CLAIMS:

1. A method of protecting a device from excessive voltages produced by a generator for producing AC electric power, the method comprising:

monitoring the voltage level produced by the generator;

operating, in response to determining that said voltage level exceeds a threshold value, an auxiliary system to absorb reactive power from said generator; and

providing said AC electrical power from said generator to an end system via a frequency converter, wherein said operating involves operating said auxiliary system to absorb reactive power from a location at or before the input of said frequency converter.

2. A method as claimed in claim 1, including operating said auxilary system not to absorb reactive power from said generator upon determining that the voltage level output by said generator is below said threshold value or a second threshold value.

3. A method as claimed in claim 1 or 2, further including configuring said auxilary system to provide a reactive load to said generator; connecting said auxilary system directly or indirectly to the output of the generator upon detection that said voltage exceeds the threshold value.

4. A method as claimed in claim 3, further including disconnecting said auxilary system from the output of the generator upon determining that said voltage is less than said threshold value or a second threshold value.

5. A method as claimed in any preceding claim including diverting, in response to said monitored voltage level exceeding a threshold level, at least some of the power from the output of said generator to said auxiliary system; and charging at least one energy storage device with said diverted power.

6. A method as claimed in claim 5, further including delivering, in response to said voltage being less than said threshold value or said second threshold value or in response to the power produced by the generator being below a threshold level, power to said end system from said auxiliary system by discharging said at least one energy storage device.

7. A method as claimed in any preceding claim, wherein said generator is a single generator, said monitoring, operating and, when applicable, said diverting and said delivering being perfromed in respect of said single generator.

8. A method as claimed in any preceding claim, wherein said generator comprises a turbine generator for generating power in response to flow of a driving fuid, and wherein said monitoring, operating and, when applicable, said diverting and said delivering are performed in response to

variations in voltage level generated by said generator as a result of fluctuations in the rate of flow of said driving fluid.

9. A method as claimed in any preceding claim, wherein said monitoring, operating and, when applicable, said diverting and said delivering are performed in response to variations in said generator output voltage level detected over a period of between 1 second and 60 seconds, or a period of between 1 minute and 10 minutes.

10. A method as claimed in any preceding claim, wherein said threshold value for operating said auxiliary system (22, 122, 222, 322, 422, 522, 622) to absorb reactive power from said generator (18, 118) is determined by a voltage rating of said frequency converter (14, 114).

11. A power generation system comprising a generator coupled to an end system, and an auxiliary system configured to selectably present an inductive load to the output of said generator, the system further including:

monitoring means for monitoring the voltage level produced by the generator; and

operating means for operating, in response to determining that said voltage level exceeds a threshold value, said auxiliary system to absorb reactive power from said generator, wherein said generator is connected to said end system via a frequency converter, said auxiliary system being selectably connectable by said operating means directly or indirectly to a location at or before the input of said frequency converter.

12. A system as claimed in claim 11, wherein said auxilary system is arranged to provide a reactive load to said generator and is selectably connectable by said operating means directly or indirectly to the output of the generator.

13. A system as claimed in claim 12, wherein said operating means is configured to connect said auxilary system directly or indirectly to the output of the generator upon detection that said voltage exceeds the threshold value.

14. A system as claimed in claim 12 or 13, wherein said operating means is configured to disconnect said auxilary system from the output of the generator upon determining that said voltage is less than said threshold value or a second threshold value.

15. A system as claimed in any one of claims 11 to 14, wherein said threshold value for operating said auxiliary system to absorb reactive power from said generator (18, 118) is determined by a voltage rating of said frequency converter.

16. A system as claimed in any one of claims 12 to 15, wherein said frequency converter comprises a rectifier-inverter architecture.

17. A system as claimed in any one of claims 12 to 16, wherein said said frequency converter comprises an AC to DC to AC frequency converter.

18. A system as claimed in any one of claims 12 to 17, wherein said frequency converter comprises an electronic frequency converter.

19. The method of any one of claims 1 to 10, including monitoring the power produced by the generator; diverting, in response to said monitored power or said monitored voltage exceeding a respective threshold level, at least some of the power from the output of said generator to the auxiliary system; charging at least one energy storage device with said diverted power; and, preferably delivering, in response to said monitored power or said monitored voltage being below a respective threshold level, power to said end system from said auxiliary system by discharging said at least one energy storage device.