

THE PROFESSIONAL DEGREE PROGRAM FOR THE "NEW VE KID ON THE BLOCK"

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ABSTRACT

This paper highlights how continuing education through Professional Development Programs in Value Engineering (VE) can benefit both employer and employee by implementing cost reduction techniques.

INTRODUCTION

Lakehead Pipe Line Company, Inc. (LPL) is a large volume pipeline company transporting and delivering Western Canadian crude oil to Midwestern U.S. and Eastern Canadian markets.

In the spring of 1991, LPL conducted a VE study under my direction while I was a Professional Development Degree student at the University of Wisconsin - Madison and staff engineering assistant at LPL working in the projects group. The VE study was beneficial for both me and LPL since the company and I would become more familiar with VE techniques. There was also a potential for increased value either in the form of capital cost reduction or improved engineering design and installation.

While a successful VE study was completed and recommendations are being implemented at LPL, the study itself is not the focal point of this paper. The fundamental concept is that there can be enormous payback through professional development programs in U.S. industry.

EDUCATIONAL BACKGROUND

Although the basis for this paper deals with the benefits gained through professional development programs, formal educational background in VE concepts at LPL is limited. I was first introduced to VE techniques at a 40 hour workshop sponsored by the University of Wisconsin Extension Program in August 1990. Since then, review of VE texts as well as consultation with UW Program Director Thomas J. Snodgrass, has enabled LPL to turn continuing education investment into professional development and realized cost reduction through the implementation of recommendations from the application of VE techniques.

Project Selection

Project selection was of particular importance since the team's findings and feasibility of their recommendations would dictate the continuation of VE analysis at LPL in the future. Selection criteria included:

Recurrence

A typical mechanical project expected to be frequently repeated would allow the Company to use the information gained from this study later.

Simplicity

Minimal project complexity (actual parts) allowed the team ample time to discuss and evaluate all options. Since the team met on a part time basis only, highly complex project review would be cumbersome.

Familiarity

Selecting a project that had been manufactured made essential project costing information available. This included a historical data base of material, labor

and overhead costs associated with the type of work chosen. This information is of paramount importance in accurately following through with the VE economic analysis.

Upon Engineering's review of the selection criteria, a Field Booster Pump was selected. An enormous amount of job costing data (baseline data), as well as minimal project components, made the booster pump project an excellent choice.

Team Selection

Team selection was carefully chosen to incorporate both technically oriented personnel and aggressive employees who were eager to learn. The team included personnel from Engineering, Engineering Standards, Operations, Purchasing and Safety.

Project Scheduling

To fulfill Engineering's scheduling commitment to Senior Management, a team and project schedule were developed. Since the group was in pursuit of project efficiency, cost reduction and improved engineering design, an on-time installation certainly gave credibility to the process.

THE VE STUDY

Established VE techniques were employed as presented in the 40 hour workshop on the campus of the University of Wisconsin - Madison. Technical reference was often made to Thomas J. Snodgrass and Muthiah Kasi².

To fairly assess LPL's first effort at VE implementation, the balance of this paper focuses on the associated benefits resulting from the study.

BENEFITS

While the main objective of the VE study was to introduce LPL to the concepts of VE, other benefits were also realized. They include:

1. Application of VE techniques on specific capital project led to identifiable cost reduction.
2. Education of team members to VE concepts.
3. Increased communication between interdepartmental personnel.
4. Approval of pilot study will lead the way for other similar special projects.
5. Expanded knowledge of project requirements between designers and operators.

CONCLUSION

Exposure to VE concepts has provided LPL with an alternate means of reviewing existing engineering designs. The Company has also realized that specific application of VE techniques merit consideration for incorporation into Engineering Standards as well as Project Engineering.

In addition to a realized cost benefit, the VE techniques employed throughout the study will have a lasting affect on the team membership and, in time, may prove to be the framework from which to maximize capital value through increased system

efficiencies and cost reductions in facilities design.

This exercise certainly proves that professional development can reward an employer with a short-term payback; the utilization of day-to-day reduction techniques will yield the company enormous ongoing returns.

ACKNOWLEDGEMENTS

The VE Committee expresses their sincere appreciation to Mr. Thomas Snodgrass, CVS, Professional Development Advisor - University of Wisconsin, for his support and advice throughout the VE study.

REFERENCES

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