

Human Factors Integration into the Facility Design Process

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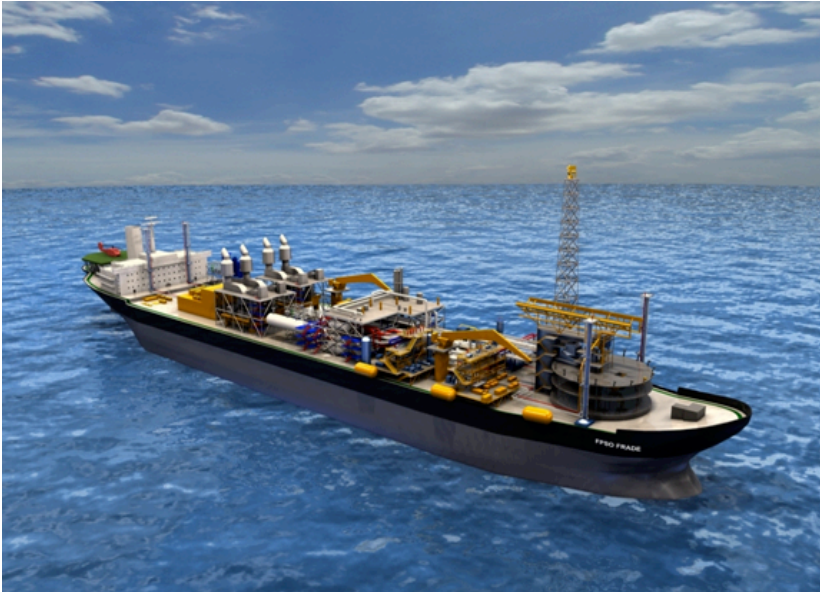
24th April 2009

Aim of the presentation ?

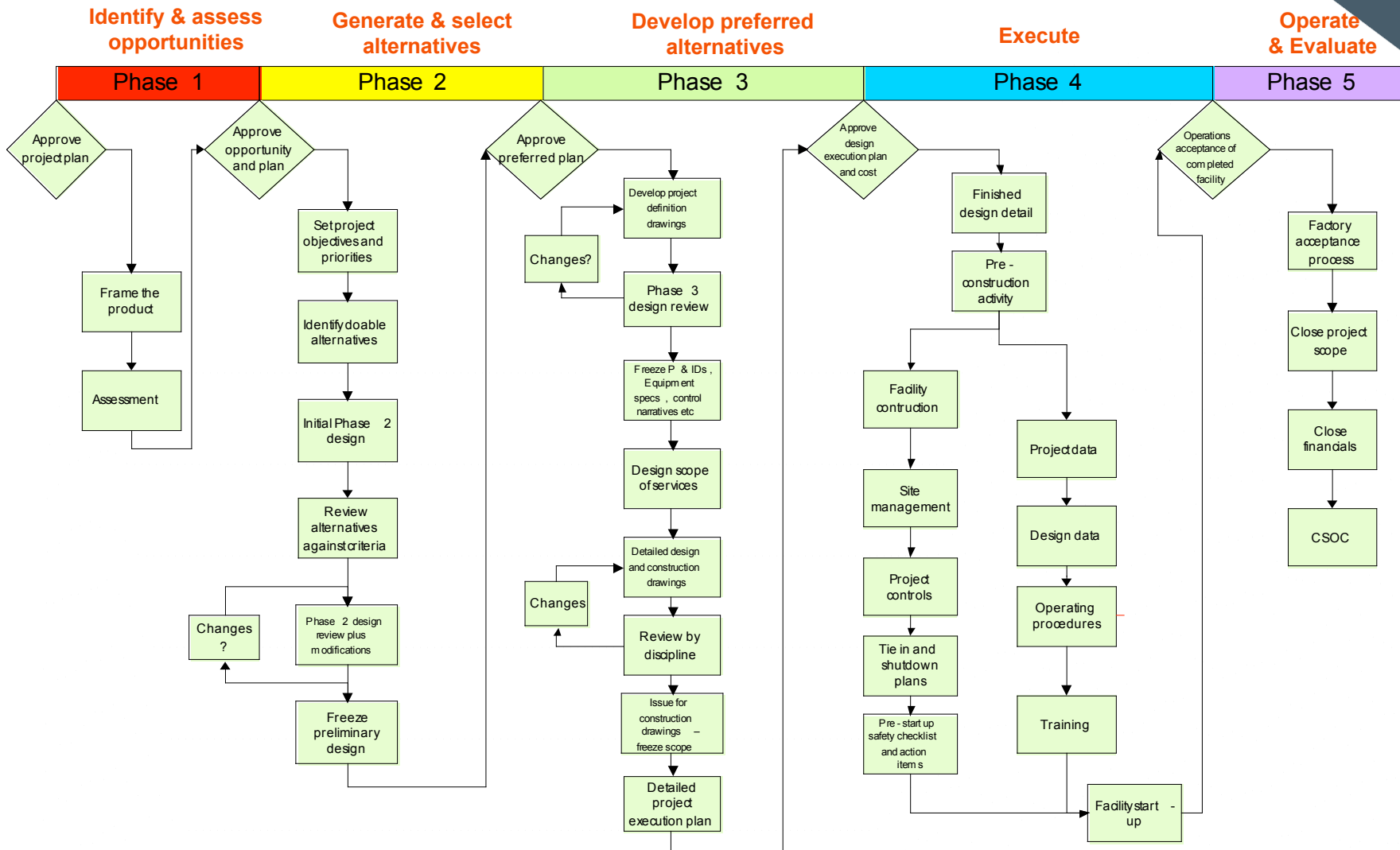
There is HF integration guidance available.

So, having implemented HF throughout a facility design process, what have we learned?

Case study: FPSO

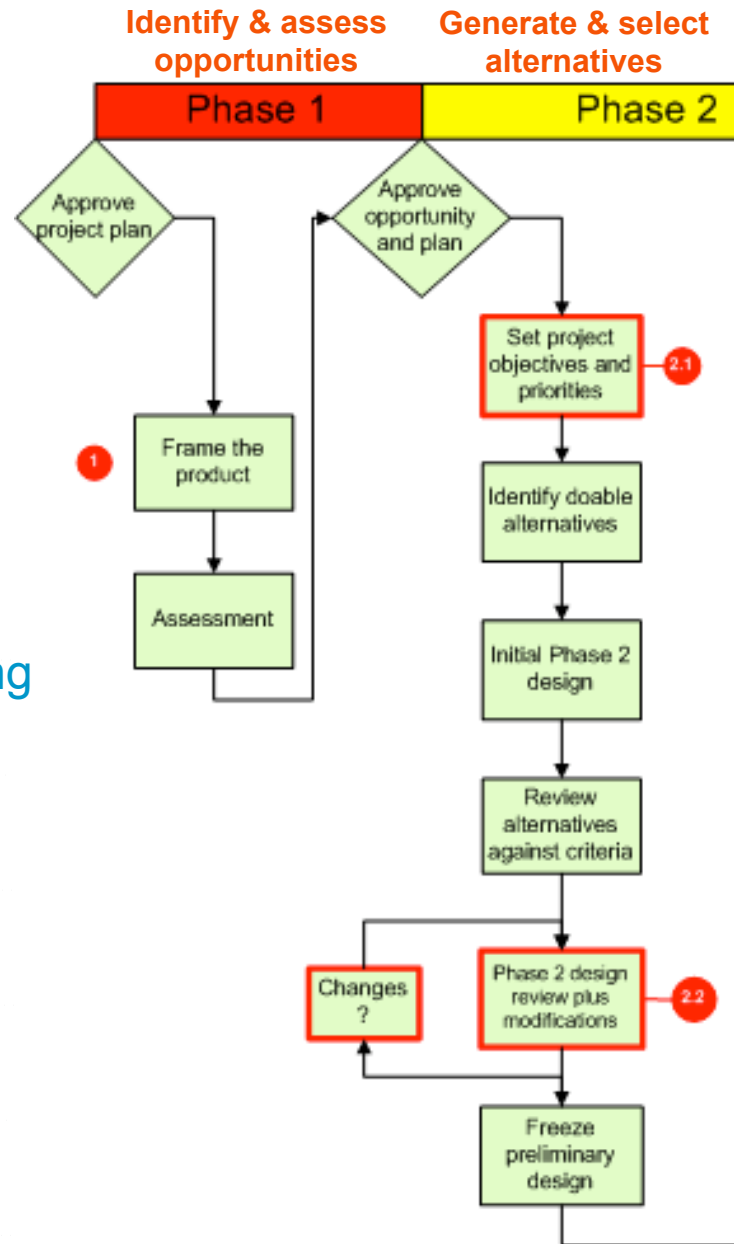


5 phase facility design process



Where does HF fit in?

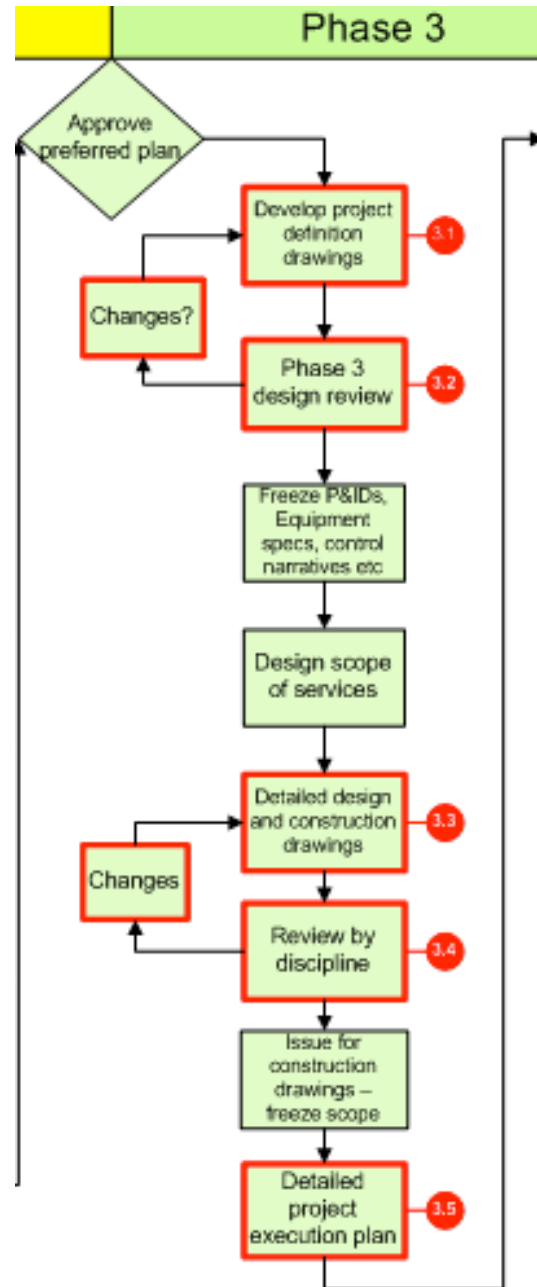
“If an HF issue is not dealt with early enough, problems found downstream will be more expensive to resolve. Conversely, if detailed HF activities proceed too early, they may miss out on technical constraints that only emerge as technical developments unfold.”



Don't do anything

Ensure HF is integrated in the design philosophy

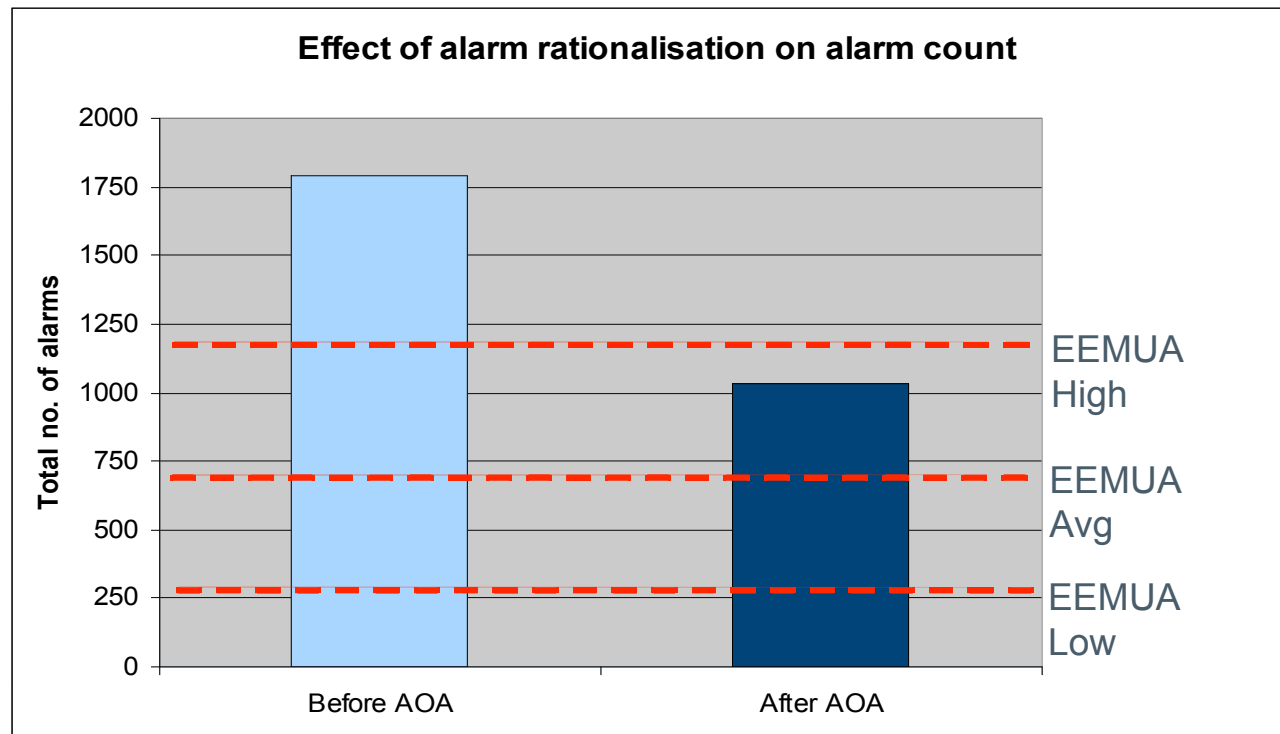
Develop preferred alternatives



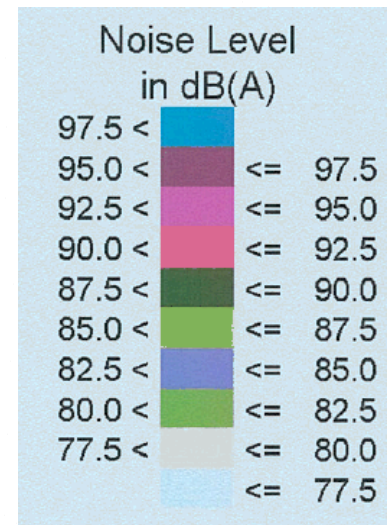
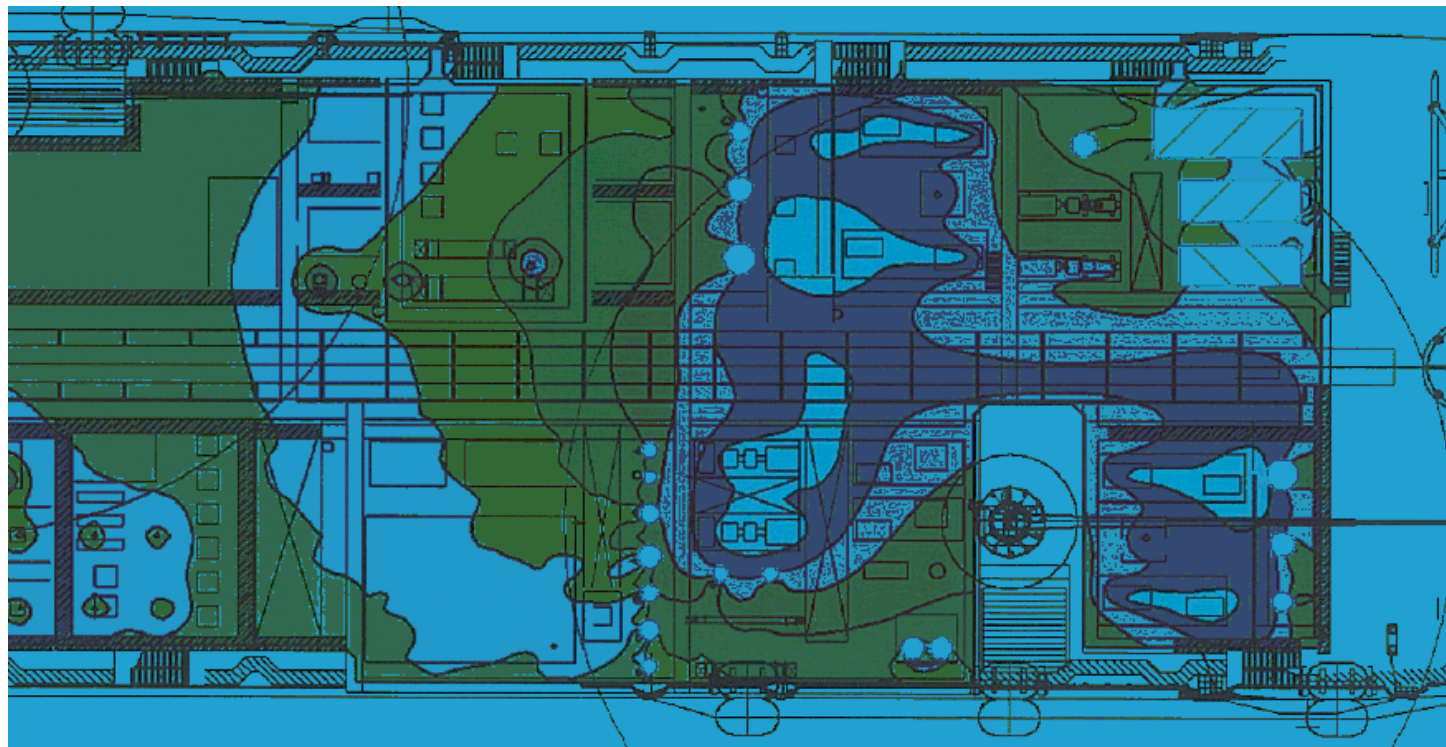
Keep key players on board

HFE successes: Alarm rationalization

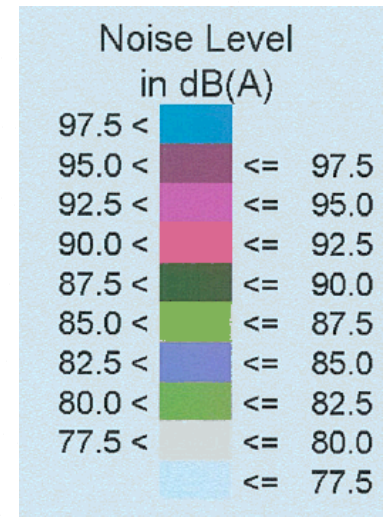
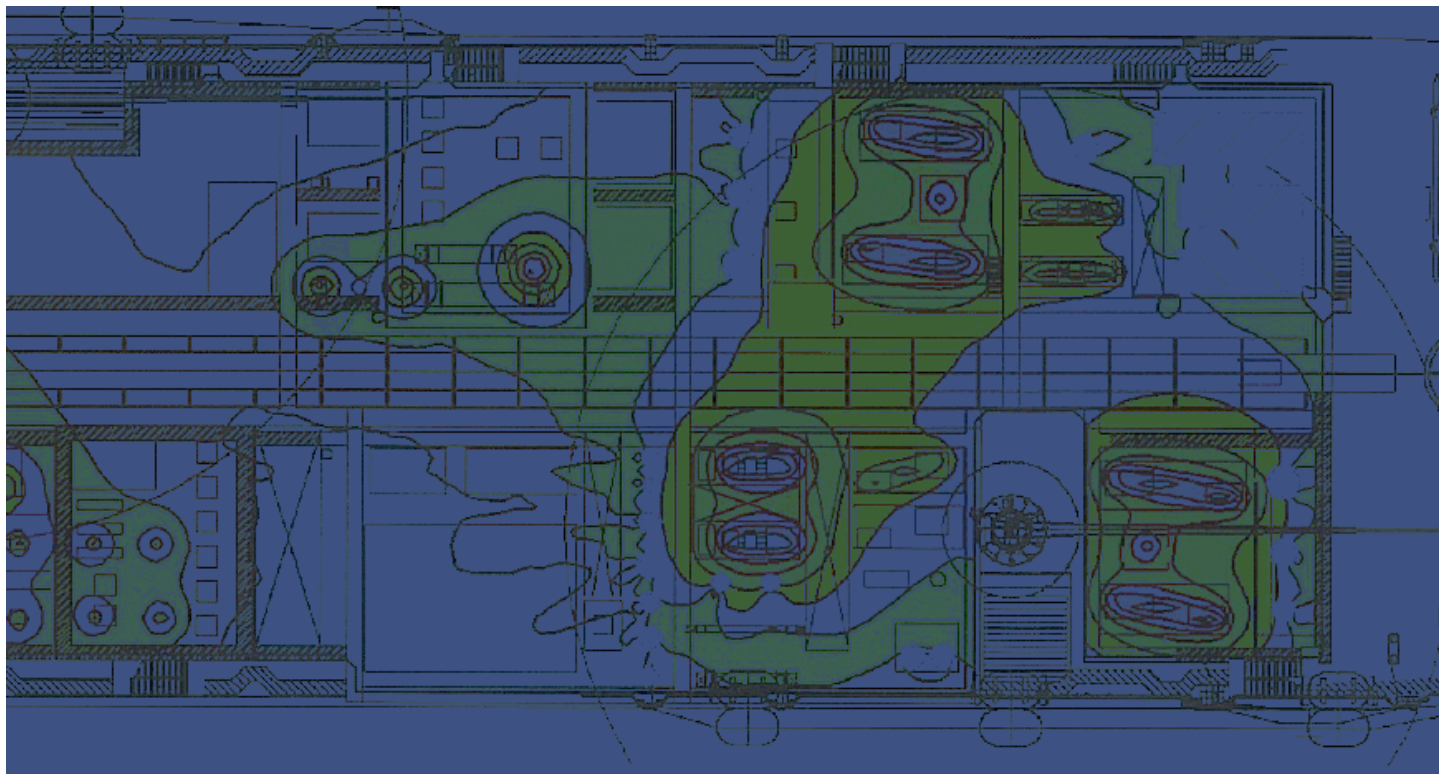
- Alarm objective analysis
- Eliminate unnecessary alarms
- Optimize operator workload especially under abnormal conditions

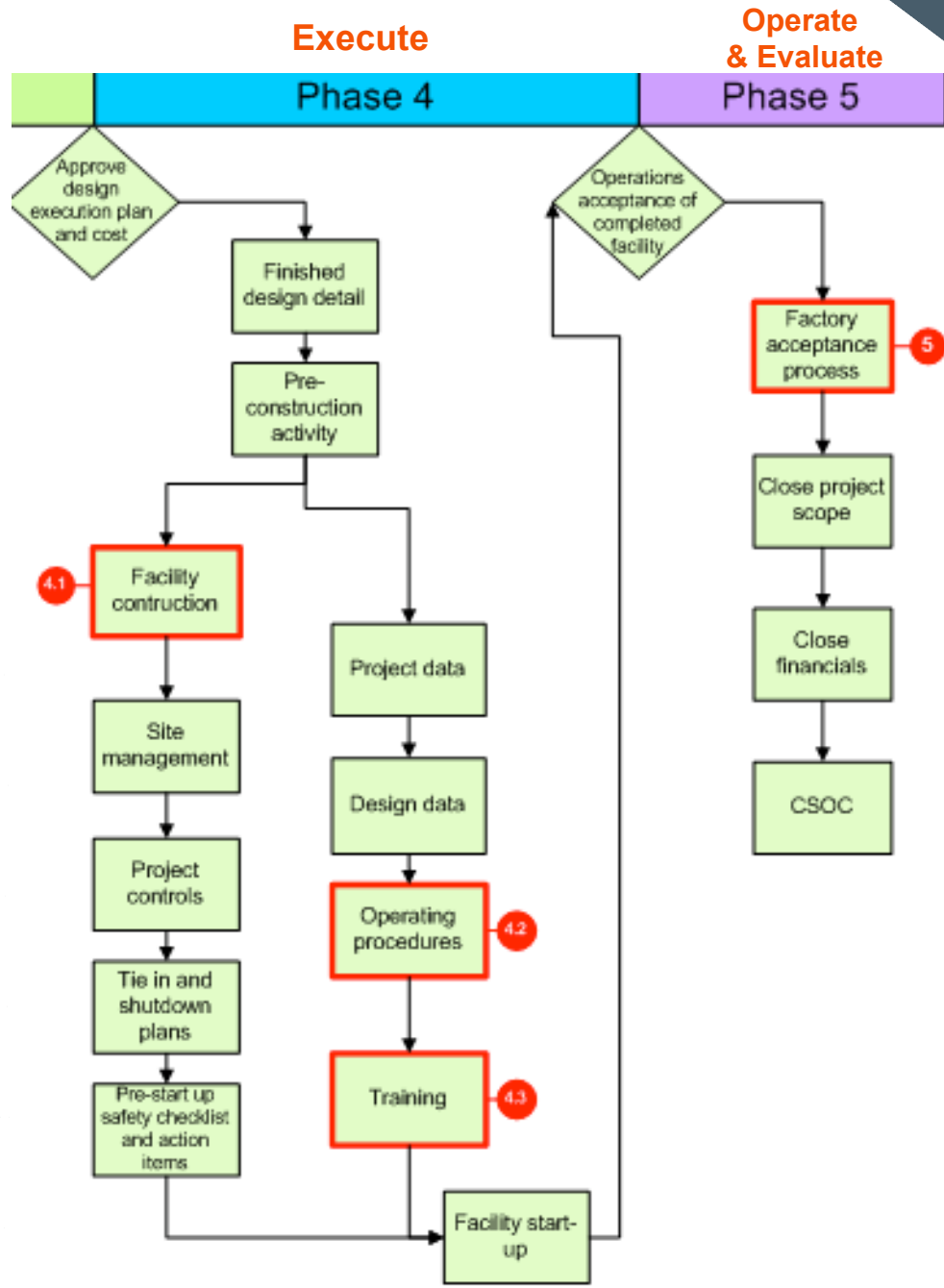


HFE successes: Noise attenuation



HFE successes: Noise attenuation





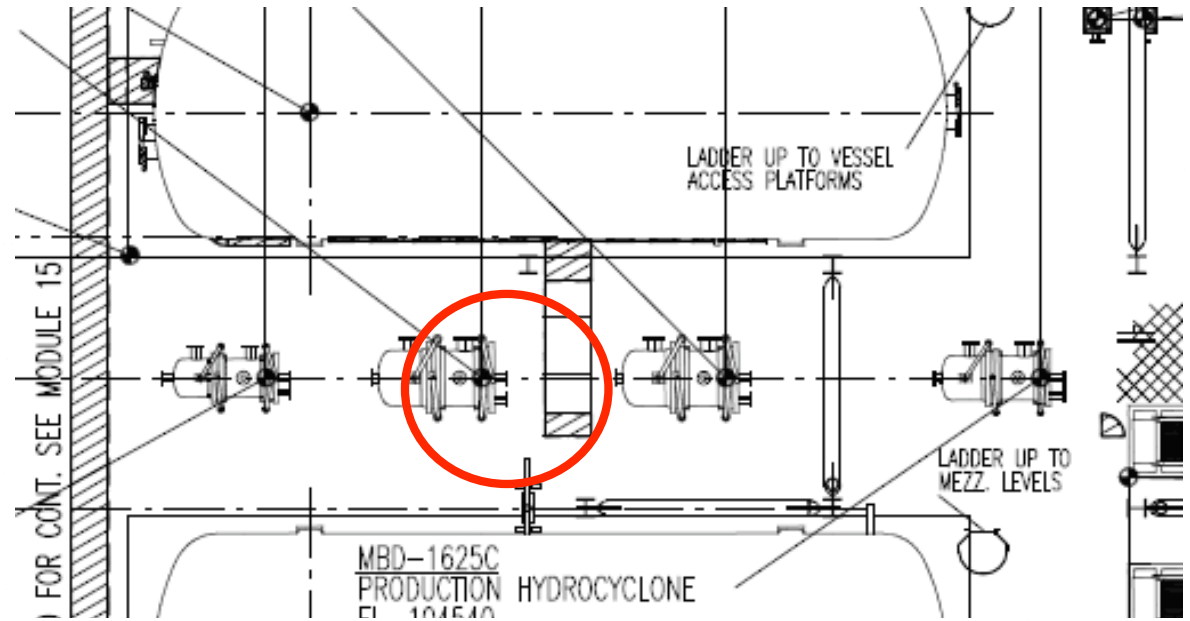
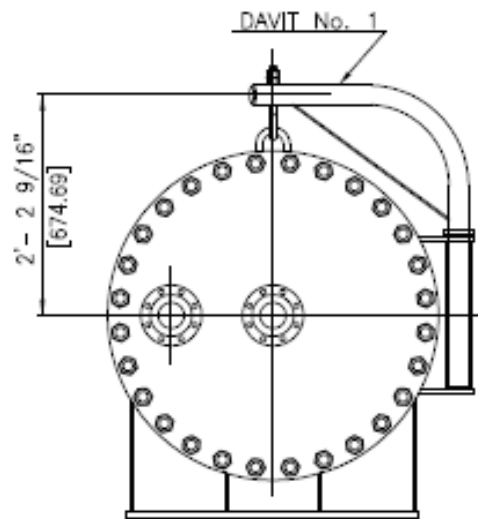
Undertake design assurance

Reassess

Issues to resolve: escape routes

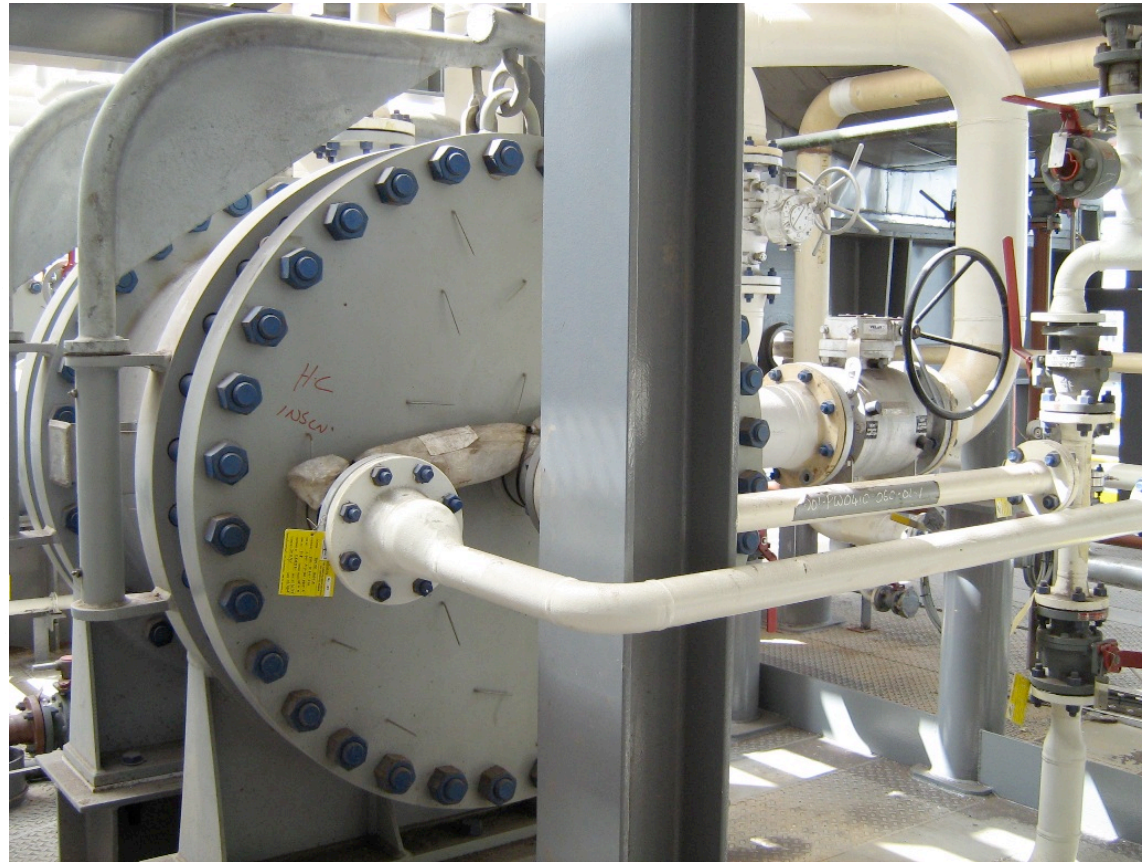


From design to construction: Production Hydrocyclone



From design to construction: Production Hydrocyclone

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Important points to consider

- **Project team must buy into the HF process**
- **HF must proceed in parallel to technical development**
- **Apply HF where it is most needed and can achieve most added value**
- **Contracts with contractors and vendors must consider HF requirements**

Thank you

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