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NEWS



## Customers Witness Success of World-first g<sup>3</sup>-Substation Testing at 145 kV

12/12/2017 - 12.43 pm

 CLEAN GRID    G<sup>3</sup>    GIS  
 SF<sub>6</sub>-FREE SOLUTIONS    SF<sub>6</sub>

*GE is ready to connect the world's first Gas-insulated substation to use g<sup>3</sup>, the green gas for grid, as an insulation, switching and interruption medium.*



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On November 21<sup>st</sup>, high voltage tests were successfully conducted at the Etzel substation, south of Zurich, Switzerland, and the g<sup>3</sup> GIS was handed over to the customers.

Ordered by Axpo Power AG and the Elektrizitätswerke des Kantons Zurich (EKZ), the groundbreaking substation is the first to replace SF<sub>6</sub> with g<sup>3</sup>. The g<sup>3</sup> GIS will run just like SF<sub>6</sub>-insulated GIS, achieving the same performance, with the same size, under the same ambient conditions (down to -25°C), but with a residual global warming impact of the gas of less than 1% compared with SF<sub>6</sub>-filled GIS. This represents such a large step for the environment that other utilities wanted to witness the tests. They were: TenneT (Netherlands); Rte (France) and Romande Energie (Switzerland). The tests were passed successfully!

### **Developed Successfully in Only Three Years**

The development of this new type of GIS started just one month before GE officially announced the g<sup>3</sup> as an alternative solution as dielectric, switching and interruption medium in 2014. In a record breaking time of only three years the development team led by the R&D Center in

Switzerland could design and successfully type-test the complete GIS including circuit-breaker, disconnecter-earthing switch, make-proof earthing switch, instrument transformers and surge arresters.

In March 2017 Axpo gave their final GO for the implementation of g<sup>3</sup> in the Etzel substation. Since then, the release from production in GE's factory in Oberentfelden was given and the factory acceptance test was successfully performed, witnessed by Axpo. Finally, the last missing piece, the high-voltage test on site, was successfully achieved in November.

Says Christophe Descottes, GIS Chief Technology Officer, “*Everyone at Oberentfelden who worked so hard to make this day happen can really be proud. This is an important step on the g<sup>3</sup> path and with the attendance of such important customers, we demonstrated our pole position in the race for an SF<sub>6</sub>-free alternative.*” Adds

Stephan Lelaidier, Executive Chief Engineer “*To experience this kind of world first success is rare. Let's enjoy it with pride but let's remain humble for the next challenge.*”

Following the tests, site works will continue to connect the high voltage transformers and, to connect the substation to the network. The energization of the full site will occur in Spring 2018.



145 kV g<sup>3</sup>-GIS successfully achieved the high voltage tests at Axpo substation, Etzel, in Switzerland

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