

**Hazardous Installations Directorate
Offshore Safety Division**



KEY PROGRAMME 3

Installation Integrity on the UKCS

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Offshore Europe, Aberdeen - 8th September 2005

A Response to.....

- Ageing Installations
- Reduced Maintenance/Inspection
- Industry's Commercially-Driven Changes
- Manning Reduction Programmes
- Evidence gathered from HRR Campaign
- Specific Integrity-Related Incidents

KP3 – The Inspection Vehicle

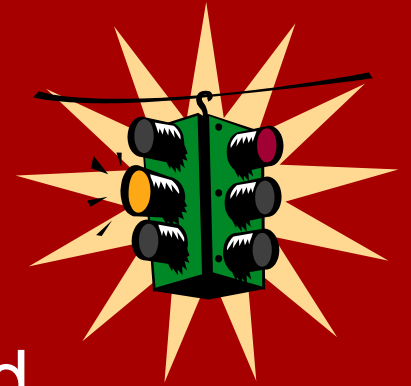
- Started 1st April 2004 (3-year programme)
- Focus is on maintenance management
- 23 fixed production installations in 2004/5
- 40 installations in 2005/6, incl.10 mobiles
- A default team of 3 inspectors
- 3-stage inspection
- Templates

Summary of Findings

- Backlog
- Corrosion
- Maint. Management Systems
- Technical Support
- Planning
- Supervision
- Performance Standards
- SCE test results

Analysis

- Inspection results analysed
- Traffic light coding assigned
- Generic deficiencies identified
- Best practice captured
- KP3 process continuously reviewed



KP3 Inspection Analysis Matrix 2004 / 2005

| | Installation Manager Maintenance history | Communication on-site / off-site | Test / Sopy Competence SCCs | Supervision | Maint. Recording | Backlogs | Deferrals | Corrective maintenance | Defined like repairs | Maint system evaluation | Measuring compliance with regulations or measuring quality of maintenance | Review of KPI tests / Verifications | Senior amount report on testing | KPIs for maintenance effectiveness | Discharge test | Fire pump test | ESD valves | Fire detectors | Gas detectors | HVAC dampers | Emergency lighting | Public Address systems | Water Valve | EX equipment |
|----|---|-------------------------------------|-----------------------------------|-------------|------------------|----------|-----------|---------------------------|----------------------|----------------------------|---|--|------------------------------------|--|----------------|----------------|------------|----------------|---------------|--------------|--------------------|---------------------------|-------------|--------------|
| 1 | Amber | Green | Red | Green | Green | Red | Green | Amber | Green | Amber | Red | Amber | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 2 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 3 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 4 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Red | Red | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 5 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 6 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 7 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Red | Red | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 8 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 9 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 10 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 11 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 12 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 13 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 14 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 15 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 16 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 17 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 18 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 19 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 20 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 21 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 22 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 23 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 24 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 25 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 26 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 27 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |

KP3 Inspection Analysis Matrix 2005 / 2006

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| 28 | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 29 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 30 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 31 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 32 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 33 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 34 | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 35 | Red | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 36 | Red | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| 37 | Red | Green | Green | Green | Green | Green | Green | Green | Green | Amber | Green | Green | Green | Amber | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |

Identified Best Practice

- Workforce awareness
- Maintenance management
- Supervision
- Risk assessment (SCEs)
- Interface with ICP
- Performance standard for TA visits

Stakeholder Engagement

- UKOOA Work Group
- BROA
- IVBs (Lloyds, DNV, BV, etc.)
- Proposal in preparation for research project: workforce communication aligned to KP3
- Discussions in progress with Nuclear and Chemical industries and regulators

Conclusions

- The results and analyses bear out the original concerns
- Make full use of audit, inspection and monitoring techniques
- The key to success