

Increasing Network Capability through a Review of Asset Ratings



Joint Electrical Institutions Sydney - Engineers Australia, IEEE, IET

Public Lecture

Date:	Thursday, 14 November 2013
Time:	5:30 pm for 6:00 pm start
Venue:	Engineers Australia Auditorium, Ground Floor, 8 Thomas Street, Chatswood
Speaker:	Name Dr Darren Spoor Company TransGrid
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ABSTRACT:

There is a growing focus on the need for increased utilisation of network assets as electricity supply utilities focus on improved operating efficiency. The economic utilisation of assets is often considered to be a concept that is resident within power system planning. However, it is actually entwined within the design, planning and operational functions of all electricity supply utilities. For this reason, it is necessary for collaborative discussion to occur between the designers, planners and system operators during the early stages of any network augmentation.

This presentation will review the various power system limits that are commonly applied within transmission and distribution systems. Of these, the thermal limitations are one particular area where significant gains are presently being made in the economic utilisation of the power system. Nevertheless, this requires careful coordination of the thermal inertia within the power system and a thorough review of design practices. Discussion will focus on some case studies within the New South Wales power system where thermal inertia is being used to secure load.

Short-time ratings may be applied to almost all power system equipment. In fact, the calculation of short-time rating for transformers, cables and overhead conductors is now common practice due to the good thermal models that exist. However, in many cases, this will require local measurement of ambient temperature, current, and possibly the local wind speed. The appropriate consideration thermal inertia can often assist in the deferral of future capital while also greatly increasing the flexibility of the power system.

SPEAKER BIOGRAPHY

Darren Spoor is currently employed as a Senior Engineer at TransGrid and has worked in a variety of positions within the power transmission and distribution industry. He received his PhD from the University of Technology, Sydney in 2007, with his main interests focussing on simulation of overhead transmission circuits, fault location and improvements to conventional rating methodologies. His previous roles with Integral Energy and TransGrid have primarily involved network planning, operations, protection systems and high voltage design.