A CENTURY IN OIL

The "Shell" Transport and Trading Company
1897 - 1997

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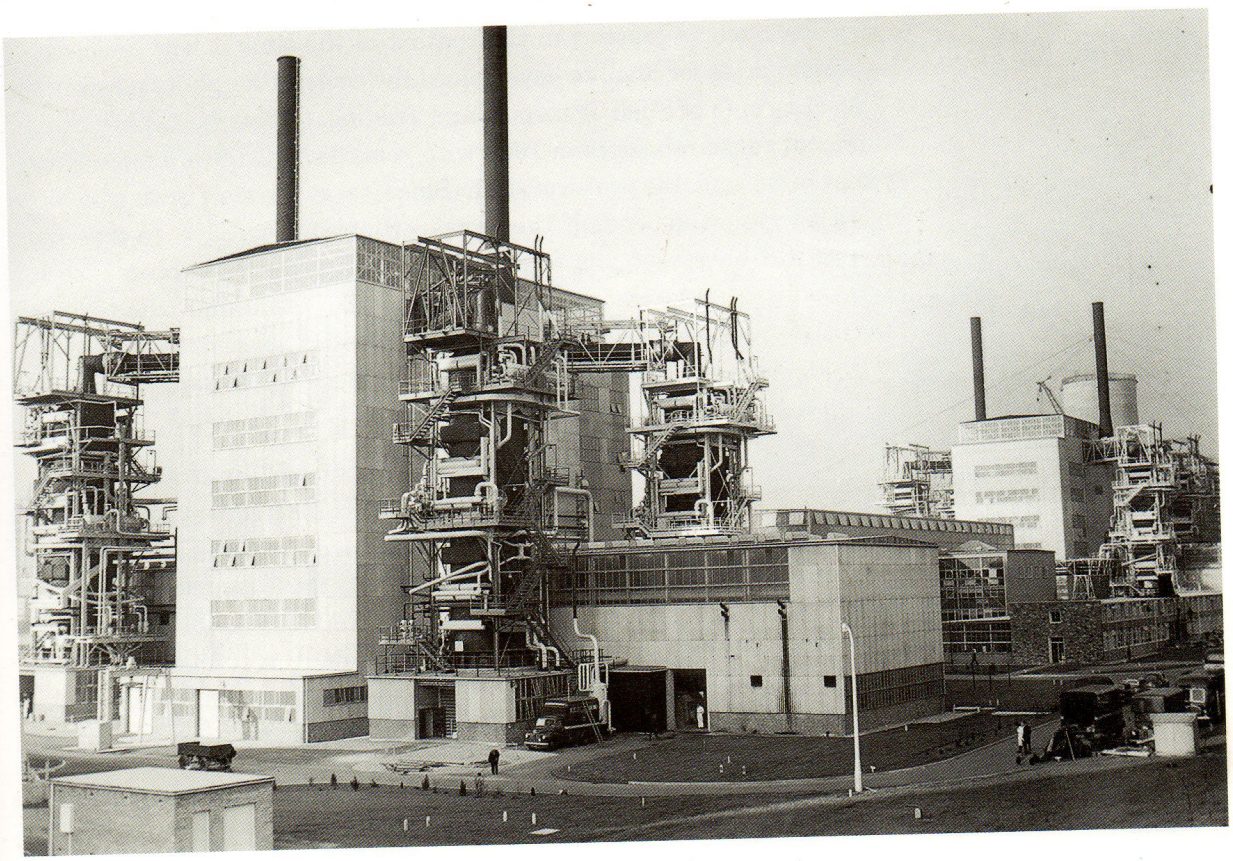
The colossal expenditure of £721 million on exploration and production was the largest single set of bills Shell had to face in 1952–6, but by no means the only one. Oil refineries and chemical plants swallowed another £361 million; marketing, a further £109 million; the fleet, £101 million. Even the 'Miscellaneous' category (practically speaking, the petty cash) included costs amounting to £13 million. It would have been from there, incidentally, that money came for the commissioning in January 1955 of an exhibition in the Royal Watercolour Society's galleries. Shell had invited the artists to visits refineries and other installations, giving them carte blanche to paint and draw whatever they chose. The 90 resultant works of art constituted (in the view of the Slade Professor of Fine Art at Cambridge University) 'an extremely interesting example of intelligent patronage by an industrial organization.' He need not have sounded *quite* so surprised.

In among the large bills there was also the funding for agricultural research. At Sittingbourne in Kent, Shell's Woodstock House farm estate (bought in 1945 for £45,000) was quickly becoming a world centre of excellence in this branch of science, specializing initially in the synthesis and formulation of pesticides. Its first laboratory had been in the old dairy, only eight feet square. By 1956, however, its staff had grown to nearly 100 with upwards of 40 scientists, and in May of that year Sir William Slater, FRS, secretary of the Agricultural Research Council, officially opened its impressive new buildings: 25,000 square feet of laboratory space and 4,600 square feet of glasshouses, constructed at a cost of £100,000 – more than twice the original price of the whole 332-acre estate.

Comparable progress in oil and lubricant research was being made at Thornton near Liverpool. From those laboratories, birthplace of Shell with ICA and Shell X-100, came new two-stroke oils, the improved 'Multigrade' and 'Ashless' car-engine lubricants, and in 1955 a new marine diesel lubricant with the somewhat poetic name of Alexia. (It is said that the marketing people were not wholly impressed by this product, commenting, 'Magnificent – but could you make it look less like salad cream?') At the same time Thornton's remit was extended beyond fuels and lubricants to include metallurgy, in order to look at and diagnose the reasons for engine failures, especially for Shell customers. All sorts of engines were included – 'anything', as its Head of Engineering said, 'which went up and down or rotated.' While a sister organization in The Hague investigated hydrocarbon corrosion and refinery failures, Thornton's metallurgists had a very wide clientele: airlines, the military, railways, shipping, the police. The research into engine failure soon had nearly fatal consequences. On trials in the Irish Sea, the engines of a passenger liner called *Reina del Pacifico* exploded, killing several crew members. Accepting a request to investigate the cause, Thornton engineers replicated the conditions – and, unintentionally, the explosion as well, even though their own engine,



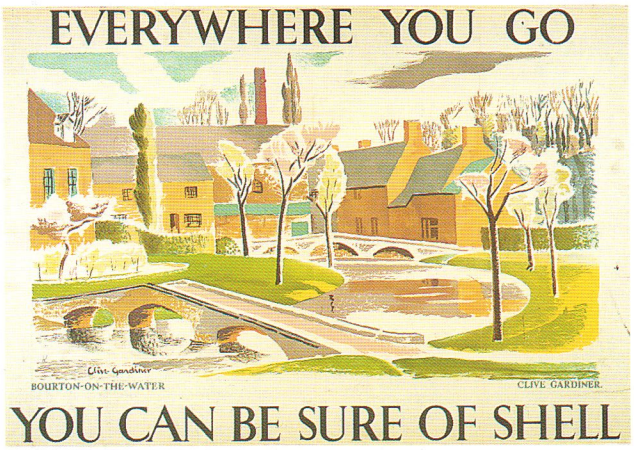
Calder Hall in Cumbria

supplied by Shell Tankers, was fitted with relief valves. Fortunately no life was lost, and the engineers did solve the problem eventually; but by coincidence, one of Shell's visiting artists was present, and afterwards painted a watercolour of the spectacular damage – a gift of a subject, if not exactly the planned 'intelligent patronage'.

Thornton's most unusual venture at this time was into radioactivity. This took two forms: the use of radioactive isotopes to monitor wear on piston rings in car engines, and the provision of lubricants for atomic reactors. The latter came about almost by chance, when samples of oil were subjected to radiation from Cobalt-60 to see the effect on the hydrocarbons. What was discovered was that one sample proved impervious to radiation, remaining liquid throughout the experiment. As it happened, a nuclear reactor was being built at Calder Hall in Cumbria, barely 90 miles from Thornton. Lubricating the reactor's graphite moderators was a problem no one had yet satisfactorily answered, but Thornton's fortuitous find was the basis of the solution. The peaceful use of nuclear energy – in later years a highly contentious subject – was widely viewed in the early 1950s as the world's best bet for future energy resources. Even then, Frederick Godber suspected that this optimism 'suffered from some exaggeration'. But when Calder Hall was opened by the Queen on 17 October 1956, it was the world's first commercially

operating nuclear reactor; in the context of the time it was a source of legitimate pride for Shell to have gained the contract for all its lubrication.

As chairman of Shell Transport and Trading, Godber began his annual statement to shareholders in 1956 with remarks which were more usually kept to the end: the praise of staff. (Since it was the staff upon which the entire operation depended, this was perhaps an overdue re-ordering.) 'As you will have seen', he said, 'the post-war years have been a period of continuous progress and almost dramatic expansion'. Recognizing that this would have been impossible with the 'immense drive and ability unsparingly applied by the staff', he continued:



> The good relations which exist within the Group are a subject for frequent comment. In a big organization which is still expanding, bigness itself can create problems and there could be a danger of losing sight of the individual; it is therefore our prime concern to watch the progress and well-being of each individual...

The re-ordering of Godber's annual statement was not only an appropriate recognition of the staff's centrality; it was also a reflection of two new thoughts on the question of bigness. In the interests of simplification, Shell Transport and Trading was beginning to re-order itself and the Group of which it was a parent. During this process, the name of the Anglo-Saxon Petroleum Company (the British operating company established in 1907) disappeared in 1955; its business and assets were vested instead in The Shell Petroleum Company. Moreover, it had dawned upon the London-based Shell Transport that to have staff scattered throughout the capital in 30 different buildings was inefficient: there should be a focal point in which all London staff worked, a centre. On the south bank of the Thames a large acreage of slums had been cleared in preparation for the 1951 Festival of Britain. Shell Centre would be built there.

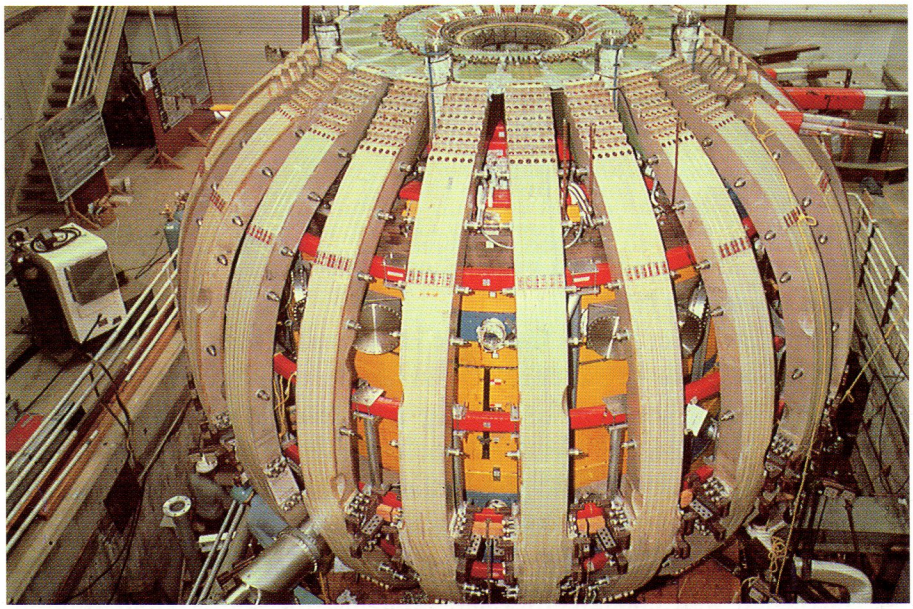
Read out at the AGM on 30 May 1956, the written version of Godber's statement for 1955 contained another small but important indicator of change: his signature. Rather than 'Frederick Godber', as it always had been, it now read simply 'Godber'. On seeing the surname *tout court*, anyone in his audience who did not already know rapidly realized that their chairman had been ennobled in the 1956 New Year's Honours, and was now Lord Godber. Shell people, shareholders and staff, liked that: it seemed eminently suitable once again to have a lord as chairman, and it certainly reflected well on their company.

business which they've had for years, which are not making enough money. I can see a group like ours at a certain stage saying 'Well, we might as well sell our Billiton interest...'

That stage was reached in 1994. After a brief upturn in the late 1980s, the beginning of the '90s saw a further slide in the metals market. In May 1993 a South African mining company, Gencor, made an unsolicited bid for Billiton, and after prolonged negotiations its sale was agreed and completed in November 1994.

Looking back over Shell's history, it is noticeable that wherever it has worked and whatever it has done, its commitment has always been either complete or non-existent, all or nothing; and after the sale of Billiton, its first and major interest in metals, all its later metals interests were swiftly disposed of as well, with the process being completed in 1995. An experiment lasting a quarter of a century could not be called a passing fancy; but an experiment it had been, and though it had not failed, it simply had not succeeded well enough. In 1994, remembering the original Billiton purchase, Barran described it as 'a sensible move; we certainly haven't made enormous sums of money out of it, yet I think over the period we haven't suffered. But it never really quite achieved the synergy we'd hoped for. We were looking around for what was to be the next thing, and it didn't go quite as much hand-in-hand as we had hoped.'

The venture into nuclear energy was even less successful – indeed, considerably less so. In the 1950s, when nuclear power began to generate electricity for civilian use, Shell was delighted (as we saw in chapter 13) to gain the contract to supply all the lubricants used in Calder Hall, Britain's first commercial nuclear power station, and proceeded additionally to produce coke of extremely high purity for use in reactors. At the time there was a good deal of concern among shareholders that nuclear power could become a competitor to oil. Lord Godber (Shell Transport's then chairman) dismissed these fears as exaggerated, but a watchful eye was kept on the nuclear industry's development. On 2 April 1958, Shell Transport's Minute Book recorded that 'A paper on Atomic Power was placed before the Board and was the subject of a general discussion.' Less than a year later, on 16 March 1959, John Berkin – one of Shell Transport's directors – reviewed for the benefit of his colleagues on the board a 'Memo on Atomic Power...with particular reference to its cost compared with that of power from conventional fuels.' The wisdom then was the same: there was no foreseeable likelihood of nuclear power even coming close to overtaking oil as a cheap and convenient source of energy. But by the early 1970s that view had changed. A toe was put in the nuclear water with the purchase of a 10% interest in



In appearance oddly reminiscent of Shell's pecten logo, the Doublet III experimental nuclear fusion device was developed by General Atomic

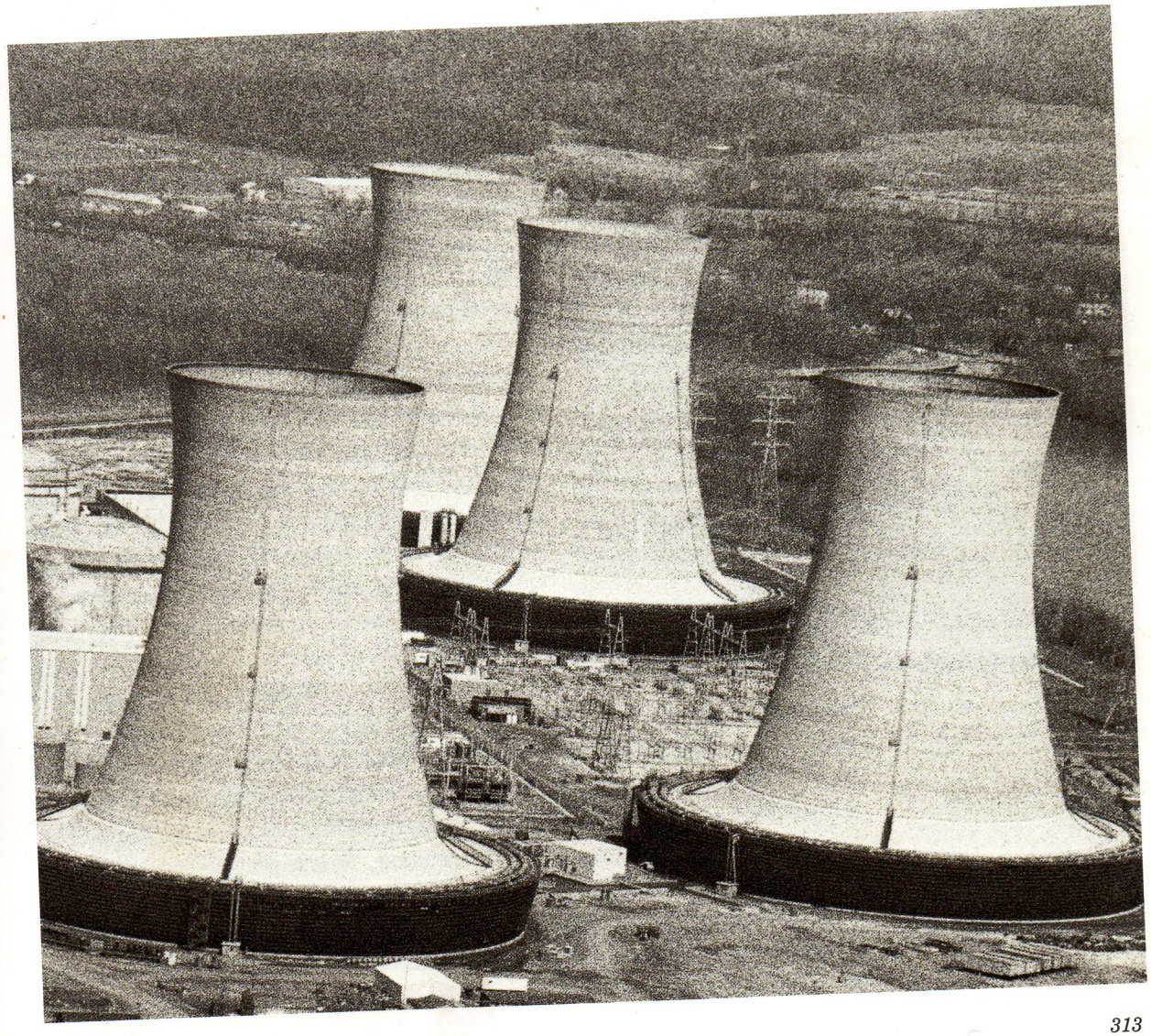
David Barran (left) and John Berkin

a Dutch company called Ultra-Centrifuge Nederland, part of a British-Dutch-German arrangement for developing the centrifuge method of uranium enrichment; and in 1973 Shell announced its 'first big step into nuclear energy'. In a 50:50 partnership with Gulf Oil, two businesses – General Atomic Company in the United States, and General Atomic International elsewhere – were established to develop, manufacture and market the second-generation High Temperature Gas-cooled Reactors (HTGRs) and their fuels.

The initial cost to Shell was $200 million, with all subsequent costs to be shared equally with Gulf. For its money Shell acquired interests in a small 40-megawatt experimental plant in Peach Bottom, Pennsylvania; a commercial-scale 330-megawatt plant in Colorado; six other larger HTGRs which were on order; and two more on which options had been taken. Nor was that all. HTGR technology was set to be introduced into France and West Germany, and possibly into the UK and Japan; and (as Shell Transport's annual report for 1973 recorded) General Atomic was already working on several other developments, including *inter alia* an HTGR closed-cycle gas-turbine power plant, a gas-cooled fast breeder reactor, the use of HTGR heat in industry, nuclear fusion research and 'the construction of the largest industrial light-water reactor fuel reprocessing plant in the United States.'

In the annual report there was, with all this, a blissful lack of technical explanation, even in the simplest terms. Probably few shareholders had any clear idea of the differences between types of reactors, or between nuclear fusion and nuclear fission as sources of power; but an annual report is hardly the place to attempt such explanations, and anyway – O brave new world! – they may not have wished for elucidation. Especially when set against the worrying and unfamiliar background of high-cost oil, it was enough to feel that their company was, as always, in the vanguard of modern energy supply.

At any time in our lives, we all (or most of us) do the best we can with the knowledge and tools currently available, and to many specialists and non-specialists alike, Shell's entry into the nuclear field seemed a sensible idea. Proponents of nuclear power saw it as the clean, simple, eternally



Three Mile Island, near Harrisburg, Pennsylvania

renewable fuel of the future, and nuclear fusion (the process at work in the sun) may yet prove to be just that. But the existing method of nuclear power generation (nuclear fission, the principle of the atomic bomb) was already a publicly contentious issue, soon exemplified – long before the much greater disaster at the Russian plant of Chernobyl in 1986 – by the episode at Three Mile Island near Harrisburg, Pennsylvania, when, on 28 March 1979, the cooling system of the plant's No. 2 reactor failed and led to a leak and partial melt-down of the uranium core, with radiation detectable over twenty miles away.

Three Mile Island was a great leap backwards for the nascent nuclear industry, hardening feelings that having a nuclear reactor on one's doorstep might not be an unmitigated good. It was followed, moreover, by a series of five smaller but similar accidents in the US, which led the Nuclear Regulatory Commission temporarily to cease licensing the construction of new reactors. Although General Atomic was not involved in any of these, Shell read them as a clear warning and decided there was not enough to be gained from remaining in an industry which was so expensive, so politically vulnerable, and so much the target of public protest. Those factors were quite sufficiently present in the oil industry anyway; one would have to be a glutton for punishment to seek them elsewhere as well. So, resolving to remove itself from active participation in the nuclear industry, Shell sold its interests in both General Atomic companies to Gulf Oil in 1980. Lasting a mere seven years, nuclear energy had been a short and costly byway – one which Shell would not follow again for a very long time, if ever.

Turning briefly to coal, the third element of Shell's diversification in the early 1970s: Shell Coal International was established in 1974 as a bridge to the future – the future being a place in which, underpinned by metals, the ancient and modern energy sources of coal and nuclear power would push expensive oil into second or third place. This move was better judged than the others, for though metals and nuclear have fallen away, it is coal – oil's oldest rival – which has lasted the longest as part of Shell's post-shock portfolio. Nevertheless, coal has never yet become as dominant as, in the 1970s, it was thought it might be. Shell first made a profit out of its