



Enhanced Technical underpinning of Portable Radiological Instruments at AWE

1. Production of AWE portable RI condition survey report
2. Production of a technical review report assessing AWE future portable RI requirements in line with IRR99, and instrumentation developments

INF/04/13 Part 1



Production of AWE Portable RPI Condition Survey Report

- RIS Technical Evaluation of Existing In-Service Portable RPI
 - Number in Service
 - Deployment
 - Manufacturers Support
 - Capability to Support In-house
 - Performance Analysis
- Produce Final Report
 - RPI Condition
 - Asset and Type Consolidations
- Report Recommendations Accepted
 - Head of Profession & RPA Technical Meeting
 - Formal Change Control



Production of AWE Portable RPI Condition Survey Report

Findings

- 45 Portable Radiological Protection Instruments Identified
- 41 Are Fit for Purpose
 - Poor Serviceability - 2
 - Full Manufacturers' Support - 30, Limited Support - 5
 - No support - 6
- Where Instruments Have Been Identified As Obsolete/
Obsolescent, There Are Sufficient Spares or Similar Instrument
Types to Meet the Life Expectancy of the Equipment Whilst
Replacements Are Sought and Procured.



Production Of Portable RPI Condition Survey Report

Recommendations

- 6 Instrument Types to Be Formally Withdrawn From Service;
 - Not Fit for Purpose
 - Not Compatible With Other Parts of the Current Portable RPI Portfolio
 - Or Applying Rationalisation Opportunity.
- 10 Instruments Need Replacement Due to Obsolescence or Limited/no Support From the Manufacturer. Market Search Will Be Undertaken to Identify Potential Replacement Instruments.
- Prompt Identification of Replacement Instruments and Procurement Action As Directed by Condition Surveys, to Avoid Potential Unavailability Issues.



Production Of A Technical Review Report

- Report Produced Detailing User Metrology Issues
 - RPAs Identify Requirements
 - Assess Current Assets Against RPA Requirement
 - Identification Of Gaps
- Assessment Of Developments In RI Technology Against AWE Requirements
- Publication Of Technical Development Strategy For Portable RPI
 - Accepted By Head Of Profession & RPA Technical Meeting
 - Discussion With BNFL Peers



Production of a Technical Review Report

Findings

- Range of Instruments and Calibration Protocols Generally Suitable and Sufficient.
- Minimum Gamma Doserate of $0.1\mu\text{sv/h}$ Cannot Usefully Be Met Using Existing Instruments.
- PDM1 Series, RO-2 and RO-20 Utilise Reed Relays for Range Switching. May Give False Readings in Magnetic Fields. Use of These Instruments Not Recommended in Viper and Laser Facilities.
- Gamma Interference When Alpha Monitoring, Under Investigation by RIS. Assessments Are Being Made of Alternative Detector Technologies.
- Instruments Available at AWE Suitable for the Radionuclides and Energies Identified.



Production of a Technical Review Report

Recommendations

- Market search for a low Gamma doserate instrument for clearance monitoring, to ascertain availability, accuracy and cost. Compare with RIS development instrument.
- Investigations/assessments of instruments to reduce/remove Gamma interference problem when carrying out Alpha monitoring.
- Market search for a Gamma doserate monitor suitable for use in magnetic fields. Compare with RIS development instrument.
- An assessment of the requirement to monitor pulsed X-Rays, and the suitability of available instruments, should be carried out.
- Review calibration and monitoring accuracy requirements.
- Review Questionnaire and reissue.