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Analysis of the Effect of Lightning on the Energized Shield Wire Line Technology

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This paper examines the effect of lightning overvoltages resulting from direct strikes to the two SWL (energized shield wire line technology) systems located in the State of Rondônia, Brazil, with the aim of understanding how lightning affects the SWL system. The analysis covers the periods from 1996 to 2000 (Jaru SWL) and from 1997 to 2007 (Itapuã do Oeste SWL). Field measurements were carried out regarding both soil resistivity and tower footing resistance, as well as laboratory tests to determine the positive and negative critical impulse flashover voltage (CFO) of insulator strings. The influence of soil ionization is also considered.