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Arc Voltage Between Deion Grid Affected by Division of Arc in Magnetic Driven Arc. YUTARO INUZUKA, TAKASHI YAMATO, SHINJI YAMAMOTO, TORU IWAO, Tokyo City University — Magnetic driven arc has been applied to DC breaker and fault current limiters. However, it has not been researched, especially stagnation and re-strike of the arc. In this paper, the arc voltage between deion grid affected by division of arc in magnetic driven arc and arc behavior are measured by using the oscilloscope and HSVC (High Speed Video Camera). As a result, arc voltage increased because of division of the arc. The arc mean moving speed increases with increasing the external magnetic field. However, when the arc was not stalemate, the arc moving speed does not change so much. The arc re-strike time increases and stalemate time decreases with increasing the external magnetic field. Therefore, the anode spot moving speed increases 8 times because arc re-strike occurs easily with the external magnetic field. Thus, the erosion of electrodes decreases and the arc movement becomes the smooth. When the arc is divided, the arc voltage increased because of the electrode fall voltage. Therefore, the arc voltage increases with increasing the number of deion grid.

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