

## DAMAGE MECHANISM REVIEWS

WORKING WITH YOU TO IDENTIFY DAMAGE MECHANISMS AND DEVELOP A PLAN



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For more than two decades, E<sup>2</sup>G | The Equity Engineering Group, Inc. has been working with customers to identify active and potential damage mechanisms and to develop corrosion control documents (CCDs). E<sup>2</sup>G has Damage Mechanism templates for nearly every unit in a refinery.

### WHY PERFORM A DMR?

It is the best starting point for accomplishing the following:

- Developing inspection plans
- Identifying areas of vulnerability
- Developing IOWs & CCDs

### HOW IT'S DONE

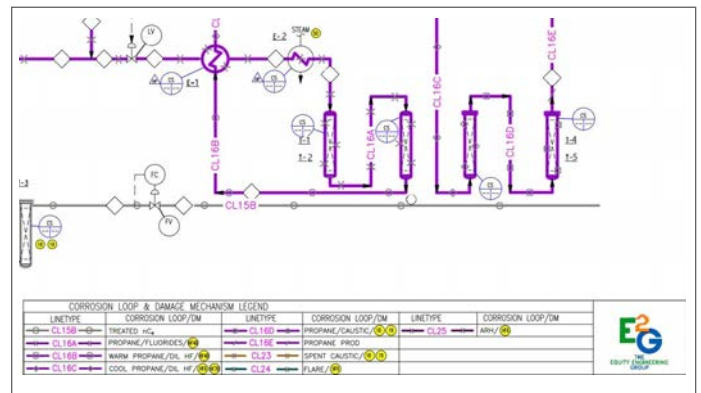
- You give us your PFDs and process info
- We review Operating Conditions and Metallurgy
- We provide color-coded PFDs

### REFINERY DAMAGE MECHANISMS

E<sup>2</sup>G engineers were the primary authors of API 571, *Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*. Our Materials and Corrosion Engineers are well-known industry experts who have previously worked in refineries.

### E<sup>2</sup>G HAS BEEN DEVELOPING INTEGRITY OPERATING WINDOWS FOR YEARS

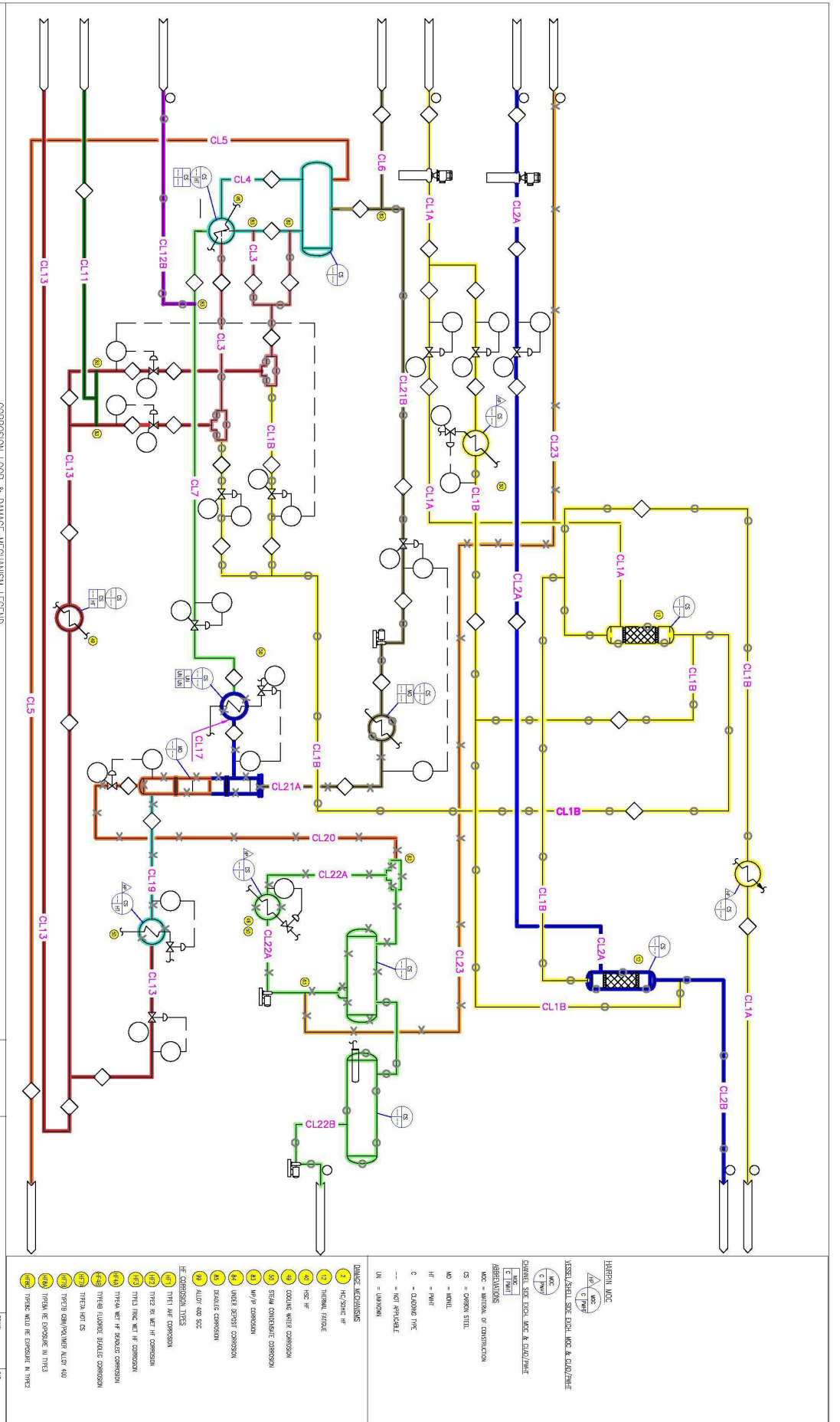
Integrity Operating Windows (IOWs) are established limits for process variables that can affect the integrity of equipment if the process operation deviates from the established limits. A thorough understanding of corrosion and other damage mechanisms is needed to establish IOW limits



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CORROSION LOOP & DAMAGE MECHANISM LEGEND			
LINE/TYPE	CORROSION LOOP/DM	LINE/TYPE	
CL1A	WET ACIDIC FEED (W/A)	CL7	WET HFVA (W/HFVA)
CL1B	WET ACIDIC FEED (W/A)	CL8	WET HFVA (W/HFVA)
CL1C	WET ACIDIC FEED (W/A)	CL9	WET HFVA (W/HFVA)
CL2A	WET ACIDIC FEED (W/A)	CL10	WET HFVA (W/HFVA)
CL2B	WET ACIDIC FEED (W/A)	CL11	WET HFVA (W/HFVA)
CL2C	WET ACIDIC FEED (W/A)	CL12	WET HFVA (W/HFVA)
CL3	WET ACIDIC FEED (W/A)	CL13	WET HFVA (W/HFVA)
CL4	WET ACIDIC FEED (W/A)	CL14	WET HFVA (W/HFVA)
CL5	WET ACIDIC FEED (W/A)	CL15	WET HFVA (W/HFVA)
CL6	WET ACIDIC FEED (W/A)	CL16	WET HFVA (W/HFVA)
CL7	WET ACIDIC FEED (W/A)	CL17	WET HFVA (W/HFVA)
CL8	WET ACIDIC FEED (W/A)	CL18	WET HFVA (W/HFVA)
CL9	WET ACIDIC FEED (W/A)	CL19	WET HFVA (W/HFVA)
CL10	WET ACIDIC FEED (W/A)	CL20	WET HFVA (W/HFVA)
CL11	WET ACIDIC FEED (W/A)	CL21	WET HFVA (W/HFVA)
CL12	WET ACIDIC FEED (W/A)	CL22A	WET HFVA (W/HFVA)
CL13	WET ACIDIC FEED (W/A)	CL22B	WET HFVA (W/HFVA)
CL14	WET ACIDIC FEED (W/A)	CL23	WET HFVA (W/HFVA)
CL15	WET ACIDIC FEED (W/A)	CL24	WET HFVA (W/HFVA)
CL16	WET ACIDIC FEED (W/A)	CL25	WET HFVA (W/HFVA)
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