Driving Operational Excellence™

Operational Sustainability, LLC®

OESuite™ Risk-Based Inspection (RBI)

Improving maintenance and inspection performance while maintaining compliance with OSHA 1910.119 and the Bureau of Safety and Environmental Management (BSSE) Safety and Environmental Management Systems (SEMS) Regulations continues to be an industry challenge. Operational Sustainability, LLC® (OS) RBI software and industry-leading RBI knowledge empowers operating companies to reduce risk and focus resources where they matter most, while delivering the economic benefits of a sustainable RBI program.

Sustaining Your Results from RBI

Many companies make the investment in RBI software, but fail to obtain sustainable results due to the lack of follow through. The **OESuite™ platform** offers powerful game-changing integration with other key OESuite modules to ensure that your investment continues to bear fruit by leveraging powerful management of change and visualization capabilities to identify risk as it occurs and facilitate inspection program updates.

Qualitative and Quantitative

OESuite offers both a qualitative and a quantitative RBI option. The qualitative option is based on the Tischuk model, offering a relative risk ranking. The robust quantitative option leverages the best parts of API RP 581(3rd Edition), while avoiding the challenges that can make RBI a time-consuming endeavor. OS's quantitative RBI calculates the Probability of Failure (PoF) and Consequence of Failure (CoF) for damage that is potentially occurring. Because our software is stream-composition based, changes to damage mechanisms can be seen as they occur (e.g., addition of chemical injection points, feedstock variability). Cost benefit (risk reduction and dollars spent) can be calculated to determine the optimum inspection interval. OESuite also integrates API RBI 581 with our API 584 **Integrity Operating Windows (IOWs) Module**, to give owners the ability to address feedstock variability and process upsets.

Turnaround and Inspection Planning

OESuite enables the integration of RBI data into the turnaround process through a robust project planning module that incorporates drag and drop scheduling into time-based inspection so no planning detail gets lost. This allows operators to target resources where they matter most, while maximizing equipment uptime.

Risk-Based Intervals

Inspection intervals can be optimized to a 20-25 year potential maximum. In addition, because the powerful **MOC Module** helps operators see changes that normally go undetected, inspection intervals can be automatically shortened as conditions change. The result is that high-risk equipment is provided the right level of inspection and maintenance attention. OESuite offers a redlining and **Document Management Module** to reduce the effort required to circuitize a plant while ensuring the process safety information stays harmonized with our process safety management system. Our calculated PoF and risk levels allow inspection intervals to change over the life of the equipment as the condition of the equipment changes.

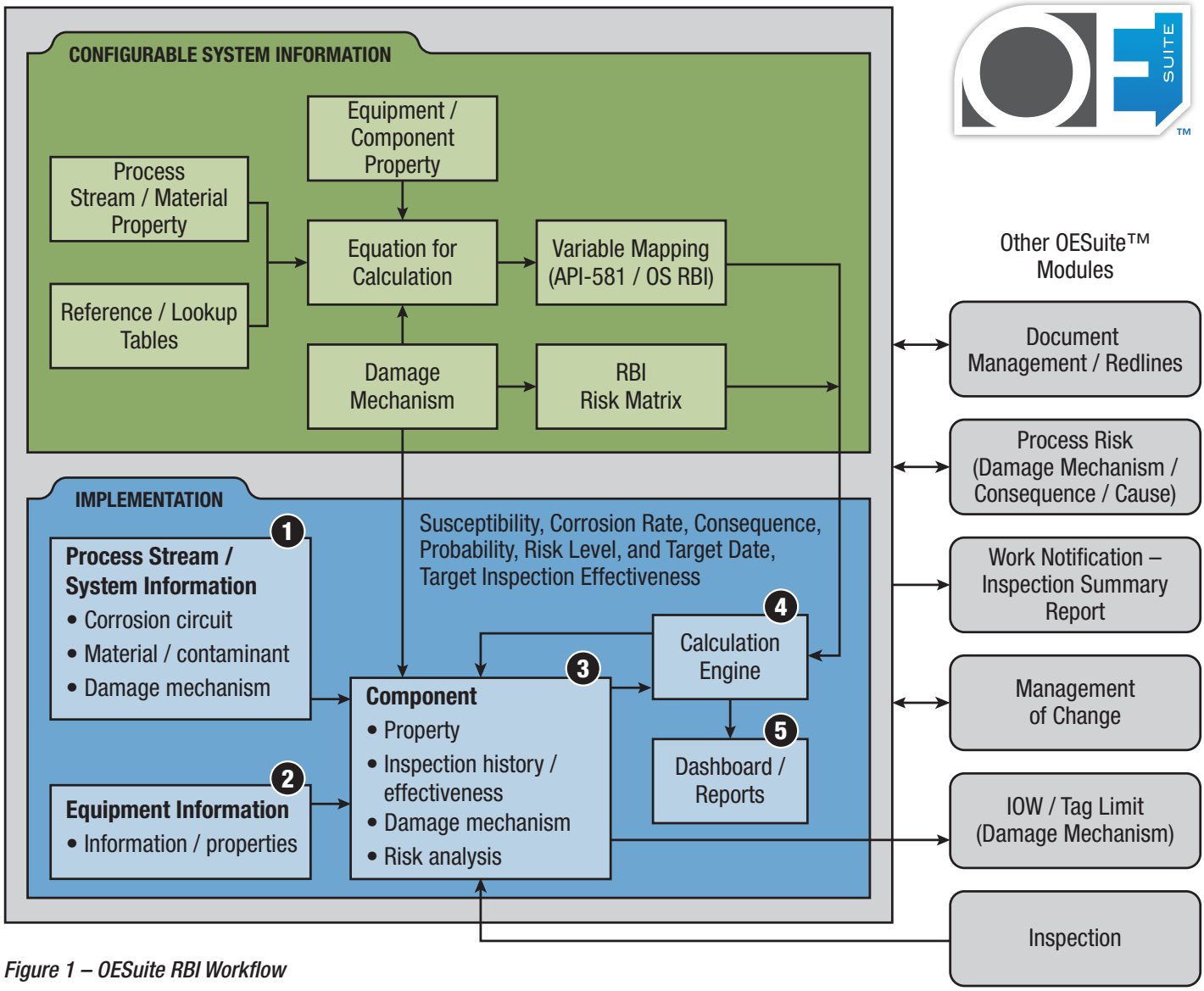

Figure 1 – OESuite RBI Workflow

The OESuite™ Difference

OESuite software was developed based upon feedback from our clients and industry experts. We offer the rigor of API RBI quantitative methodology and the benefits of qualitative RBI templates. We bring it all together by integrating MOC with RBI and historical time-based inspection while tying operating variables driving damage mechanisms to an acceptable operating range. OESuite alerts management using email for potential equipment integrity issues. Risk is tied back to inspection requirements to justify upgrades. The final product is a living inspection plan tied to notifications of IOW events linking to the **OESuite Incident Module**. The individual tasks or activities are integrated with strategies and procedures.

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Risk-Based Inspection (RBI)

The OS RBI solution is consistent with API 510 and NB-23 (for pressure relief devices). The atmospheric tank information is consistent with API 653. OESuite also integrates RBI with Fitness for Service (FFS) using API 579-1 / ASME FFS-1, pressure relief system design (API 520), and damage mechanisms (API 571).While most RBI solutions have generic RBI capabilities, OESuite was optimized to ensure that PRD inspections are pushed out as far as is practical based on risk. In addition, the **MOC Module** is integrated to ensure that process changes are factored into potential requirements in PRD design information. The Visual Operations function enables users to quickly filter to see the most critical PRDs, inspection and work order history, and failure information, while ensuring that the overall rules of plant risk tolerance are not violated.

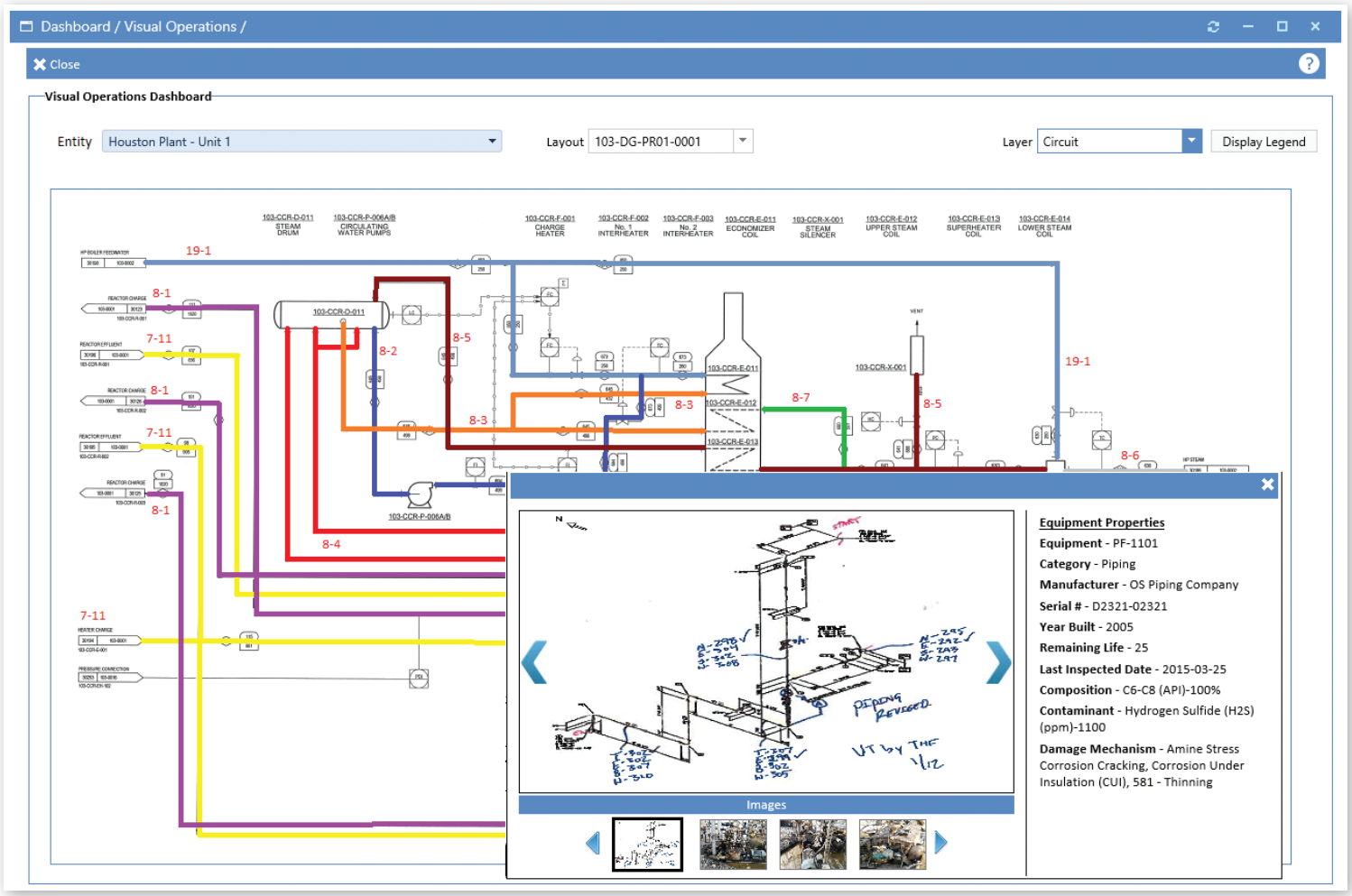

Figure 2 – OESuite Visual Operations

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Our software offers the following RBI outcomes:

- Screening of operating units to identify areas of high risk
- Estimating risk values associated with the operation of each equipment item based on a consistent methodology
- Prioritizing the equipment based on the measured risk
- Designing a highly effective inspection program
- Systematically managing the risk associated with equipment failure to maintain equipment availability

Extended OESuite™ Modules

PHA / Risk Management | Work Management / CMMS / EAM | Inspection Management / Mechanical Integrity | Integrity Operating Windows (IOWs) | Management of Change | Document Management / Redlining | Incident / Event Management | Asset Health | Asset Analysis (CCD, Lifecycle Cost, Criticality)

For more information email us at info@DrivingOE.com or call (713) 355-2900.