Introduction – it's as simple as A, B, C, D …

A. Identify
B. Document
C. Plan
D. Deploy

The whole purpose of Risk Management Plan in Facility Management is to LOWER the likelihood of accidents or failure events and to MINIMIZE the consequences of accidents or failure events. No one can guarantee that equipment will not fail, or that humans will not make mistakes, or that accidents will not happen. But you can put a process in place that when these events do occur that the result will be fail safe or have minimum impact on the operation of the organisation.

What I will outline in this paper is not rocket science but rather common sense. The usefulness of this paper is that it can be used as a starting point or outline to develop your own risk management plan. I have also created a data collection document that can be used for the identification, documentation and planning process. This document "Risk Assessment & Planning Form" is available, at no cost, from the author.

My objective is to discuss and document a Risk Management framework so that organisations can initially identify risks, collect and document information, plan and setup a risk management strategy and deploy the plan and continue to assess new risks.

A. Identify

Perhaps the first step in setting up a risk management procedure is to IDENTIFY what the possible risks are or the Risk Classes. The reason for having a Risk Class checklist is to guide people in the assessment process to check things that may not normally occur to them. For example if I were given a clipboard and told to identify the risks associated with a power distribution board. It may not occur to me to check if the distribution board could be invaded by insects, birds or rodents.

Just some of these Risk Classes are:

- Asset Failure – The sudden unexpected failure of an asset. A steam pipe bursts in a public access corridor.

- Asset Degradation – The relative slow degradation of an asset's performance over time which is not noticed. A lift car not stopping level with the floor level.

- Asset Invasion – In this class, the asset may continue to work perfectly normally, however the asset itself gets invaded or colonised. For example Legionaries bacteria happily growing in the nice warm cooling tower water does not affect the cooling ability of the tower, but the asset becomes deadly. Bird nests or insect invasion can lead to asset failure or other unexpected problems.

- Unexpected Human Behaviour – Humans behaving in a totally unexpected way. For example someone becomes very upset and attacks or damages equipment, power distribution switchboards etc.

- Possible misinterpretation by humans – Poorly worded instructions or signs can lead people to do things that are dangerous to themselves or others or contribute to dangerous conditions developing.

Identify the Risk:
The reason for having a Risk Class checklist is to guide people in the assessment process to check things that may not normally occur to them.

B. Document

The collection of information about risk management is a very time consuming process, but the collection of this information is itself a powerful risk management strategy. What I mean is that it is better to have known about a risk and not "yet" done anything about it than not to have even been aware of the risk or made no attempt to document the risk.

The collection of information can be done by many people at the same time and should be done by people with knowledge about the specific asset class or area. My recommendation is for the specific trade staff to do the collection because they probably know more about the asset classes they work with and would be more accepting of risk management procedures for which they had some input. For example a Refrigeration Mechanic would be able to assess the risks associated with equipment that they normally work on.

Document the Risk:
Specific trade staff to do the collection because they probably know more about the asset classes they work with and would be more accepting of risk management procedures for which they had some input.

Refer to the example **Risk Assessment Collection & Planning Form** that follows on the next page. This document can be used by trade staff to go out and begin the collection of information. The document can of course be used in an ongoing capacity during the commissioning of new equipment or the take on process of managing another building or facility.

The suggested **Risk Assessment Collection & Planning Form**:

	(use ✓ or ✗to indicate if the item is applicable):
(a) Asset + description or location (enter an asset no + description or a physical location eg. loading bay)	
(b) Risk Class(s) involved (select the risk classes that apply to this asset or location)	❑ Asset Failure ❑ Asset Degradation ❑ Asset Invasion ❑ Unexpected Human Behaviour ❑ Misinterpretation by Humans
(c) What could go wrong? (describe in words what could go wrong with the asset or location)	
(d) Failure mode(s)? (select the mode(s) catastrophic, slow degradation, intermittent)	❑ Catastrophic ❑ Slow degradation ❑ Intermittent failure Evidence of failure ❑ No external evidence ❑ Visual, sound or smell
(e) What are the consequences of failure? (describe in words)	
(f) Criticality of failure (choose a value 1, 2, 3, 4, 5)	❑ Level 1 – life threatening ❑ Level 2 – major disruption ❑ Level 3 – minor disruption ❑ Level 4 – inconvenience ❑ Level 5 – almost no impact
(g) What is the likelihood of this failure in the next 12 months? (enter a value 0% to 100%)	
(h) What can we do to minimise damage when this happens? (describe in words)	
(i) What can we do to recover from the event? (describe in words)	
(j) What can we do to prevent the event? (describe in words)	

(k) Agreed risk minimisation action (describe in words or identify specific CMMS Task Id)	
(l) Agreed frequency of action (how often the risk minimisation action is to be carried out, for example every 2 weeks)	Every _____ ❑ Once only ❑ Days ❑ Weeks ❑ Months ❑ Years

C. Plan

Now that some of the **Risk Assessment Collection & Planning Forms** have been filled in and returned, the planning process can take place. Of course in some cases the plan will be very straight forward and very obvious.

For example suppose an Automatic Sliding Door was assessed and was located in the ambulance entry for the Emergency Room area. If the assessment showed some possible risks such as "Door remains closed if power failure occurs and cannot be opened manually" and "Door has no visual markings on glass and could be mistaken for being open when it was closed". These two risks can be dealt with by a "one off" door modification that allows the door to be manually opened during a power failure and the application of some decals to give some visual indication that the door is closed. The location of this door and any failure of the door can make this a relatively high risk asset.

Using the **Risk Assessment Collection & Planning Form,** every asset or location can have a structured and well thought out risk plan.

- ❑ This plan would address what items of equipment spares need to be carried "if" the risk event occurs and thus the duration and extent of the event can be reduced.
- ❑ The plan can make sure that clear instructions exist on how to respond to the risk event, for example electrical isolation process, shutdown sequences for computer driven systems etc. A well setup CMMS would provide this alert function.
- ❑ The plan should define an inspection (checklist) or task and have this task carried out regularly at some recurrent interval such as every 3 months.
- ❑ The plan should have a budgeted resource time and cost for managing this risk.
- ❑ The plan should be easily accessible to be reviewed as circumstances change or to add new steps or procedures to the plan.

Plan for the Risk:
The plan can make sure that clear instructions exist on how to respond to the risk event, for example electrical isolation process, shutdown sequences for computer driven systems etc. A well setup CMMS would provide this alert function.

D. Deploy

One of the most common problems that I see in business generally is the issue of implementation of plans into the normal operational workflow of an organisation. I am sure you have seen it many times. A consultant's report comes in with many recommendations. The deployment or adoption of these plans can be so poorly done that the fees spent on the consultant are in fact totally wasted!

My firm belief is that the deployment of a Risk Management Plan will only be partly successful unless a CMMS is already in use. I believe this because trying to run a Risk Management program in an ongoing way using manual or paper based processes is very time consuming and prone to human error (juggling many recurrent tasks or inspections). In my experience the typical hospital engineering department operates in an environment dominated by 2 realities:

(1) Money for any activity beyond normal reactive maintenance is hard to find. The Essential Services legislation and framework has helped and the significant insurance premium increases have certainly increased funding into preventative activities, but money is tight.

(2) Existing staff are very busy and they have no spare time.

The implementation of a Risk Management Plan will generally need to spawn 3 **simultaneous** actions.

The first action is doing the things that only need to be done once. These are things like installing extra guard rails, replacement of inherently dangerous equipment, replacing signs etc. The requirement generally is extra capital funds and an external contractor to carry out the work.

The second action is acquiring additional safety equipment or spare parts. This applies to identified risks such as fire breaking out. There may be little that can be done to prevent the risky event from occurring, but when it does the organisation can respond more quickly and more decisively because equipment is in place. The documented procedures can be included into personnel training or the documentation can be consulted when the event occurs.

The third action is the ongoing inspection process that may be necessary to manage the risk. The time and resources needed to do this are often not easily obtained. The inspections processes are often contracted out because it is easier to get block funding for external services than to increase staffing levels within an organisation. This outsourcing of responsibility seems like a neat solution, however in practise the organisation also needs to ensure that processes are being followed in the way they were designed. For example the Melbourne Aquarium, a new facility, the responsibility of dosing the cooling towers was outsourced to an external contractor. This arrangement failed tragically and several people died as a result of Legionnaire's disease. The Melbourne Aquarium was not monitoring the contractor's work and the contractor had stopped doing the work because they were not being paid and had not told the Melbourne Aquarium.

My belief is that a CMMS should be used to manage and monitor the recurrent inspections that are necessary as part of the Risk Management Plan. A CMMS can perform this function regardless if the inspections are inhouse or outsourced.

Deploy the Plan:
My firm belief is that the deployment of a Risk Management Plan will only be partly successful unless a CMMS is already in use. The reasons for this is that the typical hospital engineering department works in an environment dominated by 2 realities: Lack of money and lack of time and human resources.

Summary

In summary a Risk Management Plan is not a technically difficult concept or even a complex data collection process, however it is a large undertaking and the final deployment of such a plan in my opinion needs a modern CMMS.

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