



OESuite™ Corrosion Control Document (CCD) / Integrity Operating Window (IOW)

CCD / IOW Analysis Feature

In process environments where corrosion, cracking, and erosion are only a few of the possible failure mechanisms, proper analysis and mitigation are critical for business continuity. The **OESuite™ Corrosion Control Document (CCD) / Integrity Operating Window (IOW) Analysis Feature**, part of our **Asset Analysis Module**, is designed to guide teams through this type of study leading to inspection, Non-Destructive Examination (NDE), and process monitoring strategies to prevent the loss of containment (See Figure 1).

The screenshot displays the OESuite software interface for a CCD / IOW Analysis. The main window shows the following details:

- Entity:** Plant 3 Crude Unit
- Type:** CCD/IOW Analysis
- Status:** Study In Progress
- Title:** Corrosion Control Document - Crude Unit
- Analysis #:** 2019-CCD-0012
- Description:** Developed based on information generated during onsite meeting held at the plant on July 27-28 with personnel from engineering, maintenance, and inspection in addition to personnel from OS.

A 'Corrosion Loop' window is open, showing a table of components for 'Loop 2 - Desalted Crude':

Corrosion Circuit	Asset	Description	Component	Fluid	Operating Temperature	Material Specification	Material of Construction	Heat Treatment (PWHT)	Insulation	
CU-02	V-3152	1st Stage Desalter	Shell	Crude and Water	234 degree F	SA-516	Carbon Steel	N	Y	X Delete
CU-02	P-3152-2	Piping from V-3152 to MP2	P-3152-2A	1st Stage Desalted Crude	236 degree F	SA-106	Carbon Steel	N	Y	X Delete
CU-03	MP-2	Pressure Vessel	Shell	2nd Stage Recycle Water with Crude	231 degree F	SA-106	Carbon Steel	N	Y	X Delete
CU-03	P-MP2-2	Piping from MP2 to V-3153	P-MP2-2C	1st Stage Desalted Crude	231 degree F	SA-106	Carbon Steel	N	Y	X Delete

The interface also includes a sidebar with 'Preparation' and 'LOOP' sections, and a bottom navigation bar with '+ New', 'Copy', 'Save', and 'Delete' buttons.

Figure 1 – CCD / IOW Analysis

The CCD / IOW analysis identifies corrosion loops and circuits, assets, asset components, damage mechanisms, documents, material specifications, and other necessary components connected to process streams with fluid operating conditions. These studies can be performed at the unit level, with all loops identified. Potential IOWs are suggested based on damage mechanisms, asset priorities are assigned, and then IOW tags can be selected for monitoring.

Recommendations are made by the study team and the Manage As type is assigned (see Figure 2). Once confirmed, these recommendations will spawn action items and other management system records such as Management of Change (MOC), Work Requests, and Corrective and Preventive Actions (CAPA) to ensure proper implementation and completion.



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Corrosion Loop

Corrosion Loop: Loop 2 - Desalted Crude

Information	Property	Corrosion Circuit	Damage Mechanism	Tag/IOW	Recommendation
Add Recommendation					
Rec #	Circuit	Asset	Priority	Recommendation	
123133	CU02	V-3152	High	Established maximum desalter operating temperature. This temperature should be based on the type of Teflon bushing the desalter has. Typical maximum temperature is 320 F.	
123134	CU02	V-3152	Medium	When cleaning the Reduced Crude/Flashed Crude exchangers to reduce heater firing, use a more effective procedure than hydroblasting. This will increase the run length between cleaning.	
123135	CU03	MP-2	Medium	Expect to see significant corrosion in the water piping after the Excalibur injection when a pH of <3 is achieved - there is a corrosion inhibitor with the Excalibur 7510 injection/combination corrosion inhibitor acid. If pH decreases to <3, consider an inspection of the CML's.	
123136	CU-03	MP-2	Medium	Inspect the injection point per the API recommended practice.	
123137	CU-03	P-MP2-2	Low	Piping around tubeside of E-365A/B has a dead-leg by-pass around the tubeside. This desalted crude contains small amounts of water. Depending on the shape of the dead-leg by-pass, if it is traced and insulated, the potential for corrosion is present if the water is allowed to settle out. An inspection plan is recommended for each dead-leg by-pass.	

+ New Copy Save Delete

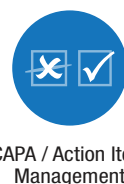
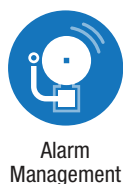
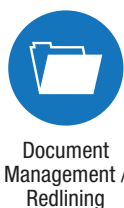
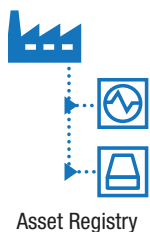
Figure 2 – CCD / IOW Recommendation Management

The **CCD / IOW Analysis Feature** also enables your organization to allocate inspection and NDE resources in the most effective manner. As process or equipment conditions change, informed decisions are easily supported.

Key benefits of the **OESuite™ CCD / IOW Analysis Feature** include:

- Identification of damage mechanisms
- The visualization of corrosion loops and ability to redline
- Ability to set alerts based upon acceptable corrosion rates
- Ability to establish integrity operating windows and document safeguards
- Auto scan of damage mechanisms
- Prioritization of assets
- Documentation of recommendations as action items, CAPAs, and MOCs
- Linking of Process Safety Information (PSI)

The **Asset Analysis Module** integrates with these OESuite™ features and modules:



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