\$2	\$1	\$1
Cumulative	(\$890)	\$36,423	\$36,425	\$36,426	\$36,428	\$36,429
<b>Net Cash Flow With Regulatory Recovery</b>						
Annual	(\$781)	(\$340)	\$152	\$147	\$142	\$137
Cumulative	(\$781)	(\$1,122)	(\$969)	(\$822)	(\$680)	(\$543)
<b>Incremental Earnings Before Interest &amp; Taxes</b>						
Without Regulatory Recovery	(\$55)	\$60,804	(\$93)	(\$92)	(\$92)	(\$91)
With Regulatory Recovery	\$119	\$121	\$149	\$142	\$135	\$128
<b>Incremental Earnings</b>						
Without Regulatory Recovery	(\$31)	\$37,741	(\$80)	(\$78)	(\$77)	(\$75)
With Regulatory Recovery	\$77	\$88	\$70	\$67	\$64	\$61
<b>Annual Revenue Requirement</b>						
Calculated	\$188	(\$60,678)	\$241	\$234	\$226	\$219
Recovered	\$188	(\$60,678)	\$241	\$234	\$226	\$219

\* Includes regulatory lag of zero months.

## 8. Regulatory Recovery Strategy

The asset will be included in construction work-in-progress (CWIP) until the project is used and useful. Allowance for funds used during construction (AFUDC) will be applied while the asset remains in CWIP. Recovery through retail rates will begin once the asset is included in the applicable regulatory filing as made in each state. Filings include general rate cases or other cost recovery mechanisms that may allow for

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recovery of all or part of the project costs. Assets (and any impacts on the company's ongoing revenue requirement) will be included in regulatory filings if the project is or will be used and useful during the test year used in the respective filing.

Rate recovery is subject to approval by the public service commission in each state served by the company and such approval will be sought on a state-by-state basis. Each commission will evaluate the prudence of the company's investment and ultimately determine any allowed recovery. The company anticipates this project will be approved as a prudent investment and recovery of its ongoing revenue requirement will be allowed, including a return on the amount included in rate base.

#### **9. Project Contingency**

There is no contingency detailed for this project.

#### **10. Procurement Strategy**

This was an emergent project so it was not competitively bid. Work is being performed use T&M rates that company had in place with contractor from previous maintenance contract prior to this project.

#### **11. Project Management**

Will Lester, Project Manager  
Glenn Pinterich, Engineering Manager Huntington Plant  
John Ularich, Buyer  
Ginger Wiscombe, Procurement Sourcing Manager

#### **12. Project Milestones**

Project Start Date – November 30, 2012

Project Completion Date – March, 2012

#### **13. Recommendation**

The Huntington Canyon Plant recommends that this project be approved and completed to bring unit 2 on-line.

#### **Appendices**

- Appendix A – Financial Analysis

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PacifiCorp - Thermal Economic Analysis Model									
Huntington U2: U2 Mill Bay Repairs								Page 1 of 2	
Official Curve: 9/30/2011									
<b>Inputs:</b>		Dollar Year - 2011							
		In-Service Date - 2011							
		Average Inflation Rate - 1.9%							
		Discount Rate - 7.2%							
		Analysis Period - 26 years							
Calendar Year	Capital Excluding AFUDC (In Thds)	AFUDC (In Thds)	Book Depreciable Life (Years)	Avoided O&M Savings or (Increases) (In Thds)	Forced Outage Benefit (Equiv. Days)	Risk of Forced Outage (Percent)	Incr. Station Use Increase or (decrease) (KW)	Heat Rate (Restore) or Loss (Btu/Kwh)	Capability Restore or (Loss) (MW)
2011	\$1,434	\$5	26						
2012	\$469	\$44	25		365.0	100%			
2013			24						
2014			23						
2015			22						
2016			21						
2017			20						
2018			19						
2019			18						
2020			17						
2021			16						
2022			15						
2023			14						
2024			13						
2025			12						
2026			11						
2027			10						
2028			9						
2029			8						
2030			7						
2031			6						
2032			5						
2033			4						
2034			3						
2035			2						
2036			1						

**Project Assumptions:**

This work is required to bring the unit back on-line. If this work isn't executed then it will result in an indefinite loss of 450 MW.

**Fixed Assumptions:**

Capacity Factor	89.32%	<table border="1"> <thead> <tr> <th>Calendar Year</th> <th>Medium IPC In Use (\$/MWH)</th> </tr> </thead> <tbody> <tr><td>2011</td><td>N/A</td></tr> <tr><td>2012</td><td>\$32.81</td></tr> <tr><td>2013</td><td>N/A</td></tr> <tr><td>2014</td><td>N/A</td></tr> <tr><td>2015</td><td>N/A</td></tr> </tbody> </table>	Calendar Year	Medium IPC In Use (\$/MWH)	2011	N/A	2012	\$32.81	2013	N/A	2014	N/A	2015	N/A
Calendar Year	Medium IPC In Use (\$/MWH)													
2011	N/A													
2012	\$32.81													
2013	N/A													
2014	N/A													
2015	N/A													
Heat Rate	10,148 Btu/KWh													
Incremental Fuel	\$ 23.94 \$/Ton													
BTU/lb	11,700													
MDC	450 MW													
Plant Property Tax	0.94%													
Total Capital Cost (Spent & Saved)	\$ 1,952 (In Thds)													
\$/mmBtu	\$ 1.576													

	Med	Low	High
Net After-Tax Cash Flow NPV (In Thds)	\$32,816	\$19,883	\$45,750
Internal Rate of Return (IRR)	MultiSol >100%	>100%	>100%
Simple Payback Period of Original Investment	1.0 Years	1.0 Years	1.0 Years
Net Benefit to Capital Ratio	19.8	12.4	27.2
Present Value Revenue Requirement PVRR (In Thds)	\$52,714	\$31,870	\$73,558

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PacifiCorp - Thermal Economic Analysis Model							Page 2 of 2
Huntington U2: U2 Mill Bay Repairs							Official Curve: 9/30/2011
Calculated Revenue Requirement Detail (In Thds)							Medium Level
Calendar Year	Capital Revenue Requirement	O&M Cost Reduction (Increase)	Heat Rate (Cost) or Benefit	Station Use & Cap. Restore or (Impact)	Outage (Cost) Benefit	Total (Cost) Benefit	Cumulative PV Revenue Req. Benefit
2011	(\$188)					(\$188)	(\$182)
2012	(\$214)				\$60,892	\$60,678	\$54,558
2013	(\$241)					(\$241)	\$54,355
2014	(\$234)					(\$234)	\$54,171
2015	(\$226)					(\$226)	\$54,006
2016	(\$219)					(\$219)	\$53,856
2017	(\$211)					(\$211)	\$53,721
2018	(\$204)					(\$204)	\$53,600
2019	(\$197)					(\$197)	\$53,490
2020	(\$190)					(\$190)	\$53,392
2021	(\$182)					(\$182)	\$53,303
2022	(\$175)					(\$175)	\$53,224
2023	(\$168)					(\$168)	\$53,153
2024	(\$161)					(\$161)	\$53,090
2025	(\$154)					(\$154)	\$53,033
2026	(\$147)					(\$147)	\$52,983
2027	(\$140)					(\$140)	\$52,938
2028	(\$132)					(\$132)	\$52,899
2029	(\$125)					(\$125)	\$52,864
2030	(\$118)					(\$118)	\$52,833
2031	(\$111)					(\$111)	\$52,806
2032	(\$104)					(\$104)	\$52,782
2033	(\$98)					(\$98)	\$52,762
2034	(\$92)					(\$92)	\$52,744
2035	(\$85)					(\$85)	\$52,728
2036	(\$79)					(\$79)	\$52,714
<b>Totals</b>	(\$4,195)	\$0	\$0	\$0	\$60,892	\$56,697	
<b>2011 NPV</b>	(\$2,219)	\$0	\$0	\$0	\$54,933	\$52,714	

Net After-Tax Cash Flows Without Regulatory Recovery (In Thds)							Official Curve: 9/30/2011
Calendar Year	Net Operating (Cost) or Benefit	Property Tax	Income Tax Payments	Capital Investment	After-Tax Cash Flow	PV After-Tax Cash Flow	Cumulative PV After-Tax Cash Flow
2011			\$544	(\$1,434)	(\$890)	(\$860)	(\$860)
2012	\$60,892	(\$13)	(\$23,098)	(\$469)	\$37,312	\$33,661	\$32,801
2013		(\$17)	\$19		\$2	\$2	\$32,802
2014		(\$16)	\$18		\$2	\$1	\$32,804
2015		(\$16)	\$17		\$1	\$1	\$32,805
2016		(\$15)	\$16		\$1	\$1	\$32,805
2017		(\$14)	\$15		\$1	\$0	\$32,806
2018		(\$14)	\$14		\$0	\$0	\$32,806
2019		(\$13)	\$13		\$0	\$0	\$32,806
2020		(\$12)	\$13		\$0	\$0	\$32,806
2021		(\$11)	\$12		\$1	\$0	\$32,807
2022		(\$11)	\$12		\$1	\$1	\$32,807
2023		(\$10)	\$12		\$2	\$1	\$32,808
2024		(\$9)	\$11		\$2	\$1	\$32,809
2025		(\$9)	\$11		\$3	\$1	\$32,810
2026		(\$8)	\$11		\$3	\$1	\$32,811
2027		(\$7)	\$11		\$4	\$1	\$32,812
2028		(\$6)	\$10		\$4	\$1	\$32,813
2029		(\$6)	\$10		\$4	\$1	\$32,814
2030		(\$5)	\$10		\$5	\$1	\$32,816
2031		(\$4)	\$10		\$5	\$1	\$32,817
2032		(\$4)	\$5		\$2	\$0	\$32,817
2033		(\$3)	\$1		(\$2)	(\$0)	\$32,817
2034		(\$2)	\$1		(\$1)	(\$0)	\$32,817
2035		(\$1)	\$1		(\$1)	(\$0)	\$32,816
2036		(\$1)	\$0		(\$0)	(\$0)	\$32,816
<b>Totals</b>	\$60,892	(\$227)	(\$22,301)	(\$1,903)	\$36,461	\$32,816	
<b>2011 NPV</b>	\$54,933	(\$126)	(\$20,181)	(\$1,810)	\$32,816		