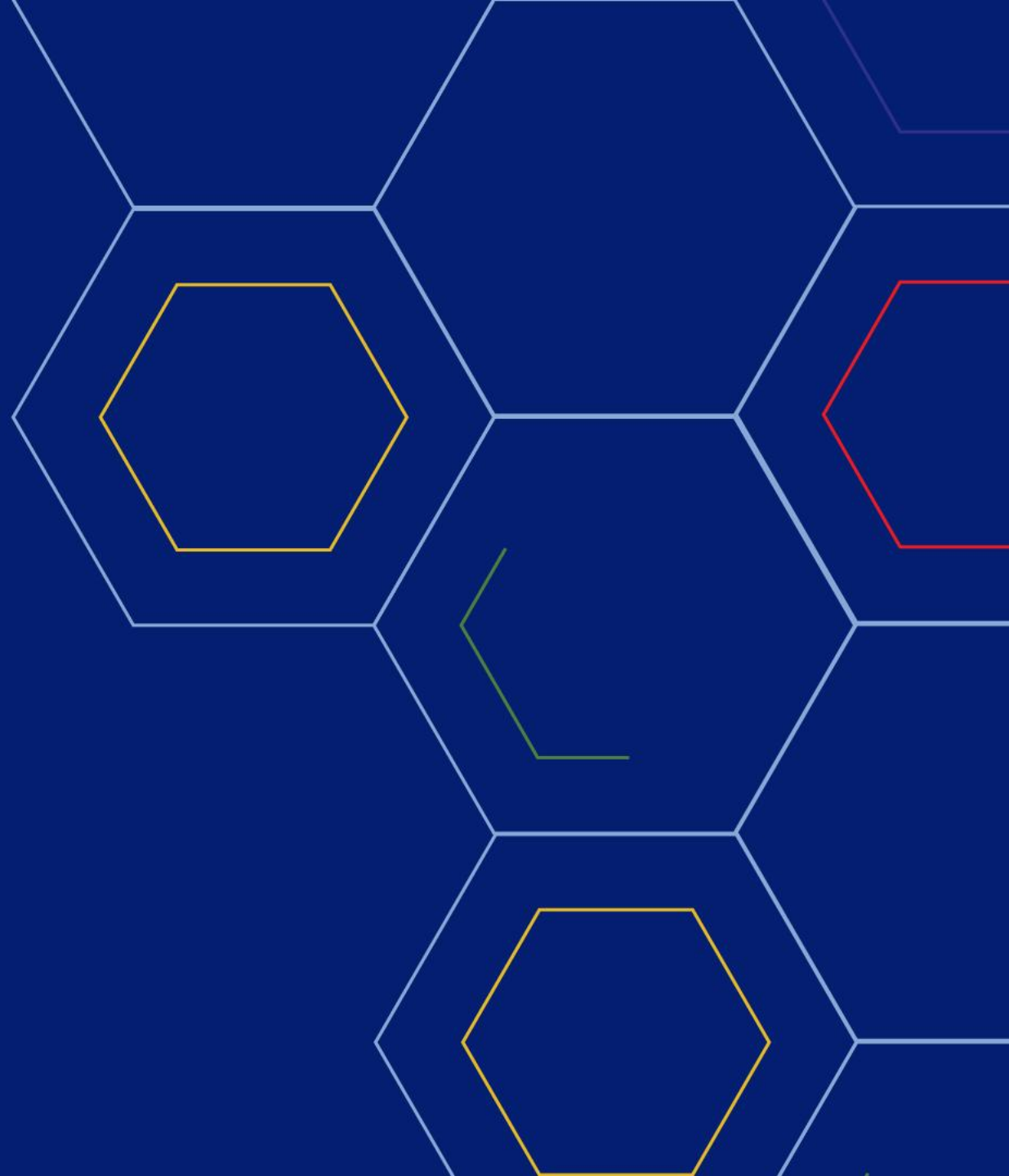




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# INSURANCE VISIT





# Positive observations

- Minimal natural hazards exposures
- No nearby neighbours (3<sup>rd</sup> party liability)
- Excellent inter-plant spacing (reduced potential domino effect)
- Alarm rates – good monitoring, feedback, analysis and reporting (target 2/ 10 minutes).
  - Note that the EEMUA 191 target is an average of 1 alarm per 10 minutes during normal operation, with a peak alarm rate of less than 10 in the first 10 minutes of a major system failure).
- In house (AIA) inspection department capability
- Use of Power BI for data gathering and analysis (Maintenance, PSM etc.)
- Thorough and detailed RCAs for significant incidents
- Control room notice board information very good, CCPS Beacon, zoning, etc.



# Recommendations

- Ethylene Plant Compressor Shelter Fire Protection Improvements
- Develop a Plan to Complete the Baseline HAZOP programme
- Improvements to the Process Isolation Procedure
- Fire Detection & Protection on Critical Compressors
- Process Safety KPIs Improvement – PSM
- SIS Proof Testing Methodology
- Management of Change System Improvements
- Investigation of PSV Test Failures
- Fire Pre-Plans Development
- Control of Safety Critical Manual Isolation Valves
- Requirement for ROIVs
- Piping Inspection
- Pump Seal Upgrades on Risk Priority Basis
- Physical isolation steps and LOTO improvement



# Concerns

- Instrumentation equipment obsolescence.
- Use of glass level indicators – risk of failure
- Alarm rate target set at twice industry good practice value
- FW Pump annual performance testing – provide NFPA 25 pump curves
- All furnaces before 2006 - fuel gas supplies have single valve remote isolation only – generally DBB isolation provided on modern furnaces



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**Thank You**

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