

Ranger Environmental Requirements

Explanatory Material relating to Section 19.2

Best Practicable Technology

Foreword

Section 19.2 of the Environmental Requirements of the Commonwealth of Australia for the Operation of the Ranger Uranium Mine (the Ranger ERs) provides for the publication of explanatory material agreed to by the major stakeholders to assist in the interpretation of provisions of the Ranger ERs.

This document has been published by the Supervising Scientist under section 19.2 to assist in the interpretation of the Ranger ER (ER12) which relates to Best Practicable Technology (BPT) and should be read in conjunction with ER12.

Definition Of BPT

Section 12 of the Ranger ERs defines BPT as follows;

That technology from time to time relevant to the Ranger Project that produces the maximum environmental benefit that can be reasonably achieved having regard to all relevant matters including:

- a) the environmental standards achieved by uranium operations elsewhere in the world with respect to
 - i) level of effluent control achieved; and
 - ii) the extent to which environmental degradation is prevented;
- b) the level of environmental protection to be achieved by the application or adoption of the technology and the resources required to apply or adopt the technology so far as to achieve the maximum environmental benefit from the available resources;
- c) evidence of detriment, or lack of detriment, to the environment;
- d) the physical location of the Ranger Project;
- e) the age of the equipment and facilities in use on the Ranger Project and their relative effectiveness in reducing environmental pollution and degradation
- f) social factors including the views of the regional community and possible adverse effects of introducing alternative technology.

The objectives of the National Strategy for Ecologically Sustainable Development (NSED) provide a national context and basis for understanding Best Practicable Technology as applied to the Ranger Project Area. The goal is to ensure the protection of the environment through the application of relevant technologies at the site within a strategic environmental management system. The NSED principles are;

- integrating economic and environmental goals in policies and activities;

- ensuring that environmental assets are properly valued;
- providing for equity within and between generations;
- dealing cautiously with risk and irreversibility; and
- recognising the global dimension.

Interpretation

Objective Of BPT Provisions

The Ranger ERs are attached to the Authority to Mine issued by the Commonwealth under Section 41 of the Atomic Energy Act for the explicit purpose of authorising mining and milling operations within the Ranger Project Area. Thus the objective of BPT is in the context of some unavoidable environmental disruption as a consequence of the authorised operations.

BPT as defined in the Ranger ERs establishes a framework for the technical assessment of proposed actions connected with mining and milling operations and rehabilitation on the Ranger Project Area. The objective of including BPT provisions in the Ranger ERs is to provide the company with flexibility in environmental management to ensure that the Primary Environmental Objectives (section 1 of the Ranger ERs) are met under all circumstances, including any which were unforeseen when the Ranger ERs were drafted.

Interpretation Of BPT To Be Undertaken With Strict Reference To The Primary Environmental Objectives

The level of environmental protection required by the Primary Environmental Objectives within the Ranger Project Area is significantly different to that required beyond the project area in Kakadu National Park. The Primary Environmental Objectives require that environmental impacts within the Ranger Project Area are as low as reasonably achievable, but do not allow any significant impacts on Kakadu National Park.

Maximum Environmental Benefit

It is not the intent of the Ranger ERs that the definition of BPT be interpreted as a veto on mining and milling operations authorised by the Commonwealth. Any proposal to amend or introduce operational approaches, procedures or mechanisms which ranks highest among a range of widely researched options when assessed under Section 12.5 of the Ranger ERs, and which is determined to be consistent with the Primary Environmental Objectives would normally be accepted as BPT.

The BPT option that reasonably achieves the maximum environmental benefit should also be the option that achieves the most efficient allocation of environmental protection resources. That is, the environmental benefit derived from the resources applied to environmental protection should be maximised thus ensuring that environmental protection is optimised.

To identify the BPT option that maximises environmental benefit, all relevant matters including the six criteria listed in Section 12.4 (a) to (f) must be assessed against each option. An explanation of these factors is provided in Table 1. As provided in Section 12.5, the rigour of the BPT analysis must be commensurate with the potential environmental significance of the proposal.

Table 1 Explanation of Relevant Matters/Criteria to be Included in BPT Assessment.

Environmental Requirement Clause	Explanation
12.4 BPT is defined as: That technology from time to time relevant to the Ranger Project which produces the maximum environmental benefit that can be reasonably achieved having regard to all relevant matters including:	<i>BPT</i> That technology that ranks highest when assessed against the factors below and is consistent with the Primary Environmental Objectives.
(a) the environmental standards achieved by uranium operations elsewhere in the world with respect to (i) level of effluent control achieved; and (ii) the extent to which environmental degradation is prevented;	<i>World's Best Practice</i> Options must be compared with the environmental standards set by world's best practice in uranium mining and milling at the time they are to be implemented, with respect to the level of effluent control achieved and the prevention of environmental degradation.
(b) the level of environmental protection to be achieved by the application or adoption of the technology and the resources required to apply or adopt the technology so as to achieve the maximum environmental benefit from the available resources;	<i>Cost-effectiveness</i> Options should be assessed with respect to both the level of environmental protection achieved, and the cost of implementation.
(c) evidence of detriment, or lack of detriment to the environment;	<i>Proven Effectiveness</i> Proposals for which there is practical evidence of their effectiveness should be favored over proposals for which there is only experimental or theoretical evidence.
(d) the physical location of the Ranger Project,	<i>Location</i> The Ranger mine is located in the Wet/Dry tropics, on Aboriginal land surrounded by Kakadu National Park, remote from high population density cities. Hence the level of protection required for the environment and community is very high and the technology chosen should be designed accordingly.
(e) the age of equipment and facilities in use on the Ranger Project and their relative effectiveness in reducing environmental pollution and degradation; and	<i>Age of Equipment</i> Technology in use should be reviewed periodically to determine whether or not recent advances have been made that would result in enhanced environmental protection. Technology installed at Ranger in accordance with BPT should be reasonably allowed to fulfil its serviceable life with due consideration given to the advances in technology and the amount of serviceable life expended.
(f) social factors including the views of the regional community and possible adverse effects of introducing alternative technology.	<i>Social Factors</i> The views of the regional community must be incorporated into BPT assessment. This includes where the introduction of new technology would improve the level of environmental protection but may also have negative social consequences. Benefits in environmental effectiveness may not necessarily result in greater social acceptability.

BPT Analysis

Section 12.5 states that "Proposals to amend or introduce operational approaches, procedures or mechanisms must be supported by BPT analysis. The rigour of the BPT analysis must be commensurate with the potential environmental significance of the proposal. The BPT analysis must involve consultation with and having regard to the views of the major stakeholders and copies of the BPT analysis must be provided to each of the major stakeholders.

The six elements listed in Table 1 must be considered in a BPT analysis. The BPT analysis technique employed should provide a systematic and consistent methodology for evaluating a proposal in terms of each of the six BPT elements. It should allow the valid comparison of proposals in order to determine which is BPT. The type of analysis technique to be employed should be chosen by stakeholder consensus for each specific application on a case by case basis. Environmental risk assessment is an integral step in BPT analysis.

The BPT analysis technique employed should be kept under review by the stakeholders to ensure that it is and remains consistent with relevant industry standards, government policies, international agreements and expert opinion.

The Precautionary Approach

The precautionary approach as defined in Section 20 is “an approach where decisions are guided by careful evaluation to avoid serious or irreversible damage to the environment”. In Section 12.6 “a precautionary approach is to be exercised in the application of BPT in order to achieve outcomes consistent with the Primary Environmental Objectives”.

The precautionary approach as it relates to the six criteria provided in Section 12.4 (a) to (f) should be applied by all stakeholders when taking part in BPT assessment. In particular, when proven effectiveness is assessed, application of the precautionary approach should result in the thorough investigation of all available information regarding the technologies under consideration together with an assessment of the risk-weighted consequences. This is particularly important where a technology has not been previously applied at Ranger. Current research and track record information should be assessed with consideration given to the relevance of this information if the technology were to be applied to the location of Ranger.