

(reprinted with permission from the Guardian, 8 May 1992)

Anatomy of an accident

The Windscale fire of 1957, the world's worst nuclear accident until Chernobyl, was "almost certainly inevitable." This startling conclusion comes not from a diehard nuclear opponent, but from the latest official history. It makes sobering reading.

When I was a schoolboy, history seemed to be devoted entirely to kings, battles and dates. It bored me rigid. Then I discovered the history of science. The history of kings and battles kept retracing the same dreary cycles of human folly; but the history of science and technology was an exhilarating crescendo of human inspiration.

Gradually, however, caught up in the first wave of widespread concern for the "environment," I realised the history of science and technology had its dark side. As a nuclear physicist I knew about Hiroshima; but civil nuclear power seemed a Good Thing. However, the more I studied it, the more dubious I became. I had stumbled on "official history," as promulgated by the US Atomic Energy Commission.

History, to be sure, has always been written by the winners. Science and technology have exacerbated this tendency. Throughout this century scientific and technological activities have become the creatures of governments and companies. They control access to information about these activities, and seek to present them to the public in the best possible light. That means, inevitably, minimising the dark side - the mishaps and mistakes. In science and technology especially, the mishaps and mistakes are the most important learning experiences; but official history all too often conceals or misrepresents this most crucial evidence.

There are, however, honorable exceptions. In 1974, steeped in scepticism after my immersion in the self-serving official nuclear history from the USAEC, I opened *Independence and Deterrence*, by Margaret Gowing and Lorna Arnold, the official history of Britain's postwar atom bomb programme. It was enthralling - and it pulled no punches. It laid bare the conflicts, controversies and rivalries that shaped Britain's nuclear undertaking, interwoven with lucid explanations of the scientific and technical issues involved. It recounted not only successes but failures. As official history of science and technology in the real world, *Independence and Deterrence* set new standards for clarity, thoroughness and integrity.

Since then Professor Gowing and Mrs Arnold have been grappling with the next phase of the history, a Herculean task. Fortunately, rather than waiting until the whole massive study is complete, Mrs Arnold has brought out one of its most dramatic episodes as a separate book, entitled *Windscale 1957: Anatomy of a Nuclear Accident* (Macmillan).

As official scientific history it is exemplary. Mrs Arnold has the rare gift of writing incisive, gripping narrative, whatever the topic, be it an abstruse scientific phenomenon like Wigner energy or a convoluted committee meeting. Individuals leap from the page: Mrs Arnold knows personally many of those involved, and her copious references to official records and documents are spiced with telling vignettes about the daily lives of the Windscale staff and their superiors in the Atomic Energy Authority and the government.

She tells not only what happened but why, both in the engineering and in the politics. It may seem hard to believe in retrospect, but the AEA was desperately understaffed and short of funds, measured against the magnitude of the tasks set for it by its political masters. Mrs Arnold shows in

scrupulous and fascinating detail how the politicians demanded more than the scientists and engineers could deliver with the time and resources available, and made the Windscale fire, in her words, "almost certainly inevitable." *Windscale 1957* must be required reading for anyone embroiled in the forthcoming 1994 review of Britain's nuclear power policy. We have been here before.

To err is human; and science and technology are quintessentially human activities, as *Windscale 1957* vividly portrays. But Gowings and Arnolds are desperately scarce, and science-based issues crowd the global agenda. Will we ever, for example, get honest official histories of policy-making about ozone depletion, or the greenhouse effect? Those who do not know history are condemned to repeat it. But some mistakes we can make only once.

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