

High voltage air core shunt reactors

Towering at an impressive 10 m from ground level in a substation near the Olympic village in Sydney is a newly installed set of shunt reactors. Rated at 120 Mvar and 132 kV the reactors form part of a set controlling reactive power flow and voltage levels in the power distribution network.

At a weight of nearly seven tonnes per phase, these air core reactors contain no oil, are simple to transport, and are inherently linear, meaning that the inductance remains constant regardless of applied voltage, and current drawn by the reactors contains no harmonic distortion.

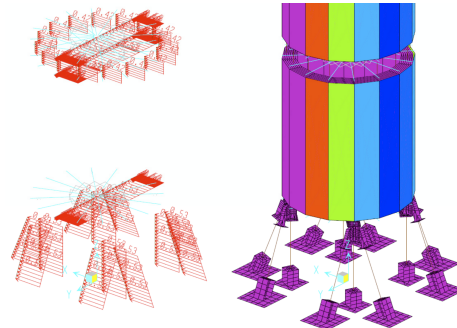


Challenges

The project presented ONE with a number of challenges:

A customer requirement was to re-use the support insulators of the existing, failed reactors of a competitor. Great attention to detail was required to ensure that the new, modified base support structures were fully compatible with the existing equipment. The final solution used the existing porcelain insulators rearranged in a more reliable configuration that was compatible with the factory's base support design.

Very strong focus was placed on the structural integrity of the installation, with a comprehensive finite element analysis performed to verify the reactor and support structure integrity under a wide variety of load cases.



The equipment was delivered and installed in a live substation, at the height of the first wave of Covid-19. ONE mobilised resources based in Sydney to assist and supervise the installation that went off without a hitch.

Completion

The project was completed on time at the fixed contract price. Customer satisfaction with the equipment and execution is evident from receipt of an extended contract to supply a second set of identical shunt reactors to the same site.

Benefits

The reactors were designed and supplied by GE Power Quality, demonstrating the world class design, analysis and manufacturing technology available to all clients in need of air core reactor technology, from large high and extra high voltage shunt reactors to neutral earthing reactors, filter tuning reactors, and series connected current limiting reactors.

ONE can assist you in feasibility analysis, project scoping, application engineering, design, delivery, installation and commissioning of any aspect of your reactive power or power quality project. Talk to us about your harmonic filter, capacitor bank, series and shunt compensation, whether dynamic and passive, low or high voltage.

Contact us

Contact us on 0400 846 611 or using the details below to get reliable assistance with your power quality or reactive power solutions.