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Effects of sea salt sediment on 110 kV cable stations on the Croatian Adriatic coast
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Summary: This paper discusses environmental causes of sea salt sediment and its destructing effects on cable plant objects of Transmission Area Split. The objects taken into account were those built recently where destructive effects of sea salt sediment had been considered at the very beginning of object planning. The paper also describes effects of sea salt sediment on earlier plant objects, where the need for reduction of destructive effects has been noticed subsequently. All this knowledge can be applied to other objects exposed to air pollution.

Keywords: sea salt sediment (sea salt pollution), cable station, damage affects

1. Introduction

Certain areas along the Croatian coast are more likely to be exposed to bad weather conditions, accompanied by strong northern winds, especially during the winter. The winds, known as «bura», make mist out of sea-water droplets. Considering that the saltiness of Adriatic Sea is very high, from 35-38 ‰, the mist consists of large amounts of salt. (figure 1).

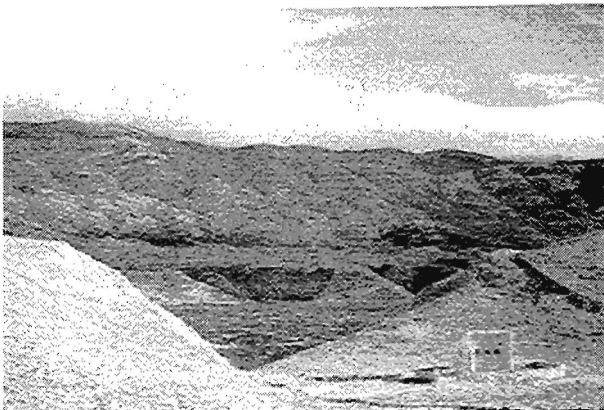


Figure 1: CS 110 kV Toreta under the gust of northern wind

When the water has evaporated, the tiny crystals of salt float in the air carried by the wind. Those crystals, together with concentrated salt solution, fall onto the ground, trees, other objects and people.

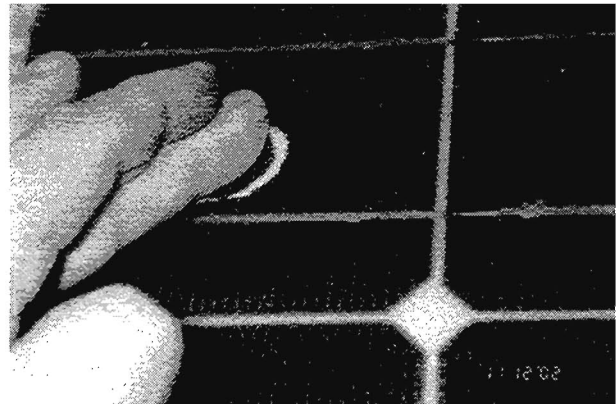


Figure 2: Crystals of salt on a solar cell 10 min. after cleaning

As seen on diagram in figure 3, layers of salt rise exponentially depending on the wind speed [1].