Setpoints for Safety-Related Instrumentation

An Overview of Draft Regulatory Guide DG-1141

(proposed revision 4 to Regulatory Guide 1.105)

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Setpoints for Safety-Related Instrumentation

DG-1141 (RG1.105r4) — Public meeting of 14August2014

Introductory Presentation

Sometimes, things go wrong.

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Twofold Objective

- Confirming the Past
  - As-Found Limits provide a basis for confidence that the instrumentation has behaved as expected.
  - 10CFR50.36(c)(3)
- Protecting the Future
  - As-Left Limits help to ensure that the instrumentation will initiate action when it is needed.
  - 10CFR50.36(c)(1)(ii)(A)

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Setpoints for Safety-Related Instrumentation

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Introductory Presentation

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Plant Protection Continuum

Plant Safety

↑ Is demonstrated by

Safety Analyses

↑ Are enforced by

Technical Specifications

↑ Are established by

Instrument Setpoint Calculations

↑ Are based upon

Device Uncertainty Data

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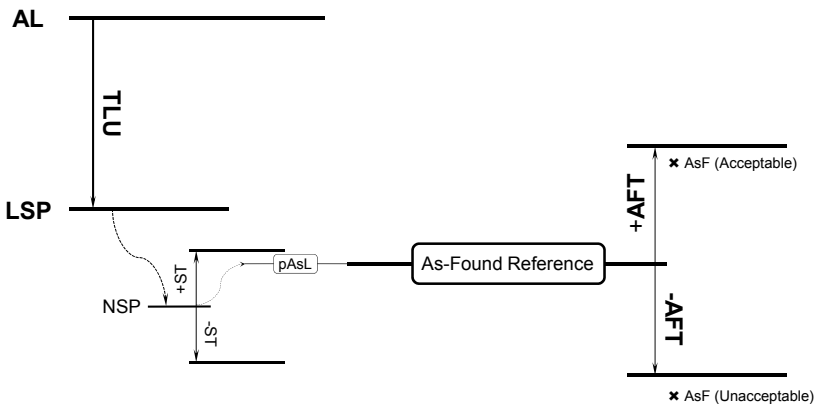
Key Setpoint Parameters



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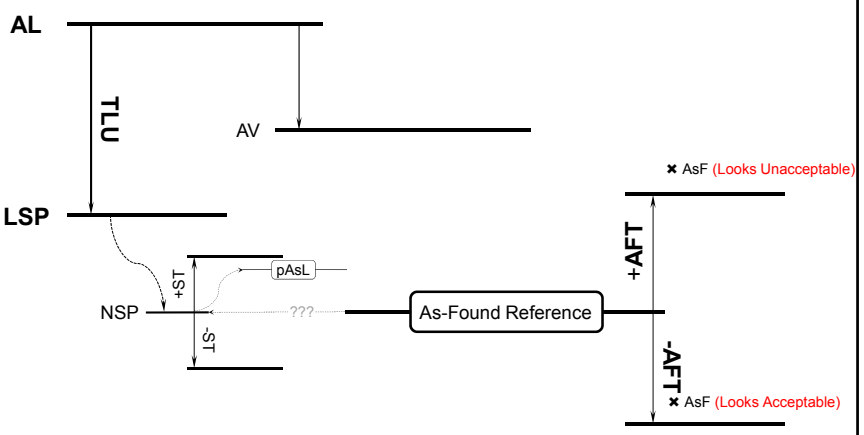
Key Setpoint Parameters



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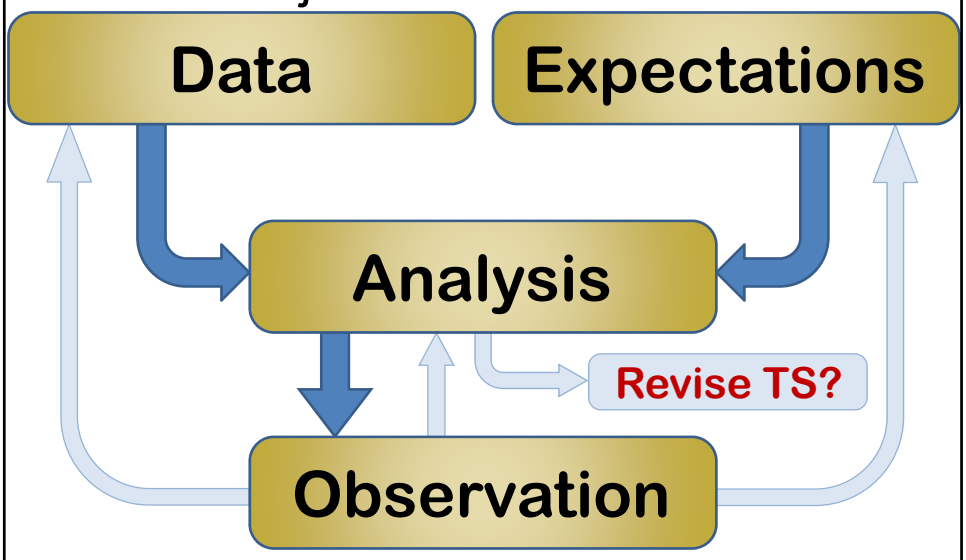
The Cycle of Adjustment and Confirmation



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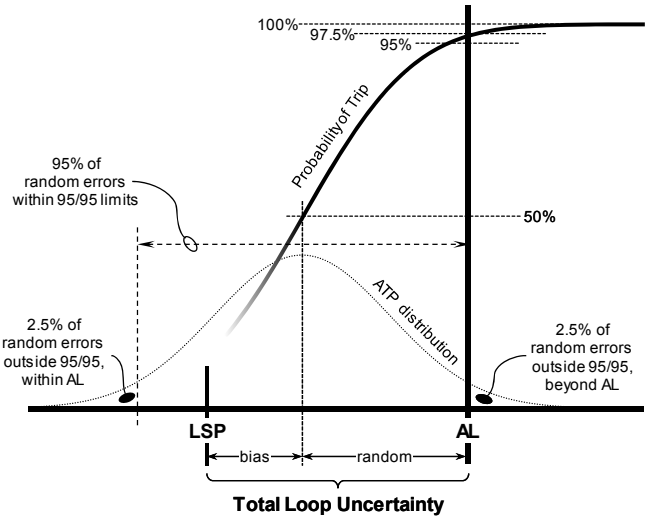
95/95 vs Probability of Trip



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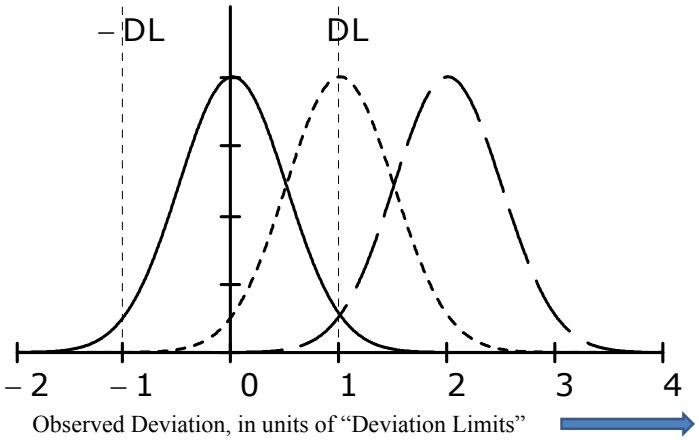
Malfunction-Induced Deviation

Histograms of AsFound values

For no malfunction and for Malfunction-Induced Deviations of 1 and 2 times the Deviation Limit



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