

SIEMENS



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CERTIFICATE

Lee Tse Twan

Has successfully completed the Functional Safety
Certification Program requirements for

Siemens Functional Safety Professional

In accordance with
IEC 61511:2003
IEC 61508:2010

Date issued: 2015-06-17
ID number: SFSP1506159
Field: Process industry
Subject: Safety Instrumented Systems

A handwritten signature in blue ink, appearing to read 'G. Greil'.

G. Greil
Certifier

A handwritten signature in blue ink, appearing to read 'W. Henke'.

W. Henke
Trainer

CURRICULUM

- **Functional safety management:**
Life cycle concept, verification, validation, assessments, modifications
- **Hazard & Risk Analysis:**
Hazard identification, hazard analysis, risk reduction, safety function definition using LOPA, risk graph, SRS, Cause & Effect
- **Hardware design:**
Demand mode, continuous mode, voting, hardware fault tolerance, safe failure fraction, type A/B, architectural constraints,
- **Hardware reliability:**
PFD, PFH, proof testing, simplified equations, common cause, MTTR, proven in use
- **Software design:**
Embedded software, application software, utility software, limited variability languages, full variability languages, software architecture, software lifecycle, FAT
- **Operation and maintenance:**
Installation and commissioning, operation, maintenance and repair, modification, decommissioning