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Practical experience of rolling out process safety competency assessments across a large multinational company

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# Johnson Matthey plc

London based speciality chemicals and sustainable technologies company

Over 200 years' experience in the refining of precious metals

50 global sites operating process safety 'applicable processes'



## JM Group EHS requirement

### Group Policy P13 Process Safety Risk Management (PSRM)

Site PSRM systems for applicable processes must include:

3. Process safety competence - demonstration of competence standards for leadership/management, employees and contractors involved in designing, implementing and maintaining controls used to manage the risk of a major accident;

## Process Safety Competency Levels based on ISC Tool

Level	Definition
<b>1: Aware</b>	Has knowledge of the theory and displays conceptual understanding. Actively participates in discussions regarding the skill. Performs routine tasks with significant supervision. Learns how to do things.
<b>2: Developing</b>	Performs fundamental and routine tasks. Requires occasional supervision. Increased functional expertise and ability. Works with others.
<b>3: Proficient</b>	Independent contributor. Integrates work with other disciplines. Frequently mentors or coaches' others. Assesses and compares alternative options.
<b>4: Expert</b>	Advanced experience in the particular skill. Applies creative solutions to complex problems. Defines and drives critical business opportunities and needs. Represents the organisation internally and externally on critical issues. Sets standards within the organisation. Recognised as a subject matter expert.

# Competency Matrix

Competency Levels: 1: Aware 2: Developing 3: Proficient 4: Expert	1: Process Operator	2: Maintenance Technician	3: Operations Team Leader	4: Maintenance Team Leader	5: Integrity Engineer	6: Project Engineer	7: Process Safety Advisor	8: Process Safety Manager	9: EHS Manager	10: Production Manager	11: Maintenance Manager	12: Site Manager
1: Safety leadership	2	2	3	3	2	2	3	4	3	3	3	4
2: Process Safety concepts	2	2	3	3	2	2	3	4	2	3	3	3
3: Hazard ID & risk assessment	2	2	2	2	2	2	3	3	2	3	3	2
4: Hazard awareness	2	2	3	3	3	3	3	4	2	3	2	3
5: Safety in Design	1	1	1	2	2	2	2	3	1	1	2	1
6: Asset integrity	2	2	1	2	4	2	2	3	1	3	4	2
7: Codes and Standards	1	1	2	2	2	2	3	4	2	2	2	2
8: Management of Change	1	1	2	2	3	2	2	3	2	3	3	2
9: Human Factors	2	2	3	3	1	2	3	3	3	2	2	2
10: Systems & Drawings	1	1	3	3	4	4	2	3	1	1	4	1
11: Process Handover	2	2	3	1	2	1	1	1	1	3	3	1
12: Contractor Management	1	1	2	2	3	3	2	3	2	1	3	2
13: Safe system of work	1	1	2	2	3	2	2	3	2	3	3	2
14: Project delivery	1	1	1	1	2	4	3	4	1	2	2	2
15: Major emergencies	2	2	3	2	2	2	3	4	3	4	3	3
16: Incident Investigation	2	2	3	3	2	2	2	3	2	3	3	3
17: Legislation	1	1	2	2	2	2	3	4	2	2	2	2
18: Audit and assurance	1	1	2	2	2	2	3	3	2	2	2	2

# Focus on people carrying out Process Safety Critical Tasks

Tasks where an error could initiate or fail to mitigate a significant LOPC incident

Tasks related to the identification of unsafe conditions, e.g. inspection/testing of SCE

Tasks related to the detection and management of emergency situations



Specific process safety related tasks, for example; hazard studies, reaction hazard assessment, developing site PSRM system

PSRM system tasks such as managing site PTW or MoC activities

## Assessment methodology

Excel spreadsheet tool with personal details, assessment record, and T&D actions

Pre-work requires personal details and examples of experience versus 18 topics

Followed by ~3 hour assessment by an independent and competent Assessor

Assessor asks verification questions and determines competency level as 1 Aware to 4 Expert

Where gap exists between required and actual level, further T&D identified

- Using T&D rule: 70% on-the-job, 20% coaching, 10% formal training

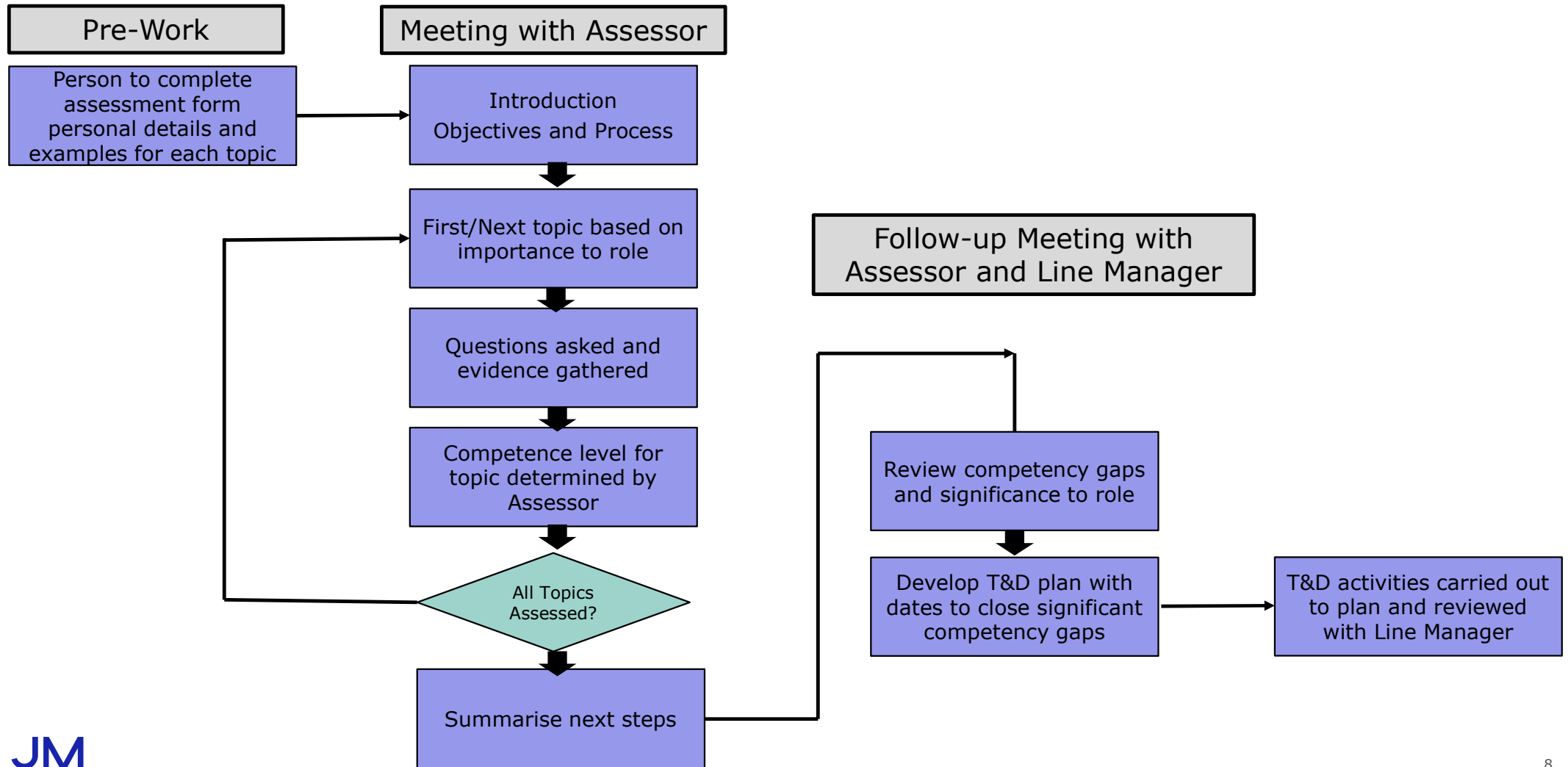
Some gaps may not be significant for the actual role versus the generic ISC role

T&D requirements discussed after assessment with Line Manager and added to PDP

Where significant gaps exist may need to check suitability for current role

- Take other data into account, assess capability/willingness to close the gaps

# Competency Assessment Process





## Key findings from pilot study

Purpose of assessments needs to be clearly explained by Site Management

Plant Operator and Maintainer level requires different approach for competency assessment

Large number of Team Leaders/Supervisors can be sampled

- Many similar findings across this group requiring with common T&D requirements

Need to develop an internal assessor team given scale of assessment task across JM Group

Question set required for ISC tool proof points – to aid consistency

- Demonstrate understanding at levels 1 & 2
- Provide examples of application at levels 3 & 4

Need to carry out assessment in native language – challenge for global companies

Need to provide timely feedback to people – Line Manager meeting planned within 2 weeks

## Developing in-house Assessor team

Using existing Process Safety specialists with thorough knowledge of PSRM

Need to develop 'soft skills' to carry out individual competency assessments

Ran a "Workplace Competence Assessor" course from UK Cogent Skills

Adapted by tutor to meet the JM competency assessment methodology

Followed by support and mentoring on assessments

- JM Assessors tested as competent to carry out assessment programme

Provided opportunity for building the JM team and developing the methodology

## Rollout to HIGH hazard sites

40% of JM global sites with ~180 people in process safety critical roles

Important to gain approval from Sector Operational Directors and EHS Directors

Kick-off meeting by Site Manager – state purpose and gain commitment to process

Administrator required to enable planning of assessment and follow-up sessions

During Covid restrictions assessments done via MS Teams

- Better done face-to-face, or ideally in workplace for operations based people

Look to complete all assessment over a 2-3 month period

Site feedback meeting at end of process

- Summary of gaps by work group, common T&D requirements

## Learning from rollout phase

Question set greatly helped Assessors and achieved better consistency

Assessors can comfortably carry out 5 assessments per month without impact on other duties

Fortnightly meetings of JM Assessor team to resolve issues and share good practices

Many common gaps identified across sites – requiring Group level initiative

- E.g., poor understanding of human failure types

SharePoint site set up to track progress and store assessment records

- Records stored with access restricted to person, Line Manager, Assessor and HR

Plans being developed for rollout to MEDIUM and LOW hazard sites

- Expect lower number of people in process safety critical roles on these sites

## Summary

Demonstrate that all staff in process safety critical roles are competent to carry out their duties

- From Site Manager to Team Leader/Supervisor level
- Important for regulated sites to show that 'relevant good practice' is being applied

Process being extended to include recruitment and change of roles

Assessments to be reviewed every 3 years to ensure that competency is maintained

Competency gaps can be resolved at individual or group level

Assessment process well received by operations management

- Individuals able to reflect on their strengths and weaknesses
- Demonstrates to importance of process safety in JM



# JM

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## Q&A Session

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