Des-Case Confidential Report

Cost Benefit Analysis

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Cost Benefit Analysis

Lubrication Improvements require an investment in hardware, training and other resources. In order to help plant management understand the return on this investment, Des-Case has developed a simple process to help the plant understand the potential cost avoidance opportunities of implementing precision lubrication. Using a simple approach similar to standard methods for other capital projects, the estimated 5 year Net Present Value (NPV) and Internal Rate of Return (IRR) for lubrication improvements has been estimated. The information provide below was gathered from group discussion with representative from the plant maintenance team, including maintenance management, reliability engineers, planners, maintenance mechanics and lube techs.

		Low Case Estimate	Likely Case Estimate	High Case Estimate
Question 1	How much do you typically spend annually on ALL maintenance work (mechanical, electrical etc.)? Include in your estimate both material and labor costs for both planned (scheduled) and unplanned (repair) work.	$9,000,000	$9,000,000	$10,000,000
Question 2	In a typical year, how much do you lose due to unscheduled downtime, production slowdowns or off spec production? If you cannot provide an reasonable estimate, enter $0 and proceed to complete the assessment without accounting for production losses.	$0	$0	$0
Question 3	Of your total annual maintenance costs entered in question 1, what percentage can be attributed to either scheduled rebuild/replacement or emergent, unscheduled repairs? Exclude any costs associated with routine inspections or routine predictive maintenance activities.	80%	80%	80%
Question 4	What percentage of scheduled or unsceduled repair work is performed on rotating or reciprocating equipment, as opposed to facilities maintenance, electrical equipment etc.?	50%	50%	60%
Question 5	Of the scheduled or unscheduled repair tasks performed on rotating or reciproctaing equipment (Question 4), in your estimation, what percentage are due to poor lubrication (worng lubricant, under or over lubrication, contaminated oil etc.)?	10%	25%	50%
Question 6	By implementing the improvement plan outlined in this project proposal, what precentage of the lubrication problems entered in question 5 could have been avoided?	75%	75%	70%

	Response	Calculated value
Choose low, medium or high case estimate	low case	
Annual maintenance costs	$9,000,000	$9,000,000
Scheduled PM and Repair costs	80%	$7,200,000
Amount spent on rotating/reciprocating equipment	50%	$3,600,000
Percentage of lubrication related problems	25%	$900,000
Percentage of lubrication problems that can be eliminated	75%	$675,000

Estimated Annual Losses Due to Poor Lubrication	**low case**	**$900,000**

Addressable Losses Due to Poor Lubrication	**low case**	**$675,000**

Business Case Analysis

Prepared for	**ACME Paper Co.**
Location	**Anywhere, TN**
Client Contact	**Joe Smith**
Des Case Account Manager	**Jason Kopschinsky**
Distribution Partner	**Better Products Inc.**
Distribution Partner Representative	**John White**
Assessment Date	**6/29/2015**

Financial Evauation Case	**low case**
Estimated Annual Lubrication Losses	**$900,000**
Addressable Annual Lubrication Losses	**$675,000**

Year	**0**	**1**	**2**	**3**	**4**	**5**
Program Benefits	$0	$675,000	$675,000	$675,000	$675,000	$675,000
Program Costs						
Upfront						
Lubrication Training Program	$9,750					
Lubrication Audit (inc. modification design for maintainability)	$120,000					
Lubrication Audit Implementation	$95,000					
Lube Room Design	$105,000					
Oil Analysis Design	$15,000					
Ongoing						
Lubrication Training Program		$9,750	$9,750	$9,750	$9,750	$9,750
Lubrication Audit Implementation (consumables)		$15,000	$15,000	$15,000	$15,000	$15,000
Lube Room Consumables		$5,000	$5,000	$5,000	$5,000	$5,000
Oil Analysis		$30,000	$30,000	$30,000	$30,000	$30,000
Total Costs	$344,750	$59,750	$59,750	$59,750	$59,750	$59,750
Net Cash Flow	-$344,750	$615,250	$615,250	$615,250	$615,250	$615,250
Select Discount Rate	15%					
Discount Factor	100%	87%	76%	66%	57%	50%
Discounted Net Cash Flow	-$344,750	$535,000	$465,217	$404,537	$351,771	$305,888

Investment Analysis	
Five Year Net Present Value (NPV)	**$1,717,663**
Internal Rate of Return (IRR)	**177%**