The Black Swan – Planning for the unexpected – Normal life in the nuclear industry!

Recently read “The Black Swan” by Professor Nassim Nicholas Taleb. Anyone at all interested in the use of probabilities to assess and manage risk must put this on their reading list. Taking aim at the normal curve high priests, Taleb attacks by showing that most of what shapes our lives are the result of highly improbable (or at least thought so until ……) events. We seem to believe things are not probable without focusing on the consequences and we have difficulty distinguishing between those events that clearly suit a normal curve (or “Mediocristan”), such as the heights of a group of people where the limits are real (no 10 foot tall people around) and those that don’t (i.e. “Extremistan”). This example being that within a large group it is certainly feasible that one individual’s income can overwhelm the mean (i.e. you cannot predict my income by looking at a mean – there are those who earn more in a day than most others in a lifetime).

Written in 2007 it is even more relevant today as I watch TV utterly amazed at the lack of preparation for the consequences of the recent oil well rupture in the gulf. Was the event likely? Maybe not (or maybe it was actually inevitable). But it was definitely possible and the consequences should have been planned for. Taleb also forecasts the economic crisis and the housing crisis due to our unwillingness to consider extremes. His biggest lesson is that we actually don’t learn lessons from our experiences, rather we use increased data to try our best to demonstrate that we are correct in our assumptions and that extreme events are so unlikely that they will never happen.
I did find his tongue in cheek sarcasm a bit much at times. I felt like he was looking down his nose at both the readers and even more so, those that follow the rule of normal – which I truly do believe he shows to be wrong. However his tone does distract from the his strong points at times.

I think that in the nuclear industry, we have been following his mantra for years. We cannot imagine not preparing for the worst although we strive to design to avoid these scenarios. We implement probabilistic risk assessments that follow event trees down to very low levels of probability and we then plan to mitigate those events which the rest of the world would find incredible. In the nuclear industry we have learned from our experience that we can leave no stone unturned in protecting the public. We design to mitigate consequences from events that would never be considered in other industries and then we make plans in case the unimaginable happens with emergency preparedness unparalleled by others.

Again, looking at the recent event in the gulf, most of us in the nuclear industry cannot understand how a single valve failure can lead to such extreme consequences and that there was no plan to address it should it happen.

So what have I learned from this book? After years of developing and structuring complex nuclear new build projects, I see a bigger need to not only plan to reduce risk, but also to accept that there will be issues during the project and thus allow for time in the schedule to both identify and address these unexpected issues as they arise. After all, we live in Extremistan……..

A fun read – highly recommended.