US nuclear power

Cancellations promise bleak year ahead

Washington

THE new year has brought a new wave of trouble for the US nuclear power industry. Five nuclear power plants now under construction have either been cancelled or have encountered licensing problems in just the last few weeks, chiefly as a result of rising costs and newly discovered safety violations. And a report from the Energy Information Administration (EIA)* has found that average construction time for a new reactor has reached 12 years — more than twice the time it took to build a reactor in the early 1970s. Three-quarters of the plants completed in the past decade or nearing completion now have cost more than twice the original estimate. One in ten of them have cost more than seven times the original estimate.

These escalating costs, together with the failure of electricity demand to keep up with the utilities' projections, have played a large part in the recent cancellations. Last week, the Public Service Company of Indiana announced that it was abandoning the Marble Hill plant on which it has already spent \$2,500 million. The River Bend plant No.2 in Louisiana was recently cancelled as well, and the two-reactor Midland plant in Michigan is facing an uncertain future, with its current estimated cost at more than ten times the original figure of \$300 million.

Safety violations have aggravated economic difficulties in some other recent cases. On 13 January, the Nuclear Regulatory Commission's safety and licensing board unconditionally denied an operating permit to the Byron plant in Illinois, saying it had "no confidence" in the quality assurance programme of key contractors. Although the board did not point to specific safety deficiencies, it said that the quality assurance was so poor that there was no way to know for sure. According to the Nuclear Regulatory Commission press office, the board, in its 400-page report, charged that Systems Control Corporation, which supplied safety-related equipment, had actually run a "fraudulent and ineffective" quality assurance programme and is being investigated by the Department of Justice.

Spokesmen for the utility said the problems were only in the documentation of the quality assurance efforts, not in the work itself. They also said that the utility was losing \$1 million a day as a result of the delay.

Safety troubles with Cincinnati Gas and Electric's Zimmer plant led to an unusual decision over the weekend at that troubled plant, which has stood half-finished since November 1982 when mounting quality

assurance failings prompted the Nuclear Regulatory Commission to order a halt in construction. The utility decided that rather than spend an additional \$1,000 to \$2,000 million to complete the nuclear plant, they would convert the station to a coal-burning facility. The utility had already spent \$1,700 million.

A spokesman for the Atomic Industrial

West German universities

End of old order in sight?

A RADICAL reform of West German education is in the air. Professorial powers will be increased and advance beyond the basic degree will be made more difficult if recommendations made by a commission appointed by the West German Minister of Education are accepted.

The commission's mandate was to examine the working of the 1976 University Law (*Hochschulrahmengesetz*) framed in reaction to the student unrest of the late 1960s. This shifted the balance of power from the professors (the *Ordinarien-herrschaft*) to a wider group. Decision-making committees of the universities now comprise representatives including students, administrators, scientists and non-scientists, as well as professors.

The commission finds, in agreement with the *Wissenschaftsrat* and the Conference of West German Rectors, that over-diligent application of the principle of group responsibility has led to the hardening of conflicting interests, inefficiency and a mushrooming bureaucracy.

The commission wants to see the professorial and faculty role strengthened at all levels. However, the number of faculties should be limited to fifteen, and the heads of faculties (*Decane*) represented in the senate. It does not, however, agree with the rectors that the professorial complement in the senate should be increased. At present, university rectors are elected by the professors in universities of six *Länder*. The commission favours this system as against appointment by the president.

Subject to restrictions on admissions to popular faculties (*numerus clausus*) such as medicine, the school-leaving *Abitur* remains a general passport to university education and student careers have traditionally been long even with rising student numbers. The report now recommends that length of study should be controlled and academic criteria strictly applied to courses beyond the basic level.

Many bureaucratic barriers have arisen in the application of private sources of finance in university research. All such sup-

Forum said the cancellations were all primarily due to the low growth in electricity demand. He said that "nuclear is a natural target" because of the large capacity of nuclear plants and their high initial capital costs.

The cancellations of half-completed nuclear plants are already sparking heated confrontations over who is to bear the construction costs — stockholders or ratepayers. The decisions in each case will ultimately be made by the state regulatory commissions which have different rules and have come down on different sides of the issue.

Stephen Budiansky

*"1983 Survey of Nuclear Power Plant Construction Costs", DOE/EIA-0439(83).

port now requires special permission and must be channelled through the university administration. The present government favours closer links between industry and the universities and will therefore agree with the recommendation that restrictions on this source of money be lifted and also that researchers be given freedom to appoint their own staffs.

The report also recommends the redesigning of the academic echelons. The present two highest levels of C3 and C4 will be amalgamated, perhaps to provide a larger pool of professional expertise. The lower C2 grade and general all-purpose university assistant would vanish, to be replaced by a class of scientific assistants who would be in the process of qualifying.

Those obtaining the *Habilitation*, the formal German professorial qualification, would be guaranteed a four-year post as an assistant, giving them time to receive the necessary invitation to a full professorship and at the same time maintaining a reserve pool of available talent.

The report has been a long time in gestation. It reflects the opinion now widely held among West German academics that the reforms of the 1970s, which diffused power widely among statutory university committees and which further strengthened the legal rights of students and junior members of teaching staffs, failed to tackle the outstanding problems of excessive demand for places in some universities and the difficulty of placing young people in any but the most demeaning academically related posts.

The problems encountered in some *Länder* of making full use of newly built universities have helped to win approval for the new proposals in the *Wissenschaftsrat*, the constitutionally unique body representing the federal and *Länder* governments which has been for the past thirty years the most powerful arbiter of policy on higher education.

The report will be the basis for discussion from which a new university law will emerge.

Sarah Tooze