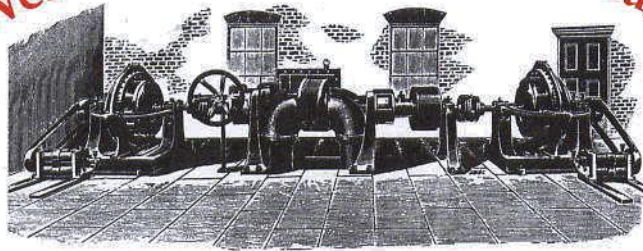


South Western Electricity Historical Society



Lynmouth Hydro Scheme 1890

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AN EXTRACT FROM THE LYN VALLEY NEWS

By kind permission of the author Mr. Wally Gilson

THE ELECTRICITY WORKS – LYNTON AND LYNMOUTH

The initiative for the provision of an electricity supply at Lynmouth was taken by a Mr. Geen, who formed the Devon Electric Light Co., and proposed a system, which include the lighting of the public places, streets, etc., of the twin towns. In August 1889 the local Board accepted his terms and work started. The Station was built alongside the river below the row of cottages on School Steep and was opened in March 1890.

The water power was obtained from the East Lyn River, (just below Vellacotts Pool) by an open leat 6ft wide by 3ft 6ins deep for the first 400yds then by a 30inch iron pipe to the station. The right to obtain power from the river was held by the Lynton and Lynmouth Hotel and Property Co., who leased this right for 21 years to the Company for a fixed rent and a proportion of the profits. The head of the turbine was about 90ft. A horizontal shaft reaction turbine (The Little Giant), made by Hett of Brigg in Lincolnshire, could develop a power of about 150hp. It was regulated by a hand wheel control of a slide valve controlling the flow of water. Two Mordey alternators were driven by the turbine on a single shaft, each could develop 37.5kW at 2,000 volts. They had stationary armatures and rotating field coils.

The high voltage distribution was by Callender's bitumen covered lead-sheathed cables, which were run underground mostly in bitumen sealed wood casing. Some troubles were experienced with this set-up, all the joints were "boiled in pitch in situ, and then had a lead sleeve soldered overall". The Surveyor to the Local board gave a very satisfactory report on the electric light in June 1892. Business expanded and by September 1893 complaints were being made that the Company could not meet the demand, especially when the water flow in the river was low. Pressure was put on the Company to install more machinery. Mr. Geen sold his Company to Mr. H. H. Benn, who in 1894 sold out to a new Company, the Lynton & Lynmouth Electric Lighting Co. (The directors being Mr. Geen and Mr. Benn). The new Company's plans were to install new turbines and alternators and also a pumped storage system.

The Lynmouth pumped storage system may well have been the first in the world in connection with electricity generation. A storage reservoir was constructed on the top of Summerhouse Hill to hold 190,000 gallons. During low demand, surplus electrical energy generated by the water turbine was used to operate a pump by Baileys, which pumped the water through a pipeline up to the reservoir some 800ft above Lynmouth. The size of the

reservoir was 50ft. in diameter about 16ft. deep and lined with bricks (It is now filled in). During peak demand the water was fed back through the pipeline to operate two 50hp Pelton turbines. Four new turbines were installed and a new alternator.

The water flow diminished over the years, and more efficient turbines were installed in 1904 and 1911, which coped until 1921, when they were supplemented by the first two oil engines (Parsons). Demand still increased and in 1928 a 100hp 3 cylinder Ruston-Hornsby engine was installed. In 1938 a 90hp McLaren-Benz 4 cylinder engine was installed and a 5 cylinder Ruston-Hornsby about 1947. Also a number of new and second hand alternators were added.

By 1892 the electric light was rapidly becoming appreciated, the light was installed in the Devon and Cornwall Bank and the bank manager's residence, this being the first private house in the area to use it. (It is interesting to note that Sir G. Newnes "Hollerday House" used acetylene carbon gas). In 1899 the first public lighting comprised 59 incandescent lamps (carbon filament) of 32cp and one arc lamp of about 2000cp on the Rhenish Tower. Gradually all the houses and streets were lit by electricity, which was at 100 volts 100 cycles; so all the equipment had to be especially made. For some reason there never seemed to be enough power, the writer remembers having to jump on a bench and pull on a belt to start the engine going.

At the time of the 1952 floods, the South Western Electricity Board had become responsible for the system and were in the process of changing over the district to a supply on the standard frequency of 50 cycles, which involved a 33kV transmission line to connect the area to the Grid.

When the flood struck Lynmouth on the night of August 15th, the approach road to the station disappeared and a portion of the concrete wall of the leat supplying water to the hydro-plant, was washed away and water flooded the station cutting off supplies to Lynmouth and the part of Lynton not yet connected to the Grid. The engineer in charge (Mr.C.H.Postles) kept the Station going on diesel engines following the failure of the receiving news of the disaster, Electricity staff were drafted in from other places to connect the new line to the existing underground cables in Lynton. At the same time appliances were brought to substitute for the non-standard equipment.

As the road reconstruction and rebuilding of Lynmouth proceeded, so the mains were reconnected. The electricity station was never rebuilt, but parts of the leat walls can be still seen, together with the entrance sluice and the stone hut, which stands where the leat joined the supply pipe. The storage reservoir on Summerhouse Hill has been filled in but its outline can still be seen.

Lynton and Lynmouth was one of the first towns to have street lighting by hydro-electricity and certainly by the pumped storage system.

Between 1952 and 1985 no use was made of the rivers to provide electricity until Mr.Oxenham started to build a hydro-electric plant in the Glen Lyn Gorge (West Lyn) feeding into the Grid. This plant uses 12 million gallons of water a day. The fall is 200ft. through a 20inch pipe, supplying one turbine, then in 1991 a second turbine was installed