

# HISTELEC NEWS

NEWSLETTER OF THE SOUTH WESTERN ELECTRICITY HISTORICAL SOCIETY

Web Site : [www.swehs.co.uk](http://www.swehs.co.uk)

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## GLOBAL WARMING

The newspapers seem full of clean energy schemes these days, which will cost all of us more money in the long run, due to the subsidies involved. Most of the “green” schemes involve generation of small kilowatt units i.e. “small is beautiful”! We seem to be turning back the clock from the 1930’s, when the building of the grid system heralded in more economic generation as “big is beautiful”!! See articles on page 3.

## NUCLEAR PULL-OUT?

There have been reports that the German electricity conglomerate RWE is threatening to pull out of the consortium Horizon Nuclear established to build two nuclear power stations in the UK at Oldbury and Wylfa. However these reports have been denied. This could be understandable since the German Government are proposing to shut down all the German nuclear stations following the Japanese nuclear disaster. In some ways it is rather a bizarre situation since Germany is surrounded by countries with nuclear power stations, such as Hungary, Sweden, Finland, France and now Poland is proposing to build one. It is very unlikely that any of these will be closed in the future.

## PARIS ELECTRIC CARS

The French capital has stolen a march on London by installing plug-in electric hire cars. There are 66 vehicles available at 23 locations around the City, with the intention to rise to 3,000 cars from 1,000 stations by 2013. They are called “Blucars”, which is causing a slight confusion since they are grey coloured. The four-seater car is supplied by Vincent Bolloré and made by the Italian manufacturer Pininfarina. They are powered by a 50kW motor fed from a lithium-metal polymer battery and can reach 60km/hr in 6.3secs.

## OIL & GAS UNTIL 2050

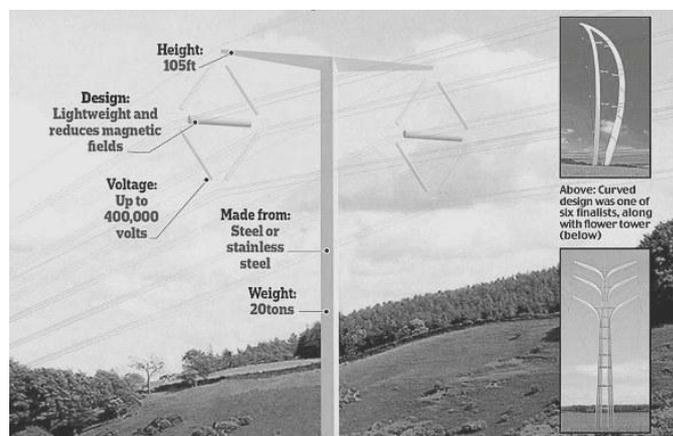
BP has announced that they can provide oil and gas well up to 2050. This follows the second phase of development in the Clair Oil Field off the north of Orkney and west of Shetland. This is part of £10 billion package of North Sea Projects and is good news extending a story which has now run for 40 years. After some years of decline, they now see the potential to maintain a production of a minimum of 200,000 barrels a day.

## NEW PYLON

What do you think of the new pylon? The winning design is shown with the two runners-up. We are told that the new “T” shaped pylon will stand at 32 meters high, shorter than the current 400kV pylons which are 50 meters high and the new one would be lighter at 20 tonnes. The pylons would be made of steel or stainless steel near coastal areas and in some cases could be painted to blend into any landscape. The design was submitted by Danish engineering firm, Bystrup.

Question : How would the linesmen climb it?

Further designs however are still being considered Ian Ritchie Associates’ “Silhouette” design and New Town Studio’s “Totem” design for use in certain landscapes.



## INTERCONNECTORS

Further to the piece on Interconnectors in the last issue, Barrie Phillips contacted us to say that there has been information available on this subject for some time. He gave the following web site :-

<http://www.nationalgrid.com/uk/electricity/data/realtime/demand/>

He said it provides the following:-

Demand – every five minutes.

System Transfers – every ½ hour

(N.Ireland to Great Britain, France to Great Britain and Netherlands to Great Britain)

Internal Boundaries – Every 15 minutes (North – South and Scotland - England)

Demand Curves for 60 minutes, 24 hours and 7 days etc

Plenty to occupy you if you’ve got nothing better to do!!

*Barrie Phillips*

## BRUNEL IN 21<sup>st</sup> CENTURY

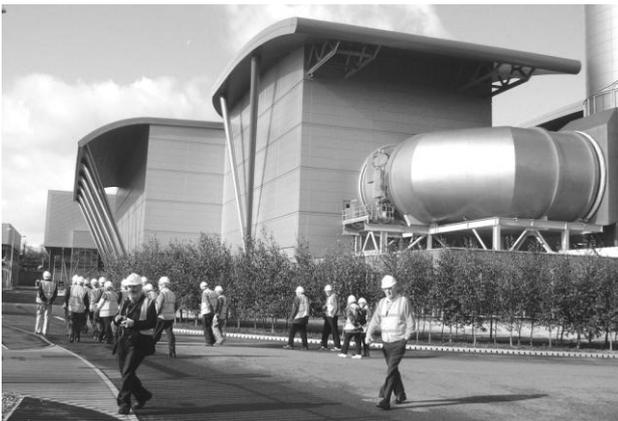
The weather on 29th September was perfect with clear blue skies and sunshine, the sort of day when one could regret being indoors. However that is exactly what about 20 members and guests did and very good it was too!

Our event started with another excellent buffet lunch in the "Westbury Park Tavern", (amazing value at only £5), and continued with an absorbing presentation - "Brunel In The 21st Century" given by our guest Will Harris. Although Will did not spend his career in engineering he is a long standing committee member of the Bristol Industrial Archaeological Society and is clearly passionate about historic industrial buildings, sites and archaeology. He entertained us with a variety of slides and facts which clearly demonstrated Brunel's amazing versatility and numerous achievements. His enthusiasm for his subject was plain to see and was only matched by his amazing knowledge of his subject.

Tea and biscuits that followed was made more interesting by one of our guests, John Bates, a collector of antiquities, who brought along his own tea cup. How dull you might think, but no, this was a 240volt, carbon arc heated, unearthed tea cup complete in it's original box! I never thought a tea cup could be considered dangerous, or even lethal, but this one certainly could! If you missed it you missed a treat, but don't worry John has promised to leave it to our museum in his will! *David Hole*

## LANGAGE & SALTRAM VISIT

John Ferrier lives in Falmouth and so I think we should be doubly grateful to him for organising our day out near Plympton recently as it was enjoyed by everyone, ladies as well as gents.



**Members at Langage with their hard hats!**  
**Photo by Barrie Phillips**

We met at Langage Power station where the energy company, "Centrica", and our own, very special, host Mr Roy Bailey, the Plant Operations Manager welcomed us with hot drinks and biscuits. Later his presentation was clearly a clever propaganda exercise but, I have to say, his passion and enthusiasm convinced me that he was justifiably, and sincerely proud of his plant. Driving down the A38, you might not spot the striking chimneys amidst the countryside. I say striking because a great deal of money was spent on them, and the plant, in an attempt to make them attractive rather than the usual industrial eyesore. Upon arrival, one cannot fail to be impressed by

the elegant design, curves and profiles of the buildings which the architects based on the appearance of a grasshopper! Everything, that could be done, to lessen the impact of this plant upon the environment, was done. It was built out of town so that the installation of the gas pipe feeding it didn't disrupt Plymouth's traffic, erecting it just about beneath the Exeter/Abham/Landulph 400kV line needing only one additional 400kV tower, a huge excavation was made to lower the impact of the plant upon the skyline and the level of noise and emissions are incredibly low. A few wisps of steam from drains at roof level are really the only clues that the station is on load!

Within the buildings, the "combined cycle gas turbine plant" was producing almost 900MW without fuss, excessive noise, or polluting emissions using a deceptively simple system. Gas is burnt to drive 2 gas turbo/alternators. The exhaust from these gas turbines is piped into a heat exchanger, generating steam to drive a conventional steam turbo/alternator and, following expansion, the steam is passed to a closed loop air cooled condenser of amazing proportions. No tall cooling towers, no continuous water vapour plume, nothing! However perhaps the biggest surprise of all was the fact that all of this incredible technology required a staff of only 43, and only 3 operational staff were on shift at any time! During our tour of the plant I saw no one except the men in the control room. I spent half my career in power stations and it wasn't like that in my day!

Following our visit we drove back a few hundred years to Saltram House, a National Trust property located on one side of the River Plym estuary, for our pre-ordered lunch and tour. The house is famous for it's Robert Adam influence, its great kitchen and the gardens which include a ha ha . It is true we had to dodge the showers in the garden but it was worth it. *David Hole*

## CANALS MEETING REVIEW

Our November meeting was held at Nutwell Lodge Hotel, Lymstone attended by 41 members and guests. After a carvery lunch, Bernard Hughes OBE, a local Devon County Councillor with many years of interest and experience in inland waterways began his presentation with the history of Inland Waterways (canals and rivers) of England and Wales. He mentioned the massive expansion of canals during 18<sup>th</sup>/19<sup>th</sup> century to form a waterway equivalent of the modern motorway, so important to the industrial revolution. Canals were planned to traverse undulating countryside by a series of locks and tunnels requiring adequate water supplies for top-up. The amount of water required depends on the size of the lock: the rise, number of vessels it can hold, the frequency of operation and leakage. Bernard described the different types of locks used, named the items of equipment commonly encountered and its operation. He described unique items such as the Anderton Lift connecting the Trent & Mersey and Weaver Navigation, a lift of 50 feet, the Pontcysyllte Aqueduct and many types of bridge designs.

A vote of thanks to Bernard for his presentation and David Hole for arranging the event was proposed by John Ferrier and endorsed by all present. *David Cousins*

## GLOBAL WARMING OR NOT?

The International Energy Agency has warned all governments that a drive in clean energy is required to avert power plants, cars, buildings and factories from tipping the planet into catastrophic climate change. Already they estimate that existing coal and enough gas power plants and “dirty” factories are already committed. The Agency’s Chief Economist, Dr Fatih Birol said there was little sign of governments taking the necessary action; they were more concerned with economic considerations at present. He also called on governments to invest in plants fitted with carbon capture and storage technology.

So what do you believe, read on? - The letter written in the Prospect Magazine (August Issue), which is reprinted here, puts another point of view :-

### No detectable link between global warming and CO<sub>2</sub>

To think that we can significantly change natural climate is fatuous. All that wind and solar subsidies will do in the UK is create fuel poverty for our people and fail to solve a non-problem of atmospheric global warming.

What is it all about? It amounts to unwarranted alarmism based on a very modest 0.75°C global mean temperature increase since 1900 from all causes - not just human-emitted CO<sub>2</sub>, not just CO<sub>2</sub>, not just greenhouse gases but the vast array of other natural climatic influences such as solar, tectonic, cloud formation, cosmic radiation and aerosols.

My figures are from official data sets. Between 1860 and 1880 with an increase in atmospheric CO<sub>2</sub> of just 0.21 ppmv pa, the rate of rise of global mean temperature was 0.163°C per decade. However, from 1925 to 2009 it actually rose at a little less (0.161°C per decade) with atmospheric CO<sub>2</sub> increasing at the rate of 1.682 ppmv pa. This does not support the catastrophic AGW hypothesis.

Using the official mean global temperature datasets again (HADCRUT, RSS or GISS) and Scripps for CO<sub>2</sub> from 1910, we see:

- 1) An overall warming trend from 1910 to 1940 with a negligible rise in CO<sub>2</sub> levels of just 0.33 ppmv pa.
- 2) Virtually the same overall warming trend repeated from 1920 to 2000, but with a rise in CO<sub>2</sub> levels of 1.43 ppmv pa.

If CO<sub>2</sub> were the primary temperature driver then how could a 1.43 CO<sub>2</sub> increase only produce the same rate of warming as was observed with a mere 0.33 rise in CO<sub>2</sub>? This does not prove the rise in atmospheric CO<sub>2</sub> has had no effect; it does prove that the rise in atmospheric CO<sub>2</sub> has had no discernible effect.

*Rod Eaton, Melksham, Wiltshire*

## NEW GREEN ENERGY CO

A new company has been formed in Bath, Bath and West Community Energy, with the objective of making Bath the “greenest” city in the UK. They plan to place solar panels on roofs of schools and build a small hydro-electric station on the River Avon at Bathampton. Their aim is to provide projects which will produce 1.5

megawatts of electricity. The share offer anticipated is £400,000 comprising of minimum purchase of £500 or a maximum of £20,000 in order to reap a 7% return on your capital. For those interested go to [www.bwce.coop](http://www.bwce.coop)

## WIND TURBINE IN CREDITON

There is rash of planning applications being made for large wind turbines on ad-hoc farm sites across the south-west. Wind Turbine developers are racing to install turbines before the lucrative feed-in tariff drops in the new year and before a bill going through the House of Lords will keep them at least 1500m from dwellings. I have had to oppose one such proposal on the hill behind our village and its historic church.

Typically developers seek to install a 67 metre high 330kW wind turbine at a farm site where the farmer is glad to receive £15,000 a year and where a handy 11,000 volt supply is available to achieve a grid connection and thus enable the subsidy to be paid. This policy forces the developer to go for contentious sites close to dwellings, hamlets or villages with the consequent problems of noise, aesthetic issues and shadow flicker. Also the sites may be far from ideal in terms of annual wind speed. Many villagers are now up in arms across the south-west!

The installed cost of the favoured German Enercon E 33 turbine is £800,000 and the annual revenue is around £216,000 of which £187,150 is from the feed in tariff subsidy paid at 19.7 pence a unit and guaranteed for 20 years! UK taxpayers and energy users are subsidising the destruction of our beautiful environment!

The Enercon E 33 turbine is a gearless machine driving an alternator the output of which is rectified to produce DC power. This is then handed to the clever electronics which invert it to 400 volts AC 50 Hz and then synchronised to the grid via a step-up transformer. The control circuits vary the pitch of the turbine blades to maximise power, in conjunction with varying the phase angle of the output, and vary the voltage to adjust the reactive output. The turbine produces about 105 dba of noise at source dropping to about 30dba at around 1000 metres which can be audible over the very low background levels, typically 20 to 25 dba, to be found in rural areas. Shadow flicker effects from a turbine can be most annoying to the west and east of the turbine as the sun rises behind the blades and sets behind the blades.

Wind turbines require that a continuous back-up is available from either fossil or nuclear generation. With the increasing installation of renewable, and hence unstable, methods of generation more conventional generation will be sitting around at low output and low efficiency and thus destroying any reductions in carbon claimed for renewable energy. Our energy bills have to increase to pay for this inefficiency. A double whammy when combined with the subsidies! Wind Turbines should only be used where they can be located as efficient wind farms, away from people, and where their output can be used to store energy in, for example, pumped water storage schemes. and the energy used can thus be an aid not a hindrance to UK energy supplies."

*John Dike*

## **SOLAR PANEL SUBSIDY**

The subsidy for electricity generated by solar panels and on-shore windfarms is to be cut by 10%, which should cause a dent in the solar panel installations, since it will take longer to get a return on the capital outlay. The money will be diverted to Ocean Power Technology i.e. wave power.

## **SOLAR PANEL CORRESPONDENCE**

The article in our last newsletter on this subject inspired some interesting correspondence.

### An extract from John Dike's e-mail :-

"If you are supplied by an O/H LV line the electronic interphase at the meter position, a very expensive item, is very vulnerable to lightning induced surges. A lightning strike within 150m can induce up to 150kV in an aerial cable. Electronic Surge protection cannot deal with this energy level. I have been asked to comment on a case which happened locally where there was a lightning strike that induced voltages on our mains, knocking out our neighbour's phones and ours and causing complete failure of the photo-voltaic cell mains interface."

### An extract from John Perkin's e-mail :-

"A solar panel may last ten years, although I have had them fail in less, and the inverter in eight years – if you are lucky. There may be other reasons for installing solar and wind power generation, but return on investment is not one of them, if the finance wasted on Nuclear and wind had been invested in clean coal and tidal power, we would not be in the present mess."

### An extract from non-member James Scott's e-mail :-

"My installation consists of 12 panels (made by Romag) with a total output of 2.16kW. The inverter is a Sunny Boy model made by SMA. The cost of the installation was £10,200 and I received a grant of £2,500. The grants are no longer available but my installation would now probably cost about £8,000. The installer was Solarsense. My roof faces south by south west. Ideally it should face south. Each panel is a current generator and if one part of the array is in the shade then the total output is degraded. To get over this it is possible to have the panels connected in parallel. My system is in series.

My home consumption is quite high because I have an Everhot Cooker which is constantly switched on and uses about 12kWh per day".

## **WIND FARM SUPPORT**

Recently MPI Offshore Ltd have taken delivery of specially designed ship to install and service off-shore wind farms. It is called the MPI Adventure and was built in Oidong, China. The main ability of this vessel is the 50 ton crane and its ability to jack items with 6,000 tons of cargo on board. It has capacity to accommodate 112 persons and is powered by a Rolls-Royce marine engine.

## **WIND FARM HIDDEN COSTS**

The Renewable Energy Foundation has stated that there are some drawbacks to Wind Farms. The costs will be higher than anticipated due to the need to strengthen the Grid and provide back-up plants when there is no wind estimated to cost £97 million.

## **TONEDALE MILL**

(Wellington, Somerset)

A former weaving mill with boiler room containing an Allen Steam Turbine, with control and instrument panel, driving a Mather & Pratt generator, Allen 4T47 Diesel Engine driving an Allen DC Generator, and Allen Switchboard with Voltage Regulator that is now part of a housing re-development site having listed buildings in which there is increasing interest to preserve the machinery space. The Allen equipment was ordered in 1946 and installed in 1949.

### **This is a message from the W H Allen Engineering Association Heritage Committee :-**

It has been a few months since we corresponded on Tonedale Mill, and our committee member John Kitchenman has kept a diligent eye on events just to ensure English Heritage and the Developer are touching base periodically on its future.

In August, Jenny Cheshier (Historic Buildings Inspector – English Heritage) advised us:-

"I have recently had a tour of the Tonedale site with the new owner and this included the boiler house, at which point I highlighted the significance of the surviving machinery. I was assured that the intention is still to retain it in situ for a use which will allow public access. At the point when more detailed negotiations start I will make him aware of your organisation's interest but am also copying the Council's Conservation Officer into this message so that she is aware of it."

More recently we had information from an enthusiast visiting the site were advised by security staff that work by the new site owners would soon start on demolishing the boiler room. If this were to be the case and included the machinery room adjacent to the boiler room then all the heritage artefacts would be lost to scrap which would be a tragedy. John has been in touch with English Heritage, who advise that it is still the intention to retain the machinery in situ for a use which will include public access.

Should your members have any contacts to keep an eye on this it would be appreciated. Thoughts are that a local museum may be invited to take an interest and bring the restoration and management under its own wing – we may need your help with this one when the time comes.

Photos can be viewed on our WHAEA Website

<http://www.whaea.co.uk/Heritage> (or <http://www.whallenengasn.org.uk/>) then click on buttons for Heritage Group, Heritage Activities, then Tonedale Mill)  
*Colin Embley*

## **WELCOME NEW MEMBERS**

Charles Bristow and Michael G Williams

Dave Ham – Dave, ex-CEGB employee, worked at Newton Abbot Power Station (NAPS) and at Durling Park with Roger Hughes. His own web site is very interesting particularly on NAPS :- [www.uptonmanor.eclipse.co.uk](http://www.uptonmanor.eclipse.co.uk)

## **ELECTRICITY ON THE ISLES OF SCILLY**

I read with interest the excellent article by John Haynes on "Isles of Scilly Electrification" (August 2011) and thought some members may be interested in the *how and why* SWEB became involved on the islands.

Prior to 1954 Islanders paid no UK Income Tax. On the main island of St Marys public electricity supply was provided by St Marys (Scilly) Electricity Supply Company, registered in 1931 by Mr E.C. Sydney, who remained its Managing Director. With the imposition of Income Tax inhabitants sought parity with the mainland on a range of services including electricity. By the 1950's the generating station and network also required significant investment to meet increasing load.

The islanders campaign at many levels resulted in agreement for SWEB to take over the company, subject to due diligence. J. H. Phillips (the writer's father) then Senior Assistant Engineer, Commercial, Cornwall Group was appointed to this task. He had wide experience of both commercial and engineering aspects of the business, having previously held Branch Manager appointments and as Regional Maintenance Engineer on Nationalisation in 1948.

His task involved many days on St Marys examining accounts and records and surveying the extent and condition of assets. He was such a regular passenger on the early morning *mail flight* from St Just airstrip that the BEA pilots of the two de Havilland Rapide bi-planes serving the island would ring him at home if the flight was likely to be delayed by fog (an all too frequent occurrence).

The Electricity Supply Act 1947 required the CEBG to own and operate generating assets and I recall father's firm opposition to this unnecessary division of responsibilities in the circumstances. His view won support resulting in the passing of Electricity Act 1957, Section 6 allowing generation of electricity by Area Boards, the minister issuing the required formal consent at the end of 1958. This Act later enabled SWEB to build and operate its fleet of remotely controlled Proteus gas turbine powered generating stations providing alternative supplies to remote areas and peak lopping.

The St Mary's undertaking also carried out domestic and commercial contracting and sold and serviced both white and brown goods. In those days valve televisions were much less reliable than today's models, requiring *burning-in* over several hours before being considered by dealers as reliable for sale. I recall he brought a surprisingly heavy 9 inch Ekcovision TMB.272 mains/battery *portable* TV/VHF receiver home one weekend for this purpose.

In the early 1960's, whilst undergoing training on the commercial side, I stood in for Ralph Hemsell, Commercial Stores Officer, West Cornwall, arranging appliance deliveries from wholesalers to service centres, ensuring those for St Marys arrived on the quayside at Penzance in good time for loading onto the RMV Scillonian II. Later in my Distribution Engineering

training I was fortunate to be training with the live-line team when we were deployed to St Marys for routine 11kV O/H maintenance and insulator cleaning. Our tools were transported across on the Scillonian, while we, like true Islanders, flew across by helicopter.

Despite employing double SC1010 glass strain disc insulators and the larger PN221 pin insulators, exposure to salt spray from all wind directions necessitated periodic insulator cleaning and treatment to keep RF interference to acceptable levels. I recall that energising a 200kVA transformer from a lightly loaded system with only a couple of small sets on the bars should not be encouraged! As a Student Engineer my participation in live-line work was restricted and on occasions I helped by driving the lorry. This was a hair-raising experience, having to literally stand on the brakes on a couple of occasions. It was alleged that Pool's MOT failures were sent to the island to retire with dignity! (Vehicle excise duty and associated MOT requirements were not brought in until 1971). I also recall eating my lunchtime sandwiches sitting on the doorstep of a small bungalow owned by a certain Harold Wilson.

My training in Cornwall and familiarity with the *idiosyncrasies* of the Cornwall system proved useful many years later when Cornwall Control was transferred to Sowton.

**Barrie Phillips**

## **WASTE CONVERSION**

In September a waste recycling plant opened at Avonmouth to deal with unrecyclable waste from Bristol, North Somerset, Bath & North East Somerset and South Gloucester. The centre is expected to treat 120,000 tonnes of rubbish a year. The rubbish will be sorted and processed to create a fuel which can be burnt to generate electricity. The plant was opened by Sir Steve Redgrave. New Earth Solutions Co. Ltd., (New Earth) designed the plant for SITA and already has planning permission to build a small generating station on the site to use the fuel, which will generate 7.5MW of renewable energy.

## **DODDS/KELLETT**

Recently I was invited to a Golden wedding celebration of a close friend in Backwell, Graham Hackett. It was at the Chateau Impney, Droitwich and my wife and I were seated with Graham's cousin, SWEHS member Neil Kellett ex-CEGB engineer. Surprisingly Neil's sister, Anne also on our table, had been a demonstrator with MANWEB and she married a Commercial Engineer from that board, so there were four of us ex-ESI employees sitting together! It transpired that Neil and Anne's father, Joseph, had been with MANWEB starting with Liverpool Corporation Electricity Department. Upon nationalisation he was appointed Deputy Commercial Officer.

Having met member Gareth Dodds's father once, who had been Chairman of MANWEB, replacing J. Eccles the first Chairman, I asked if they had known him. It turned out that the Dodds and the Kelletts had been close family friends in Liverpool prior to and immediately after nationalisation. I have acquainted Gareth with this surprising coincidence and he was delighted.

**Peter Lamb**

## TOM SHERRIF PASSING OUT

We are sad to report of the death of a keen member Tom at the age of 78. He had been one of the most regular contributors to our newsletters even though he lived at Lincoln He had never worked for an Electricity Board and started his career as a Marine Engineer with Harland & Wolff. He then had considerable experience in power stations abroad ending his career as a consulting engineer spending much time in foreign parts but latterly regularly visiting Pakistan and sending his reports to us. He never stopped working even going out on business to the Indian sub-continent 6 months ago.

## MEMBERS NEWS

Brian Denham – Brian has been a new member for over a year, who we failed to welcome. He is an ex-CEGB engineer, who worked at Portsmouth and now lives at Collaton, East Devon.

Patrick Bilyard – Pat is half way through a course of chemotherapy. He is having a rough time, but is looking forward to returning to our events in the Spring. We all wish him well!

Glyn England – Glyn has taken on an interesting task that of Chairman of the Bayswater Institute, a social science based research institute and also a charity.

Chris Buck – Our Vice-Chairman has had a serious eye operation, which we hope will be fully repaired by the time he is able to read this!

## DENNIS LOMER

Dennis Lomer, who has died after a short illness, was one of the unsung heroes of the industry. He made his reputation by successfully managing the erection of the 400 KV Grid. The story is told that, with the grid almost complete and most of the erection gangs disbanded, the final gang announced that they were going to take the weekend off and would return on Monday to string the final spans. Dennis visited the site and pulled £500 in notes out of his back pocket. 'This is yours if the job is completed on Friday' - And it was! I cannot personally confirm this story but it is very much in character.

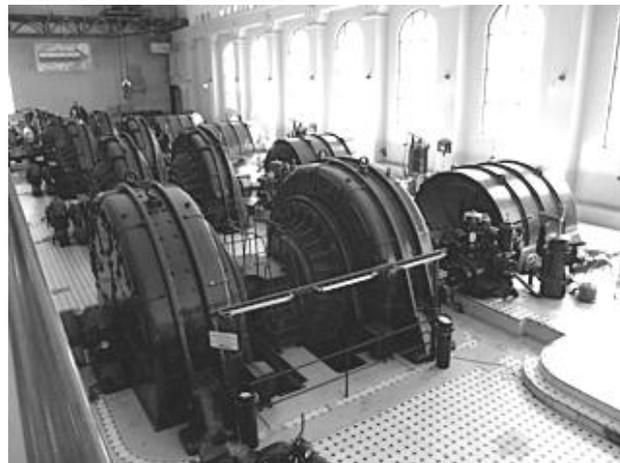
At the time he was appointed to the bigger job of CEGB Board Member for construction, many power station construction sites were in trouble as were major projects in other industries. Readers may remember the Lagger's strike at the Isle of Grain, the failure of the manufacturer's consortium at Dungeness and the almost complete standstill at Ince. Strikes were frequent and productivity low. But within a few years, Dennis had changed all that. He did it by diligent application to the needs of each site, which all had their own characteristics, setting up a joint management/ union committee in one place, replacing a contractor somewhere else, changing our project manager or doing some straight talking to management and unions. His skill was to choose the best approach for each location.

Towards the end of his period in office, power stations like Drax, Heysham B and Sizewell were being build to time and to budget and to the benefit of all industries, with Dennis' help, a National Large Site Agreement had been negotiated.

*Glyn England*

## NORWAY HOLIDAY

John and Ellie Haynes went on a cruise of Norway this year. As part of their tour they visited Vemork, where there is a museum housed in an old hydro-electric generating station. It was built in 1911 and housed ten 6MW Pelton type turbo-generators (60MW) of German manufacture (Voith & AEG) to supply a fertiliser factory. There is a modern hydro-electric station alongside and also there was a heavy water plant now removed which was successfully sabotaged during the last war by a well-known commando raid. This is featured in the museum and of course the raid was also covered in a brilliant film "The Heroes of Telemark".



**View of the old Turbine Hall now a Museum**

## FARADAY QUIP

Prime Minister Mr. Gladstone attended one of Michael Faraday's talks on electricity and afterwards asked him about the usefulness of electricity. Faraday replied "Why, Sir, there is every possibility that you will soon be able to tax it!"

## FOR YOUR DIARIES – COMING EVENTS

### Sat. 28<sup>th</sup> Jan. ANNUAL LUNCHEON – EXETER

At the Devon Hotel, Matford, Old Exeter Bypass.  
12.30pm for drinks lunch at 1.00pm. After lunch talk by Mac McLaren on the "Penlee Lifeboat Disaster".

### Sat. 24<sup>th</sup> Mar. AGM AT TAUNTON + NAT. GRID PRESENTATION ON HINKLEY CONNECTION

AGM at WPD Training Centre at 11.00am. Lunch afterwards 12.15pm at the Merry Monk Inn, with presentation by NG at 2.00pm.

- - - *NOTE NEW FORMAT* - - -

### Fri/Sat/Sun April WEEKEND AWAY IN OXFORD 20<sup>th</sup>/21<sup>st</sup>/22<sup>nd</sup>

### Sat. 19<sup>th</sup> May VISITS TO OAKHAM TREASURES AND TYNTESFIELD HOUSE

Oakham Museum in the morning followed by lunch at the Failand Inn and Tyntesfield in the afternoon.

**NEXT EDITION** - This newsletter is produced every four months. Please send articles, photographs etc to :- Peter Lamb 35 Station Rd, Backwell, Bristol BS48 3NH or telephone on 01275 463160 or e-mail him on [lambpandv@btinternet.com](mailto:lambpandv@btinternet.com)