



EDF Energy Heysham I and Hartlepool Power Stations

System : Essential Cooling Water
 Location : Northern England
 Scope : Design/Commissioning
 Client : AMEC
 Study Date : 2007
 Capacity : 640 kg/s per system
 Fluid : Cooling Water



Study Scope

Mathematical models of the four Essential Cooling Water systems were built before various start-up and shutdown scenarios were modelled. The design was optimised to ensure secure hydraulic operation with particular focus paid to the effects of air ingress into the heat exchangers. Detailed technical reports were issued with full graphical results and pipe force data. The selection of the air valves along the pipeline was critical to the design.

Hydraulic Analysis Ltd site specialists attended the commissioning of both stations and recorded the transient pressures and flows at numerous points along each of the four ECW systems. The work involved accessing the turbine and reactor buildings to record pressures and flows but to also make any visual observations regarding pipework vibration and air valve operation. A number of minor operational issues became apparent during the commissioning, such as the performance of the pump check valves. These problems were rectified and the system performance was optimised for future use. The site results were correlated to the mathematical models after each test and before the systems were declared fit for nuclear service.



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