

Construction, operation and de-commissioning of nuclear plant at Berkeley

By David Brown on 9th September 2015 at the Ashcroft Centre Cirencester

The combined audiences of the Cirencester Science and Technology Society and the Cirencester Archaeological and Historical Society were provided with a fascinating brief history of the life cycle of the UK's first fully operational nuclear generating station. The Berkeley Power Station was conceived in the early 1950s as a scaled up version of the trial installation at Calder Hall based on two reactors of the Magnox type with work starting on the site in 1957.

The archive film, that formed part of the lecture, recorded the important stages of the construction process that culminated in plant commissioning in 1961 and full operation in 1962. With a maximum output in the order of 300MW the plant remained in operation, apart from a shutdown in 1983, until final closure in March 1989. During its working life, spanning a little over a quarter of a century, Berkeley Power Station produced approximately 40 billion units of electricity at an initial capital cost of approximately £36m.

Most of the lecture described the long process of de-commissioning that started with the de-fuelling operation that took place between 1989 and 1992. This was followed by the "Safestore" period between 1993 and 2010 and the removal of the massive boilers in 2012-2013.

The period required for first stage radioactive decay is estimated to be some 70 years after final shutdown in the late 21st century.

The speaker stressed the importance of the lessons that should be learned from the careful documentation of the whole process of building, operating and closing down the UK's first commercial nuclear power station. Not the least of these lessons is the need to retain a suitable number of core staff whose knowledge of the operation of plant and accumulated experience is vital in the final de-commissioning stage in the life cycle of nuclear installations.

The lecture demonstrated the important role that Berkeley has played in the development of our knowledge in the management of nuclear plants from start to finish.