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Messages for Manufacturing Personnel

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Maintain a Sense of Vulnerability

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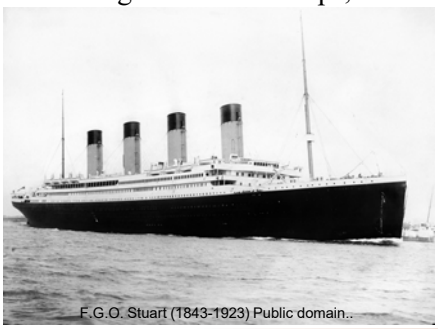
Maintaining a sense of vulnerability is an essential characteristic of a good process safety culture. What does "maintain a sense of vulnerability" mean? It means that everybody in your plant:

- Has a high level of awareness of the hazards of your processes and materials.
- Is constantly vigilant for symptoms of weaknesses that might foreshadow more serious events. This includes reporting near miss events (March 2018 *Beacon*).
- Avoids complacency that might result from good past performance and a good safety record.

On April 15, 1912 (106 years ago this month) the ocean liner *Titanic* sank in less than 3 hours after hitting an iceberg in the north Atlantic Ocean, with the loss of over 1,500 lives. There are many examples of a failure to maintain a sense of vulnerability in the design and operation of the *Titanic*. For example:

- The ship was perceived to be "unsinkable" resulting in poor critical safety decisions. For example, water tight bulkheads stopped two decks below the main deck. Lifeboats were considered "unnecessary" and the number of lifeboats was reduced from 64 to 16, so there were not enough for all passengers and crew.
- The captain was considered to be overconfident in his seamanship and the invincibility of his ship.
- The ship was traveling at high speed, although its course was through floating pack ice. Despite warnings about icebergs from other ships, at no time was any order to slow down given.



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Do you know?

Failure to maintain a sense of vulnerability has been a factor in process industry tragedies. For example, in December 1984 a toxic gas (methyl isocyanate – MIC) release in Bhopal, India caused thousands of fatalities. Following the tragedy, it was found that several critical safety systems had not been functioning for some time.

- A vent gas scrubber and flare tower were out of service.
- A refrigeration system for the MIC storage tank had been left idle.
- Pipe blinds that would have prevented the water contamination that initiated the incident had not been installed.

What can you do?

- Understand the hazards of your process and materials. Know what the worst-case incident is, and what safety systems and procedures are in place to prevent it. Understand how you can be sure that those systems and procedures are working properly, and inform management if you see weaknesses.
- Never think "it can't happen here" or "it can't happen to me." It can!
- Encourage everyone at your plant to have a calm awareness that the worst-case scenario can happen, and it could happen right now! Know what you can do to prevent it, what to do if it happens, and always be ready to follow emergency response procedures.
- Understand the potential impact of the full range of events which could occur in your plant, not only the "worst case" event.

"It does not do to leave a live dragon out of your calculations, if you live near him."
– J. R. R. Tolkien, *The Hobbit*, Chapter XII

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