

## TR-20-14 - Review instructions

### Background and objectives

This review plan concerns a report produced within the department of Research and development at SKB. Any report produced within this department may support future safety analysis and/or applications to build final repositories for spent nuclear fuel or short-lived radioactive waste.

This report describes the post test examination of copper components from the field tests LOT S2 and A3.

This review is a factual review (Sw. "sakgranskning"). According to SKB's procedure (SD-037 Granskning) the review shall be performed with the support of an approved review plan. The overall objective of this review is to ascertain that the contents of the report are correct and that the defined review criteria are fulfilled.

It should be **noted** that the review results, including the identity of the reviewers, will be stored in SKB's documentation system (SKBdoc). The documentation may, on request, be made available to The Swedish Radiation Safety Authority.

### Review documents

Documents for the review:

- The report "*Corrosion of copper in bentonite after 20 years exposure in the field tests LOT S2 and LOT A3.*", SKBdoc id 1900516, SKBdoc version 0.2.
- Appendices A-H with the following SKBdoc id's, 1900518, 1900519, 1900520, 1900521, 1900522, 1900523, 1900524, 1900525, version 0.1 for all appendices.
- The review plan (this document).
- The review form for documentation of the result of the review.

### Requirements

It is required that the report is scientifically and technically sound and that the conclusions reached are supported by the analyses or other findings in the report and that these are clearly documented.

## Review criteria

The following general criteria need to be fulfilled in order for the report to meet the requirements:

- 1 The objective, scope and premises for the report and analyses should be clearly and traceably presented.
- 2 Methodologies and models are verified and validated or proven.
- 3 Used methodologies and models are applicable and have been used within its possibilities and limits.
- 4 It should be possible to evaluate the quality of cited references of importance for the conclusions reached.
- 5 Factual information shall be supported by relevant references.
- 6 The conclusions reached shall be supported by the analyses, other findings in the report and/or by supporting documents.
- 7 The conclusions should be clearly reported and in such way that the fulfilment of the stated objectives can be judged.

The reviewer/s shall have the following competence:

- Technical knowledge of the KBS-3 disposal concept.
- Factual knowledge of corrosion and/or material chemistry.
- Experience of repository like field tests.

## Reviewers

Following reviewers have been selected in order to meet the requirements of competence:

Name of reviewer	Competence	Part of report to review	Focus in review
Fraser King, Integrity Consulting	Long experience of corrosion in repository environments in different programs around the world. Specific knowledge of copper corrosion.	Whole report.	All general review criteria.  Particular focus on the discussion of localised corrosion.
Paul Wersin, Uni Bern	Long experience of repository science. Good knowledge of LOT and similar field tests.	Whole report.	All general review criteria.  Particular focus on the quantification of copper in bentonite clay and the corrosion depth calculations.
Torbjörn Sandén, Claytech	Long experience of working with bentonite clay. Involved in LOT since the installation.	The following chapters in the main document (SKBdoc id 1900516, SKBdoc version 0.2):  Chapter 1, check technical information about installation, design, and operation of LOT.	

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		<p>Chapter 3.5, check calculations of copper in bentonite (assumptions made regarding dimensions, density, mass etc).</p> <p>Chapter 4.3, check discussion and numbers regarding the initial air (oxygen) inventory.</p>	
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## Documentation

General comments and any reservations and references to comments, as well as answers should be given in the provided review form.

General language review comments can be given as suggestions for new wording directly into the digital version of the document with “track changes”.

Comments should be sent to [lena.lind.konsult@skb.se](mailto:lana.lind.konsult@skb.se) who is also responsible for the handling and documentation of received comments. A copy should be sent to [johannes.johansson@skb.se](mailto:johannes.johansson@skb.se).

## Relation to other reviews

The factual review is followed by a quality review in order to assess that the factual review have been according to SKB procedure (SD-037 Granskning).