

About AMS

AM Sensors (AMS) Limited is a Controls & Instrumentation company specialising in engineering systems relating to Plant Life Extension (PLEX) and Ageing & Obsolescence (A&O) of EDF's fleet of nuclear power plants. Their expertise is in 'front end' instrumentation including pressure, level, flow and temperature measurement, analytical equipment and environmental monitoring.

AMS's services cover the whole project lifecycle including:

- Plant walkdowns and requirements specification writing
- Optioneering reports
- Detail design
- Design substantiation
- Enclosure / cubicles / panel / frame manufacturing
- Factory Acceptance Testing
- Installation
- Site Acceptance Testing
- Commissioning
- Documentation / LTQR

AMS's team of Chartered and Incorporated Engineers are Suitably Qualified and Experienced Personnel (SQEP) for undertaking a range of engineering services including detailed design and substantiation of safety critical systems.

Additionally, AMS has a range of 'standard' solutions for sampling of Sulphur-35, Tritium and Carbon 14 with their Total Oxidation Units (TOUs) and can design, build and install systems for isokinetic sampling of particulates in stack monitoring applications.

EC&I

Obsolescence Solutions

for the Nuclear Power Industry



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INSTRUMENTATION & CONTROL

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The problem

Obsolescence is a significant and growing issue facing the UK's aging fleet of Nuclear Power Plants with several thousand items on the OBSO AR list needing addressing.

Critical Components and Single Point Vulnerabilities may be given particular attention but any obsolete item, whether a component or a system, can cause significant problems when spares become unavailable.

Reactively solving obsolescence issues can be costly, particularly if the solution requires a system or sub/system replacement as the Engineering Change process then needs to be followed. However, conversely, a proactive approach and one that properly assesses the potential for dealing with the component obsolescence at the heart of the problem, can lead to significant cost savings.

The AM Sensors (AMS) approach

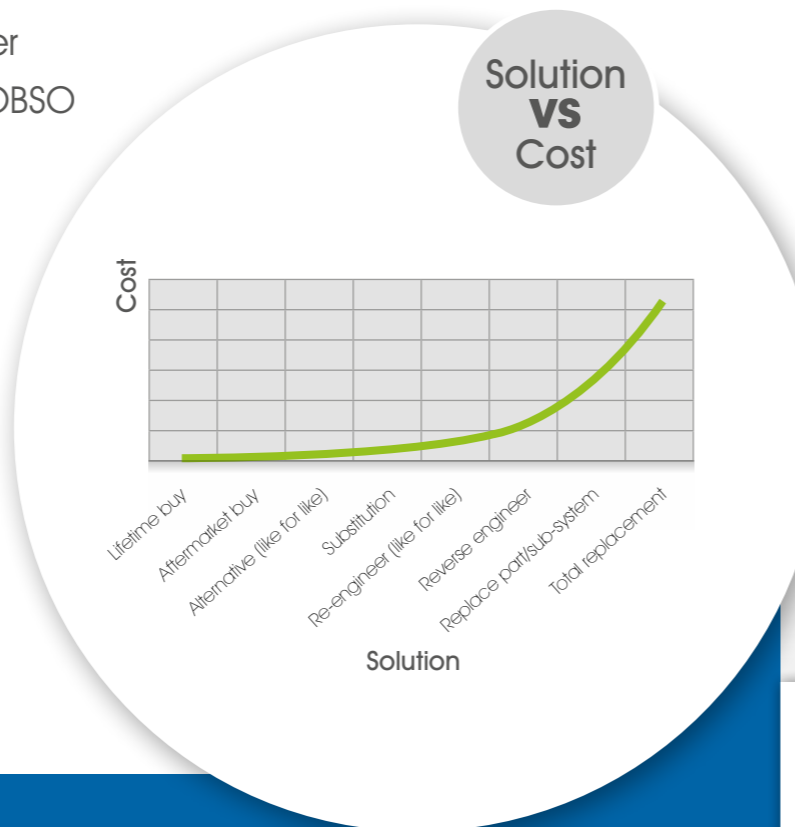
AMS fully understands this relationship between the different types of solution available and their relative cost implication to EDF. Furthermore, AMS has the knowledge and experience to not only engineer total system or sub-system replacements but also to carry out Item Equivalency Evaluations (IEE) and Fit Form and Function comparisons that enable the lower cost solutions to be considered first.

Working with Appropriate Rigour (WAR), AMS applies the principles of BS EN 62402:2007 Obsolescence Management to its own solutions and where appropriate can apply BEG/SPEC/FENG/001 Graded Application (Quality Assurance) to the design process and conduct and incorporate OPEX analysis for safety critical system design.

AMS Obsolescence Capabilities

AM Sensors' obsolescence specific capabilities include the following:

- Internal SQEP C&I engineering resource
- Properly managed supply chain of supplementary design and manufacturing services
- Component, Sub-System and System design capabilities
- Reverse Engineering of PCBs
- TTL/CMOS/Analogue expertise
- Working with Appropriate Rigour (WAR)
- Access to EDF's management systems (AMS/CDMS)
- Site access (unescorted)
- Plant knowledge / systems knowledge
- Site contacts
- Item Equivalency Evaluation (IEE) Authors



Case Studies



Case Study Type: Reverse Engineering

Project Title: Obsolescence of Water Ingress Detection System / Spurious Ingress Detection System

Challenge: To reproduce an obsolete PCB, cost effectively, whilst complying with BEG/SPEC/FENG/001 and BS EN 62402:2007.

- Scope of work:**
- Obtaining obsolescence statement from OEM
 - Reverse Engineering internal PCB of original equipment
 - Management of industrial electronics design sub-contractor
 - Item Equivalency Evaluation at electronic component and complete PCB level
 - Production of proof of concept test report

Case Study Type: Sub-System Replacement

Project Title: Obsolescence of gap sensors for AETP sludge tank level measurement

Challenge: To find a technical solution capable of differentiating between multiple media interfaces and in a highly radioactive environment.

- Scope of work:**
- Review and selection of suitable modern technologies
 - Proof of concept testing
 - Challenges / constraints: harsh environment, space constraints,
 - Optioneering and concept testing