THE FLEXIBILITY AND ADAPTABILITY OF VALUE MANAGEMENT.

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SUMMARY

The Australian Standard describes Value Management as a structured analytical process which adopts the sequential approach of the core methodology called the Job Plan. It also describes roles and responsibilities involved in a valid VM Study. But in case it may be thought that this could be restrictive, the Standard also emphasises that the process is flexible and adaptable over a wide range of projects, products, systems, services or processes.

The purpose of this paper is to give some examples from the wide variety of applications with which the writer has been involved, and in which Value Management has proved to be what Larry Miles described as a 'superior problem solving system'.

THE KEYNOTE ADDRESS OF THE 1991 IVMA CONFERENCE.

The Chief General Manager of the State Electricity Commission of Victoria (SECV), Mr. George Bates gave the Keynote address to the 1991 Conference of IVMA, and included the following :

'In the early 80's we were engaged in a huge new power station project — Loy Yang A — in the Latrobe Valley. It was one of the biggest projects in Australia at the time.

It's no secret that the project was having some construction problems, which included some engineering management issues and of course, cost over-runs.

We decided to use Value Management as a process to allow us to critically review all areas of the power station project without degrading performance. The end result — and it is a much longer story than this! — was that we got the project well and truly under control so that it came in on time and under budget.

That really sold us on Value Management. I mean with the Loy Yang project we are talking about a project costing thousands of millions of dollars. And we did it.

Since then we have maintained a strong committment to VM'

Having had the opportunity and the responsibility for establishing the Value Engineering Techniques used by SECV, it is of interest to describe some of the developments which illustrate the flexibility and adaptability of the VM Job Plan.

THE FIRST VALUE ENGINEERING WORKSHOP

SECV set up a Value Engineering Section headed by Jack Ferguson and David Gaffe. For the first five day Workshop, they selected three projects, which were

1 The steelwork for the Boiler House.
2 The conveyor system delivering coal into the Power Station Bunker.
3 The system which delivered conditioned air into the switchgear galleries.

Although I agree with the definition of Value Management which appears in the Draft Australian Standard, in a VM Workshop I use the one derived from Larry Miles

:VALUE MANAGEMENT

VALUE ENGINEERING

VALUE ANALYSIS

AN ORGANISED APPROACH TO LOCATE, IDENTIFY AND REMOVE UNNECESSARY COST

The Teams in this first SECV Workshop were taken simultaneously through the Job Plan Phases described in the Standard, using also the six questions :

1 *What does it do ? (what are the significant functions ?)*
2 *What are the resources used ? (for each of these functions)*
3 *What do they cost ? (to perform each of these functions)*
4 *What MUST they do ? (the satellite functions)*
5 *What else would perform these functions ? (the alternatives)*
6 *What are the best alternatives ?*

1 The Boiler House steelwork involved a massive 23 story building, housing four large boilers and ancillaries, and the Team listed over 20 significant verb-noun functions, such as :

Suspend water walls ; suspend reheater elements ; suspend economiser elements ; suspend superheater elements ; resist wind ; provide lateral restraint ; provide access ; provide weather-protection — and so on.

They drew the FAST Diagram and then allocated the cost of the steelwork components to the appropriate functions. They were amazed to find that the total cost of the steelwork was $100 million. During the Workshop they identified many potential savings in both Loy Yang A, which was already under construction, and in Loy Yang B, which was still in the design stage. A recent figure which I saw indicated that the steelwork for Loy Yang B Power Station had been reduced below $70 million, and the shape of the Boiler house considerably changed,

2 .The Team on the Coal Conveyor listed significant functions such as : Move coal ; raise coal ; provide stand-by ; require maintenance ; protect coal (from damage due to rain or wind) ; protect maintenance staff — and so on.

The structure involved massive steelwork, the cost of which was about $40 million. The Team used the same Job Plan and the six steps and identified potential savings of over $10 million.

3 The project for the third Team involved a large fan unit mounted high up in the building, drawing air through a filter, correcting temperature and humidity so that the air delivered into the switch gear galleries would protect the contacts and exclude dust. The team identified potential savings of approx. 40% and by installing elements in the switch gear cubicles reduced the power required for heating from 2 Mw to 18 Kw.

VALUE MANAGEMENT APPLICATIONS

The success of the three Teams in this first Value Engineering Workshop was followed by a series of over 400 studies, and as Mr. Bates has said, provided ' 'audited returns of up to 100–to–1 on the cost of running the study'.

The Board of SECV were aware of the successes of Value Engineering Studies, and decided that the Techniques should be extended to management problem areas. This resulted in a number of Value Management Studies, including :

- Review of Finance and Administration Directorate
- Paying Accounts
- Electrical appliance sales and distribution
- Re-organisation of the SECV Stores system
- Corporate Contract Procedure
- Technical Education of SECV Staff
- Maintenance of PCs
- Staff replacement procedures
- Internal postage system
- Typing Pool
- Canteen Service

VALUE MANAGEMENT REVIEW OF ALL ACTIVITIES OF SECV

In 1986 the then Chief General manager, Mr. Jim Smith, decided that there should be an 'Activities Review' of the whole of the SECV, then employing 22,000 people and with an income of $2 000 million per annum. An Activities Review Taskforce was formed and it was decided to use the Value Management Approach.

Teams of about six people were selected from each Department, making up twenty three VM Teams. In groups of up to ten Teams in the one session, these Teams were taken simultaneously through the Job Plan, so that each Team then developed its FAST Diagram, and applied the Job Plan to its own Department.

At the conclusion of the Workshop, during which the Teams also followed the six point process described above, each Team selected the best alternatives for improving the performance of their own Department. Hundreds of recommendations were included in the Reports, all of which were studied by the Chief General Manager and appropriate staff at all levels.

When approvals for implementation had been given, the Departments ensured that they were successfully implemented, and although this involved a considerable extent of change throughout this very large organisation, it was achieved without industrial unrest.

The Activities Review Taskforce also developed a FAST Diagram of the activities of SECV, and then proceeded to Strategic Planning. This was necessary because it was apparent that the massive design and construction programme was drawing to a close, and it was essential to Plan how the SECV expertise could be used outside the Commission. The success of this Strategic Planning is another story.

The SECV Activities Review is an outstanding example of a highly successful application of Value Management, over a wide range of activities, and which could not have been achieved by any other process.

PERSONNEL DEVELOPMENT FROM INVOLVEMENT IN VM.

It was also apparent that many of those involved in the VM Studies developed a new sense of maturity, as Value Management not only improves products, processes and systems, but also gives confidence and satisfaction to those who participate in this 'superior problem solving system' called Value Management.