

EPGMS – Adroit Smart SCADA-based Emergency Plume Gamma Monitoring System

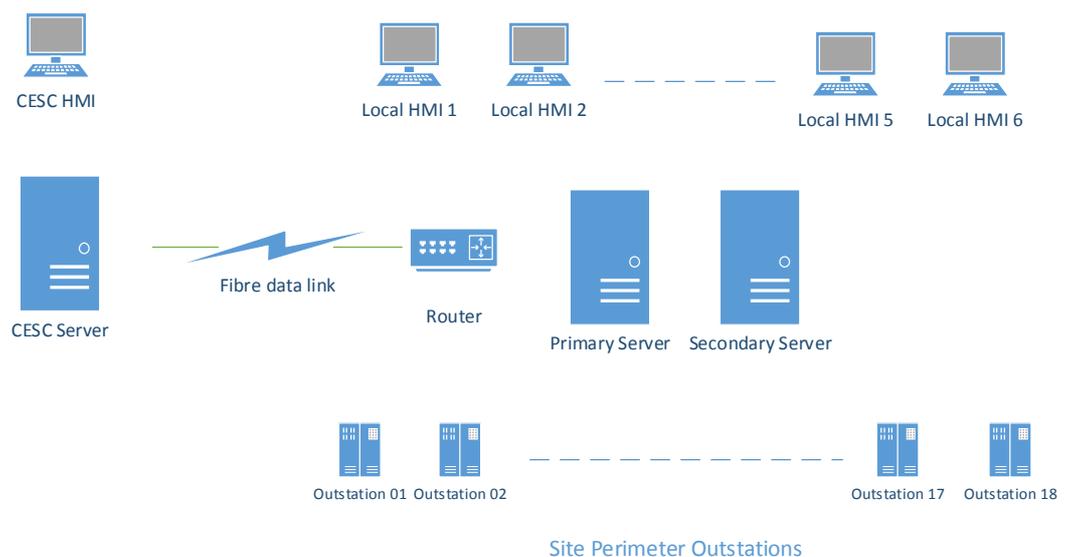
Servelec Controls, one of Adroit Technologies key channel partners, has over twenty years' experience in the provision of Emergency Plume Gamma Monitoring Systems (EPGMS) to the nuclear power generation industry.

During 2010, a total of ten nuclear power stations were chosen to have their legacy EPGMS systems replaced by new, Adroit Smart SCADA-based installations. Around half of the sites are run by Magnox Limited, and will ultimately be decommissioned. The remaining sites are operated by EDF Energy and have an ongoing lifespan.

The primary function of EPGMS systems is to provide essential information to an emergency team on site to assist in the assessment of the local population's radiation dose in the unlikely event of an accidental release of radioactivity. They do this by providing specialist detection, measurement, and recording of a radioactive CO2 plume, or other contaminated material. EPGMS also interfaces with meteorological systems to monitor wind speed, direction and humidity. In this way, the potential impact of an off-site release can be evaluated.

Each EPGMS system consists of a pair of Adroit Smart SCADA servers engineered in a dual-redundant, hot-standby configuration, with up to 6 client workstations connecting in to the servers. In addition, all EPGMS systems are connected to and monitored by a Central Emergency Support Centre (CESC), located geographically central in the UK. CESC is at all times able to see the operational and emergency status of all monitored sites from a central, off-site location.

Schematic EPGMS Architecture



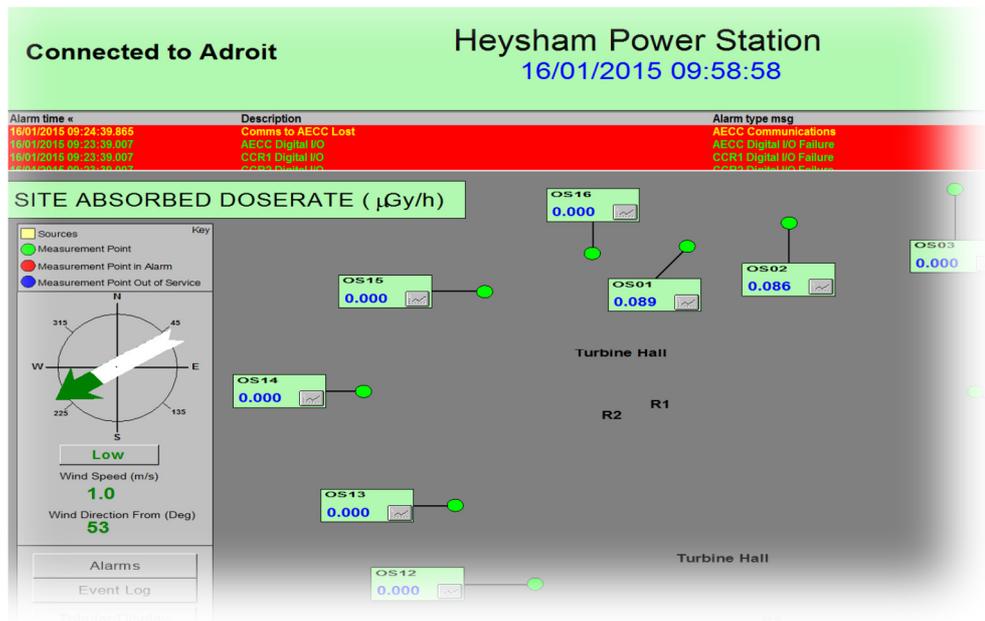
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Upper-left section of local HMI site overview display



Key features of EPGMS

- Collection of Gamma air kerma readings from station perimeter
- Meteorological tower monitoring for wind speed and direction
- Up to eighteen perimeter outstations per site
- Thirty-second sampling during an incident
- Annunciation in the control room of an incident
- Long-term data storage, allowing analysis and trend monitoring
- Dual-redundant servers for high availability
- Redundant power and communication cabling
- Simulation mode for operator training
- Off-site central monitoring (CESC)

Named in the Site Emergency Plans of all installed sites, the successful operation of the EPGMS system is a key requirement for each site's operational licence. In this regard, Adroit Smart SCADA's high-performance, flexibility, and virtually effortless ability to support true dual-redundancy has been instrumental in ensuring the success of these important nuclear safety projects.