



Current status EGS Soultz project during geothermal exploitation

A. Genter (1), N. Cuenot (1), J. Scheiber (1), and B. Melchert (2)

(1) GEIE Exploitation Minière de la Chaleur, Kutzenhausen, France (genter@soultz.net), (2) BGR, Hannover, Germany

A three-year research program (2010-2012) associated with the geothermal exploitation of the Soultz-sous-Forêts power plant is on-going with a scientific and technical monitoring. Several hydraulic circulation tests have been running that take into account one production well, GPK-2 and two reinjection wells, GPK-1 and GPK-3: a long term circulation for about 11 months in 2010, and two short term circulation tests in 2011.

During the 2010 exploitation, geothermal fluid discharge from GPK-2 reached about 500 000 m³ by producing 18L/s and 164°C. In 2010, more than 400 induced micro-seismicity events occurred with low magnitude. Geochemical monitoring of the fluid discharged from GPK-2 indicates that the chemical composition of this fluid becomes closer to that of the native geothermal brine because it only remains 5% of injected freshwater. Corrosion study done on-site on several kinds of materials indicates a corrosion rate of about 0.2mm/year for re-injection conditions.

During 2011, geothermal fluid discharge from GPK-2 reached about 300 000 m³ by producing 24L/s and 159°C. The strategy was to increase the reinjection flow rate in GPK-1 and simultaneously minimize it in GPK-3 in order to decrease reinjection pressure. Induced seismicity activity was very low with only 5 micro-earthquakes in 2011. In parallel, many research works have been carried out for characterizing scaling and the natural radioactivity derived from natural brines circulating within a deep fractured granite reservoir.

Because Soultz is the first geothermal power plant in France, many challenges have been outlined, new scientific and technical expertise is raising and will benefit to the French-German consortium for transferring the results to some new geothermal applications through the Upper Rhine Valley.