IntegriWISE™

IntegriWISE™ is a Fitness–For–Service (FFS) assessment software tool designed by TWI to assist engineers in evaluating the integrity of ageing pipework, pipelines, storage tanks, boilers, pressure vessels and high temperature equipment. It is the fastest and easiest software tool to undertake FFS assessments. IntegriWISE is designed to help calculate and record FFS assessments for industrial plants and equipment.

FFS assessments are conducted to assess the structural integrity of a component, and its suitability for continued service under the same or changing conditions. Procedures such as BS 7910:2012 and API 579/ASME FFS–1 enable the integrity of critical components and welded structures to be assessed against different failure modes, using a validated engineering approach. The methods can be used to support design, fabrication, operation, change–of–service, and life extension programmes, and are employed in a range of industries.

FFS assessment is widely used as part of the plant life management process, to confidently increase availability, reliability, efficiency and safety.
The FFS concept has become accepted practice throughout the engineering community for asset integrity management.

IntegriWISE™ is designed to assess pressure equipment against different damage mechanisms such as general and local metal loss, pitting corrosion, blisters, hydrogen damage, dents, gouges and laminations. In addition, the system provides evaluation techniques for assessing resistance to brittle fracture.

This software complements TWI's existing suite of integrity management software such as RiskWISE™ and CrackWISE®, and can be integrated with other software packages for additional features relating to asset integrity management.

Key benefits of IntegriWISE™

- Automates Level 1 and Level 2 FFS assessments described in API 579/ASME FFS–1.
- All assessments are rigorous applications of a selection of the most widely used and relevant FFS standards or procedures from API, ASME and BSI (e.g. API 579–1/ASME FFS–1 2007, ASME B31.G).
- Material databases from the following design codes are included in the software: ASME VIII, ASME B31.3, ASME B31.4, ASME B31.8, PD 5500, API 650, and API 620.
- IntegriWISE offers the next generation in plant integrity management systems, by allowing engineers and managers to improve safety and plant availability and reducing outage and maintenance costs.
- Decision–support software designed to assist engineers in evaluating the integrity of pipework, pipelines, pressure equipment and high temperature structures
- Full customer support and after sales service.

Key features of IntegriWISE™

- Wide range of assessment modules for different damage mechanisms (metal loss, pitting corrosion, laminations, hydrogen damage, dents, gouges).
- Wide range of equipment and component geometries (cylindrical shells, spheres, torispherical head, elliptical heads, bends, elbows, reducers).
- Calculation of critical operational conditions, safe continued operating loads to applicable international standards such as API 579-1/ ASME FFS-1 2007, ASME B31G, DNV RP F101, etc. in a single software tool.
- Assessment management based on equipment with possible multiple assessments for each part of equipment.
- A hierarchical structure enabling multiple assessments that can be used to conduct "what-if" scenarios:

Plant
↳ Facility
↳ Equipment
↳ Component
↳ Assessment

- Each different assessment has its own data entry screen, where the specific input data required by the assessment is defined.
- Assessment reports generated in accordance with API 579-1/ ASME FFS-1 2007.
- Integration with other TWI software such as RiskWISE, CrackWISE, and PipeWISE.

Industrial applications

FFS is accepted practice throughout the engineering community, and assessment procedures are routinely applied:

- worldwide, throughout the oil and gas, oil refining, petrochemical and power industries.
- to a wide range of industry structures including pressure vessels and pipework, pipelines, offshore structures, storage tanks, buildings, ships and aircraft.

Training

- FFS Assessment, based on API 579-1/ASME FFS-1 2007 – 3½ day course covers Level 1 (for plant inspectors) and Level 2 (for engineers) FFS assessments, in accordance with the latest edition of API 579, now issued as a joint API/ASME document, API 579-1/ ASME FFS-1 2007.
- IntegriWISE Training Workshop – 1 day training workshop intended for engineering staff involved in fitness-for-service assessment.

Free demonstration software

Free demonstration software is available for download from: *www.twisoftware.com*

TWI

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