

## What is an IPL?

- Function that prevents a consequence of a HAZOP/LOPA scenario from occurring
- Identified during the LOPA process
- Higher degree of required Operations and Maintenance

## Common Gaps for Managing IPLs

- **Function:** Function is not acceptable as an IPL
- **Design:** Design does not provide required Function, Independence, or Availability
- **Operate:** Function not treated as an IPL
- **Maintenance:** Testing not performed as required
- **IPL Tools:** Requirements for IPLs don't overlay well with typical Plant Management Tools

## Challenges for Managers

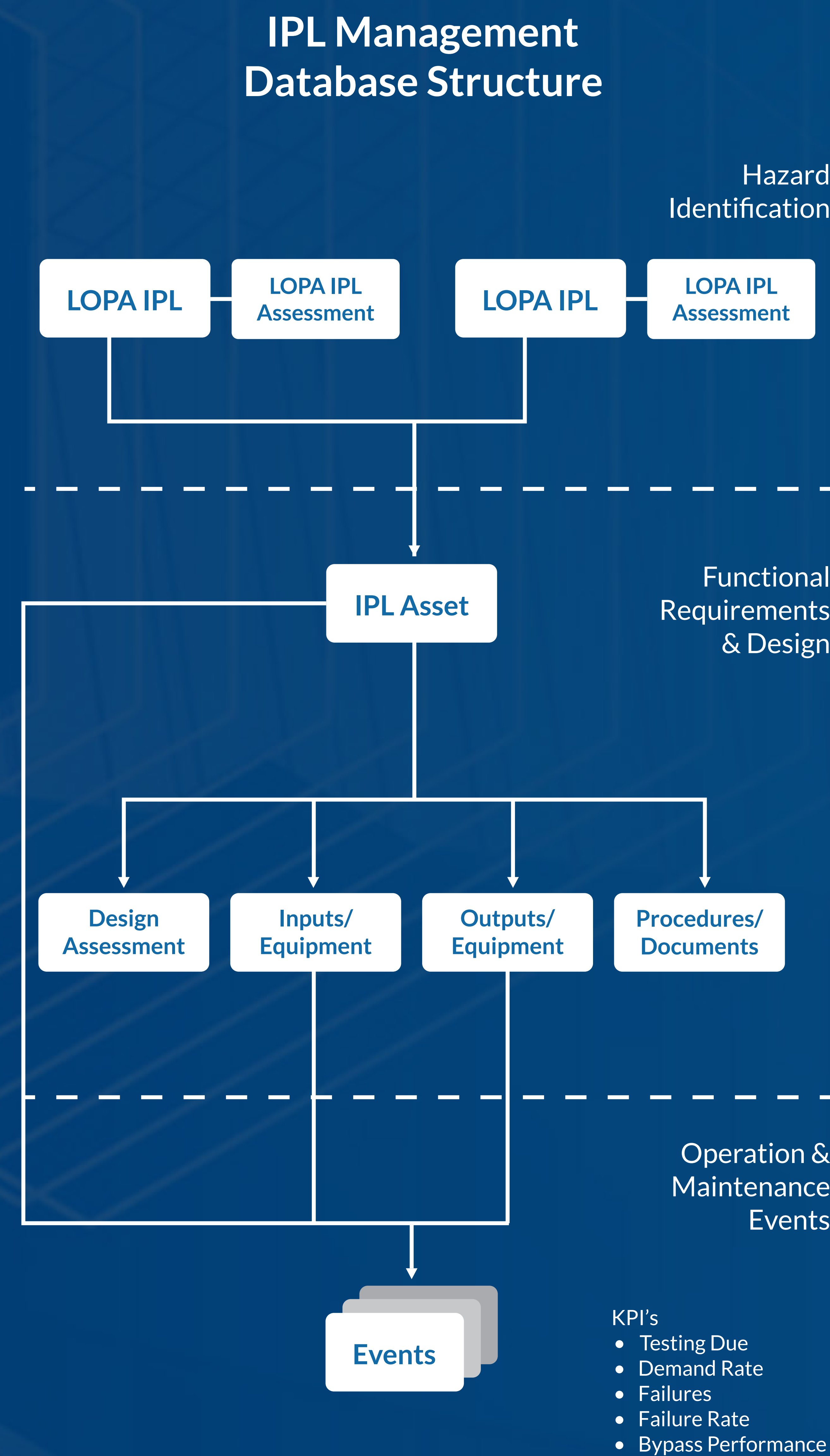
- IPL Management crosses multiple engineering disciplines/departments
- Existing tools are fragmented, hard to apply, and offer limited access to documentation
- Lack of higher level commitment

## The Solution

- A Safety Lifecycle Management System
- Relate real Plant assets to LOPA IPLs
- Standardize IPL function and design requirements
- Consistently assess IPL Independence, Design, and Operational Preparedness
- Record Operation and Maintenance events against IPL function and Devices

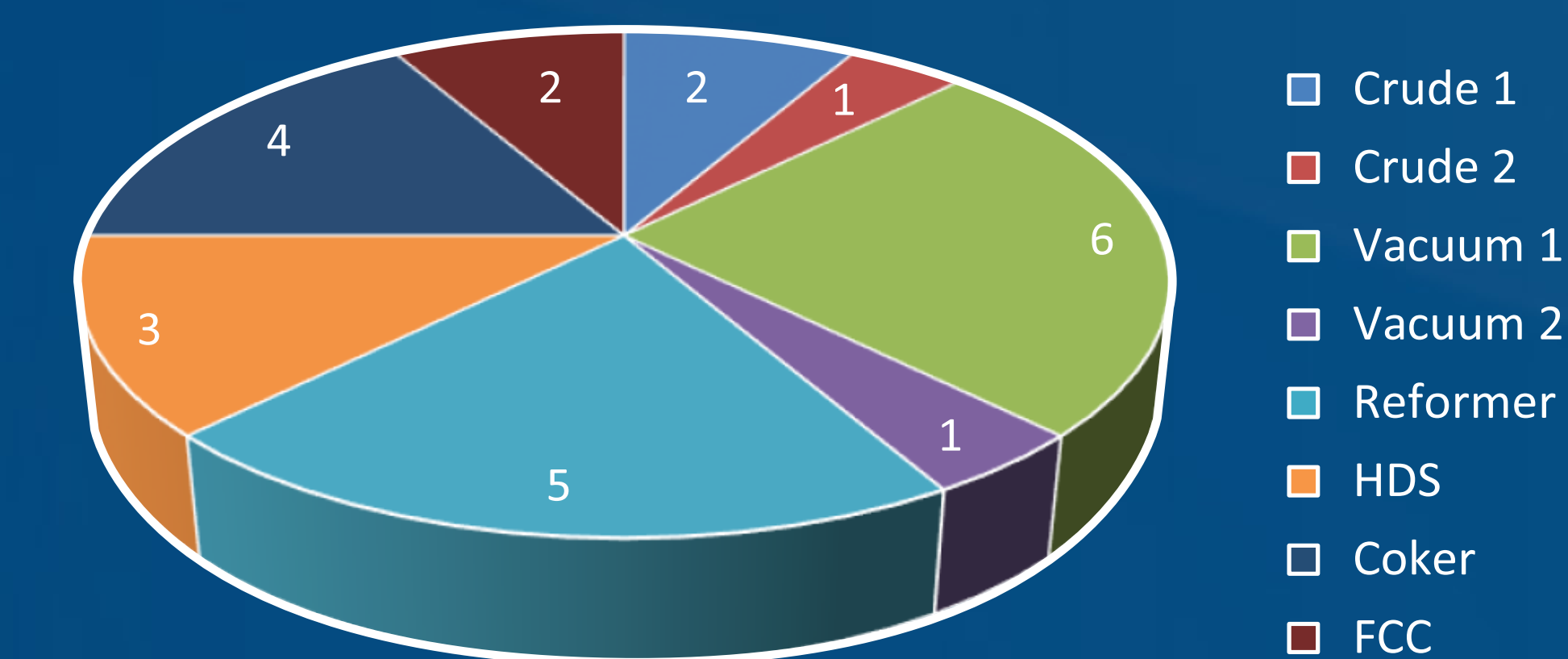
## Benefits of a Consolidated Approach

- Effective management of IPLs
- Validate design intent
- Clear and actionable IPL Performance KPIs
- Ensure performance meets SIL requirements
- Documents, Manage, and Analysis of IPL Events in one platform

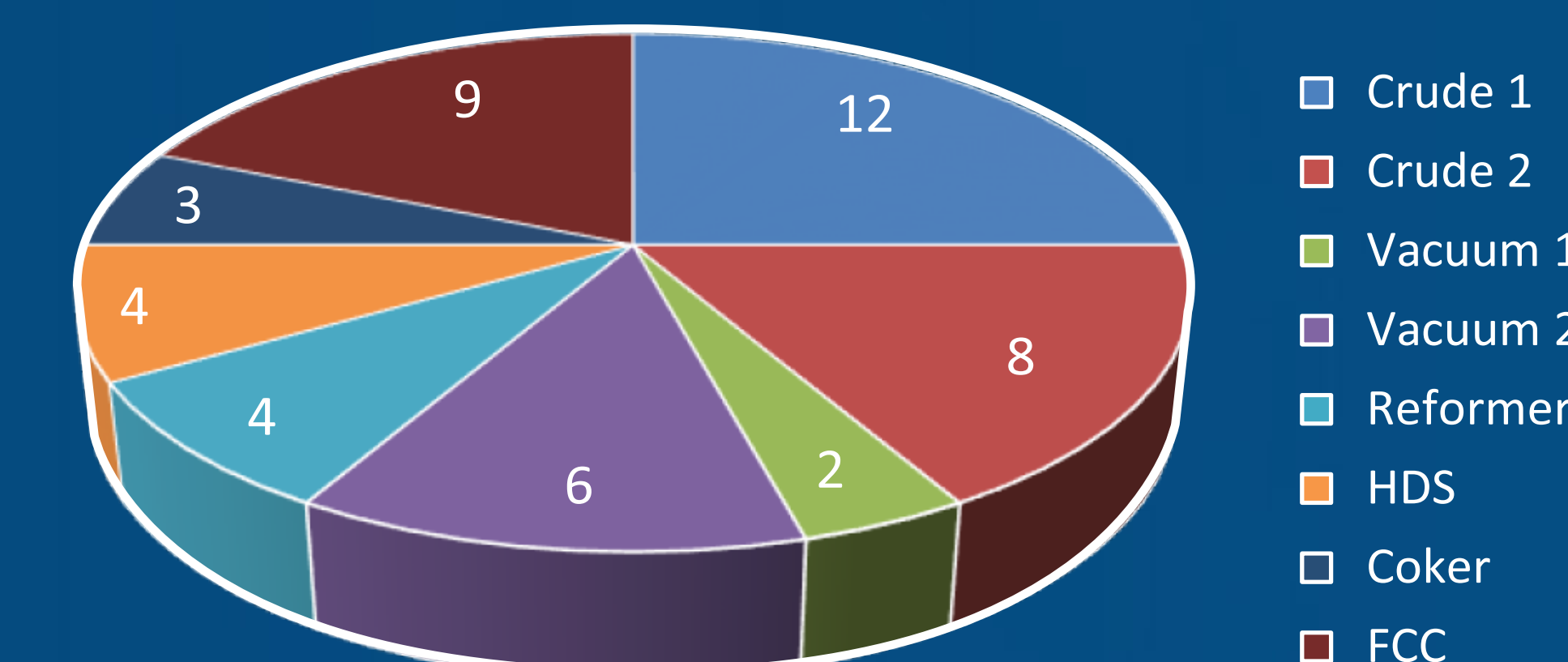


## IPL KPI Examples

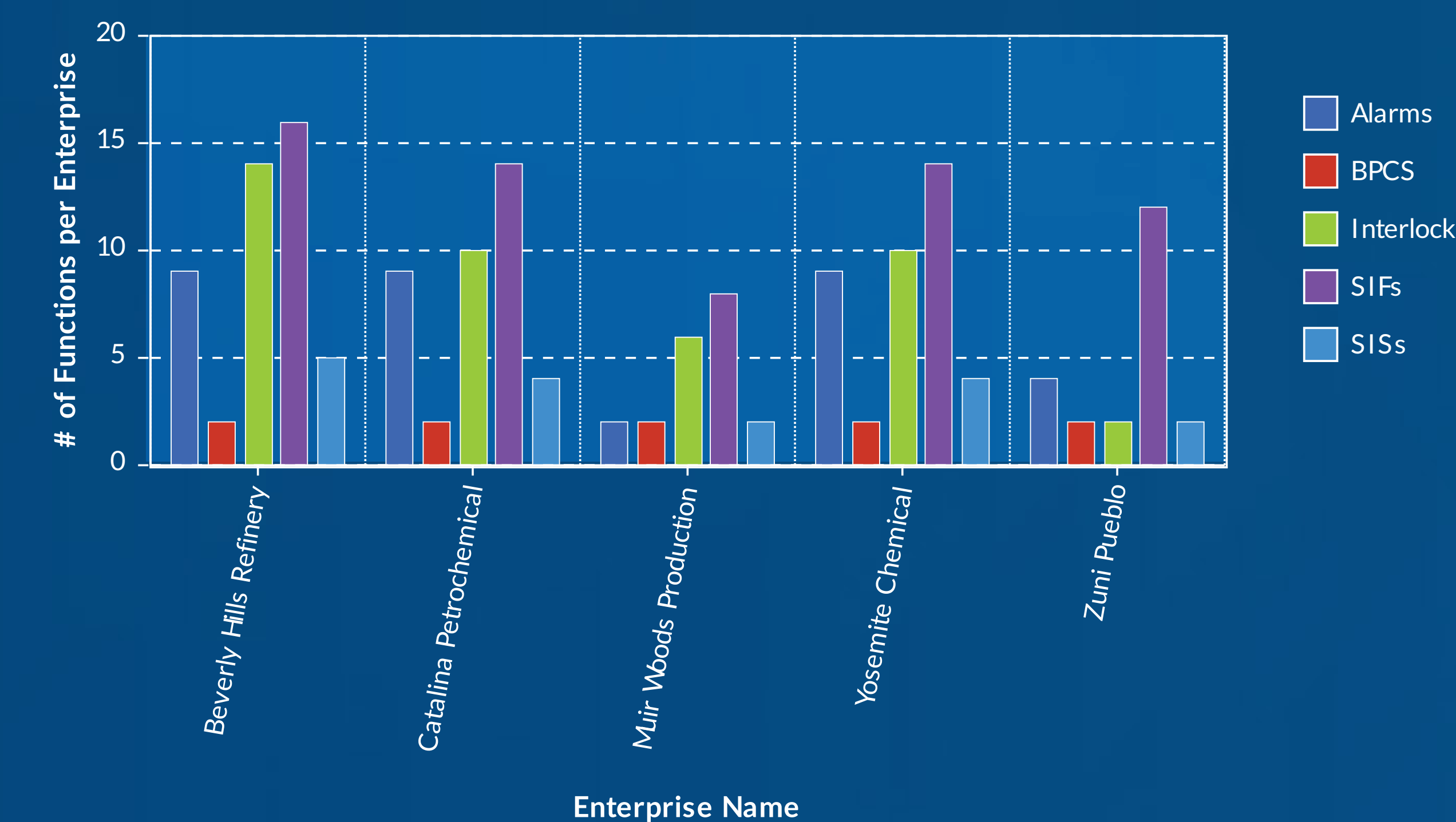
Overdue Test - Beverly Hills Refinery



Current Bypasses Active - Beverly Hills Refinery



Function Type Summary within Clampett Energy Corp



Enterprise Name	Alarms	BPCS	Interlock	SIFs	SISs
Beverly Hills Refinery	9	2	14	16	5
Catalina Petrochemical	9	2	10	14	4
Muir Woods Production	2	2	6	8	2
Yosemite Chemical	9	2	10	14	4
Zuni Pueblo	4	2	2	12	2