This document presents, discusses and provides a general guide on electrical performance standard requirements for connection of large scale onshore wind farms into HV transmission networks. Experiences presented here refer mainly to technical requirements and issues encountered during the process of connection into the Eastern Australian power system under the Rules and guidelines set out by AEMC and NEMMCO (AEMO). Where applicable some international practices are also mentioned. Standards are designed to serve as a technical envelope under which wind farm proponents design the plant and maintain ongoing technical compliance of the plant during its operational lifetime. This report is designed to provide general technical information for the wind farm connection engineer to be aware of during the process of connection, registration and operation of wind power plants interconnected into the HV TSO’s network. No special NER Rule has been used in this document, however V30 (year 2009) has been used as the latest reference on some of the topics discussed. Care has been taken to emphasise certain wind farm design and connection issues that could be considered throughout different stages of the wind farm development and operation. However, it is the responsibility of the wind farm design engineer and the wind farm operator to apply correct and effective analysis and assessment tools, standards, design specifications etc. according to the needs of grid utility interface specifications as per NER (National Electricity Rules) under consideration at time of project development, connection, commissioning and operation of the generating plant and its associated equipment. CONTENTS: 1. Reactive Power Capability 2. Quality of Voltage Supply and Continuous Uninterrupted Operation 3. Generating Unit response to Frequency Disturbances 4. Generating Unit Response to Voltage Disturbances 5. Generating system response to disturbances following contingency events 6. Partial Load Rejection 7. Protection of Generating Systems from Power System Disturbances & Protection and Design of Wind Farm Networks 8. Protection Systems that Impact on Power System Security 9. Protection to Trip Plant for Unstable Operation 10. Frequency Control 11. Impact on Network Capability 12. Voltage and Reactive Power Control 13. Active Power Control 14. Remote Monitoring, Communications Equipment and Control Requirements 15. Power Station Auxiliary Supplies 16. Fault Current Infeed 17. On Provision of Models and Accuracy Requirements 18. Summary of Electrical Design Schedules 19. References and Standards 20. Document Revision History 21. Author Contact Information