

**PERCEPTION VERSUS REALITY: BRIDGING THE GAP BETWEEN  
QUANTITATIVE AND QUALITATIVE INFORMATION RELATING  
TO THE RISKS OF URANIUM MINING**

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Communication of scientifically valid estimates of risk to the general public is a notoriously difficult task. The public's perceptions of risk are strongly influenced by its experiences in the use, benefits, and level of understanding of, and control over, the issue at hand. Therefore, whilst the risk of death or injury from car travel is high relative to say air travel, the greater level of familiarity, immediate benefit, general understanding of the technology, and ability to exert control of car use leads to the perception that the level of risk from this form of transport as acceptable. In contrast, the greater statistical safety of air travel does not lead to a perception of lesser risk because aeroplane passengers are disempowered through a lack of technical knowledge and control.

Similarly, the general public feels disempowered and over-awed by the technical complexities of the nuclear industry. Furthermore, perceptions are coloured by three very significant attributes peculiar to the nuclear industry: the invisibility of radiation, which magnifies fear because of the inability to smell, see or feel a potentially lethal health risk; the very long time scales of potential health and environmental impacts; and the association between the nuclear industry and nuclear weapons.

It is not realistic to expect that discussion with non-specialists on environmental management in the uranium production cycle can take place to the satisfaction of the public without the perceptions outlined above being fully considered. Indeed, in any discussion, equal weight needs to be given to these perceptions, as they influence opinion at least as much as do the technical information provided by specialists.

In the course of discussion in forums established by the Australian Government to consider the environmental and health impacts of uranium mining in the Alligator Rivers Region, the catch-phrase *perception is reality* has been coined to emphasize the absolute need to deal with the (commonly not well technically founded) concerns of the public. To trivialize their concerns is to demean them and their representatives, and so deepen levels of mistrust which commonly typify the relationships between those in or close to the industry, and the broader community.

Key components of building a base for effective communication include openness and transparency of process, complete information sets, regular communication at appropriate times, and mutual respect. Information must be prepared in a way which can be understood and jargon must be minimized.

This paper describes the processes and techniques used to facilitate communication between technical specialists and the general public in relation to the environmental impacts of the Ranger uranium mine. These techniques include a simple matrix method developed for conveying information objectively on the impacts upon the environment, but which allows different subjective interpretations of the significance of that impact to be overlaid. Thus a clear distinction can be made between the *perceptions* of the seriousness of an incident and its technical *reality*. This approach is proving useful in improving the level of trust and understanding on an issue where debate is commonly plagued by mistrust, mis-information and mischievousness.

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