

## **Using Value Focused Thinking To Address Public Health Issues In The Mining Industry**

### **Introduction**

The mining industry is one of the most controversial in the world today. It is commonly known as a contaminator of the environment and an abuser of public health. Its notoriety doesn't stop here. Ask any member of public how they perceive employment in the mining industry and they will describe poor conditions involving heavy physical work, high injury rates, fatalities, extreme temperatures, visual impairment, dusts, toxic gases and noise to mention but a few.

Dick Martin had once worked in an underground mine and resident in a near by mining community.<sup>1</sup> His belief that there is a direct connection between a healthy environment and healthy workplaces may have been formed from this unique experience.<sup>1,2</sup>

With the emergence of global awareness to environmental concerns, pressure groups helped to bring global impacts of the mining industry onto the international arena. Out of the public eye, this was is less true for occupational health issues, but people like Dick Martin have promoted, and continue to promote, these issues as one concept.

One place where Dick Martin's ideas are alive is the Canadian Environmental Assessment Act which stipulates that each assessment should carry a health component, forcing workforce, community and environmental health to be considered together.<sup>3,4,5</sup> Although great in concept, this process is currently far from perfect. Although an option, it is not common for industrial hygienists to be invited as experts.<sup>5</sup> In consequence, discussions relating to health impacts are often limited.

This essay proposes the introduction of value focused thinking to the environmental assessment process will allow the public's interest in environmental and occupational health and safety to be unlocked. This will, in turn, require these issues to be more widely investigated and lead to occupational health and safety prevention measures being implemented at the planning stage. Finally, the essay will also comment on its adaptability to other occupational health and safety contexts.

### **Present Mine Planning Methods**

On application for environmental assessment, a review panel is formed consisting of varied provincial and federal regulatory bodies, local government and experts in environmental and public health.<sup>3</sup> Most public opinion is gathered at public meetings.

The public participation process is seen as painful by all. Regulators consider it ineffective and a drain on resources. Mining companies tend to regard the public hearing activity as a rite to be passed. The general public often consider it as a symbolic gesture by regulators or as a coercion exercise by mining companies. They feel fruitless in their efforts, consistently observing the panel exercising their right to reject issues.

For example, a panel may consider priorities as attracting industry to the area, solid compliance with environmental regulations with regard to air and water emissions, and workforce exposure to radon gas. A study may even have been commissioned to address these issues. In contrast, community members may be concerned about the potential impact on wild deer resident on neighbouring land. Others may be willing to welcome employment if it promises to increase the community's average household income. Potential workers may be concerned about the mining method, working conditions and the potential for dust related diseases. Some residents may be against the mine and concerned for the potential disruption to tranquil community life. A local community group may be concerned about the creation of physical hazards such as steep cliffs on which community members may incur injuries. The community may feel outrage at the panel's refusal to commission a similar study for its own priorities.

### **The Problem With Present Methods**

Many people advocate that the political decision-maker is the root of the problem and suggest decision-making should be passed to the public body.<sup>6</sup> I propose that the problem is encountered much earlier in the process where it fails to address the public's values and therefore allows the decision-maker to make an ill-informed decision. During the process the public can voice issues, but with its right to reject them, the panel has control of the public's values and therefore assumes to be an expert in them. I believe the acknowledgment that communities and workforces are experts in their own values would allow this process to become more effective.

### **Application Of Value-Focused Thinking To Mine Planning**

Value focused thinking calls for the identification of all stakeholders.<sup>6</sup> That is, all those persons or groups of persons whom the decision will have an impact upon.<sup>6</sup> It asks the stakeholders for its values and uses these exclusively as objectives. These objectives should be explicit and can be personal, political, economic, social, or any other.

Applying value focus thinking to the example discussed above, the fundamental objective to approve a project optimizes environmental impact and public health remains.

Means objectives can be drawn up by summarizing the ideals of the stakeholders. In this example, the means objectives would be increasing employment in community, minimizing workforce exposure to radon gas and dust, minimizing impact on wild deer, optimizing working conditions, minimizing effect on tranquility of community and minimizing physical hazards to public.

By asking the question "How could this be achieved?" ends objectives can be extracted from stakeholders.<sup>6</sup> For example, stakeholders may agree that a conservation project would help protect the impact to wildlife in the area. The appropriate location of mine buildings would help minimize the noise and visual impact to residents. An environmental control program would minimize noise impact and air, water and soil contamination. The use of specific appropriate technologies and modern mining methods would minimize environmental pollution, workplace hazards and exposures. A secure operation would minimize risk to the safety of the community. Health and safety monitoring programs with specific attention to radon and dust would monitor and control workplace hazards and exposures. The mine would bring income to the community, indirectly improving general health of the community.

The mining project would then be designed with respect to these ends. Acknowledging that some objectives conflict, a range of alternatives is produced where the difference in project designs become the value trade-offs to be made when the final decision is made.

### **Comparison Of Methods**

In the traditional example, income, environmental pollution and radon exposure were considered important to project design. Dust exposure, community safety and preservation of tranquility were not issues felt to be important and would have the potential to become factors of public outrage and concern for occupational health and safety officials if the project were to be approved.

In the value focussed example, all these factors were inherent in the design stage of the project. It can be clearly seen that community and workforce health issues attained a satisfactory context in which to be considered. Value focused thinking is a constructive process. To the occupational health and safety field, value focus thinking creates the opportunity for health impact prevention.

### **Application To Other Projects**

Value focussed thinking does not need to be preserved in the environmental assessment process but should be used in other applications in the mining industry. For example, the design of a new mineshaft may benefit from the involvement of the workforce who may introduce concerns for the mental health impacts of different work cycle patterns. In another example, injuries and exposures could be minimized by inviting maintenance workers and workshop visitors to contribute to the planning of a new maintenance workshop.

It has applications outside of the mining industry too. Used in an office setting, an economic ergonomic workplace could be designed. Alternatively, a pharmaceutical manufacturing company may wish to use value focused thinking to improve the efficiency in a production line while minimizing worker exposures.

### **Conclusion**

Public health issues are most commonly given low priority in the Canadian Environmental Assessment process. Value focused thinking has the potential to ensure public health is placed correctly in the context of the decision, as it puts all other issues in context. Public health finds a natural setting in which to be discussed and this discussion takes place at the design stage.

Finally, if value focused thinking is incorporated into industry and workplace design, there will be no need to wait for the emergence of people like Dick Martin who lead the fight again and again for the consideration public health issues. Instead, we would be confident that workforce and community health will find their appropriate context at the planning stage. It is my hope that this decrease in the need for unnecessary mitigation will enable the occupational health and safety field to focus the development of already best technologies, enhancing working and living conditions in the world today and tomorrow.

## Bibliography

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