

Carbon Sequestration Leadership Forum

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Working group : Performance based standard site safety and integrity

CSLF meeting

March, 15, 2010

Pau



Context

- conciliation meeting between the IEA, CSLF and GCCSI identifies, among the 24 recommendations suggested to the G8 in 2008, those which should need complementary information.
- Among the four recommendations addressed to the CSLF Technical group, one asks us to specify reasons adduced by the recommendation n°14: "*Governments with stakeholders need to develop performance based standard site safety and integrity*".
- Technical group decided to create the task force during the last meeting in Oslo, 2 April 2009
- Members:
 - Canada, France, Japan, Netherland, South Africa, United States

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Agenda

- Final comments on the text
- Endorsement of all members of the working group
- Propose recommendations to submit to the TG



State of work

- Content of the Draft report
 - state of the technical requests necessary for the establishment of safety standards.
 - various regulation approaches to be used possibly to guarantee the safety and integrity of the storage sites on the basis of technical criteria described previously.
 - In conclusion, main knowledge gaps which will need to be covered in order to make this technology acceptable to the various stakeholders.



State of work

- Technical requirements for performance-based standards
 - Exposure effects
 - Review of exposure effects on human health, ecosystems and groundwater
 - Acceptable concentration limits
 - Except for human, too few data available
 - Risk level
 - Computation of risk level
 - Uncertainties too high, no real computation possibilities
 - Notion of “acceptable risk level”
 - f. i. expressed in term of number of fatalities per year



State of work

- Technical requirements for performance-based standards
 - Monitoring for performance quantification
 - Number of solution for short term monitoring (operation phase)
 - Less solutions for long term monitoring (post-closure phase)
 - Conclusion
 - Performance standards are loosely connected to safety standards
 - Safety assessments have to be based on potential exposure
 - Need to know the conditions of exposure of vulnerable assets



State of work

- Regulation requirements for performance-based standards for storage site safety & integrity
 - Two options:
 - Performance-based approach
 - Prescriptive-based approach
 - Review of existing regulation
 - From IEA roadmap
 - From EU funded project (STRACO₂)



State of work

- Regulation requirements for performance-based standards for storage site safety & integrity
 - Conclusion
 - Regulatory documents assign goals rather than means to achieve them
 - Lack of experience makes difficult the establishment of criteria
 - ⇒ Need flexibility at the development stage
 - S&I performance will depend on the capacity of monitoring techniques
 - to locate and quantify the volume of stored CO₂
 - to detect and quantify leaks