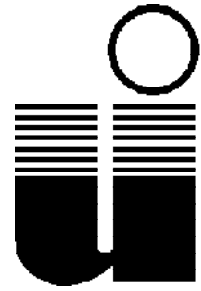


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The Changing Role of the Supervising Scientist in the Uranium Industry of the Kakadu Region

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Uranium mining is a subject that commonly elicits emotive and polarised comments from almost all sectors of the community. Australian society is no different. In the 1970s a heated national debate was in progress over the possible re-development of a uranium mining industry. Earlier uranium mining operations had by that time completely died out, and the legacy of those earlier operations, such as Rum Jungle with its poor environmental record, added fuel to the intense debate. In this atmosphere the government of the day called for a comprehensive inquiry into the whole issue of the nation's possible involvement in uranium resource development.

The Ranger Uranium Environmental Inquiry, chaired by Mr Justice Fox, began in 1975. In its first report the inquiry determined that, subject to proper safeguards being in place, there was no reason why Australia should not develop uranium resources for export.¹ The inquiry also examined the specific issues of mining in the Alligator Rivers region in the Northern Territory of Australia. At the same time much of this same area was being considered for designation as a national park to be called Kakadu and nominated for World Heritage listing. As all the land involved was aboriginal land, the mix was indeed a heady one with tremendous potential for highly emotive debate.

The inquiry determined that it would be possible to have both uranium mining and the national park, but that several safeguards would have to be

put in place to provide assurance to the community that the environment was being adequately protected. A comprehensive list of recommendations was provided to support the findings. All these recommendations were expressed in the inquiry's second report.²

The Supervising Scientist

As part of the safeguards, the inquiry recommended that the federal government create the post of Supervising Scientist, with the role of overseeing the uranium mining industry's environmental management performance in the region. The post, together with a supporting office and a small research institute, were created by Act of Parliament in 1978. The research institute was to be dedicated to research related to environmental protection in relation to uranium mining in the region. It was located near the new town of Jabiru, adjacent to the Ranger mine in the centre of the Kakadu region. Other offices of the Supervising Scientist were established in Darwin, and a corporate headquarters in Sydney.

The organisation's main function was to supervise and assess environmental performance at the mines and the adequacy of the regulatory regime in delivering on the government's expectations for protection of the national park. These expectations were articulated as a series of environmental requirements attached to several instruments within both federal and Northern Territory legislation.

This work required liaison with the Northern Territory Department of Mines and Energy (the organisation given the day-to-day responsibility for regulation of the uranium mining process), the Northern Land Council (representing the interests of the traditional aboriginal owners of the land), and other stakeholders in the Northern Territory. Darwin-based staff also carried out frequent routine inspections of uranium mine sites and uranium exploration operations, and assessed in considerable detail all the environmental monitoring reports from the mining companies.

Thus the Supervising Scientist was seen as a surrogate regulator, and industry and government stakeholders saw this as an unnecessary duplication of the regulatory responsibilities of the Northern Territory government. Other stakeholders, however, perceived the Supervising Scientist as having insufficient power or influence to ensure that the environmental objectives of the federal government and the general community could be met.

As part of the co-ordination and liaison process, the Act of Parliament which created the Supervising Scientist also set up a body called the Co-ordinating Committee for the Alligator Rivers Region (CCARR). This was a group chaired by the Supervising Scientist and comprised members representing stakeholders in the uranium mining process in the region. As well as its co-ordinating function, the committee also had the roles of setting priorities for research and providing a forum for information exchange.

The committee was not a great success. The major concern was that the Act required the workings of the CCARR to be secret, with members required to sign undertakings that they would not divulge the business of the meetings to the outside community. The groups represented on the CCARR included the mining companies, government agencies and a trade union representative, as well as the Northern Land Council. Eventually, in the late 1980s, a single representative of the environment movement was invited by the federal minister to join the group.

The unbalanced composition of the group and tightly restricted flow of information did little to meet the expectations of many stakeholders, in particular those local aboriginal and environmental organisations which had become established during the period since mining began. The business of the committee was commonly conducted in an adversarial atmosphere with resistance to release technical information or fully discuss technical and environmental issues of fact or perception.

The Early Days

By 1980 the Ranger mine was under construction, and at Nabarlek the orebody had been extracted and stockpiled and milling was about to begin. A change of federal government and the introduction of a more restrictive approach to uranium mining then prevented the development of the two other deposits previously identified in the region, Jabiluka and Koongarra.

As time progressed through the early and mid 1980s the meetings of the CCARR were less frequent and tended to become more acrimonious. The change was brought about by a growing frustration within the group that it was no longer serving a purpose useful to the members. Discussion of details of the minutes took up more and more time at meetings as political issues became all-pervading. There were a few minor leaks of information and misinterpretation of it in the media, which made the mining companies very reluctant to table any significant data.

The export levy on uranium originating from Ranger and Nabarlek was increased several times by the government as the uranium price increased, but there was no corresponding decrease in the levy rate when the uranium price later dropped. As the levy was seen to be a mechanism for government to recoup from industry the operating costs of the Supervising Scientist, the level of antagonism from industry increased, co-operation decreased, and fewer real outcomes were achieved from the CCARR.

The lack of trust between the parties placed the effectiveness of the Supervising Scientist and the credibility of the CCARR process at considerable risk. The claims of duplicated activities became more commonplace as there was less frequent exchange of information about who was doing what, when and where. Finally, the federal government determined that an overhaul of the system was required in order to meet its own expectations for efficient and effective working relationships with the territory government regulators, and the needs of the wider range of stakeholders.

The New Arrangements

Following a review of the Supervising Scientist's organisation, mechanisms, budget, and concerns of major stakeholders, the government amended the Act of Parliament and made several other related decisions. These brought about major changes in the methods of operation used by the Supervising Scientist, and the level and style of

interaction with stakeholders. These were put in place in 1993, and included closing down of the CCARR and replacing it with two committees having a more balanced representation of key stakeholders and groups with special interest in the uranium mining activities of the region. An important change in approach was that the committees were to be chaired by an independent and impartial person of high scientific standing.

The Alligator Rivers Region Advisory Committee (ARRAC) was established to provide a forum for exchange of information and discussion of issues amongst the wider stakeholder group, including discussion of the results of monitoring and environmental performance evaluations. Membership includes the Supervising Scientist, the Director of the National Parks and Wildlife Service (i.e. managers of Kakadu National Park), and representatives of the Northern Land Council, local aboriginal groups with direct interests in the land where the mines are located and where impacts might occur, the uranium mining companies, the Northern Territory regulators, NT and federal departments of health and environment, the trade union for the miners, environmentalists from both local and national organisations, and the local town council (representing the resident population).

The Alligator Rivers Region Technical Committee (ARRTC) was created to co-ordinate and liaise on environmental research within the region. This committee has a more restricted membership, confined to organisations with research capacity relevant to the region, and the key stakeholders. It has the responsibility to determine priorities for research and recommend how that research is best conducted and co-ordinated.

At the same time, the federal government entered into a new memorandum of understanding with the Northern Territory government. This set out the day-to-day working arrangements between the two governments and more clearly defined the limits of responsibility and operations of the Supervising Scientist and the NT Department of Mines and Energy. This included the cessation of routine inspections of the mining operations by the Supervising Scientist, with visits to the mine sites limited to invitations from the companies and investigation of infringements of the Northern Territory regulations or federal environmental requirements.

New mechanisms were put into place to enable the Supervising Scientist to assess the environmental performance of the mines. These comprised twice-

yearly Environmental Performance Reviews (EPRs), with the purpose of focusing on environmental outcomes (i.e. leaving the day-to-day compliance issues with the NT regulating authority) and reporting as soon as practicable thereafter to the ARRAC. Any significant technical issues identified by the EPRs are referred to a committee of experts for each mine site for consideration and the development of recommendations for remedial actions by the relevant authority or organisation.

The New Process

The new process involves the integration of two main steps: environmental performance audits (i.e. EPRs), and stakeholder consultation (i.e. the ARRAC). These are operated together on a six-month cycle, reflecting the dynamics of the mining activity, the level of interest in it, and the extreme pressures that the wet-dry tropical climate can impose upon environmental management at the mine (in particular, water management and disposal of excess water). The key features are set out in the next section. The major principles behind the process are:

- there are no surprises and no secrets;
- the focus is on outcomes rather than process;
- continual improvement is encouraged by a shared problem-solving approach which is kept apart from regulatory, compliance-focused processes;
- as far as possible, all relevant data are released to the public domain;
- the process is independently chaired;
- key stakeholders are always consulted on major issues;
- detailed scrutiny is expected from the broad stakeholder group;
- the processes are transparent, predetermined, and frequent.

The Audit Element

Environmental audits of the mine sites are undertaken every six months. The EPRs were designed to reflect the federal government's focus on measuring outcomes rather than process or day-to-day regulation. The process is run by the Supervising Scientist Group (SSG) jointly with the NT regulating authority, and over time the NT government has taken the opportunity to make increased use of the process to satisfy some of its needs in the application of regulations. This trend is consistent with a general trend in Australia towards less intrusive and more goal-driven approaches to regulation.

The EPR functions to identify any areas where

performance does not meet the reasonable expectations of the broad stakeholder group; these areas are examined to determine possible methods of achieving improvement. Where they cannot be resolved by the EPR process they are commonly referred to technical working groups to evaluate options in terms of effectiveness, cost and acceptability. Non-compliance issues may be exposed and are reported upon, but disciplinary action is pursued through the normal regulatory framework, which provides a “safety net” of minimum acceptable performance to the EPR process.

A five-year forward plan for audit focal issues has been developed and is available for adjustment by the broad stakeholder group through the ARRAC forum. The plan recognises the appropriate frequency for issues to be revisited. This is based upon technical assessments of risk and consequences, and public perceptions of risk and consequences as voiced by the broad stakeholder group.

The five-year plan is flexible, and accommodates topical issues arising from, for example, unusual rainfall patterns (which may stress the water management system of the mine), infringements, or public interest issues which may arise from time to time. Hence, a normal environmental audit addresses: matters arising from the previous review; compliance questions put by the regulating authority; issues concerning the mining operation’s forward plan; and topical issues of technical or public concern which have arisen in the period under review.

The audit protocol takes the form of a questionnaire, which is provided to the company at least two weeks before the scheduled audit week. It includes prompts designed to assist the audit team in their work, but which also assist the company to identify particular matters of interest, documentary evidence required, etc. The company may then prepare for the review by carefully checking relevant data and operational systems (hardware and processes), and ensuring that documentary evidence is accessible. A preliminary session to examine and agree documentation is encouraged as this saves time on the day of the EPR.

After two years of undergoing this audit process, Energy Resources of Australia (the operator of the Ranger uranium mine) began to prepare fully documented responses to the questionnaire, which have considerably assisted in the thoroughness, detail and efficiency of the process.

Following the audit interview, a site inspection is made to examine areas of particular interest, including those where poor performance has been indicated. This is commonly the first step in discussions to identify possible reasons for poor performance, and development of options for improvement. Where improvement is indicated, the matter is referred to the technical working groups or to expert consultants to develop solutions. The matter is placed on the agenda for examination at the next review in six months time, when progress will be evaluated.

The questionnaire framework is used to develop an audit outcome report, and each item in the questionnaire is assessed as acceptable, unacceptable, or requiring further work. A scoring system (for example, a mark out of ten) is avoided, because this always implies that for any score of less than ten there is a significant degree of under-performance and hence impact on or risk to the environment. This approach is not helpful; for example, it overlooks areas where insufficient data may be available to fully understand an issue. This may be in spite of the fact that more environmental data may be available than in any other known situation, and the company may already be committed to an ongoing programme of investigation.

A summary report of the review is prepared immediately following the audit process, and is signed by the principals of organisations participating in the review team. The outcomes are therefore agreed, and misunderstandings or differences of opinion are worked through before the results of the review process are presented to the stakeholder consultative group as an agreed position.

The Consultation Element

The stakeholder group meets in the same week as the environmental performance review, and is presented with copies of the audit assessment and the summary report – often only completed late the previous day. This information is made available at least two hours before the meeting commences so members may, if they wish, examine it before the meeting and prepare specific questions. This procedure also ensures that discussion focuses on up-to-date information.

Other information provided includes reports by the NT government regulator and the Supervising Scientist for the period under review; annual environmental reports by the mining companies; and additional reports the companies

or other stakeholders may wish to make available. These may include monthly or quarterly reports of monitoring data, one-off technical reports, and planning documents. The company staff commonly also give brief presentations on recent or planned developments at the mine sites. There is no restriction placed on the distribution of any material presented to the meetings. All these data are distributed as early as possible before the meeting, often up to two weeks in advance.

The stakeholder group is extremely diverse and is made up of representatives of aboriginal groups, a local environmental group, a representative of the workforce at the mine, local government, and federal and Northern Territory departments and agencies of resources, health and environment. The federal Minister for the Environment approves the stakeholder groups, and the groups are free to select their representatives. Additional members have been added to the consultative group to ensure that the consultative process is truly inclusive of all significant stakeholder bodies.

The committee is independently chaired. Debate is managed so as to focus on environmental protection from uranium mining. Whilst some representatives have strong positions on whether or not uranium mining should be permitted in Australia, discussion on uranium mining policy is discouraged. "Meeting notes" are taken rather than formal minutes, in order to avoid acrimonious discussion on detail, which was common in the CCARR meetings which took place before 1993.

The EPR/stakeholder forum process has been applied successfully at all stages of mine life. Whilst the Ranger mine is an example of an active mine, the process is still being applied to the Nabarlek mine which has been decommissioned and rehabilitated, and is undergoing monitoring prior to closeout. The EPR process allows the re-vegetation and surface stability of the site to be regularly assessed, and for the stakeholder forum to be advised of the success of these works to date. It is anticipated that the process will continue to be applied at least until the site is declared to be satisfactorily rehabilitated, some long term issues such as post-closeout monitoring are resolved, and the site handed back to the traditional owners.

The EPR process is already being applied to the proposed new mine at Jabiluka, with the active support of the mining company. The first review took place in July 1998 following commencement of site clearance works in June 1998. The process has also been applied in other sectors. A slightly modified version of the EPR/stakeholder forum

process has also been introduced successfully in the Australian Indian Ocean Territories of Christmas Island and the Cocos (Keeling) Islands. There it has been applied to the assessment of environmental management of phosphate mining and a range of industrial activities including airports, power stations, oil storage facilities and a hotel-resort complex.³

Evaluation

The Environmental Performance Review (EPR) approach to evaluating the adequacy of performance, in place of a system of frequent compliance inspections, has engendered more harmonious working relationships between the federal government (through the Supervising Scientist), the Northern Territory regulator (Department of Mines and Energy), and the mine operators. This has grown from acceptance of, and trust in, the objectives of co-operation and collaboration in identifying and rectifying problems. An appreciation by the mine operators that this reduces the risk of the application of regulatory sanctions has also fostered more commitment from them in the identification and application of best practicable technology, and commitment to continual improvement.

In addition, there is the perception that the level of community concern and the number of protest actions in respect of the active operations have reduced since the new system was put in place, particularly since there has been more public access to information. The more open exchange of viewpoints and discussion of information and its interpretation through the ARRAC stakeholder forum has developed more of a sense of shared commitment to problem-solving, rather than apportioning blame. The success of the procedure relies heavily on trust between the parties. In particular, it depends on trust on the part of the audit team that all relevant data are presented, and are presented objectively, and that the company is consistent and committed to pursuing improvement in areas identified as unacceptable or requiring further work.

The scope of the audit goes well beyond regulatory considerations, and so regulatory sanctions generally cannot be called upon in the case of this trust-based relationship breaking down; for example, evidence that a company may only be paying lip service to continual improvement. However, the sensitivity of the mining companies to negative perceptions in the community and government over uranium mining, national parks

and aboriginal issues, and the effectiveness of the stakeholder group as a conduit to expose controversial issues to the public domain, has to date guaranteed positive mining company participation in the performance review process.

A major benefit of the independent chairing of the consultative forum is the effective avoidance of a political agenda. This has ensured a close focus on environmental performance as the main business of the group and improved the maturity and quality of discussion. Access to up-to-date comprehensive environmental data and interpretation, and the opportunity to discuss these in detail with the key information sources, has increased the responsible use and acceptance of this information, and reduced the prior tendency for its selective and sensationalist misuse.

Conclusion

Over the past nearly 20 years the role of the Supervising Scientist has changed little in respect of the objectives of the organisation, but quite markedly in the manner in which those desired objectives are achieved. A completely new and proactive approach to the oversight of environmental management at the uranium mines of the Kakadu region has been well received and is working effectively. The process has been applied to an operating mine (Ranger), is serving its purpose well at a rehabilitated mine (Nabarlek), and is being applied at a new mine (Jabiluka) from the very earliest stages of development.

The combined approach of Environmental Performance Review and stakeholder consultation

processes is a successful case study of an arrangement designed to deliver accountability in situations of particular environmental sensitivity to the community. The yardstick for measurement, and the main sanction for continued poor performance, is community reaction. Regulatory mechanisms act as a "safety net" beneath these processes to avoid the risk of significant environmental damage.

Success depends to a large degree on mutual trust, developed from a clear definition of the environmental objectives and commitment by all parties to continual improvement. It may take several iterations of the audit/consultation cycle to generate a trusting relationship. The ultimate goal is to develop a shared, open, team approach, able to accept and absorb differences in position and principles, and robust enough to maintain focus through difficulties beyond the scope of this (and usually any other) environmental management system (for example, accidents). We believe that we are well on the way to achieving this objective in the uranium mining industry in Australia's Northern Territory.

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