ROI

Table 8 combines the data from the previous tables to illustrate the paper mill's ROI (return on investment) that the mill realized from its infrared window program. The table details the total investment using three scenarios: 1) traditional open-panel inspections with a contract thermographer and two staff electricians; 2) the same contractor using infrared windows; and 3) an in-house thermographer using infrared inspection windows. It then compares the ROI that the mill was able to achieve using windows and either a contract or in-house thermographer.

Switching to infrared windows is shown to pay dividends in just one inspection cycle. Over $5,600 in savings can be put back into the budget by the end of the first cycle. After just five inspection cycles, the mill shows a savings of over $273,542.

Plant management was encouraged by these projections, so they decided to invest in an infrared camera and training for two of its engineers (one electrical and one mechanical). Two engineers were enrolled in a Level I thermography course at $1,250 per man. An additional $1,500 per man was budgeted for travel and expenses. The new camera totaled $8,000. The total investment to start up the new internal inspection team was $13,500.

The cost of in-house inspection (47 hours x $68) amounted to $3,196 per inspection, yielding a savings of $3,794 per inspection (or 54%) compared to a contractor.

ROI of the new program using internal resources was achieved within the second inspection cycle; by the fifth cycle, the ROI was over $280,000. Because inspections can now be completed with greater ease and without increased risk to plant personnel and processes, the mill increased the frequency to quarterly, reflecting best-practice recommendations that originally were not considered feasible.

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Table 8

	Contractor Traditional	Contractor Windows	ROI Contractor Windows vs. Contractor Traditional	In-House Windows	ROI In-House Windows vs. Contractor Traditional	ROI In-House Windows vs. Contractor Windows
312 Windows: One-Time investment	None	$51,405		$51,405		
Window Installation: One-Time Investment	None	$9,898		$9,898		
IR Training & Camera: One-Time Investment	None	None		$13,500		
Labor Costs: Per Inspection Cycle	$74,919	$7,950	$66,969	$3,196	$71,723	$4,754
Investment: Inspection Cycle 1	$74,919	$69,253	$5,666	$77,999	$(3,080)	$(8,746)
Investment: Inspection Cycle 2	$149,838	$77,203	$72,635	$81,195	$68,643	$(3,992)
Investment: Inspection Cycle 3	$224,757	$85,153	$139,604	$84,391	$140,366	$762
Investment: Inspection Cycle 4	$299,676	$93,103	$206,573	$87,587	$212,089	$5,516
Investment: Inspection Cycle 5	$374,595	$101,053	$273,542	$90,783	$283,812	$10,270
5yr. Investment: QUARTERLY Inspection Cycle	$1,498,380	$220,303	$1,278,077	$138,723	$1,359,657	$81,580

SAFESIDE IR Viewing Windows

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Conclusion

The new inspection process using infrared windows brought significant ROI to the plant in just one quarter, while reducing the risk of catastrophic failure among the plant's critical power distribution systems.

Management succeeded in:

- Increasing safety
- Facilitating inspections of previously "uninspectable" equipment (11% of critical assets were not inspected in the old program)
- Increasing the frequency of inspection - while saving money
- Safeguarding profitability by eliminating high-risk behavior that posed a risk to plant assets and production

The purchase of the IR camera and training for the maintenance engineers quickly paid dividends. It allowed the plant to improve the maintenance program while operating in full compliance with the requirements of NFPA and OSHA.

An infrared window program provides a cost-effective and safer alternative to traditional open-panel inspections. To learn more, visit www.iriss.com where you will find more case studies and white papers.

Use of IRISS family Electrical Maintenance Safety Devices (EMSDs) such as infrared windows, ultrasound ports, voltage detection ports and online monitoring, allow energized electrical maintenance tasks to safely and efficiently be completed while switchgear enclosure remains closed.