



The Chandler Proposal - Safety case

What is a Safety Case?

A Safety Case is a document that clearly explains the risks associated with operating a large project. If approved, the Chandler Facility would be a very large project. Constructing it, operating it, and closing it, will create a wide range of risks. These risks may be related to the environment or to humans. They are generally regarded as being negative and because of this, they require special management.

Why does the Chandler Proposal need a Safety Case?

The Chandler Proposal would store and permanently isolate a large amount of dangerous and hazardous chemical goods. Because of this, a Safety Case is required under Northern Territory (NT) law.

The law states that if a certain volume of hazardous waste is stored or permanently isolated in one place for a long period of time, it may be registered as a Major Hazard Facility (MHF).

The Chandler Proposal is likely to be registered under NT law as a MHF. Therefore, Tellus will prepare a Safety Case for the Chandler Proposal.

What will the Chandler Safety Case include?

The Chandler Safety Case addresses the key components of the NT Safety Case Regulations. It also includes potential risks to human health and safety that were identified by Tellus during multiple risk assessments undertaken during the preparation of the Environmental Impact Statement. These include potential risks on groundwater; surface water and geology.

Engineered barriers versus natural safety barriers

The combination of engineered and natural barriers are shown in the image below. This system is known as the 'multi-barrier system'. It means multiple fail-safe layers are in place to protect the environment and humans. Even if one of these barriers fails, hazardous waste would still be contained by the other engineered layers.

What engineered barriers will be used?

A combination of strict waste acceptance criteria involving packaging, transport rules, temporary storage, permanent isolation and closure would be underpinned by engineering principles.

What is the natural barrier at the Chandler Facility?

Salt! The Chandler Facility has a 500 million year old, 300 metre thick bed of salt. It has not been disturbed for over 500 million years. No water has penetrated into the salt bed for the same amount of time.

Why is salt an excellent natural barrier?

Salt has a very special natural property that is known as salt creep. This means that a thick bed of salt can self-heal if it is disturbed. Have you ever seen a tree wound heal itself by growing over the wound? If so, then salt can do the same thing if a crack or a gap appears within a thick bed, just like the Chandler Formation.

The safety case would be based on the multi barrier concept which is underpinned by geology, hydrogeology, operational procedures and the natural arid climate.

Engineered barriers during operations

Natural barriers

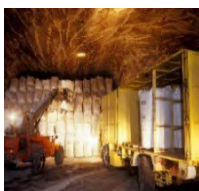
Packaging



Transport



Operations



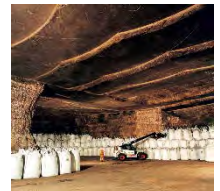
Operations



Closure & Control Period



Extensive salt bed



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