



ENGINEERING SAFETY CONSULTANTS

The Global Provider of Functional Safety Expertise and Technical Consultancy

Certificate of Conformity to IEC 61508 Safety Integrity Level (SIL) 1

Functional Safety of Safety-Related Programmable Electronic Systems

The **Tracerco, Hyperion Detection (Type T251-A-5) Oil Breakthrough Detection System** has been assessed and is considered capable for use in a low demand Safety Function up to SIL 1.

The assessment was based on the assumptions, data provided, and recommendations given in:

- **Engineering Safety Consultants (ESC) Ltd Report: K109_SA001 rev. 3.**

The product was assessed against the following failure mode:

- Failure to detect genuine low water level condition in 1st stage separator vessel containing mixture of hydrocarbon and water.

The assessment was carried out to determine compliance with IEC 61508 (2010 Edition) with regards to:

- Random Hardware Failure (Predicted PFD 4.0E-03 per year, assuming a 5-year full test capable of revealing 95% of undetected failures, a 1-year partial test capable of revealing 85% of undetected failures, a Mean Down Time (MDT) of 168 hours and a Mission Time of 10 years);
- Architectural Constraint (Type B, SFF >90%, <99%);
- Systematic Capability of SIL 1 against IEC 61511 (2016 Edition) Prior Use.

IMPORTANT: It should be noted that this assessment does not include confirmation of the response time of the device. For response times (along with any relevant assumptions) reference should be made to the Safety Manual of each device and the total SIF response time **MUST** be compared against the process safety time for the specific application.

Managing Director: Simon Burwood
Member of IEC 61508 (MT61808-1-2) & IEC 61511 (MT61511) Maintenance Committees
Assessment Date: August 2021
Renewal Date: August 2021, valid to August 2023
Certificate: K109_CT001 rev. 1

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UKAS-accredited ISO9001 certification
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