

PA System Replacement

Background

Following the final shutdown and de-fuelling of Hinkley Point 'A', the Magnox site entered the 'Preparation for Care and Maintenance' Phase. Magnox Sites expressed concerns as to the continued operability of the on-site Public Address (PA) System. It was understood that potential redundancy caused by Ageing & Obsolescence issues could have an impact upon Safety & Evacuation procedures thus causing contravention of Site Licence Conditions. In the first instance, it was determined that a study needed to be carried out to determine whether a refurbishment of the system or a completely new approach was required.

Scope

Initially the project scope was to:

- Carry out a site survey to explore the concept of refurbishing un-commissioned analogue wireless PA equipment to act as the new site PA system.
- Write a report and submit findings to Hinkley Point A

Following the completion of this initial phase and the decision to proceed with AMS' recommendation to design and build new equipment, due to corrosion of the un-commissioned equipment, the scope was expanded to:

1. Provide a detail design and build of the mobile and fixed outstations including:
 - Enclosures, mechanical components and aerials (construction and portability)
 - Electrical Supplies (Including battery backup and duration requirements)
 - Automatic Change over facility
 - Human interface (Panel Indications, Speakers etc)
 - Key Components (Radio Receiver, MP3 player, Line Power Amplifier)
2. Refurbish the existing operator console making improvements to the HMI
3. Design and build of a new floor standing base station housing the PA equipment and providing for an improved HMI.

Outcomes

Whilst it had initially been hoped that the existing analogue wireless PA system could be refurbished the initial survey revealed that this would not be possible due to many of the units showing signs of corrosion and component deterioration.

Ultimately AMS delivers 15 mobile outstations, 15 fixed outstations, 3 consoles and 1 base station with the designs taking into consideration both the installation and future maintenance needs.

AMS designed the replacement PA system using sound engineering practices, BS6739 'Code of Practice for instrumentation in process control systems', BS7671 'IET Wiring Regulations' along with Magnox standard Proc-Spec-001 for guidance.



Working with the client and other specialist suppliers on the software requirements AMS were able to supply the equipment pre-loaded with the radio's frequency and power ratings ready for installation.

Key Skills Utilised

AM Sensors provided the full range of project lifecycle services on this project, from initial site survey and optioneering, through to design, build, test, installation and commissioning. AMS's knowledge of the site, past experience with nuclear site PA systems and long history of delivering high quality, cost-effective and safe engineered solutions to the nuclear industry made us the logical choice for this project