# Contents

SHAW, R. P. The Fate of Repository Gases (FORGE) project  1

JACOPS, E., MAES, T., MAES, N., VOLCKAERT, G., WEETIENS, E. & SILLEN, X. Gas-driven radionuclide transport in undisturbed and disturbed Boom Clay  9

POPP, T., RÖLKE, C. & SALZER, K. Hydromechanical properties of bentonite–sand block assemblies with interfaces in engineered barrier systems  19

PURSER, G., MIŁODOWSKI, A. E., NOY, D. J., ROCHELLE, C. A., HARRINGTON, J. F., BUTCHER, A. & WAGNER, D. Modification to the flow properties of repository cement as a result of carbonation  35


ZHANG, C.-L. Investigation of gas migration in damaged and resealed claystone  75

SVOBODA, J. & SMUTEK, J. The experimental in-situ study of gas migration in crystalline rock with a focus on the EDZ  95

POPP, T., MINKLEY, W., WIEDEMANN, M. & SALZER, K. Gas-pressure-induced integrity of salt formations  107

AHUSBORDE, E., AMAZIANE, B. & JURAK, M. Three-dimensional numerical simulation by upscaling of gas migration through engineered and geological barriers for a deep repository for radioactive waste  123

ALCOVERRO, J., OLIVELLA, S. & ALONSO, E. E. Modelling fluid flow in Opalinus Clay excavation damage zone. A semi-analytical approach  143

DYMITROWSKA, M., SMAI, F. & BOURGEAT, A. Thermodynamic modelling of hydrogen migration in argillite for a deep geological radioactive waste repository: IRSN contribution to FORGE  167

SEDIGHI, M., THOMAS, H. R., AL MASUM, S., VARDON, P. J., NICHOLSON, D. & CHEN, Q. Geochemical modelling of hydrogen gas migration in an unsaturated bentonite buffer  189

SHAO, H., XU, W., MARSCHALL, P., KOLDITZ, O. & HESSER, J. Numerical interpretation of gas-injection tests at different scales  203

YAMAMOTO, S., KUMAGAI, M., KOGA, K. & SATO, S. Mechanical stability of engineered barriers in a subsurface disposal facility during gas migration based on coupled hydromechanical modelling  213

BENNETT, D. P., CUSS, R. J., VARDON, P. J., HARRINGTON, J. F., SEDIGHI, M. & THOMAS, H. R. Exploratory data analysis of the Large Scale Gas Injection Test (Lasgit) dataset, focusing on ‘second-order’ events around macro-scale gas flows  225

NORRIS, S. EC FORGE project: updated consideration of gas generation and migration in the safety case  241

Index  259