



ASQ CRE Prep course

Lesson III. A.

Reliability Design Techniques

A color photograph of an astronaut in a white spacesuit standing on the light-colored, cratered surface of the Moon. The astronaut is facing a large, metallic, multi-layered thermal insulation panel that reflects the orange and yellow light of the setting or rising Sun. The American flag is visible on the left side of the panel. The background is the dark void of space. Several thin white crosshair lines are overlaid on the image, particularly on the left side.

The big picture

RELIABILITY DESIGN TECHNIQUES

Lot's of Approaches

Shorter design cycles

Less development time

It's the design's fault

**80% of quality
problems are design
related**



Design Considerations

- **Performance**
- **Environmental**
- **Durability**
- **Diagnostics**
- **Repair**
- **Field service**
- **Thermal**
- **Derating**
- **Structural**
- **Risks**
- **Manufacturability**
- **Software**
- **EMC**
- **Simulations**
- **Reviews**
- **Customers**

ISO 9001:2015

System in place to support

- **Planning**
- **Inputs**
- **Controls**
- **Outputs**
- **Changes**

A design and development process

Often a phased process with gate reviews

What is most
important
information?



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Environmental and Use
Factors