Errata 2011-10

SKB TR-10-52

Data report for the safety assessment SR-Site

In the earlier distributed report, there are errors that have now been corrected. The corrected pages 293, 422 and 448 are enclosed. The changed text is marked with a vertical line in the page margin. An updated pdf version of the report, dated 2011-10, can be found at www.skb.se/publications.

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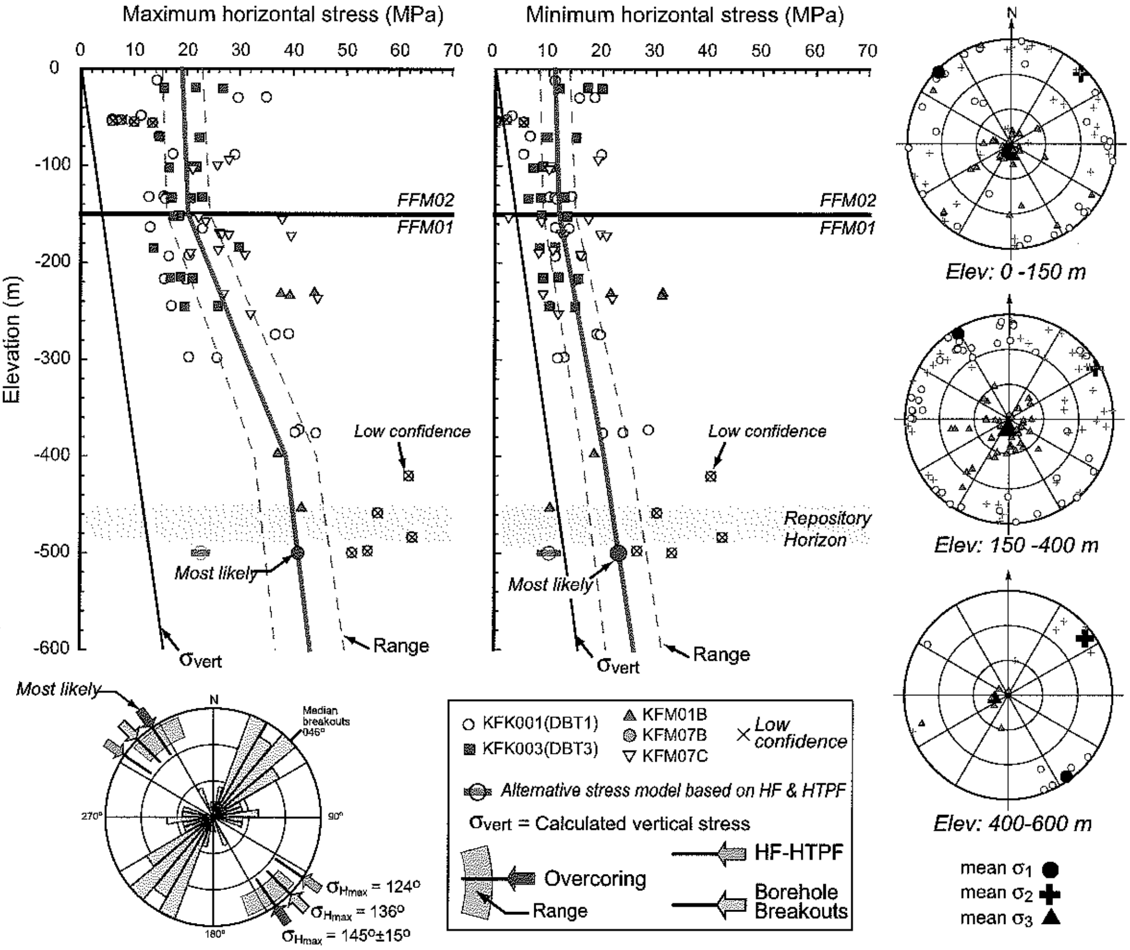

*Figure 6-48. In situ stress model for fracture domains FFM01 and FFM02, cf. Table 6-51, with measurement data. Reproduced from Figure 7-18 of **Site description Forsmark**.*

Table 6-50. Generic rock mass density used to estimate the vertical stress gradient. This value is consistent with the densities of the most common rock types in rock domains RFM029 and RFM045 given in /Stephens et al. 2007/.

Parameter	Unit	Value
Density (ρ)	kg/m^3	2,700

Table 6-51. Stress models for domains FFM01, FFM02, FFM03, and FFM06 at Forsmark /Glamheden et al. 2007/.

Domain	σH (MPa)	σH, orientation (°)	σh (MPa)	σv (MPa)
FFM01 and FFM06 (150–400 m)	9.1+0.074z±15%	145±15	6.8+0.034z±25%	0.0265z±2%
FFM01 and FFM06 (400–600 m)	29.5+0.023z±15%	145±15	9.2+0.028z±20%	0.0265z±2%
FFM02 (0–150 m)	19+0.008z±20%	145±15	11+0.006z±25%	0.0265z±10%
FFM03	5+0.075z±20%	145±15	2.5+0.0375z±25%	0.0265z±10%

Table 6-52. Proposed Maximum Stress Model for the repository elevation –450 to –475 m /SKB 2009d/.

Depth range (m)	σH (MPa)	σH, orientation (°)	σh (MPa)	σh, orientation (°)	σv (MPa)
450–475	56±6	145±15	35±8	55	0.0265z±0.0005z

7.2.9 Correlations

The model that has been used for derivation of *LDF* values, i.e. the radionuclide model described in /Avila et al. 2010/, relies on several element- and radionuclide-specific parameters that are correlated with each other. This means that *LDF*s obtained for different radionuclides might also be correlated. However, the delivered *LDF*s have been obtained from independent deterministic simulations for each radionuclide and parameter correlations have not been considered. Furthermore, parameter correlations have not been considered in the probabilistic simulations carried out within the sensitivity and uncertainty analyses discussed above. In summary, no correlation needs to be propagated to the SR-Site main project.

7.2.10 Result of supplier's data qualification

The *LDF*s recommended for use in SR-Site are supplied in Table 7-13 for the temperate, periglacial, and glacial climate domains, and for the global warming case.

Table 7-13. LDF's (Sv/y per Bq/y) for assessment of long-term releases under different climate conditions: temperate, permafrost, glacial, and the global warming case. Data reproduced from /Avila et al. 2010/.

Radionuclide	Temperate *LDF*	Periglacial *LDF*	Glacial *LDF*	Global warming *LDF*
Ag-108m	$7.05 \cdot 10^{-13}$	$8.75 \cdot 10^{-15}$	$4.60 \cdot 10^{-16}$	$7.05 \cdot 10^{-13}$
Ac-227	$8.0 \cdot 10^{-12}$	$8.92 \cdot 10^{-16}$	$6.44 \cdot 10^{-17}$	$8.0 \cdot 10^{-12}$
Am-241	$1.46 \cdot 10^{-12}$	$1.10 \cdot 10^{-14}$	$1.57 \cdot 10^{-17}$	$1.46 \cdot 10^{-12}$
Am-243	$1.53 \cdot 10^{-12}$	$1.95 \cdot 10^{-13}$	$1.41 \cdot 10^{-15}$	$1.60 \cdot 10^{-12}$
C-14	$5.44 \cdot 10^{-12}$	$5.40 \cdot 10^{-12}$	$8.51 \cdot 10^{-13}$	$5.44 \cdot 10^{-12}$
Ca-41	$9.90 \cdot 10^{-14}$	$9.25 \cdot 10^{-15}$	$1.92 \cdot 10^{-16}$	$9.90 \cdot 10^{-14}$
Cl-36	$5.84 \cdot 10^{-13}$	$4.36 \cdot 10^{-13}$	$2.22 \cdot 10^{-17}$	$5.84 \cdot 10^{-13}$
Cm-244	$8.74 \cdot 10^{-13}$	$8.14 \cdot 10^{-19}$	$2.18 \cdot 10^{-20}$	$8.74 \cdot 10^{-13}$
Cm-245	$1.58 \cdot 10^{-12}$	$2.20 \cdot 10^{-14}$	$3.59 \cdot 10^{-16}$	$1.64 \cdot 10^{-12}$
Cm-246	$1.55 \cdot 10^{-12}$	$1.59 \cdot 10^{-14}$	$2.10 \cdot 10^{-16}$	$1.57 \cdot 10^{-12}$
Cs-135	$3.96 \cdot 10^{-14}$	$3.02 \cdot 10^{-13}$	$4.33 \cdot 10^{-17}$	$2.85 \cdot 10^{-13}$
Cs-137	$1.20 \cdot 10^{-13}$	$9.47 \cdot 10^{-18}$	$3.67 \cdot 10^{-20}$	$1.20 \cdot 10^{-13}$
Ho-166m	$5.90 \cdot 10^{-14}$	$8.42 \cdot 10^{-16}$	$1.48 \cdot 10^{-18}$	$5.90 \cdot 10^{-14}$
I-129	$6.46 \cdot 10^{-10}$	$2.61 \cdot 10^{-11}$	$1.70 \cdot 10^{-13}$	$6.46 \cdot 10^{-10}$
Nb-94	$4.00 \cdot 10^{-12}$	$1.06 \cdot 10^{-13}$	$2.12 \cdot 10^{-17}$	$1.15 \cdot 10^{-11}$
Ni-59	$7.39 \cdot 10^{-14}$	$1.31 \cdot 10^{-15}$	$3.99 \cdot 10^{-18}$	$1.99 \cdot 10^{-13}$
Ni-63	$1.21 \cdot 10^{-15}$	$6.30 \cdot 10^{-18}$	$1.86 \cdot 10^{-20}$	$1.21 \cdot 10^{-15}$
Np-237	$4.83 \cdot 10^{-11}$	$2.21 \cdot 10^{-11}$	$8.67 \cdot 10^{-15}$	$4.83 \cdot 10^{-11}$
Pa-231	$8.10 \cdot 10^{-12}$	$1.71 \cdot 10^{-13}$	$2.77 \cdot 10^{-15}$	$1.27 \cdot 10^{-11}$
Pb-210	$5.07 \cdot 10^{-12}$	$2.60 \cdot 10^{-17}$	$2.19 \cdot 10^{-18}$	$5.07 \cdot 10^{-12}$
Pd-107	$6.73 \cdot 10^{-15}$	$2.68 \cdot 10^{-15}$	$4.63 \cdot 10^{-18}$	$9.42 \cdot 10^{-15}$
Po-210	$8.86 \cdot 10^{-12}$	$3.10 \cdot 10^{-20}$	$9.28 \cdot 10^{-21}$	$8.86 \cdot 10^{-12}$
Pu-239	$1.94 \cdot 10^{-12}$	$2.01 \cdot 10^{-13}$	$6.35 \cdot 10^{-15}$	$2.04 \cdot 10^{-12}$
Pu-240	$1.88 \cdot 10^{-12}$	$1.25 \cdot 10^{-13}$	$4.10 \cdot 10^{-15}$	$1.89 \cdot 10^{-12}$
Pu-242	$1.89 \cdot 10^{-12}$	$2.32 \cdot 10^{-13}$	$7.20 \cdot 10^{-15}$	$2.17 \cdot 10^{-12}$
Ra-226	$3.75 \cdot 10^{-12}$	$9.79 \cdot 10^{-13}$	$4.46 \cdot 10^{-15}$	$3.77 \cdot 10^{-12}$
Se-79	$1.21 \cdot 10^{-9}$	$5.79 \cdot 10^{-11}$	$9.55 \cdot 10^{-13}$	$1.21 \cdot 10^{-9}$
Sm-151	$7.16 \cdot 10^{-16}$	$1.01 \cdot 10^{-20}$	$4.58 \cdot 10^{-22}$	$7.16 \cdot 10^{-16}$
Sn-126	$2.47 \cdot 10^{-11}$	$6.14 \cdot 10^{-13}$	$1.55 \cdot 10^{-14}$	$1.09 \cdot 10^{-10}$
Sr-90	$2.19 \cdot 10^{-13}$	$7.18 \cdot 10^{-17}$	$1.96 \cdot 10^{-19}$	$2.19 \cdot 10^{-13}$
Tc-99	$8.98 \cdot 10^{-13}$	$2.80 \cdot 10^{-13}$	$1.58 \cdot 10^{-15}$	$8.98 \cdot 10^{-13}$
Th-229	$3.61 \cdot 10^{-12}$	$6.95 \cdot 10^{-14}$	$9.58 \cdot 10^{-17}$	$3.68 \cdot 10^{-12}$
Th-230	$1.31 \cdot 10^{-11}$	$1.50 \cdot 10^{-11}$	$1.74 \cdot 10^{-14}$	$6.42 \cdot 10^{-11}$
Th-232	$1.72 \cdot 10^{-12}$	$4.53 \cdot 10^{-13}$	$1.18 \cdot 10^{-16}$	$2.59 \cdot 10^{-12}$
U-233	$2.50 \cdot 10^{-12}$	$2.52 \cdot 10^{-12}$	$1.96 \cdot 10^{-15}$	$1.91 \cdot 10^{-11}$
U-234	$3.62 \cdot 10^{-12}$	$1.06 \cdot 10^{-11}$	$4.46 \cdot 10^{-15}$	$7.14 \cdot 10^{-11}$
U-235	$2.76 \cdot 10^{-12}$	$1.33 \cdot 10^{-13}$	$5.64 \cdot 10^{-16}$	$1.99 \cdot 10^{-11}$
U-236	$1.85 \cdot 10^{-12}$	$2.92 \cdot 10^{-14}$	$1.93 \cdot 10^{-17}$	$1.05 \cdot 10^{-11}$
U-238	$1.85 \cdot 10^{-12}$	$8.05 \cdot 10^{-13}$	$1.03 \cdot 10^{-16}$	$1.58 \cdot 10^{-11}$
Zr-93	$2.77 \cdot 10^{-14}$	$6.50 \cdot 10^{-16}$	$8.17 \cdot 10^{-17}$	$1.06 \cdot 10^{-13}$

Åkesson M, Börgesson L, Kristensson O, 2010a. SR-Site Data report. THM modelling of buffer, backfill and other system components. SKB TR-10-44, Svensk Kärnbränslehantering AB.

Åkesson M, Kristensson O, Börgesson L, Dueck A, Hernelind J, 2010b. THM modelling of buffer, backfill and other system components. Critical processes and scenarios. SKB TR-10-11, Svensk Kärnbränslehantering AB.

Unpublished documents

SKBdoc id, version	Title	Issuer, year
1198314 ver 1.0	Källstyrkor för bränsleelement under driftskede för Clink, slutförvarsanläggning och slutförvar	Alara Engineering, 2010
1222975 ver 2.0	Beräkning av fissionsgasfrigörelse för bränslet i slutförvaret	SKB, 2010