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Arc Conductance and Flow Velocity Affected by Transient Recovery Voltage REO FUKUOKA, YUYA ISHIKAWA, SEISUI ONO, KEN SATO, SHINJI YAMAMOTO, TORU IWAO, Tokyo City University, Setagaya, Tokyo 158-8557, JAPAN — Recently, the stable supply of electric power is indispensable. The GCB (Gas Circuit Breaker) can prevent the spread of the fault current. However, it should have the reliability more. Therefore the GCB has been researched for performance improvement of the arc interruption of abnormal fault current without the fail. Therefore, it is important to prevent the breakdown such as the re-ignition and thermal re-ignition of arc after the arc interruption. It is necessary to reduce the arc conductance in order to prevent the re-ignition of arc. The arc conductance is derived from the temperature distribution and the volume of the arc. The temperature distribution of the arc is formed by convection. In this research, the arc conductance and flow velocity affected by transient recovery voltage are elucidated. The flow rate and temperature distribution of the arc is calculated with changing transient recovery voltage. In addition, the arc conductance is calculated in order to know the extinguish arc ability. As a result, when the transient recovery voltage increases, the probability of re-ignition increases. Therefore, the arc temperature and the arc conductance were increased.

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