ABB Loss Map achieves global gains for industry

The ABB Group, global leader in power and automationtechnologies, has developed a Loss Map in New Zealand that is enabling majorindustrial clients in more than 20 countries to work more efficiently andcost-effectively.

During 2009 the map was designated as mandatory training forall ABB management teams in Europe, and for all sales, site managers, maintenancemanagers, engineers, planners and supervisors in North America, Australia and New Zealand. Swiss-based ABB’s technologies enable utilityand industry customers to improve performance while lowering environmentalimpact. The group operates in around 100 countries and employs 120,000 people.

The ABB Loss Map was created by Barry Kleine, an engineerwith ABB Process Automation Service, of Rotorua, New Zealand,who is the group’s Global Reliability Manager.It is based on the Mindjet MindManager tool that provides collaborationand personal productivity solutions which visually connect ideas, informationand people to save time, improve business processes and drive innovation.

According to Barry Kleine, the ABB loss–mapping processallows plant management to understand all the factors limiting achievement oftheir business objectives. It considers personnel factors as well as equipment,and is used across all industries. Sites using the tool soon recognise that theissues they are focusing are not necessarily the most important sources of lossat their site.

He says: “ABB Loss Map has been rolled out in more than 20countries and at every site has resulted in a better understanding of plantissues by personnel and a refocusing of the site improvement plan to achievefaster gains.”

Use of the map has enabled one of New Zealand’s biggestcompanies to increase overall equipment effectiveness (OEE) by 22.4 per cent,reduce maintenance costs per unit produced by 35 per cent, and increaseemployee satisfaction from 66 per cent to 78 per cent.

The Manager who has used the Loss Map process for more than threeyears says it has given him a better understanding of the cause of losses aswell as guidance in building an agreed plan between maintenance and operationalteams.

He said that through using this process they identified thatsome planned process improvement projects had nobottom-line impact, or had a negative impact on overall productivity. By removing these, the company freed a lot ofresources. Customising the Loss Mapprocess to the company’s site has management to focus on better priorities.

The ABB Loss Map had its inception nine years ago afterBarry Kleine joined ABB and found that operational methods differed across thecompany. He sought a more logical way ofoperating.

He says: “I began trying to document all the company’sinvaluable knowledge and know-how in a format where it could be taken to clientsites for presenting information in a clear and easily understood way. After evaluating a number of alternatives Idiscovered Mindjet MindManager, which provides the most visually clear andsimple way of breaking up a mass of information and presenting iteffectively. Using MindManager, Ideveloped the Loss Map, which allows us to work more systematically.”

The Loss Map, used by ABB as a global template for rootcause analysis, is comprehensive in size and contentwith more than 4,000 factors detailed. Barry says addressing problems as they occur is time-consumingand costly since there a risk that the root causes of problems are notaddressed. Plus there is insufficient timeto fix problems one by one. He says preventionis the only way to achieve long-term sustainable improvement. ABB investigations show two majorcontributing factors why customers run out of time and money when implementingpro-active action plans at their plants: not knowing what the real problemsare, and having insufficient or incorrect data on a problem.

Loss mapping enables key performance indicators (KPIs) criticalto plant performance and business objectives to be detailed and understood indepth. It allows the KPI (or ‘branch’)of the map with the largest potential improvement to be identified and focusedon at an early stage of a lossreview. As each branch is opened, a listof factors capable of causing poor performance of the KPI is revealed, and sitedata will identify which factors are contributing most to losses. When the data is compared to benchmark figures,personnel can focus on those factors that deliver the fastest returns.

Loss mapping also helps to determine plant strategy. If data reveals KPIs such as production rateor quality to be the largest source of loss, the customer’s maintenance and operationsdepartment can focus on these.

Employee efficiency also plays a significant part in aplant’s performance, so the Loss Map poses questions like: Are issues ofcommunication slowing down personnel?Are people the contributing factors behind those losses? The answers allow personnel to determine themost cost-effective measures to take.

Barry Kleine says ABB usually looks after a client’s entiremaintenance architecture, including equipment, health and safety, stores etc,which can be confusing in light of the scale and complexity. But using MindManager to group information inthe Loss Map, increases clarity of thought dramatically – looking at a singlebranch of the map allows staff to focus on what is most pressing and mostrelevant.

The Loss Map is also used for collaboration betweenmaintenance (carried out by ABB) and operations performed by the plant’sstaff. The map

enables everyone toevaluate processes, state their priorities, add, change, or select elementsthat don’t apply. They reach a consensusand formulate a customised plan. So themap improves understanding of what is happening at asite and compares factors such as equipment losses with personnel losses. The agreed maintenance and operational planthat results achieves better teamwork and improves levels of confidence betweendisciplines.

As well as providing thefoundation for ABB’s Loss Map, MindManager helps Barry Kleine with day-to-day and long termplanning. Each new year he agrees workobjectives with his manager, and breaks these down in MindManager intosub-daily sections.

“Each day I know exactly what Ineed to do and sign off, track priorities and processes,” said Barry. “Each year that I’ve done this I haveachieved 98 per cent of my performance criteria, and it’s taken less than 15minutes to show my manager. Once I show him a print of the MindManager map, hecan see this at a glance.”

Barry Kleine presents his Loss Mapmaintenance program to colleagues in 100 countries. Personally he has shown the Loss Map to morethan 500 ABB training representatives from more than 20 countries. All agree that the MindManager-based Loss Mapmakes their life easier.

For more information

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Mindjet distributors in Australia are: Aquion (sales@aquion.com.au); Mindsystems(www.mindsystems.com);Lifeboat Distribution (www.lifeboatdistribution.com);and PICA Australia (www.pica.com.au). In New Zealand, MindManager is distributed byMindLogik (www.mindlogik.co.nz).