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(54) **Title:** LOW EMISSION POWER GENERATION SYSTEMS AND METHODS INCORPORATING CARBON DIOXIDE SEPARATION

(57) **Abstract:** Methods and systems for CO₂ separation in low emission power plants are provided. One system includes a gas turbine system that combusts a fuel and an oxidant in the presence of a compressed recycle stream to provide mechanical power and a gaseous exhaust. A purge stream is taken from the compressed recycle stream and directed to a CO₂ separator configured to absorb CO₂ from the purge stream using a potassium carbonate solvent. Volatiles are removed from the rich solvent by stripping or by flashing to an intermediate pressure before the rich solvent is regenerated and CO₂ is removed.

