

Notes from the Meeting of Task Group 1: Safety Case Understanding

The following is a record of the main conclusions and actions from the Task Group 1 meetings (on Safety Case Understanding) held during the PRISM meeting from 30th March to 3rd April 2009. It has been derived from the notes and flipcharts generated during the meeting.

Proposed Programme

Task Group 1 (TG1) will focus on:

- The identification of the relevant decisions steps occurring through the lifecycle of a near surface disposal facility for which a safety case is necessary;
- The identification of the key components of the safety case that support this decision step, and identification of the related stakeholders; and
- illustrations of good practice based on national experience.

TG1 will appraise and check the applicability of the decision process for different types of near surface radioactive waste disposal facilities. By considering a wide range of disposal facility types (VLLW, mining, ILW facilities) the work will provide confidence that the results are broadly applicable. Furthermore, each decision step and its associated safety case components will be examined from the point of view of an existing disposal facility as well as a new disposal facility. Finally, special attention will be paid to the expectations of the operators, regulators, and other stakeholders through this decision process.

The group will also take into account the following constraints:

- The scope of the Task Group is limited to long term safety concerns;
- Decision processes differ between countries, but common elements can be found in each. These common elements permit the development of a reference decision process to be used by the Task Group to illustrate how the safety case supports decisions that have to be taken, and how the safety case evolves with time. The work of the Task Group is focused on the decisions that have to be taken rather than the process itself. In this way the results of the Task Group will be broadly applicable to various national licensing frameworks.

From the discussions held during the first plenary session, TG1 will analyse the motivations for undertaking a reassessment safety case, for both operational and legacy facilities.

Proposed working plan:

- For the next plenary meeting, a draft of the reference decision process will be produced, along with the associated key components of the safety case. The goal of this draft is to stimulate discussion, in order to arrive at a final version of the reference decision process. In parallel, a first draft will be presented of the evolution of elements of the safety case.

Each participant will provide some examples on how the safety case elements have been managed in their country (or are envisaged to be managed) identifying the key success factors or difficulties encountered.

- In order to be able to reach these objectives, a Task Group meeting¹ will be organized in autumn 2009 to produce the draft information needed for the second plenary meeting (based on the preliminary discussions held during the first plenary session).
- During the second plenary, the objectives are to finalise the reference decision process, to initiate discussion on the evolution of the safety case, and to discuss how national experiences could illustrate the decision process.

It seems reasonable to expect that the decision process should be similar for all types of waste disposal facilities considered. However, the evolution of the safety case may be more facility dependent. This aspect will be subject to discussion during the second plenary meeting.

During the second plenary, TG1 will present its preliminary results to the other task groups to collect their comments and suggestions.

- After the second plenary meeting, it is planned to collect comments and to develop a first draft of the TG1 report, which will include examples of good practice
 - Special attention will be paid to communication with other task groups.
 - TG1 participants will also contribute to the proposed Booklet and a PRISM project poster.

Technical approach

During the first plenary, TG1 has identified a set of key decisions taken in an evolving safety case. Each time a key decision has been identified and acknowledged as such by the members of TG1, the group identified the needed information for this decision and the concerned stakeholders. Through intensive and interactive discussions, a first scheme for a decision process has been developed.

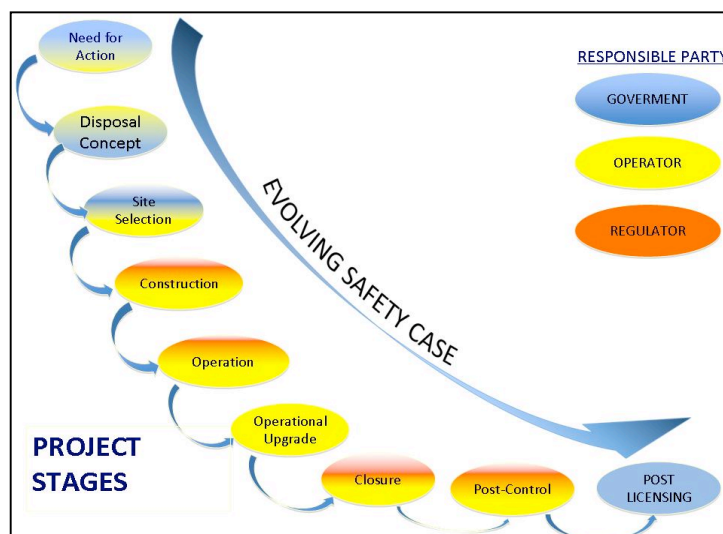


Figure 1: Illustrative example of decision steps and key stakeholders for such.

Figure 1 provides an illustration of the decision steps indicating the role of the different stakeholders for each step..

Each step is defined by the nature of the decision that has to be taken. For example, the “Operation” step is driven by two decisions: the decision to “Operate” taken by the operator and the decision of issuing an authorisation and a license for operation taken by the regulator.

Table 1 at the end of this note provides the preliminary list of decisions that have been identified, discussed and developed during the plenary session. For each decision, the associated phase and the identified components of the safety case that support the decision have been listed.

¹ Resource limitations are such that preparatory work will have to be done by a subgroup of TG1.

Figure 2 illustrates how the components of the safety case might evolve with the decision process. A weight factor that is a function of time and assigned a value from 0 to 3 has been allocated to the different components. A value of “3” is set when this component is judged as essential for the step. A value of “0” is set when the component is not relevant for the decision step.

Some components become more important as the project progresses. For some peaks higher values have been allocated to all components. This implies that these decision steps are quite important.

It may be interesting to spend some time during the PRISM project on the different analyses that can be performed on such results, and identifying if such analysis is very subjective, or if some generic results could be developed independent of the type of disposal facility.

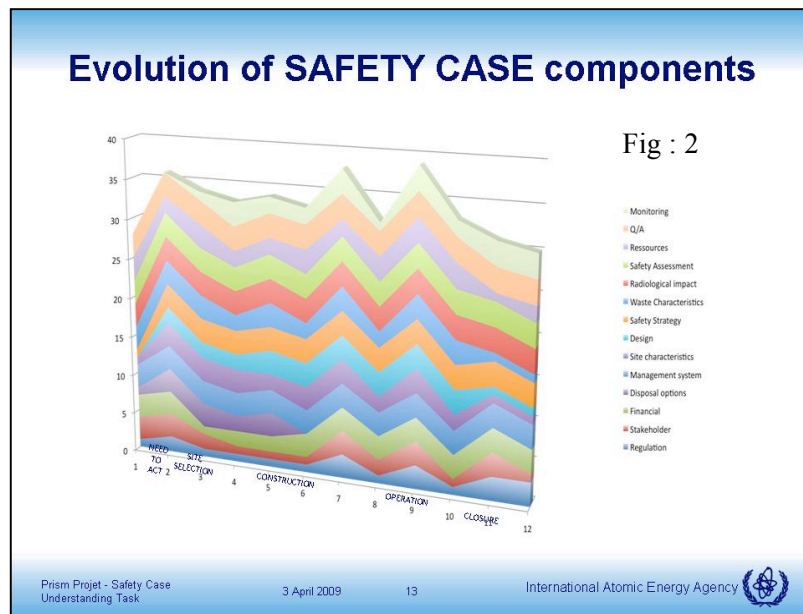


Figure 2: Safety case components and their relative importance by phase of project evolution.

Table 1: Decision making and evolution of the safety case

<u>Decision</u>	<u>Phase</u>	<u>Safety Case</u>
<ul style="list-style-type: none"> - Choose an option 	<p>Initiating process:</p> <p><u>Remark:</u> Recognize that there is a hazard to be managed</p>	<ul style="list-style-type: none"> - Waste Inventory (amount, type, activity → WAC); - Alternative options - National regulation / national strategy - International guidance and duties/commitments - Expectations of the stakeholders
<ul style="list-style-type: none"> - Decide on the disposal concept in a given environment (conditions) - Decision in principle 	<p>Disposal Concept</p> <p><u>Remark:</u> Iterative process → Design Group; Uncertainties; WAC</p>	<ul style="list-style-type: none"> - the safety strategy - the disposal options (data) - the possible sites conditions (data) - regulation - policy, - stakeholders - financial and political considerations - Early coordination with regulator, stakeholders - Check the waste to be disposed of taking into account the disposal concept and environment
<ul style="list-style-type: none"> - Choose the site and associated design - Licensing decision <p><u>Reassessment:</u> Risk management options</p>	<p>Site selection and its associated design</p>	<ul style="list-style-type: none"> - Site characteristic and environment - Specify of design taking into account the site characteristics (data generic and specific) - Environmental Impact Assessment (mining !!) - Stakeholders and neighbor countries - Financial issues - Regulation
<ul style="list-style-type: none"> - Construction (operator) - Authorization and/or license for construction (authorities) <p><u>Reassessment:</u> Choice and implementation of alternative options (operator and regulator)</p>	<p>Construction</p>	<ul style="list-style-type: none"> - Site characterization, (DS354 req. 15) - public involvement, - confirmation of the site, - confirmation on the disposal design, - safety assessment - Management system - Financial commitment to continue - Permits non-nuclear for the construction authorization - Programme for monitoring - Environmental Impact Assessment
<ul style="list-style-type: none"> - Operate (operator) - Authorization and license for operation (authorities) 	<p>Operation</p>	<ul style="list-style-type: none"> - Commissioning tests - Modifications during construction and commissioning - up-date the safety assessment - Permits non-nuclear - Programme for monitoring (partial results) - WAC - Management system (operational procedure, workers protection, training, security ..) - Financial commitment - Closure Programme
<ul style="list-style-type: none"> - Continue or change the operating and licensing conditions - End operation. 	<p>Up-dates during operation</p>	<ul style="list-style-type: none"> - Motivation - Periodically or non required by the regulator - Modifications (new type of wastes, WAC, capacity, design) - New information

<u>Decision</u>	<u>Phase</u>	<u>Safety Case</u>
Reassessment: monitoring the process		<ul style="list-style-type: none"> - Regulatory change - Modifications in the management system
- Close or remediate the facility	Closure of facility	<ul style="list-style-type: none"> - Up-date safety assessment - Final design - Programme for monitoring (partial results) - Management system - Environmental issues - Partial decommissioning - Regulation (others authorities, non-nuclear permits)
- Start to post-closure phase	Post-closure phase	<ul style="list-style-type: none"> - Final configuration - Financial - Management system (security,..) - Programme for monitoring (partial results) - Up-date safety assessment (time scale, schedule,..) - Transfer of license
- End active institutional control	Post active institutional phase	<ul style="list-style-type: none"> - Up-date safety assessment (time scale, schedule,..) - Programme for monitoring (results) - Financial - Regulation change - Management system (records, ownership) - Transfer of license - Progressive reduction of activities
- Decision to end license	Post-licensing phase <u>Remark:</u> Not always considered	<ul style="list-style-type: none"> - Based on the safety case - Up-date safety assessment (time scale, schedule,..) - Management system (records, land restrictions?) - Final configuration - Regulation change - Transfer of license