Safety in design guide

Asset Management Forum

Craig Marriott
Global Lead, Safety Consulting
Advisian

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Agenda

Background to guide

Overview of safety in design

Group sessions to provide feedback

Purpose and application

Assist electricity businesses to develop processes which:

- Provide designs that are safe
- Document design decisions
- Continuously improve the safety of designs
- Meet statutory obligations

Targeted to operational and maintenance workers, construction managers, project managers, safety professionals, executives, designers and engineers.

The story so far

Draft reviewed by Project Steering Group

Initial member consultation workshop (March 2016)

Updated draft reviewed by Asset Management Group

Published on EEA website for member feedback

Discussed today

Structure of guidelines

Part A: An introduction

Part B: A general overview of SiD

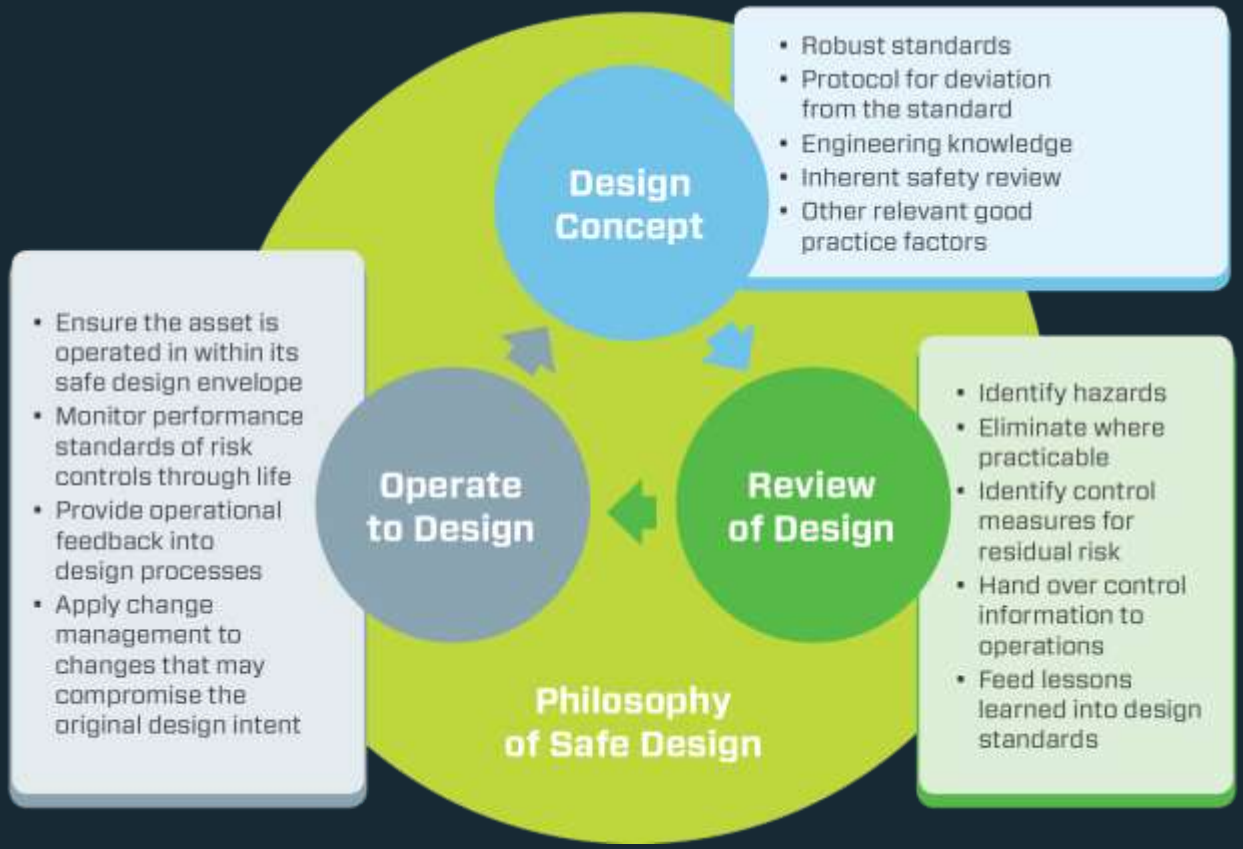
Part C: Detailed requirements

Part D: Supporting appendices

Structure of guidelines

Organisational experience		Overview [Part B]	Framework [Part C]	Frequent use tools [Appendix A]	Specialist tools [Appendix B]
Limited organisational experience	No formal systems in place Reliance on codes and standards only	Share amongst key people to provide awareness	Implement key aspects	Use the tools provided	Consider use through specialist providers, where appropriate
Moderate organisational experience	Design phase hazard ID processes in place Local design manuals supplementing codes and standards Some operational feedback	Share amongst key people to provide awareness	Review and implement aspects that are not currently in place	Review the tools currently used, and compare these with the guide Update tools where appropriate	Consider use through specialist providers, where appropriate
High organisational experience	Robust SiD systems, routinely applied Some specialist tools used, where required Regularly updated design manuals and reviews	Use as a reminder and reinforcement for people involved	Benchmark existing systems against the guide, and close any gaps identified	Develop in house capability in specialist areas, where warranted	

What is safety in design?



Why safety in design?

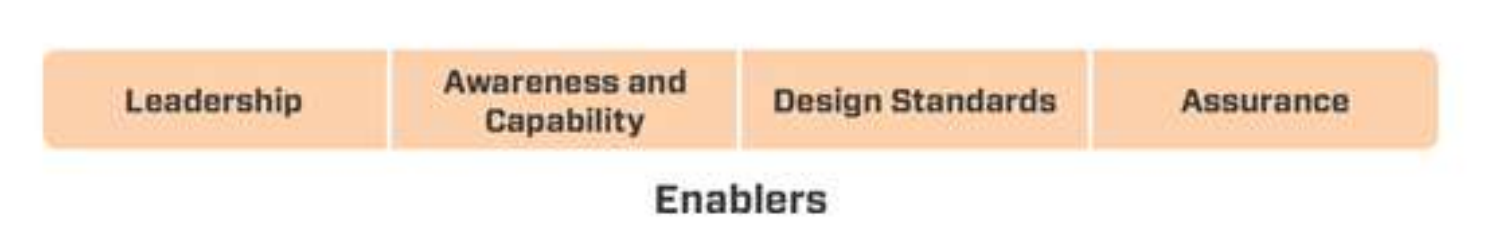
Greater influence early in the design stage

Reduced risks through life

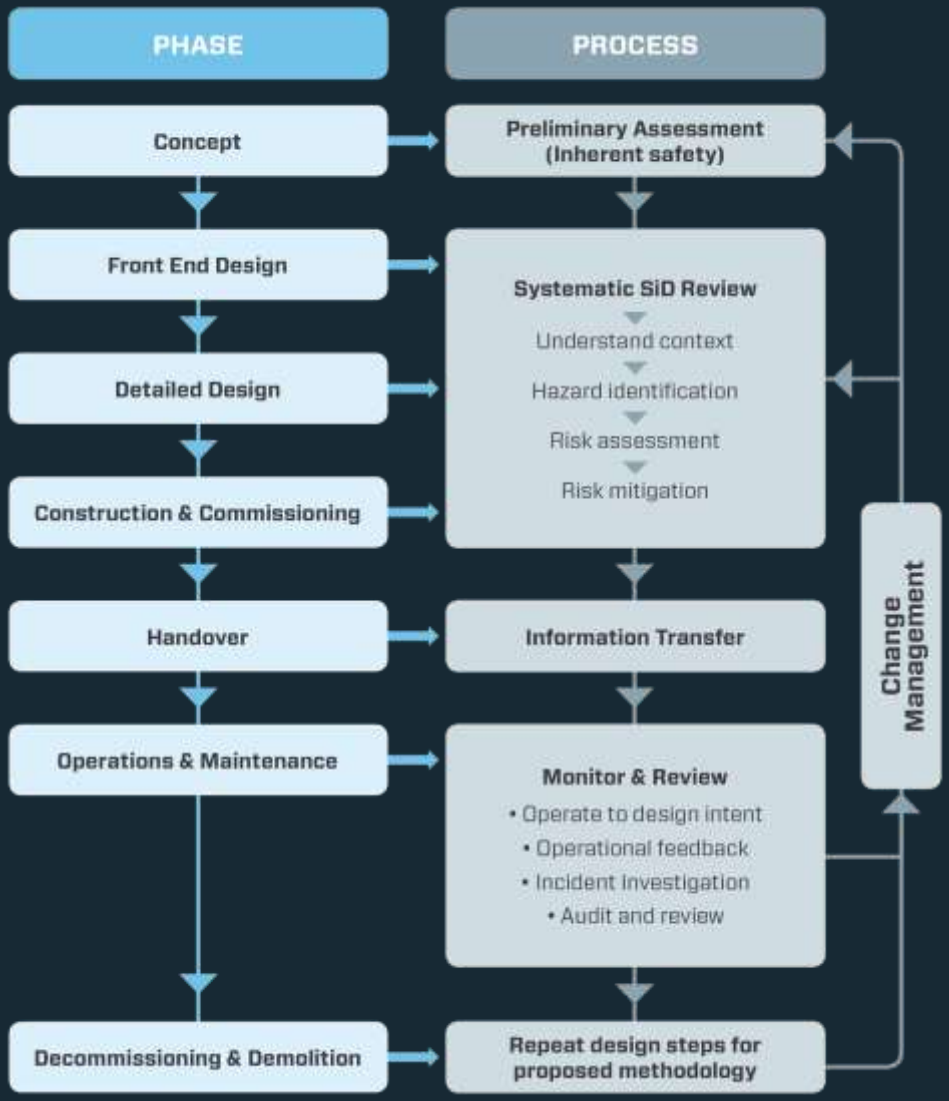
Other benefits

- More efficient construction and commissioning with less rework
- Improved usability of facilities
- Improved productivity
- Reduced costs, particularly through a reduction in both planned and unplanned maintenance
- Better understanding of the design requirements and limitations
- Better prediction and management of operational costs over the life cycle of an asset
- Compliance with legislation

Enablers


Leadership
Awareness and Capability
Design Standards
Assurance
Enablers

Framework


PHASE
PROCESS
Concept
Preliminary Assessment (Inherent safety)
Front End Design
Systematic SiD Review
Understand context
Hazard identification
Risk assessment
Risk mitigation
Detailed Design
Construction & Commissioning
Handover
Information Transfer
Operations & Maintenance
Monitor & Review
• Operate to design intent
• Operational feedback
• Incident investigation
• Audit and review
Decommissioning & Demolition
Repeat design steps for proposed methodology
Change Management

Routine tools

Inherent Safety Assessment	Concept selection	Front end design	Detailed design	Construct & commission	Operate & maintain	Decommission & demolish
Hazard Identification	Concept selection	Front end design	Detailed design	Construct & commission	Operate & maintain	Decommission & demolish

Specialist tools

HAZOP	Concept selection	Front end design	Detailed design	Construct & commission	Operate & maintain	Decommission & demolish
SIL	Concept selection	Front end design	Detailed design	Construct & commission	Operate & maintain	Decommission & demolish
FMEA	Concept selection	Front end design	Detailed design	Construct & commission	Operate & maintain	Decommission & demolish
CHAIR	Concept selection	Front end design	Detailed design	Construct & commission	Operate & maintain	Decommission & demolish
Bow Tie	Concept selection	Front end design	Detailed design	Construct & commission	Operate & maintain	Decommission & demolish
Human Factors	Concept selection	Front end design	Detailed design	Construct & commission	Operate & maintain	Decommission & demolish

Group Sessions

Is the guide comprehensive – does it cover everything you need?

- Background
- Details
- Tools

Is the guide easy to use and pitched at an appropriate level?

- Structure
- Content
- Clarity

Any other feedback?

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WorleyParsons Group

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