

# Can Safety Culture Be Utilised to Improve Public Safety?

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In the present economic climate many health and safety practitioners are concerned that their organisations will start rationalising health and safety budgets and that this in turn will have an impact on safety performance. In many organisations this will result in industrial injuries, but in utility companies the risk is broader and can affect public safety. This raises the question: how safe are the public and can an organisation's safety culture be the key to improving public safety?

The potential hazards associated with utilities are widespread, from contamination of water supplies and land that can have long term health effects to electrical hazards and gas leaks that can cause immediate injury. The risks from these hazards can be controlled and reduced by utility companies through the investment and development of robust Environmental, Health and Safety Management Systems (EHS systems). Things do however go wrong and when this happens the impact can be widespread. For example in April 2000 in Lancashire, water became contaminated by 'cryptosporidium' that affected an estimated 308 people. In 1999, a gas explosion in Lanark killed both husband and wife and their two children. The major difference between these types of incident and those that generally occur in the workplace is that they are 'organisational incidents' as opposed to individual incidents. That is, they potentially affect more than the immediate individuals involved in the incident and can impact on communities, the environment and organisational reputation not just in the immediate future, but for years to come. For example, the Burnock 1997 incident in which diesel contaminated the water supply significantly damaged the public trust and the reputation of that water supplier. It is therefore essential for an organisation to review its EHS system and one of the factors influencing its effectiveness is its safety culture.

A safety culture is the prevailing beliefs and values an organisation holds with relation to health and safety. This influences the daily practices, behaviours and decisions that are made. At its best an organisational safety culture is an environment where safety culture is either 'Generative', i.e. highly internalised to the extent that people act and make decisions naturally whilst maintaining a healthy chronic sense of unease, or a 'Proactive' i.e. a culture in which people are motivated to protect themselves and others because they want to. This is more than an organisation simply complying with safety regulations because they have to. This would fall in to the category of a 'Calculative' safety culture. That is, they work on the basis of calculating the risks on a cost/benefit ratio with legislation providing the level of duty that is imposed against any particular hazard. These organisations are typically characterised by the heavy use of procedures, and this is where the problem sits. For many companies, once they have developed comprehensive safety systems they become lulled into a false sense of security, feeling that safety is being managed effectively.

The reality is that such organisations tend to use lagging indicators such as incident data that often means that failures in safety will only be recognised once an incident has occurred. This often leads to the 'safety wave phenomenon' when safety becomes a priority once an incident has rocked the boat. This generally leads to a plethora of safety initiatives to improve safety until over time the organisation feels once again that safety has been achieved; this confidence is maintained until the next incident occurs when the cycle repeats itself in a wave like function.

In worst cases an organisation will possess a 'Reactive' safety culture dealing only with recognised risks once they have caused an incident. Worse still, an organisation will operate a 'Pathological' culture that considers safety as something that gets in the way of operations and is not managed until after a regulator has taken action. Perhaps it is the latter types of safety culture that led to the Lanock incident in 1999. During the investigation into the incident it was found that the gas supplier had identified the risk from erosion of cast iron pipes in 1988, so why had nothing been done sooner? The investigation revealed that the supplier in question had implemented a risk assessment process that was based on the failure of the gas main, in other words when the main began to fail it would rate highly enough for a replacement pipe line - a reactive strategy.

To understand how safety culture can influence an incident we need to understand the anatomy of an incident. Typically incidents occur through a mixture of latent conditions that are brought about by fallible decision making, which can exist in an organisation for years without incident, and active failures, which usually occur at the point of the incident. In most cases an incident will have an active failure occurring within moments of the event, however in organisational incidents it tends to be the existence of latent conditions that cumulate, not the single action of behaviour of an individual. For example, if we take the contamination of a water supply in 2007, one of the contributing factors was larvae in the filters. The filters were granulated active carbon filters (GAC) which provide the right conditions for the larvae to thrive. GAC filters are typically recommended as secondary filters, not primary filters as they were being used in this instance. The problem being that as primary filters these would require more regular flushing than was been practiced by the company, if they had increased the flushing regime of the filters this would have been cost prohibitive, therefore it may be argued that the decision to use GAC filters led to a latent condition (or failure) that caused the contamination of the water supply. The question is why when making decisions do people take these risks with other peoples lives?



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The answer is painfully simple it is not that people intend to harm anyone, but that they do not think it will ever happen. The cause of this is often due to a decision making bias called 'framing effects'. This involves the way we frame a problem which influences our risk taking behaviour; for example if we frame a problem in terms of gains we become risk avoidant, and if we frame a problem in terms of a loss we become risk seeking. In the case of the explosion maybe the company thought that by not replacing the pipe work it would avoid loss of gas, delivery and disruption to service. The problem being that once we have made such decisions the more confident we become with them and the less the risk that is perceived. It is the organisation's safety culture that causes such decisions.

It is essential therefore that public utility companies address their organisational safety culture and its impact on their EHS systems. Companies must maintain vigilance and address these issues or run the risk of organisational complacency. Without this being driven through leadership utility companies will be at risk of injuring consumers and individuals through poor decision making and ineffective safety systems that do nothing more than take up time and space on a bookshelf

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