

**Project Justification****Improvements****Problem Description**

The Haulage Gear Reducer and Drum is a cable winch assembly located in the train dumping house. It provides linear motion to a positioner arm that moves train cars into position for dumping.

Over the past few years the haulage gearbox has shown signs of increased wear. The last inspection revealed:

- 1) Acceleration in the gear wear.
- 2) Gear teeth running with less than full tooth engagement.
- 3) An intermediate gear with uneven wear and a roll over burr on its face.
- 4) Pitting and spalling on the gear teeth.

The above mentioned problems have become much worse in the last 6 months.

Both the vendor and our own engineers from ESO believe it is reaching the end of its life.

**Project Objective**

Replacement of the haulage gearbox.

**Proposed Solution**

Replace existing gearbox and drum with new.

**Alternative Considered**

Overhaul the existing gearbox and drum with new parts.

**Cost Estimate**

The cost from the vendor for the a new haulage assembly is current listed at \$538,000. The cost of the drum and bearings is \$205,000. The head and tail rope will be \$31,000. It will be necessary to remove the roof for installation. Two prices have been presented. One is for just the removal and installation, the other is for the modification to the roof structure so that any future work can be done with out any major roof removal. The first is 64,500 and the second proposal is 115,000. Labor for the project will be \$162,000.

**Project Benefits**

The benefit is reduction of risk. Without the use of the haulage reducer and drum we can not use the positioner arm in the dumper house. This means we have to use a lead engine to position the cars for dumping. This slows and complicates the process to the extent that we can only unload about 1.75 trains a day. Depending on the plant load we can burn over 2.25 train loads a day. Thus we would be lowering our stock of coal. Within a short time we would be below the 600,000 ton mark.

**Economic Evaluation**

Net Present Value:

Net Present Value/Cost:

Internal Rate of Return(%):

Discounted Pay Back(Years):

**Outage Duration Required****Project Champion**

Jim Velandra

**Champion Assigned On**

08/21/2002

## EXECUTIVE SUMMARY

Project ID: 931

Phase: Conceptual

OFW Number: 02BT55

MONPP Unit 0

Haulage Gearbox Project

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Plant Sponsor

Plant Manager

Proposed Implementation

04/21/2003

Project Engineer

Lawrence Powers

Project Manager

Dummy First Name Dummy Last Name

Project Created On 10/10/2003

Last Modified On 08/09/2004

**EXECUTIVE SUMMARY**

Project ID: 931

Phase: Conceptual

OFW Number: 02BT55

**MONPP Unit 0****Haulage Gearbox Project**

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**Cost Details**

Cost Description	2003	2004	2005	2006	2007
Construction Materials	\$889,000				
Construction DECo Labor	\$162,000				
Construction Contract Labor					
Removal DECO Labor					
Removal Contract Labor					
Engineering DECo Labor	\$30,000				
Contingency Miscellaneous					
Removal Materials					
Construction Management					
Engineering Contract Labor					
TOTAL	\$1,081,000				

**Benefit Details**

Benefit Description	2003	2004	2005	2006	2007
Reduction in Periodic Outage (\$)					
Fuel Savings(\$)					
Reduction Of Maint. Cost(\$)					
Reduction Of Operat. Cost(\$)					
Reduction in Forced Outage (\$)					
Restart Costs(\$)					
Capacity Gain(MW)					
Reduction Of Inventory Cost(\$)					
HEATRTE Improve(BTU/KWH)					
Avoided Derate(MW Wks)					
Capacity (\$)					
Energy Savings (\$)					
TOTAL					

P.S. - > Cost and Benefit print here only first 5 years.