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BOOK REVIEW

Maralinga – Australia's nuclear waste cover-up

by Alan Parkinson

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“Managerialism” has revolutionised public administration in Australia over the last two decades, leading to the technical de-skilling of the public service and rendering many agencies incapable of effectively managing complex technical issues. A case in point is the clean-up of nuclear-contaminated land at Maralinga in the 1990s.

Between 1952 and 1963, Britain conducted a number of atomic bomb tests in the Monte Bello islands (Western Australia) and at Emu and Maralinga (South Australia). Some tests at Maralinga involved plutonium, which has a half-life of 24,000 years. In the 1980s, a royal commission into the tests found that the post-testing remediation of the test sites by the British had been quite inadequate and recommended, *inter alia*, that the Commonwealth implement its own clean-up.

Maralinga is the personal memoir of Mr Alan Parkinson, a well-regarded nuclear engineer with extensive international experience, who in 1989 developed some 30 options for remediating the Maralinga site so that it could be returned to its traditional owners, the Maralinga Tjarutja. In 1993, he was contracted by the Commonwealth to advise it on engineering aspects of the clean-up. Lacking the in-house expertise needed to oversee the clean-up, the responsible department delegated the project set-up and technical oversight to Mr Parkinson; and the responsible Minister appointed Mr Parkinson to the Maralinga Rehabilitation Technical Advisory Committee.

The clean-up was restricted to the most contaminated sites at Maralinga and proceeded in two phases. Phase 1 involved scraping plutonium-contaminated top-soil from areas under the immediate impact of the explosion plumes and burying the soil in excavated trenches. Independent auditors tested the cleaned land and certified that it met the clean-up criteria. Phase 2 involved rendering safe the nuclear waste that the British had left buried in shallow pits. An *in-situ* vitrification process, considered to be “best available technology”, was developed for this by international experts during Phase 1 and was to be implemented during Phase 2.

Mr Parkinson managed the clean-up on behalf of the Commonwealth up to the completion of Phase 1 (December 1997), including the development of the *in-situ* vitrification technology. There were a number of problems experienced which reduced the effectiveness of the remediation efforts, particularly dust generation which must have spread contamination far and wide, but the work succeeded in substantially reducing the worst of the soil contamination.

Towards the end of Phase 1, there was a change in the key departmental staff responsible for the clean-up. The department decided to dispense with Mr Parkinson's services and to manage the project directly. On the advice of external consultants, the department decided to modify the Phase 2 strategy. While it would continue to vitrify some of the pits, it would simply dig up the remainder and

re-inter their waste in new, unlined, near-surface earthen pits. While the latter approach is hardly acceptable international practice, let alone use of “best available technology”, the project proceeded to completion in 2000 on this basis.

Despite the expenditure of \$108 million on the clean-up, the Commonwealth has not yet handed the remediated land back to either the South Australian Government or the Tjarutja as originally intended. No doubt, the residual plutonium contamination, which will become increasingly difficult to detect¹, and issues of future liability preclude this.

The Tjarutja retained Mr Parkinson as an adviser during Phase 2. He gained access to many of the relevant documents and made further site visits. Based on this knowledge, he is very critical of the management of Phase 2, the high-level decisions taken and the quality of the work performed. Since 2000, he has conducted a campaign through the media and via the Commonwealth Parliament to have an independent inquiry held into the project, so far unsuccessfully.

Against this background, it is difficult to come to a definitive view about *Maralinga*. Parkinson comes across as a person of integrity and as a highly competent nuclear engineer. As with any memoir, though, there are additional sides to the story that also need to be considered, but are not presented. Nevertheless, it is very helpful to have Parkinson's side, which I judge on the whole to be highly credible so far as it goes, and ABC Books is to be congratulated for bringing it to us. In addition to what we learn about the Maralinga clean-up and its implications for the future management of the site, it highlights important generic lessons about government management of complex technical projects, particularly the need for in-house expertise to inform high-level decision-making and to oversee outsourced work.

Maralinga is simply and clearly written in a series of 31 short chapters. There is a partial list of the acronyms, symbols and abbreviations used; a calendar of events; project organisation charts for each phase; a list of the main players; and a concise explanation of the relevant nuclear science. Eight colour plates add clarity; but the three, crude maps are quite inadequate. An index would be beneficial; and several minor errors have evaded the editor. Nevertheless, I recommend the book to anyone interested in the clean-up and to those with broader interests in nuclear issues and in the public administration of complex technical projects.

David Leece²



¹Americium-241, which is used to detect plutonium, has a relatively short half-life.

²Dr David Leece is a former executive director and chief scientist of the New South Wales Environment Protection Authority and chairman of the Radiation Advisory Council of New South Wales.