Best Practice Management of Change and Process Safety

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All opinions expressed herein are those of the speaker and not necessarily Rolls-Royce Group or any living person.
Introductions

Rolls-Royce is Steeped in Process Safety and Guided by Operational Excellence
We are not these guys anymore...it’s a BMW
Rolls-Royce is dependent on VisiumKMS for Quality Management and Action Tracking world-wide.

Rolls-Royce at a Glance

- **£79.8bn** Order book
- **49,900** Employees
- **46** Global Locations

Rolls-Royce are PSM domain and industry experts

*VisiumKMS*
Integrated solution that underpins PSM business processes

- Incident Management
- Risk Assessment
- Management Of Change
- Pre Startup Safety Review
- Audit Management
- Task Management
- Compliance Management

Provide an PSM solution that has evolved over 25 YEARS
PSM Background

Context, phrases, terms...
The Process Safety Management of Highly Hazardous Chemicals Standard

- 27 years old and is still challenging.
- Written by leaders from industry (DuPont, Shell, ICI...) who wanted optimal operations...
- Optimal operations reduce PS incidents and environmental events as a byproduct.
- You might say PSM is a Best Practice Risk Management standard.
- It has no end. It is not a project and it is a moving target.
- No deviations from design intent and no unintended change are the goal...keeping the genie in the bottle.
The Process Safety Elements

1. Process Safety Information
2. Employee Involvement
3. Process Hazard Analysis
4. Operating Procedures
5. Training
6. Contractors
7. Pre-Startup Safety Review
8. Mechanical Integrity
9. Safe (Hot) Work
10. Management of Change
11. Incident Investigation
12. Emerg Planning & Response
13. Compliance Audits
14. Trade Secrets
More Elements...Upping the Ante

1. Safeguard Protection Analysis (SPA)
2. Damage Mechanism Review (DMR) (formerly an element of Mechanical Integrity)
3. Hierarchy of Hazard Controls Analysis (HCA)
4. Process Safety Culture Assessment (PSCA)
5. Human Factors and Assessments
6. Management of Organizational Change (MOOC)
7. PSM Program and Safety Indicators – KPIS
8. Division Access to Documents and Information - Access
9. Implementation of CAPACI

California is up to 22 PSM Elements for Refiners now
Cal/OSHA GISO Section 5189
About Best Practice...
What is Best Practice?

“a working method, or methods, that are officially accepted as being the best to use in a particular business or industry”
Best Practice Requires

- The best **people**,  
- The best **process** and  
- The best **technology** (tools) for Process Safety doing.
The Best People (Managers) – Light Touch

- **Ask good (insightful) questions about PSM** – re: Baker Panel report
- Listen to the answers before you decide
- Don’t turn your **engineers in to reporters**
- **Rid your business of complaining crybabies & troublemakers** immediately even if they are talented and hardworking.
- **Hire problem solvers**...almost everyone can identify the problem.
- Make sure staff have the best tools available to do their jobs
The Best Practice Process

- The PSM standard is a great process to follow when managing risk and striving for Operational Excellence.
- The individual element processes need to be company specific.
- They should not be so broad that they are not useful.
- Should only be as prescriptive as they need to be so they do not stifle innovation or encourage bad behavior...
- Ex. “Our MOC process is so difficult that I just don’t make improvements or I work around the process. I know what I am doing!”
- Make it easy for people to do the right thing; or else!
Best Practice Technology

- Brings clarity to complexity
- Should make it easier to do the right thing.
- Designed by **business process experts**, not generalists.
- **Tried and true** – new software is buggy
- Enables **repeatable, efficient and effective** PS doing
- Built for Purpose – **No square pegs trying to fit in to a round hole**
- Is **easily** learned, maintained and upgraded…
Best Practice MOC and PSSR

Try and not group by companies.
Best Practice MOC and PSSR Should:

- Make business choice disciplined?
- Turn complexity into clarity?
- Convert creativity into productivity?
- Puts your principles into practice?
Elements of Best Practice MOC and PSSR

- Digitize Your MOC & PSSR Processes – On Demand Electronic System
- Site Configurable technology increases user adoption...The Secret Sauce
- Corporate systems that impose unnecessary standardization will sub-optimize PSM...Make Upstream use Downstream MOC Process
- Optimum Workflows for at least Simple & Complex MOCs Driven by Change Type
- All steps and content should be relevant (no NA), reasonable (<30 questions) and understood (well trained MOC Leader).
Elements of Best Practice MOC and PSSR

- There are two kinds of change simple and complex.
- Simple and Complex should be connected
- MOC Must be Connected to PSSR – almost always
- Optimum Communication – reminder/notifications
- Imbed Operational Experience – Smart Checklists
- Enable Non-Invasive Reporting
- Make it Mobile where the job is done if you can...
Best Practice MOC and PSSR Workflow

- **Complexity is not your friend**, but more complex workflow is required for MOC; Not “Like for Like”.

- Most of your technical staff are **visual learners**. “Live” on screen workflow makes it clear.

- **Make it as Simple as possible...**No Spaghetti designs with 20 approval steps and feedback loops galore... Tidy, clean, efficient, understandable is the goal...

- **The following workflow is considered the best practice for MOC and PSSR.** It is used for >100,000 MOCs per year. Developed over 25 years.
It's hard to do this well using paper.

Best Practice MOC & PSSR Workflow

Idea Generator → Proposal → Accept & Assign → Evaluation → Decision

Feedback → Action Plan

Action → PSSR → Start-up Approval → Post Start-up Action → Closure Items
How does Technology help?

- **Illustrates your MOC workflow (step by step picture)** and **enforce your MOC and PSSR process** on screen whether it be simple or complex.

- Proper workflow helps ensure change is appropriately identified, evaluated, approved and executed by the right people, in the right order & at the right time.

- Makes **poor change management** easier to identify and correct through covert management surveillance.

- Enables **Non-intrusive performance** measurement.

- The goal of a best practice automation is to **manage change efficiently and effectively; not reporting and fancy dashboards**.

- Make it simple, make it useful, make it locally valuable

- What an on demand system looks like...
MOC & Automation Musings

• Managing Change is about **optimizing operations $$ (efficiency and effective working), not compliance!**

• PSSR is not a doing step...ever!

• PSSR should be done on any change where getting it right is important. 😊

• MOC is not a form `routing/documentation` exercise.

• There must be an **implementation or action step in your workflow. The change won’t happen** by magic or pixy dust.

• Waiting until you design the “perfect” MOC **business process** and then deciding on technology is impractical and is usually a stall tactic...no idea what to do or trying for perfect...
MOC & Automation Musings

• Most of your MOC risk assessments should be checklist reviews based on your experience (smart or answer driven) and the CCPS Red Book has lots of experienced content too.

• “HAZOPing” all change is peculiar & wasteful.

• If your evaluation/planning/risk assessment step is longer than ~30 questions for routine change, you are mistaking this for a design review step. Its not.

• No amount of Evaluation/Risk Assessment questions can ensure a change is properly analyzed if you are using inexperienced staff.

• MOC is not a documentation exercise and PSM is a life saver not just a compliance initiative.
MOC & PSSR Automation Trends

- **Risk Ranking All MOCs** – Current & Future
- **MOC metrics clients are using**
  - Open, Closed and Past Due by Location
  - No MOCs at a location - suspicious
  - Too many Emergency MOCs - Bad
  - Too many Past Due MOCs - Bad
  - Expired Temp MOCs - Bad
  - SU before Approval or all PSSRs complete
  - Post Startup Actions >30, 60, 90 days aged - Bad
  - Work orders that are change without MOCs - Bad

- **Use of Dynamic risk registers** giving managers the information they need real-time Opportunities /Risks /Recommendations and the resulting risk reduction automatically.
PSSR in the Field is a Growing Trend
What’s Not Best Practice
What’s Not Best Practice

- Do nothing and expect different results...crazy!
- Asking for expert advise from seasoned PSM practitioners and then letting IT make the decision...DUMB!
- Spending engineering time reporting for reporting purposes only...
- Creating reports that are not useful AND no useful decisions or coaching from that activity...
  - Why do we send that data to corporate? What value is created?
- Create a process that is too perfect
  - No such thing, Not understandable by most
  - Assumes that technology must always follow the perfect process...wrong!
    - We don’t make our own cars
- Use software not intended for the intended purpose
  - Training software for non-training needs
  - ERP CRM for MOC...LOL
  - ERP for OpEx...LOL
  - ERP for PSM...LOL
What’s Not Best Practice

- **Custom Software.** Yes, companies still do that because they are “different”. They are always sorry they did it. Too much money, resource and time.

- **MS SharePoint or K2 are not a change management systems.** Using a workflow engine to design change management – that is just custom software.

- Get a System That **Covers everything** - one HSEQ IMS for everything)…Walmart analogy

- Choosing a **best of breed change management** tool that is made for operations/production brings the **most value**.

- Insisting that **everything must be connected**…WRONG!
  - The ERP lie

- **Choosing finance, maintenance or reporting software** and make operations people use it…Wrong!
  - Well we already paid for it___ so lets try and make it work…Bad Idea!
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Thank You!