



Case studies
PA/VA solutions

Industry



the requirement

Operated by Vattenfall, a Swedish power company wholly owned by the Swedish government and one of Europe's largest retailers of electricity and heat, Ringhals nuclear power plant is located south of Gothenburg in Sweden and is the largest power plant in Scandinavia.

One of few nuclear power plants to have both boiling water and pressurised water reactors, Ringhals generates approximately 28 billion kilowatt-hours of electricity, approximately one fifth of Sweden's total electrical energy consumption.

Ringhals has been operating for more than forty years, with stringent safety standards and safety of paramount importance to its 1,600 employees.

ASL partnered with SAC Nordic in Sweden to deliver a multi-zone public address and voice alarm system across three hundred and forty zones to EN54-16 certified voice alarm and safety standards, to meet Ringhals stringent safety needs.

the solution

The design and implementation of this large scale and comprehensive safety project was orchestrated with serious commitment from SAC Nordic personnel working closely with Ringhals engineering staff to define exact specifications and requirements for each of the three hundred and forty audio zones. The design was made more complex as it required legacy 50V loudspeaker circuits to be seamlessly integrated.

This project represents ASL's largest single site system to date.

Distributed to twenty two nodes combining ASL VIPEDIA and ASL INTEGRA, the



The solution installed by SAC Nordic at Ringhals not only meets current requirements, but future expansion is easily achieved, adding additional nodes and expanding fibre optic links as required.

- Henry Rawlins, Application Manager

the client

Ringhals nuclear power plant is owned and operated by Vattenfall, one of Europe's largest retailers of electricity and heat, and has been operating for more than forty years.

nodes are connected via standard fibre links across a vast dual redundant network, spanning the entire Ringhals site. The modular flexibility of ASL VIPEDIA and INTEGRA allows for this decentralisation of the public address and voice alarm system with reductions in installation costs and the equipment footprint proving to be key factors in the decision to choose ASL products for this project at Ringhals.

Amplification for the system is provided by ASL V2000 amplifier mainframes loaded with D500 amplifier modules. These high efficiency amplifiers with EN54 certified battery back up are ultra low in power consumption when in standby mode and greatly reduce normal associated running costs.

The entire voice alarm system was built, connected and tested at SAC Nordic's premises prior to installation at Ringhals. Due to the large numbers of audio zones this was quite an achievement but allowed SAC Nordic to demonstrate a fully tested and functioning system in advance of installation.

The Ringhals project highlights the flexibility and strength of ASL's relationship with key European partners, such as SAC Nordic. It also reflects ASL's ability to develop and adapt with bespoke software development, design, supply and installation for the Ringhals project taking place over a relatively short space of time.

the outcome

The installed system goes beyond the requirements of EN54, with additional features including high levels of controller and amplifier redundancy coupled with fallback operation in the event of system control failure.

Therefore, the ASL public address and voice alarm system installed at Ringhals can be relied upon to inform and protect employees and members of the public at all times.





the requirement

Sellafield Ltd required a high-integrity building evacuation system (BES) at the company's nuclear processing facility in Cumbria, UK. Sellafield performs tasks involving decommissioning the UK's nuclear legacy as well as fuel recycling, manufacture and waste management.

As a key safety system at a critical national infrastructure site, the equipment is required to be entirely dual redundant and to meet key objectives for a robust architecture, whilst remaining unaffected by environmental and electromagnetic factors as defined by safety standards BS EN 61000-6-4 and BS EN 61000-6-2.

the solution

ASL's solution was to provide ASL's M400 amplifiers, mounted in a V400 mainframe, which use the company's unique class-D adaptive technology. Due to the critical nature of the site, a 'confidence tone' is broadcast by the **VAR** routers at 15-second intervals, to reassure personnel on site that the evacuation system is functioning correctly.

If third party sensors are activated, either manually or automatically, a distinct warning tone is broadcast within 300 milliseconds - the site is evacuated and 'Keep Out' warning beacons are triggered. Local residents are then automatically contacted by telephone; notifying them of the incident.

The system was also designed to ensure that should any component fail, the operation of the entire system is not affected - ensuring peace of mind.

the result

Following successful delivery of the system, ASL's V400 amplifier range has become an industry standard - its exceptionally low consumption allows for compact battery backup power supplies. The system features dual power supplies, routers and standby amplifier modules, with speaker line monitoring carried out via DC surveillance.

