

Hazards30

Safe reinstatement of process plant

Learnings from HSE's regulation of the UK offshore oil and gas industry

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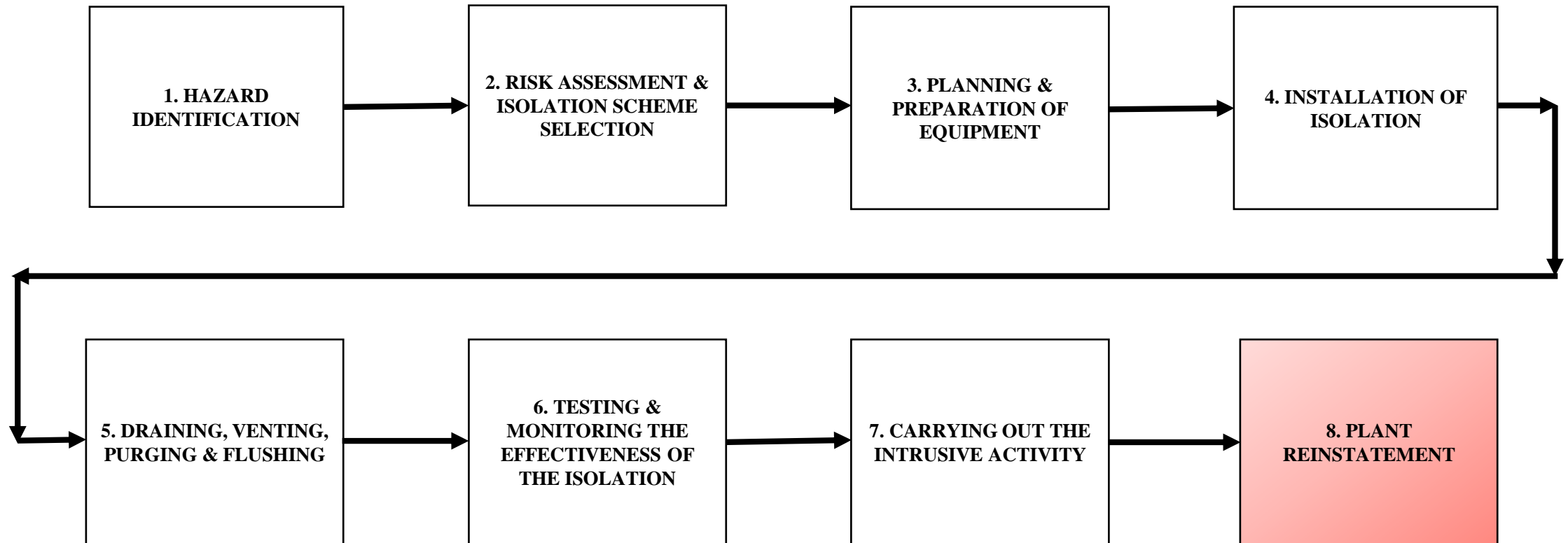
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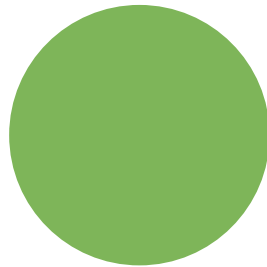
The lifecycle of an intrusive maintenance task



Adapted from HSE HSG 253 Figure 3

Piper Alpha

6 July 1988



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Case Study 1

Release of c. 550kg of gas from 220barg fuel gas suction pipework

- Failure to control work scope growth
- Failure to recognise change
- No risk assessment
- Inadequate supervision / control on job completion
- Inadequate line walk checks
- Inadequate monitoring post start-up



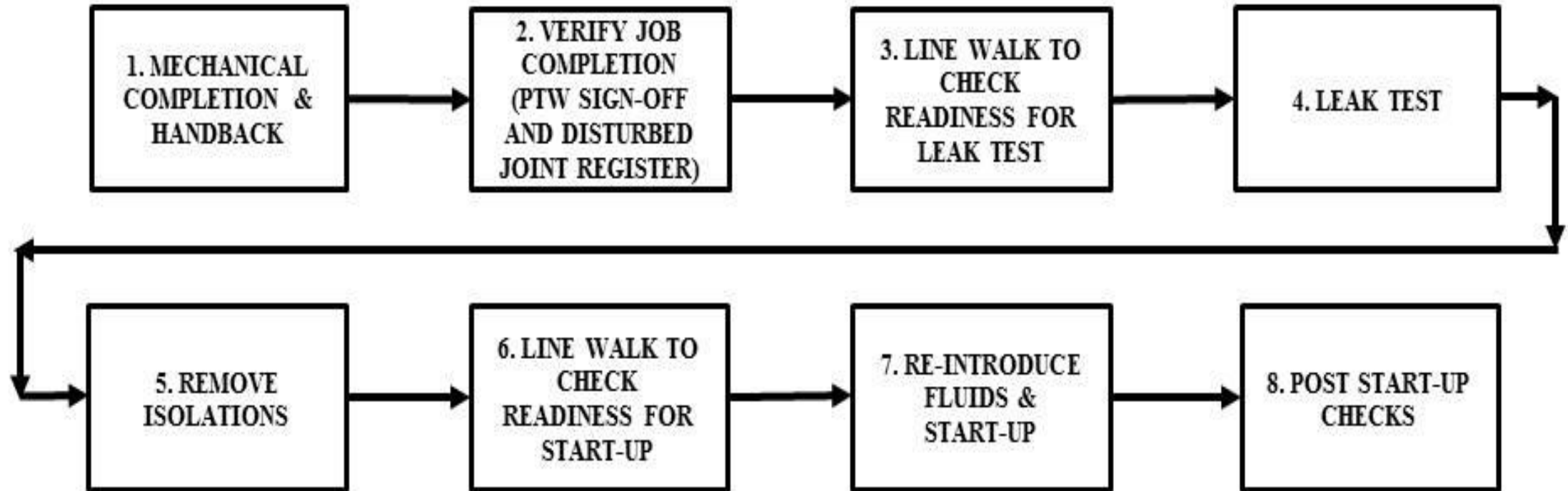
Case Study 2

Release of c. 70kg from flanged connection on flare header

- Inadequate joint integrity management procedures
- Failure to identify bleed points in isolation schemes
- Inability to test flare connections
- Absence of leak test alternatives



Reinstatement sequence



Adapted from HSG253 paragraphs 184-188

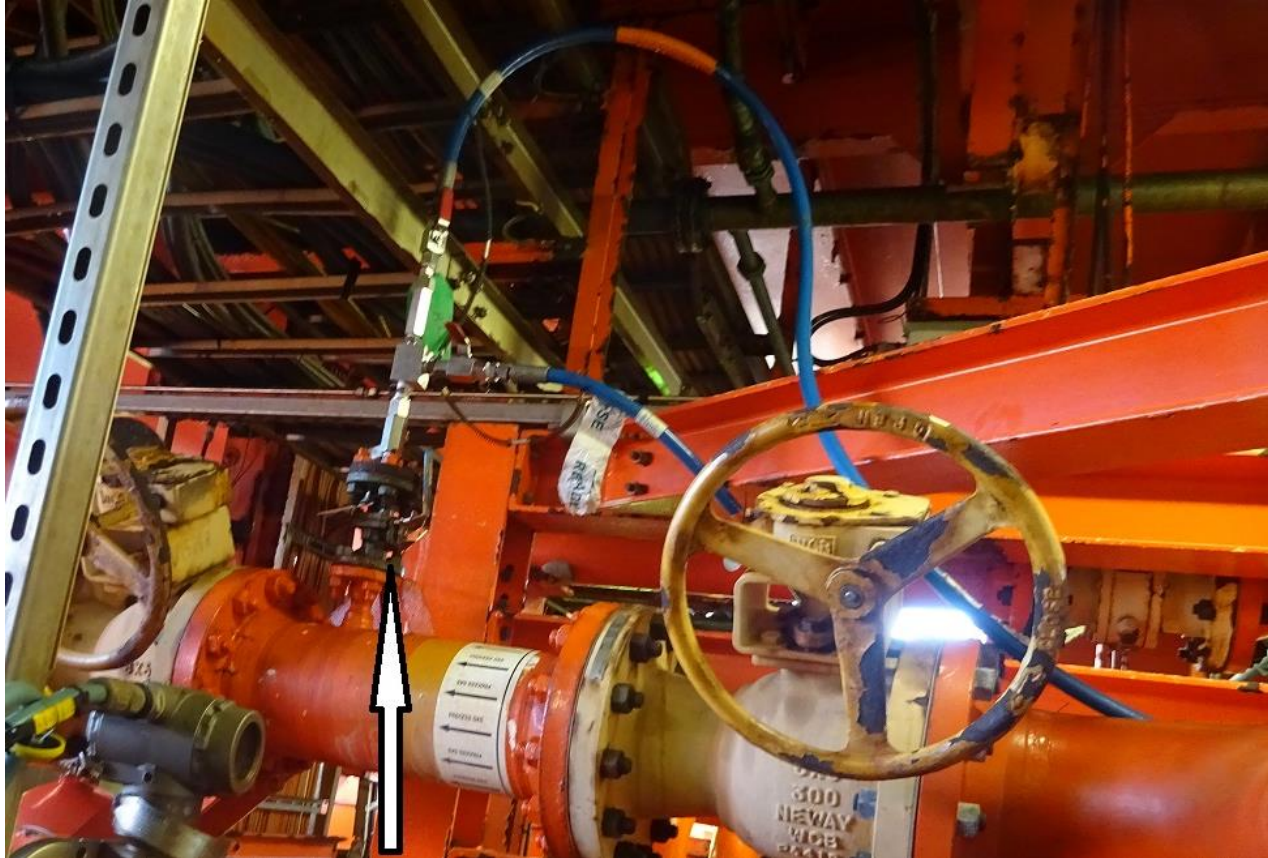
Managing the integrity of disturbed joints



Joint Tagging Systems

- Use for all maintenance tasks
- Identify and fit all tags before work starts
- Keep the register up-to-date!
 - Give staff time to do so
 - Unique ID numbers
- Manage changes in work-scope
- Co-ordinate system with 3rd parties

Leak testing



- Define your leak testing standard
- Plan the leak test method
- Check every joint!
- Identify and control risk for non-leak tested joints
- Mark-up drawings as you go
- Use a safe fluid
- Test at operating (and potential) pressure
- Manage changes in work-scope

Reinstatement line walking

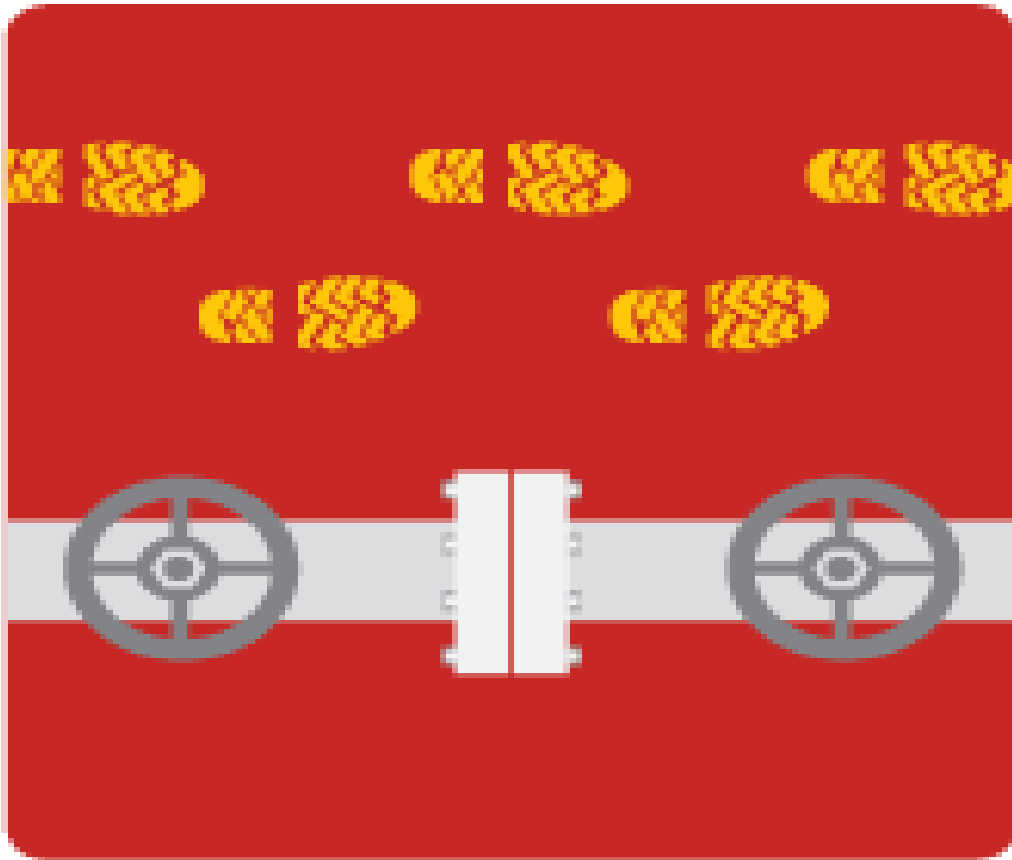


Image from ConocoPhillips Process Safety Fundamentals

- Define and communicate the standards expected
 - *when, how, who, records, action management*
- Line walk after every maintenance task, not just overhauls or project work
- Provide a checklist of issues to look out for
- Clearly define the scope/extent of a line walk on P&IDs, isometrics and plot plans
- Mark progress on drawings with a highlighter pen
- Mix it up! Walk the line in a different order to normal
- Four eyes are better than two
- Record items for rectification on a punch-list
- Risk assess each item for action

Conclusions

- Reinstatement of plant is a hazardous activity
- There is limited published guidance on reinstatement good practice
- There is a wide variety of reinstatement practice within industry

- Training, competency assurance, supervision and auditing are all critical to ensuring that operational controls, such as for reinstatement, are effective
- Our experience however is that such management activity is predominantly targeted at safe isolation and break-in rather than reinstatement
- Much more focus is needed on this critical area to ensure process safety