

Business Case for URD Crew Ergonomic Tools

September 1, 2004



Business case committee

- Dave Carter Operations Manager
- Bob Weisheim Sr. Operations supervisor
- Lori Olivares Area Manager
- Pat David Operations Supervisor
- Trisha Seeley Corporate Health & Safety



Business case components

- Savings
 - Injury/illness savings
 - Replacement/repair savings
 - Productivity savings
- Costs
 - Initial tool purchases
 - New tool repair costs, batteries
- Implementation plan



Injury/illness savings

5 Year History (1999-2003): 109 injuries reviewed, 55 OSHA recordables – actual cost to company

■ Restricted duty	\$27,720/year
■ Lost work days	\$14,880/year
■ Workers comp	<u>\$20,958/year</u>
Total	\$63,558/year

These are the costs of injuries directly attributed to use of the existing manual tools for cutting and crimping URD cable

Projecting a 1/3 reduction (gradually increasing injury reductions)

Projected annual savings: **\$21,186/year**



Replacement/repair savings

- Current Manual Tools – 2003 & 2004 YTD (19 months)
 - Purchases \$5,766
 - Repairs \$6,731
- Expected turn ins:
 - MD6 35 of 99 (35.35%)
 - Peanut pumps 7 of 29 (24.14%)
 - Y35 22 of 44 (50.00%)
 - Y45 2 of 18 (11.11%)
- Projected annual repair and replacement savings on tools turned in: **\$2,836/year**



Productivity savings

- For reduced time using the battery crimper as opposed to setting up and crimping with the peanut pump
 - 1 hour per week for 22 dedicated URD crews
= \$57,200/year
- For reduced excavation time (cuts excavation time at least in $\frac{1}{2}$)
 - $\frac{1}{2}$ hour day for 22 dedicated URD crews (2.5 hrs/week) **= \$143,000/year**
- Additional productivity savings for 29 OH crews that perform URD work (not quantified)



Costs of proposed tool purchase

- Battery operated presses for URD:
28 @\$2,700 = \$75,600
- Battery operated cutters for URD:
43 @ \$3,300 = \$141,900
- Total tool purchase cost = **\$217,500**
(capitalized over 5 years of tool warranty
= \$43,500/year)



New tool repair costs, batteries

- Repair of battery tools
 - Current overhead tools : average annual repair costs
 - Presses \$7.00 per tool
 - Cutters \$70.00 per tool (training issues: what to cut, how to cut, how to keep blades from breaking)
 - Expected worst case for URD tools (should have less problems with URD cutters)
 - Presses: \$7.00 per tool x 28 = \$ 196/year
 - Cutters: \$40.00 per tool x 43 = \$1,720/year
 - TOTAL = \$1,916/year**
- Additional batteries: 1 per tool over 5 years @ \$150/battery = \$2,130/year



Bottom line

- New tool costs **Total costs \$217,500**
 - Annual savings
 - Injury \$ 21,186
 - Productivity \$ 200,200
 - Repairs/replacements (net) (\$ 1,210)
- TOTAL savings : \$220,176**
- Payback in approximately 1 year



Timing requirements

- Approval process- from Steering Committee to Directors
- If approved, get it through Supply Chain, quotation or bidding process in September
- If tools need to be manufactured, allow 6 to 8 weeks for delivery (October and November)
- Tools need to be received by 12/31/04 to be booked as a 2004 capital expenditure



Implementation plan

- Roll out as we did for overhead
- Vendors go to service centers
- Storeroom collect tools to be turned in
- Record serial numbers, to whom assigned
- Training video and/or member of URD team to be prepared
- Implementation Committee with Service center reps
- We will articulate this if we get approval



we energies
today, tomorrow, together.



URD TOOLS BUSINESS CASE 9/1/04

Category	Total benefits (5 yr)	Annual benefits	Total costs	Annual costs
Restricted duty	138 600	27720		
Lost work days	74400	14880		
Workers compensation	104 788	20958		
Injury totals	317 788	63558		
Total Injury Percentage Reduction estimate (1/3)	105 929	21186		

¹The number of crews—28—refers only to the dedicated URD crews. It does not include 23 additional crews who also perform overhead work. There would also be productivity benefits for these crews as well, but less since a number of them already have battery-operated tools for these crews.

URD musculoskeletal Injuries:

- 109 injuries from 1999-2003 (5 years)
- Nature of these musculoskeletal injuries:
 - 97 strains, sprains
 - 3 Inflammation of jts, tendons
 - 6 Carpal tunnel syndrome
 - 3 Multiple injuries
- 55 OSHA recordables, 54 non OSHA
- 16 lost work day cases resulting in a total of 344 lost work days
- 39 restricted duty cases resulting in a total of 1083 restricted duty days
- Total URD Workers compensation—medical and indemnity—costs for all MSDs were \$ 164,831.25.

Comparison to Overhead injuries:

- there were 47 overhead line worker MSD;s over a 2.5 year period, about the same number as this group;
- however, their worker population is much larger than URD workers so the severity rate is much higher
- The average age of URD workers is considerably higher as well, so that their overall exposure is higher
- URD work is more highly repetitive than Overhead, which increases duration of forceful or awkward exposures.
- Therefore, we can expect that it will take longer to show greater benefits with this work group, since the greatest benefit is to younger workers in the prevention of MSDs and older workers will still have some injuries regardless of reduction of exposure, though they will appear more slowly.

By including only the cases attributable to cumulative injuries and the use of the manual cutting and crimping tools—but not pulling cable or shoveling/digging, the next two most injurious categories—we have the following numbers:

- 693 **restricted duty days** valued at 50% of the average hourly plus benefits for a URD installer rate times 8 hours= $(693 \times 8 \times \$50) / 2 = \$ 138,600$ (if workers comp, employee's wages were paid, but this would cover the replacement worker)
- 186 **lost work days** valued at 100% of the hourly rate plus benefits rate times 8 hours = $186 \times 8 \times \$31 = \$74,400$ (if workers comp, employee's wages were paid, but this would cover the replacement worker)
- Workers compensation costs of **\$104,788.01**
- Total **\$317,788.01**
- Annual total of these injuries (5year period) = **\$63557.60**
- **We project an initial decrease of 1/3 of these injuries, but a gradually steeper curve as we get past the group which is going to have injuries regardless of intervention due to accumulated exposures**

URD ERGONOMIC TOOLS BUSINESS CASE - PURCHASE AND REPAIR SAVINGS ON EXISTING TOOLS

2003 & 2004 YTD ACTIVITY (THROUGH JULY)

LOT#	DESCRIPTION	PURCHASES			REPAIRS		
		QUANTITY	PURCHASE PRICE	TTL	QUANTITY	AVERAGE COST	TTL
744-6896	MD-6, SINGLE D3 DIE SLOT	8	\$242.20	\$1,937.60	21	\$64.02	\$1,344.42
744-6829	MD-6, BG & D3 DIE SLOTS	0 NA			NA		
744-6942	MD-6, O & D3 DIE SLOTS	0 NA			NA		
780-6602	PUMP, HYPRESS, 10,000 PSI	2	\$1,914.37	\$3,828.74	5	\$160.18	\$800.90
749-7652	HYPRESS, Y35-2	0 NA			14	\$312.86	\$4,380.04
780-6574	HYPRESS, Y45	0 NA			1	\$205.88	\$205.88
		TOTAL (19 months):		\$5,766.34	TOTAL (19 months):		\$6,731.24

NOTE: C&M DOESN'T HAVE REPAIR DATA PER OUR LOT NUMBERS SO THE MD-6 REPAIRS WERE PROVIDED IN A GRAND TOTAL FORM.

PROJECTED ANNUAL SAVINGS BASED ON % OF EXISTING TOOLS TO BE TURNED IN:

MD6	35 of 99 will be turned in =	35.35%	\$684.94	35.35%	\$475.25	
Hypress Pumps	7 of 29 will be turned in =	24.14%	\$924.26	24.14%	\$193.34	
Y35	22 of 44 will be turned in =	50.00%	0	50.00%	\$2,190.02	
Y45	2 of 18 will be turned in =	11.11%	0	11.11%	\$22.87	
			TTL Savings - 19 mo	\$1,609.20	TTL Savings - 19 mo	\$2,881.48
			TTL Savings/Year	\$1,016.34	TTL Savings/Year	\$1,819.88
GRAND TOTAL/YEAR - TOOL PURCHASE & REPAIR SAVINGS:						\$2,836.22