

December 2016

TWO GENERATIONS IN THE ELECTRICITY SUPPLY INDUSTRY

By Andrew Smith

Member Andrew has written a fascinating story of how his family was in a unique position in establishing the CEB's initial presence in Bristol and the South West. It is the story of father and son's careers in the ESI, CEB to CEB.

The Central Electricity Board was established in 1927, and the Central Scotland Area was the first scheme to be adopted. That year my father, Albert Smith (1905 – 1988) was interviewed for a draughtsman's post in Glasgow by the Chairman, Sir Andrew Duncan, and the Chief Engineer, Mr Archibald Page, later to become Sir Archibald. The permanent office had not yet been bought.

His first trip to Edinburgh was to take £40 in cash through to the Area Manager by train one morning, reason unknown. Then an agricultural labourer's wages were about thirty shillings [£1.50] a week. He duly delivered the cash to Mr McColl at his hotel, and was asked if he had ever been to Edinburgh before. He had not and was asked, did he have money with him as the Zoo was well worth a visit, and told to take the opportunity to go. There was considerable consternation in the Glasgow office when he failed to reappear until the following morning! There was maybe some connection with the fact recorded in the Electricity Council's 'Chronology' (ECCh) that in 1928 the "First Grid tower [was] erected near Edinburgh on 14 July". His first wayleave was obtained while still in his original post. A tower had been erected without the necessary paperwork being completed. The old farmer recognised both the need for the new system and was not prepared to give him a hard time. He signed on the dotted line, and was pretty scathing about Father's superiors.

In the same year Father arrived in Bristol on the August Bank Holiday Monday to take up the post of Chief Draughtsman for almost the penultimate scheme to be adopted, namely that for South West England and South Wales. He described the office as initially being "above an estate agent's in Queens Road", but the Kelly's Directory for 1930 has no entry for the CEB.

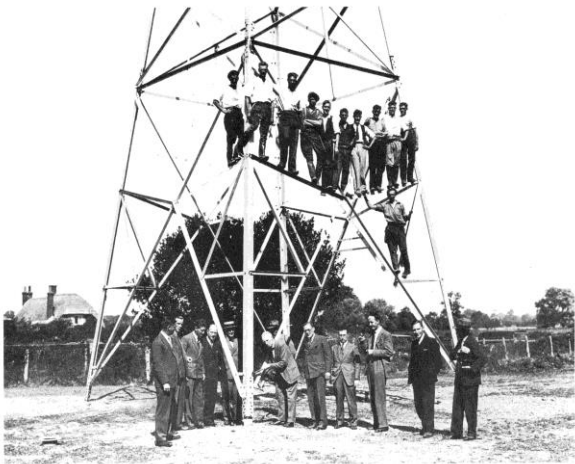


Grid House Rear entrance with new building and original house extreme left

However the 1931 edition gives Oakfield House, Oakfield Road, Clifton as the address. It had previously belonged to the Maggs family, and Frank Jones, one of their staff, came with the building. By 1934 it was renamed "Grid House". The area covered by this scheme was extensive. From about nine miles south of Aberystwyth, the border struck approximately east dropping to reach the Channel around Littlehampton. Its Great Britain statistics were it covered 19.4% in area, included 14.2% of population, contained 126 generating stations, 7 of which were 'selected' and generated 7.1% of the total units to 30.3.1930.[CEB Annual Reports]. It was nearly twice as large as either of the next two largest Areas. The North of Scotland scheme was the only one to exceed it in area. As Father pointed out, if one straightened out the Area and put Land's End on Bristol, St David's Head would be just beyond Glasgow. By 1932 Father had felt it necessary to ask permission to grow a beard, which at that time was apparently regarded as a rather bohemian. This is relevant later on.

Erection of the final tower for the original design of the system was on the Nursling –Bourne Valley [Bournemouth] route on 5th September 1933, with the Area Manager, Mr J W Beauchamp, symbolically

tightening the last bolt and contractor's staff "manning the yards". However further developments were already in the pipeline.



Completion of the final tower – Bourne Valley

My parents married in 1935, Mother having been a senior secretary in the office. From what Father told me it seemed that if the Area Manager thought one could do something, one would be given a chance to show what one's capabilities were. From his own admission he thought that war was inevitable early on and instigated protection for the control room to shield the staff from the shattering of the very large overhead skylight in the event of a near-miss. Apparently known as "Smith's folly" it none-the-less meant that it was the only control room in the country to have any sort of protection at the outbreak of war in 1939. He was also charged with finding a solution to cross-talk being picked up from echoes when more than one control engineer was giving telephone instructions. Less successfully, the Section Engineer involved thought that the new concrete structures at, I think, Newton Abbot should be camouflaged. Father was given the job of getting the contract arranged and all appeared well, until in a heavy rainstorm, the so-called camouflage turned a bright blue. Much the same colour, as far as I could gather, as the Section Engineer's language.



The Control room with the glass ceiling

Until he was pulled off by the management, having been classified as in a 'reserved occupation', he had

some interesting experiences as a part-time fireman and helped instigate what would now be called 'civil defence' activities for the staff at Oakfield Road.

I was born in 1939, and in 1940 he joined the Estates and Wayleaves department as Deputy Chief Wayleave Officer, under Capt. Cundall, RN (Retd.), who had previously been Chief Wayleave Officer for Central Scotland. As the Clifton office might be vulnerable to bombing, alternative accommodation away from Bristol was sought.



Albert Smith with Andrew 1942

Father was inspecting a property on the edge of Mendip overlooking the A38 at Churchill with the agent, accompanied by Mother, and me in my pram as it was a nice afternoon, there was considerable consternation as a German reconnaissance plane flew towards Bristol at the same level as the watchers, with the pilot clear to see. Apparently it was also possible to see the barrage balloons going up over Bristol. I do clearly remember coming up to the top of Blackboy Hill and seeing a barrage balloon which was down at ground level on the Downs. Much later I learnt that the control engineers could track a wayward barrage balloon by the circuits which were being tripped consecutively by its trailing cable.

Eventually Newbridge Hill House, a large Victorian mansion on the western edge of Bath, with extensive grounds and five acres of fields, was bought, presumably to accommodate hutments if needed. The Wayleaves section was moved there in 1940 and stayed for fourteen years. Having been in rented accommodation we relocated to live in part of the house. I can still recall the smell of highly polished lino in the offices, overlain with tobacco smoke. The large basement was reinforced with steel sheeting supported by substantial RSJs, and we went down there on camp beds when the warnings were sounded. I still remember the sound of exploding bombs and anti-aircraft fire. A small Home Guard post was established in the south-west corner overlooking the main road to Bristol, and Father was instructed to be prepared to

destroy all documentation in the event of an invasion taking hold. My twin brothers were born in 1943 and father was appointed Chief Wayleave Officer in 1944. One result of 'living over the shop' was that I grew up knowing most of the Wayleave staff. This is also relevant later on. Cable drums were stored up the north drive under an avenue of chestnut trees. In season, conkers made a very satisfactory 'clunk' when fed through the axle holes. I was fascinated to watch the Bristol Section line gang loading up spares from the stables.



Newbridge Hill House, Bath

Another, later, memory is of a school prize-giving in Bath, where the headmaster, who lived in a flat, and a well-known supporter of the Council for the Preservation of Rural England, for some reason, and to my horror, launched into a diatribe about all the pylons which were desecrating the countryside. I was really terrified that Father would react, but to his credit and my relief, he did not.] Around the same period, in the middle 1950s, he had the unenviable task of arranging access to potential nuclear power station sites for geological surveys without revealing the purpose. In the Hinkley Point area he recalled meeting with a formidable gentleman on a large horse who had apparently formed a mounted Home Guard unit in the area during the war. Later he took me on a visit to Berkeley where there were just three huge holes in the ground for the turbine hall and the reactors, and the fabrication shop for the heat exchangers where the noise was incredible.

I started my transmission post-graduate training in 1961 at what was by then Bristol District, Mr Arthur Kellett was the District Engineer and the office at Lockleaze was two stories high. Bert Tasker, the line gang charge-hand, told me that he remembered me watching them when I was in short trousers. By then we were living in one half of a Georgian house on Bristol Road, Keynsham, and apparently SWEB had no record at of the house having been connected to the local network. A elderly local told us that the original supply had been from a water turbine on the River

Chew, and that when the load increased the attendant had to cycle to the plant and open up the sluices some more. It may or may not just have been a story.

Training was primarily on the District with spells at SWEB at Colston Avenue (where I first met Peter Lamb, Roy Gladwin and others), and had some memorable experiences. Then came Portishead 'B' power station. The six months of the summer of 1962 were spent at A Reyrolle & Co at Hebburn-on-Tyne, (meeting Dave Hutton, Dave Peacock and John Ferrier). During this period Mr Kellett retired, Mr Lounsbach took over and a third storey was added to the office building. Father featured in one of the CEBG "Life as we know it depends on men like this" advertising campaign posters. I was attached to the Overhead Lines engineer when an experiment was proposed to see if a helicopter could be used for insulator changing, to obviate vehicle access to the tower site. This was of considerable interest and a suspension tower on the then single circuit section of 'G' line on the Cotswold escarpment was selected for the trial. There was a crowd of Regional staff including a group of Wayleave Officers, some of whom acknowledged me. I was standing a short distance away when someone joined them who I was aware was a new member, but who did not know me. I was very amused to hear him ask his colleagues, "Is 'The Bearded Wonder' coming up this morning?" I gave no sign that I had heard, but was aware of cautionary nods in my direction, and of course derived great amusement from reporting the incident at home.

In connection with 'G' line, pre-war, the Council/Port of Bristol had insisted that the high crossing at Avonmouth must allow the tallest full-rigged ships clearance at all states of the tide. As most will know it has a range in the order of 14 metres. When 'M' route came to be built some years later they were insisting on the same clearance for the second Avon crossing. Father apparently asked them to state when they last had a full-rigged ship of any size up the river. As they could not provide the information they lost the argument, but a certain, lesser, clearance would still be required for steamships. Their size was limited by the navigation upstream, as Bristol was still a working port at that time, but it meant a considerable saving in tower steel. As far as I can see the lowest point of the catenary of the second crossing appears to pretty well match the highest point of the underside of the arch of the subsequent M5 motorway bridge across the river.

The early 1963 heavy snowfalls saw me at Durley Park with System Operations (Grid Control) which was

fascinating, and on one occasion, actually very dramatic. I stayed on well past finishing time as the tension in the control room was palpable. The System Operation Engineer and his deputy were standing at the back of the room, observing, as was I. The system was teetering on the edge of collapse. The national flow diagram was showing how London and the south-east were drawing energy from the rest of the country like water running out of a bath via the plug-hole. The tension eased considerably as it appeared that the peak was passed so I left to walk the quarter of a mile home. I was barely in when the lights went out, so very regrettably I missed the opportunity to be in the control room to see how the system was restored.

On return to the District, the HV system extensions were getting under way, so even as a trainee I became actively involved in commissioning. Appointed as a 4th Assistant Engineer in July 1963, three months before my training was formally due to end, I found the transition quite difficult from addressing the District Engineer as 'Mr Lounsbach' to calling him 'Tony', as I was very inclined to be deferential. Before the staff numbers expanded to deal with the burgeoning growth of the HV system the engineers would gather in Tony's office for a weekly meeting reporting back and the next week's work allocated. Early on there was a point which I could not grasp, and kept coming back until Tony asked me to desist and said he had a story to tell us, which of course got everyone's interest. Apparently he had been at lunch in the 'White Hart' at Iron Acton when, "Albert came in, came over and said how pleased he was by how much Andrew had opened out since working for me." Pause. "I wish I hadn't bothered." [Everyone knew that Albert was my father.]

I was soon Authorised, the process being eased because I had frequently assisted, in a very junior role, with Authorisation courses at the Switching School at Feeder Road. Senior Authorisation followed, and eventually I was also authorised to hold Generation Sanctions-for-Test, needed for commissioning tests on the first generator at Oldbury-on-Severn nuclear power station. When testing to determine the 'circle diagram' characteristics of one of the generators I suddenly remembered that the only other time I had done it was on a generator about the size of a 5-gallon oil drum in the electrical lab. at St Andrews University.

From 1963 to 1969 I was involved in commissioning tests at Feeder Road T/S, Walham 275 kV, Iron Acton 275 kV, Lockleaze T/S, pretty much responsible for Bath T/S, and last, at Chipping Sodbury T/S. At Iron Acton I was told to commission the four 275 kV bulk

oil circuit breakers, the first in the Region. I was very concerned to learn that in total they cost £40,000. My salary at the time was £1,050 per annum. There was an interesting technical point at Bath. We found that the 33 kV cables between one of the main transformers and its auxiliary/earthing transformer had been crossed, which meant that the phasing at the 415 volt LVAC board did not match that from the other transformer. My first reaction was that the 33 kV cable box on the auxiliary transformer would need to be broken out and remade, but overnight I remembered an incident at Ryeford being discussed at one of our weekly meetings, where a main transformer had been put in the wrong way round. The solution had been to change the vector group links on the transformer and cross over the LV cables. The following morning, having checked with Roy Loft (who had been at Ryeford) that this would work for Bath, I then had to convince the contractor's site engineer that if we changed the vector group on the auxiliary transformer and swapped two of the incoming tails over on the LVAC board we would solve the problem with a lot less work.



The tall pylons at Aust Crossing the River Severn

During this period, from late in 1964, I was in charge of the line gang for about eighteen months. In many respects it was the best time, a virtually independent roving command, with a small but sometimes volatile team, but more than ably supported by Jim O'Connor, the foreman. I saw the replacement of a conductor on G line which had been originally damaged by the trailing cable of a barrage balloon which had broken loose. There was a bleak mid-winter occasion when it was necessary to climb iced towers on the ash-lands at Portishead to mount floodlights so that ash dumping could continue round the clock, there was so much demand on the station. Another, weekly, duty involved climbing the 275 kV high crossing tower at Aust to

change the vibration recorder fixed to the earth-wire where it passed through the body of the tower. The wire had been taped with a heavy-duty plastic tape to smooth the profile as there had been significant and disruptive galloping in the main span at 1,618 m (5,308 ft) thought to be the longest power-line span in the UK.

It had the desired effect, and smooth-profile conductors eventually replaced the original stranded versions. There were also requests from film crews to have access to the tower platform in the river whenever deck sections for the new suspension bridge were being raised into position from the river. Incidentally the Aust tower is not on a pier for engineering reasons. The initial proposal was to save steel by putting it on top of the cliff, but the final position was insisted on by the planners for aesthetic reasons so that the line did not spoil the aspect of the catenary of the proposed bridge, which came a decade later. Incidentally the Aust tower is not on a pier for engineering reasons. The initial proposal was to save steel by putting it on top of the cliff, but the final position was insisted on by the planners for aesthetic reasons so that the line did not spoil the aspect of the catenary of the proposed bridge, which came a decade later.

Apart from maintenance, one of our major jobs was checking the contractors' work on the YXA and YXB routes into Oldbury and the Iron Acton - Feeder Road XW route. All three were of 275 kV construction in anticipation of future demand, but commissioned for 132 kV service. At that time the rate of increase in demand on the system was a doubling every ten years. Against all the odds, it seemed, Father had managed to get the latter route all the way into Bristol with no expensive undergrounding or a public inquiry. Locally there was so much doubt that it was achievable that the CEBG chairman even came down to fly the route with Father by helicopter before giving the go-ahead. Coincidentally, I was given the job of keeping the landing area clear alongside the 33 kV Substation at Lockleaze for that visit.

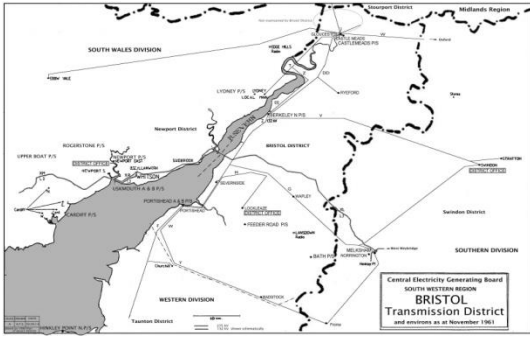
Over the years innumerable farmers had said they would sign without demur if they could get a supply, as they were fed up milking by hand and doing their books by oil lamps but of course it was not like that. However he did report some memorable conversations. A minor landowner in the West Country challenged him with the comment that he "would not do that to the Duke of Beaufort." The reply, "I am only asking you to take one tower – the Duke of Beaufort has thirty-seven." Another, "You wouldn't put one of these in front of your house." Father, "From my front window I

can see five." [The Iron Acton - Feeder Road route went across the Keynsham Hams which our home overlooked.] A planning officer said there were objections to a route along a valley bottom because the line would be seen from a National Trust-owned windmill on the top of the ridge. He was asked if an individual had come with a request to put an industrial installation for personal gain on that site, which in effect it was originally, whether or not it would have been granted? It was pointed out that from above the proposed line would not be silhouetted against a skyline, so would be very much less intrusive and that it would eventually benefit thousands. Point taken.

The CEB 1931 4th Annual Report noted that out of 9,865 wayleave consents obtained in 1931 only 2.36% were acquired compulsorily. It said "In Scotland and in South West England and South Wales, both areas notable for magnificent natural amenities, success was most marked. All consents in Scotland and 99.57% of those in South West England and South Wales were obtained voluntarily." Father was proud of the fact that when he retired in 1967, after forty year's service, the Region still held the record for the greatest number of route miles constructed without a public inquiry.

On a lighter note, when a connection going east from Bridgwater was proposed Father, as a Scot in whose education English Civil War sites had not particularly featured, was informed that his proposed route would be desecrating the site of the Battle of Sedgemoor. Inspection will show that the line was, as a result, diverted some way well to the north. Clumps of trees on an estate near Salisbury did not appear remarkable but the one which was proposed to be felled turned out to be representing HMS Victory in a planting commemorating the positions of Nelson's ships at the Battle of Trafalgar - another diversion!. Despite these, or maybe because of them, his experience was such that on several occasions he was an expert witness for the CEBG at public enquiries even in other Regions and lectured on wayleave matters at the Board's training centre at Buxton. He retired in 1967 and enjoyed a further twenty-one years.

Because of the increasing workload, Tony Lounsbach, District Engineer, established a planning office manned by a 3rd Assistant Engineer on rotation for a year with a 4th Assistant Engineer on six-month spells. It was seen as an opportunity to see how the District functioned, but was generally not popular because of the consequent restriction on expenses, followed by the roll-out of a Regional planning system for Districts.



Bristol District Territory

February 1969: I was drafted in for my turn. Before very long 'my' 3rd found another job and I had support from another 4th Assistant. Initially advertised as a permanent planning post, before any interviews were organised the vacancy was up-graded and re-advertised to include Work Study as well as Planning. Appointed in July 1969, I therefore also carried the additional responsibility for co-ordinating the implementation of a Pay and Productivity scheme for the Industrial staff, based on work study principles, across Newport, Bristol and Taunton Districts. These along with three others, similarly organised and centred on Portsmouth, were the lead Districts in the Region. This meant training as a Work Study Practitioner.

History repeated itself with respect to headmasters. At our children's primary school PTA AGM the head stated that only one event had had to be cancelled due to the electricity workers' strike over 1973-4. I was not having that and pointed out that the ESI engineering staff had never gone on strike and had had more than enough blame when the real problem was that the miners and others were striking and that the rota disconnections were enforced to maintain coal stocks. Again, point taken, with apologies.

Bristol District sat at the junction of two CEBG Regions, two Grid Control Areas, four Area Boards and four other Districts, an unusual situation. It did not change even though the Districts were expanded geographically, except that we gained a second major system interconnection as the Area Boards took over the 132 kV systems. No two years ever were the same, so it was far from monotonous, and one was right at the centre of the District operations, especially as I was retained on the standby rota. On one occasion it meant I devised and installed a system to recover the oil leaking from a joint in one of the 400 kV circuits under the Severn. The circuit could not be released over the winter, so for several months we saved on environmental contractor's costs, as the job was done for little more than they had been charging us per week to pump the sumps clear of contaminated water.

At some stage the Regional structure changed and Generation and Transmission were combined into a Production Department and we were then included in the annual Maintenance Conferences. I actively represented the District, by presenting a paper, at several of these. The power stations seemed to forget that, although (or maybe because) in terms of manpower and budgets the Districts were so very much less significant, without the transmission system they were so many white elephants. I remember learning that on one occasion retubing a condenser with a high grade alloy for a 500 MW set at Aberthaw cost more than the entire SW Region Transmission revenue budget for the year.



Jack presents the Transmission District Good Housekeeping shield to Severn district manager Tony Lounsbach, watched by members of the L.A.C. and other guests at ceremony last month. In the picture are (l to r) Ray Derrick, Bill Ley, John Allaway, Pat Howell, Mr Paak, Alan Bamford, Bernard Fennell, Cliff Hicks, Andrew Smith, Tombarth, Terry Hunt, Paul Stone and transmission manager Dick Waring.

Tony Lounsbach accepting a "Good Housekeeping" Trophy (Andrew is behind left of Tony)

I was in charge of planning and work study until July 1982, when I became Senior Engineer (Light Current), also responsible for operational staff. This morphed into Technical Engineer in yet another reorganisation.

In 1988 I was approached to take the Principal Engineer's post in the Transmission Planning Department based at Shirley, West Midlands. So I left the District after twenty-seven years, only a few months after Father's death, as it happened. Recruited because "We know you would represent the field staff and would not become a headquarters' animal", this was an interesting job and once again it was at the centre of things, but this time on a national scale. This took us up to privatisation (31/3/1990) and I helped set up the new Central Divisional HQ, temporarily in Weston-super-Mare. Six months later I was transferred to the Central Division Construction Unit, based at Aztec West, as Resources Engineer. Much of the work was outage planning, but with quite a range of other duties, including COSHH Officer. In 1993, as the Unit was seeking BS 5750 QA accreditation, I trained as a Quality Auditor, later qualifying as a Lead Assessor to BS EN ISO 9000. At the end of March 1997 I took VSS and relaxed into early retirement.