In the physics of accretion disks around extremely massive objects, the effect of spacetime curvature is manifested on the behaviour of gas and radiation. Black holes and the accretion disks around them are commonly described by the Kerr metric. However, other metrics are being tested to see if their predictions correspond better to real astronomical objects. The aim of this thesis is to generalize the description of the accretion disk developed by I. D. Novikov and K. S. Thorne for a general stationary axially symmetric metric. The results are then verified by substitution of the Kerr solution. In the last section the equations are solved for the stationary axially symmetric metric with charge parameter.