a symptom of the strains on the UK's dual support system for the support of research, exacerbated by the lack of tenured jobs in university faculties. The SRC said however last week that it had had an encouraging response to its advertisement to university vice-chancellors of a scheme whose effect would be to help older faculty members to be replaced by younger scientists.

Joe Schwartz

Nuclear Iraq

Plan set back?

The murder of an Egyptian nuclear physicist in his Paris hotel on 14 June has raised questions about the implications of a nuclear pact between France and Iraq, signed in 1975.

The Egyptian, 48-yr-old Dr Yahia el Mashad, was, according to Israeli radio, "one of the rare Arabs commanding authority in matters of nuclear energy". Trained in Alexandria, the United States and Moscow, he was playing a central role in the construction of two research reactors, based on French know-how, a short distance from Baghdad.

The reactors are designed to use, 93%-enriched uranium, a bomb-grade material. The project is under International Atomic Energy Agency safeguards but, said Israeli radio, the death of Mashad will make it "very difficult for Iraq to continue its efforts towards the production of an atomic bomb".

Iraq is the second largest supplier of oil to France, furnishing 18% of her needs; and when the Vice-President of Iraq's Revolutionary Council, Mr Saddam Hussein, requested access to nuclear technology during a visit to Paris in 1975, it was rapidly granted.

The agreement is worth £145 million to France, and involves the construction in the desert of a large thermal "swimming pool" research reactor (similar to Osiris at the French research centre Saclay). Called Tamuz I, it was due to be charged with 13 kg of highly enriched uranium at the end of 1981, and is already under construction. A second much smaller reactor (0.8 MW) is also to be supplied, creating a research centre for some 600 engineers and scientists.

This is the second time that the project has been threatened. Last April, explosions at the naval construction yard of Seynes-sur-Mer damaged metal casings destined for the reactors, and Iraq accused the Israeli Secret Service and the Central intelligence Agency of complicity in the incident. Israel has certainly been concerned about the deal; a few days before Meshad's murder, General Yeoshoua Saguy declared that Iraq would probably have an atomic weapon by the mid-1980s "which will create a totally new situation in the region". Certainly the motive does not seem to have been criminal. Meshad was left with 1400 French francs in his wallet.

Robert Walgate

Harvard finances

Half power-plant

Washington

What started as an attempt to save money by cogenerating steam and electricity for the Harvard Medical School complex is threatening to turn into one of the biggest white elephants in the history of the university.

Construction delays, cost over-runs and disagreements about the dangers to the local community from nitrous oxide emissions have more than quadrupled the original cost of \$50 million. The university has had to dig deeply into its capital reserves; and this in turn could squeeze support for other projects more directly related to teaching and research.

The university first proposed in the early 1970s to build a Medical Area Total Energy Plant (MATEP) to replace its 74-year-old steam and chilled water generator. The plant has been designed not only to provide hot water and air conditioning to a dozen medical and educational institutions in Boston's Longwood medical area, but also to produce electricity for these institutions with six 7000 kilowatt diesel-powered generators.

Once construction costs had been paid for, argued the university, the 30 per cent extra energy that cogeneration provides from a gallon of oil would save more than \$2 million a year. But it reckoned without the rapid increase of oil prices, the effects of inflation on construction costs and community opposition to a new power plant in a heavily-populated area of Boston.

Public opposition has come to focus on the potential dangers of short-term exposure to nitrous oxides. This had been of little concern when the plant was planned, but was raised in a 1976 report from the World Health Organization as a

possible health hazard from diesel-powered automobile exhausts.

The Massachusetts Department of Environmental Quality and Engineering ruled in 1978 that the steam/chilled water part of the plant could proceed. But in the absence of federal standards covering short-term nitrous oxide exposure (still awaited from the Environmental Protection Agency), refused to grant a permit for the diesel engines.

Critics of the plan claim that short-term exposure to as little as 200 micrograms per cubic metre can be harmful. While not accepting this figure, the DEQE ruled that emissions should not exceed 320 micrograms (based on a hearing officer's conclusion that harmful effects have been observed in laboratory animals at exposures of 940 micrograms per cubic metre and his use of a safety factor of three).

Though disputing the scientific evidence, Harvard has accepted this figure and has drawn up a plan showing ways in which it can comply for more than 99 per cent of the time.

Following further hearings, the DEQE has now accepted most of the university's arguments about the plant's safety and rejected protesters' claims that carcinogenic hazards require further investigation.

However, the state's Deputy Commissioner, Mr David Fierra, two weeks ago again refused an operating permit on what Mr Edward Lashman, Director of Special Projects at Harvard, calls a "single, highly technical issue". This is whether, under certain operating conditions, the plant will endanger public health by contributing further to already high concentrations of nitrous oxides arising from traffic exhaust at a number of congested "hot spots" in the area.

The university is now seeking a further hearing, claiming that the 320 microgram limit will be exceeded at these locations for only 20 out of 8,760 hours in the year, and

No power for the patients?

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