

HISTELEC NEWS

NEWSLETTER OF THE SOUTH WESTERN ELECTRICITY HISTORICAL SOCIETY

No. 35

APRIL 2007

SUMMER'S COMING

I can hear the creaking in the bones as the better weather encourages us to get out and about after our Winter's hibernation. I can picture you all beavering away in the garden.

Peter Lamb

ANNUAL GENERAL MEETING

Some 26 members and friends attended the AGM of the Society held at Taunton on 17th March. Chairman Roger Hughes gave a summary of the activities over the last year and John Gale on behalf of the Treasurer presented the Society's accounts. The following members were elected :-

Chairman : David Hutton
Vice-Chairman : David Peacock
Treasurer : Clive Goodman
Secretary : Peter Lamb
Committee : Roger Hughes, Chris Buck, John Gale,
John Heath, Marcus Palmen
South Sub-Committee (SSC)
Chairman : David Hole (also on Main Committee)
Committee : John Ferrier, Ted Luscombe, Geoff Setter
Ex-officio & Roger Christy
Membership Secretary : Paul Hulbert

Again we have a strong committee with David Hutton in charge, but we were disappointed in not getting any new volunteers for the committee. We need fresh faces with fresh ideas. We are indebted to David for stepping into the breach, since last year's Vice-Chairman, John Heath had intended to stand for the post, but due to his medical problems decided it would be inadvisable. We wish him well in the coming year. David has been on the Committee since 1995 and so has a wealth of experience.

We owe Roger Hughes a big thank-you for doing a great job as Chairman during the last two years. A talk was given after the AGM by Cyril Routley on "I ONLY COUNT THE SUNNY HOURS", which is reviewed overleaf by John Haynes.

WEEKEND AWAY 18th/19th/20th APRIL 2008

Please put it in your diaries

Three committee members, John Gale, Roger Hughes and Chris Buck, have been to Portsmouth to explore the venues/sights for the Weekend Away in 2008. I am told there is plenty to see and a notice will be coming out shortly giving details of the visit.

CORNISH MINES

The Cornwall and West Devon Mining Landscape has been awarded World Heritage status by UNESCO. Quite an achievement for those, who have laboured with bid documents for some time. The Landscape includes 10 sites, with the main attractions being as follows :- Morwellham Quay, Geevor & Levant Mines, Cornish Engines and the Discovery Centre at Pool, Poldark Mine and the Godolphin House and Estate.

ENERGY SAVING LIGHTS

Recently it has been reported in the national papers that the Australian Government is proposing to ban the sale of filament lamps in favour of low energy light bulbs. Their Environment Minister, Malcolm Turnbull said it would save four million tonnes of carbon emissions by the year 2015. Then the European Union followed suit a week later, but they don't say how much it would cost in carbon emissions to manufacture the low energy bulbs. An engineer from Cheltenham has taken apart one of these bulbs (15watt), made in Hungary, and found that it composed of a one circuit board with 69 soldered connections, seven capacitors, six resistors, three inductor/transformers, two transistors, nine semi-conductor diodes and one fuse. He asked "How much energy is saved when taking into account the costs of manufacturing and assembling all these components?" If filament lamps are banned, where do we get suitable lamps for use with dimmer switches?

Also Bristol City's street lights are to be powered from renewable sources, so I read in the Bristol Evening Post. The City has signed a year-long agreement with E.On for £1.5m to do so. How is E.On going to ensure that their contractual undertaking really happens or is Bristol paying a higher fee for their green energy?

CRAGSIDE

Most will know that Cragside, the original home of the 1st Lord Armstrong, the British Armaments magnate, which was the first house in the world to be lit solely by hydro-electric power in 1878 using arc lamps and later in 1880 with Swan's new incandescent lamps. The house, which is now owned by the National Trust, has recently undergone a complete rewiring of the 100 rooms. Quite a job considering the sensitive nature of the task, but the house has reopened to the public in April.

ANNUAL WINTER LUNCHEON 2007

On Saturday 27th January 2007 54 members and guests gathered at the Gisson's Arms at Kennford near Exeter for the annual winter luncheon. John Muggleton had kindly agreed to talk about the total quality management (TQM) programme undertaken in SWEB immediately after privatisation, for which he had been tasked with implementing by the then Chief Executive, John Seed.

John first reminded us of the monolithic engineer-led structure within SWEB that had existed since the 1948 nationalisation of the Electricity Supply Industry (ESI). In the lead up to privatisation pressure from 'The City' saw the appointment of a new finance director from outside industry (John Sellars from Rover Group) and the need for SWEB to adopt best practice in order to survive in the new era. A small number of selected staff were formed into a steering group and first tasked to look at best practice in other organisations considered to be performing well at that time. Interestingly, this included visits to organisations such as British Airways (how times change!). Following on from these fact finding visits the TQM programme was born and John was asked by John Seed to head this up as TQ Manager.

The decision was made to run the programme in-house, rather than utilising consultants, although outside help was sought in putting the programme content together. Under John's direction the programme was spearheaded by TQ champions, staff selected for their commitment to the new thinking. It was decided to train all supervisory staff off the job at residential courses using hotel venues around the south-west. A policy decision was made to provide the same standard of training and accommodation to all staff so some of us had a pleasant few days at venues such as the Grand Hotel at Torquay, all expenses paid. Rumours were rife of liaisons and other 'goings-on' that occurred as extra-curricula activities afforded by these 'away from home' sessions. The training covered a range of management techniques for problem solving, including brainstorming, fishbowl analysis, etc. The theme was staff empowerment, although with the bureaucratic structure still in place then probably meant that the full benefits of the programme were unlikely to be achieved. John mentioned that some staff, not surprisingly, had been very cynical about the programme and recounted the occasion at the start of a course when he had been presented with a box of 'hot air'.

John gave a fascinating talk, giving his views on the benefits achieved and the cost. He said that the real benefits were not to be seen until some years later in the successor company, WPD, following radical restructuring and slimming down of the former nationalised industry structure that had been SWEB for over 40 years. As to the cost, a figure of £1m+ was mentioned. *Chris Buck*

Postscript: The TQ programme represented an important milestone in the history of SWEB and its transition from part of the nationalised ESI to a plc. Readers, particularly those who participated in the programme, may like to contribute their own experiences in the next edition of this newsletter. Does anyone still have one of the 'tool boxes' issued to all attendees?

AGM TALK REVIEW

The Time and the Inclination

Members who attended the AGM at Taunton were rewarded with a very entertaining computer projector presentation, entitled "I Only Count the Sunny Hours". This was all about sundials and was presented by Cyril Routley, a friend of Peter Lamb from Backwell. We viewed photos of sundials dating from 1500BC (Egyptian), to early Greek and Roman (Pompeii), through Medieval, and right up to very recent times.

Cyril explained that, to be accurate, sundial bases must be set perfectly horizontally or vertically. In the case of the horizontal sundial, the pointer (gnomon) must face north, while the vertical one must face south. The inclination of the gnomon to the base must be the angle of latitude (51 degrees at Bristol) for the horizontal sundial, while in the vertical case it is $(90 - 51) = 39$ degrees. Another scientific point is that a sundial can 'run' up to 15 minutes fast or slow in any given year! This is because the earth travels in an elliptical orbit around the sun and hence it's speed of travel through space varies.

Many sundials can still be found on the walls of Cathedrals and Churches, as they displayed the time for worshippers attending Services before clocks and watches existed. Some sundials have the names of the vicar or churchwardens incised on them, while others have mottos. There were some ingenious sundials installed. For example at the National Trust property 'Tyntesfield', in North Somerset, there still exists a square column which has a sundial on each of three faces. These cover three periods of the day as the sun moves round, so that people working in the fields or gardens knew how the day was going. Finally I will mention the well known Blaise Castle Hamlet, Bristol, which has an ornate column with a sundial at the top.

Cyril covered much more in his presentation and his slides were excellent. They say that the sun shines on the righteous! Those who missed the AGM also missed a treat.

John Haynes

NEW ELECTRIC LYME

Member Martin Roundell Greene, who wrote the super local history "Electric Lyme" tells us that on 1st March a new micro hydro-electric plant was opened by local schoolchildren in the Town Mill, Lyme Regis. This replaces the Gilkes Francis turbine that helped provide the town's electricity supply from 1936 - 1947. The new plant uses an Ossberger cross-flow turbine & Brook-Crompton generator, and feeds into the local WPD network. The project, costing £59,000, was jointly funded (47% each) by EDF and Clearskies Renewable Energy Grants. The remaining 6% came from the Town Mill Trust. Output is up to 6.5 kVA and the project should save the environment from about 13 tonnes of CO2 per year.

It's a great educational tool too - we show visiting school children the waterwheel milling flour and then switch over to the turbine to demonstrate 'green' electricity.

ARCS, SPARKS & ENGINEERS – A REVIEW

A new book, that charts the history of Reyrolle, has been added to our Archive. It starts with the creation of the company in 1901 by Alphonse Constant Reyrolle (he was French) over the 100 years to 2001 by which time the firm had become part of VATECH. It is certainly not light reading for bed time - either physically or intellectually.

The five sections of the book, each written by different authors but edited by Alan Wright deal with the foundation and growth of the company, the history of their products (switchgear, protection, etc.), sales and installation, research and development and a final section dealing with the social life of the company.

The book is a veritable tour de force, I managed to read the section dealing with the history of their switchgear and protection. The detail is impressive - opening the section at random I found a reference to a fire that occurred on a Ferranti switchboard at Temple Back on 3rd December 1903 and to our illustrious forebear, Faraday Proctor. Names of the personnel involved in the development of their products is a feature of the book.

From my scanning of the book the best section is that dealing with the development of high voltage switchgear. The section on protection development is technically superficial. There is a good section on the evolution of their "short circuit testing station".

Probably the book will mean most to those who at some time in their career worked for, or were trained, at Hebburn. The book concentrates heavily on personalities, ending with 25 pages listing "Only Some of the Personalities"! *Roger Hughes*

WIND POWER

There are conflicting stories in the press about wind-power these days. First I read that a young man has made his fortune setting up a firm called Ecotricity, which now has 27 turbines around the Country, with a turn-over of £14m and he plans to double its size in 2007 and 2008. In December the Daily Telegraph reported upon a research conducted by the Renewable Energy Foundation, which found that wind turbines didn't match up to the Government's target of 30% of their total capacity; they averaged only 24.1% and one in Hertfordshire only 7.7%. This means that even if all those planned go-ahead, the amount of wind generation is never going to be large enough to make the impact wanted by the Green lobby.

WAVE POWER

Scotland are aiming to have the biggest share of UK renewables with wind power and wave power to the fore having already maximised their hydro-electric power. The latest wave power system is proposed for the Orkneys. The proposal is for four floating tubular generators each 525 feet long and called Pelamis. They will be installed 2km off Billia Croo near Stromness over the next 12 months. The tubes involve hydraulic rams which resist the sea movement and drive generators. The power is taken ashore by cable. This is only one of nine schemes financially supported by the Scottish Executive.

THE DAYS OF POWER CUTS

You may recall that in Ted Luscombe's supplement on Plymouth's Electricity (Histelec News no.12 August 1999) that he mentioned the back-up given by the Dockyard Power Station to the public network during the Plymouth Blitz.

So it was surprising to read in the IET Power Engineer Journal for Dec/Jan 2007 that during the national power cuts during the Winter of 1946-47, the Dockyard Power Station did sterling service once again. The article written by a member D.J. Taylor, who was a student engineer at the time, describes in great detail how this was achieved.

At the time the weather was appalling with the whole country blanketed in snow and temperatures plummeting to 2 degrees below freezing for much of February 1947. Since it was only 18 months after the War, all energy, particularly electricity, was in short supply, which necessitated network disconnections, known as "power cuts" to reduce the load on the system.

Naval warships then had a power supply of 220volts DC and the Dockyard Power Station had three Parsons axial-flow turbo-alternators and two Brush Lungstrom radial flow turbo-alternators. The DC supply for the ships was obtained through AC/DC rotary converters and mercury arc rectifiers.

After the war there were many redundant submarines tied up alongside each other in the dockyard with their diesel driven battery charging generators doing nothing. When the power crisis became much worse, it was decided that as the submarines were afloat with sea-water cooling available, their generators could be run by skeleton crews to supply the dockyard DC load. This would reduce the load taken from the Plymouth network and leave more power for the public system. Mr. Taylor says that heavy duty flexible cables were run from the submarines to ship type circuit breakers lashed up on the switchboard gallery railings in the Dockyard Power station and from there to the DC switchboard. They were concerned about the safety and the stability of such a fragmented system, but he said that the Nelson spirit prevailed. In the end by careful management and segregation all was well and a significant contribution was made towards relief of the crisis in electricity supplies in Plymouth.

COAL FIRED – CARBON CAPTURE

The papers say that Chancellor Brown has staked his reputation on "carbon capture" technology. He has decided to invest up to £600M, so that Britain may take the lead in developing this technology, and an American group has been asked to research it, which is surprising if the UK is to be in the forefront. One of the ideas is to pipe harmful CO2 gas into caverns under the North Sea.

Already the Government is impressed with a project by Centrica to build a clean-coal power station on Teesside, which would be the first coal-fired power station to be built since 1974. Eon owners of PowerGen are said to be keen to work on the new technology also.

NUCLEAR LATEST

Dungeness "A" in Kent and Sizewell "A" in Suffolk were both closed down on 1st January after 40 years of service. Both stations included the first generation Magnox reactors. Both the "B" Stations on the above sites, which are of a later design, remain in service.

Most of the Country's nuclear facilities are due for decommissioning over the next 20 years. British Energy has been given the go-head in seeking equity partners in order to fund an anticipated new £30 billion nuclear programme.

CHURCH POWER

"Songs of Praise" The BBC programme on Sunday 5th November featured a church in Newcastle created in a redundant power station. Is this unique? The new place of worship is called the Castlegate Centre, between Newcastle and Gateshead.

TELFORD'S 250th ANNIVERSARY

Archaeological groups are celebrating this year Thomas Telford's birth 250 years ago. An international conference will be held at Wrexham in June with the main attraction being the Llangollen Canal built by both Telford and Jessop, which includes the spectacular aqueduct at Pontcysyllte at 126 feet high and 1000 feet long. Members may wish to visit this area at some time, since I understand that tunnels and innovative aqueducts were used to drive through some very picturesque mountainous countryside of the Welsh borders region.

EXETER GENERATING BUILDING

A member of Exeter Local History Society, Dick Passmore has approached us about a booklet he is preparing about the old generating building on Exeter quayside, known originally as Haven Banks when first commissioned in 1904. The building when built was designed in decorative red and cream brick and without doubt is the most attractive generating station to be built in the south-west, which is why it has been preserved for so long. When generation ceased it became a depot for SWEB and after that part of the Maritime Museum, which closed a few years ago.

We have agreed to let Dick have copies of our many photographs and archival material. Coincidentally the building is shortly to be refurbished for multiple use. The turbine hall is to become an art gallery with the surrounding rooms being converted into flats, shops, restaurant and a "mini boutique hotel". The whole project is due for completion by Easter 2008.

THANK YOU

Barrie Philips has donated an oil painting by himself of Michael Faraday. He assured me it wasn't painted in person! Andrew Dick, non-member, has donated some super coloured drawings of Portishead A & B Power Stations, presumably completed as artists' impressions prior to construction. *Peter Lamb*

MEMBER PASSING We are sad to lose another member, this time Ron Chapple from Barnstaple.

NEW ELECTRIC CAR

It's called the Tesla and is a sports-car and can do 60mph in 4 seconds. The car is assembled in England at a factory belonging to Lotus Cars by the Tesla Car Company. The electric motor is imported from Taiwan. They will be shipped directly to California only for use in the big cities, when they have received a Federal safety certificate. The car is powered by a 3 phase 4 pole induction motor and a two speed electrically actuated manual transmission "fuelled" from lithium-ion battery storage system (6831 cells) regulated by a cooling system.

MEMBERS NEWS

John Haynes been elected Chairman of Bristol Brunel Probus Club. He hasn't wasted much time since descending upon the Bristol social scene!

Colin Hill has moved house recently to be nearer the shops and facilities. Busy chap he is – Chairman of Honley Civic Society and he still gives many talks.

John Heath has been in hospital, but is back home now and is feeling better.

David Lock has also been in hospital and is back home, but is still relatively immobilized due to his stroke and would welcome visitors.

ELECTROCUTION

We were asked in the Autumn by Peter Kijgsman, writer of novels, how to create an electrocution on a farm and satisfy electrical parameters i.e. to be seen to be accurate. We have made a few suggestions how that could be achieved. One hopes it doesn't lead to the real thing!!

ARGUABLE!

A bricklayer, carpenter and an electrician argued about who was on earth first. "We built the Pyramids" said the bricklayer "so we must have been here first". "No" said the carpenter "We built Noah's Ark long before that". Hearing that the electrician chuckled to himself "What's so funny?" asked the carpenter. "Well – on the first day of creation, God said - "Let there be light", explained the electrician "so we had already laid the cable!!"

ON THE BALL!

After receiving an invitation to an Inventor's Ball :

Edison thought it would be an illuminating experience.

Watt reckoned it would be a good way to let off steam.

Stephenson would engine-er to come.

Faraday couldn't be induced to go.

Ampere was coming with his current wife.

Morse replied "I'll be there on the dot. Can't stop now must dash".

NEXT EDITION

This newsletter is produced every four months. Please send information, articles, photographs or letters to :- Peter Lamb 35 Station Rd, Backwell, Bristol BS48 3NH or telephone on 01275 463160 or E-mail lambpandv@btinternet.com (Note new e-mail address).