

# A BRIEF DESCRIPTION OF AN EXPERIMENT ON ARTIFICIAL STIMULATION OF RAIN IN THE NECAXA WATERSHED, MÉXICO

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## 1. Introduction

Since 1949 the Mexican Light and Power Company has conducted silver iodide cloud seeding experiments in Necaxa, Puebla, México. This report is a continuation of earlier descriptions of the project [1], [2], and extends the evaluation by using the method of historical years (years before the cloud seeding was started) and applying to them the random seeding schedules used in the later years of experimentation. Further, in order to investigate possible carryover effects of seeding, the first day after seeding is studied.

The Necaxa target area and its control, about 60 miles to the ESE, are shown in figure 1. The target area of about 531 square miles has been divided into two sections for the purposes of the experiment: the upper section with an average elevation of 7500 feet and the lower with an elevation of 5300 feet.

The seeding was done by plane from 1949 to 1955, with no seeding done in 1952. Beginning in 1955, ground based generators were used instead. Seeding was done during the rainy season, June through October, and, starting with 1956, the days to be seeded were chosen at random at the beginning of the year.

## 2. Methods of evaluation used

In evaluating the results of cloud seeding, two main methods have been used. The first was historical regression. Using seasonal data for the fifteen years prior to the years of operation, a regression line was computed comparing rain in the Necaxa areas with that in the control zone. The correlation coefficient between the amount of rain in the upper Necaxa area and the control area was 0.97. For the lower Necaxa target and the control area the correlation coefficient was 0.95. The deviations from the regression line in the historical years were due to natural phenomena. When the data for the years of operation are added, compared to the same historical regression line, the deviations should increase systematically if the seeding is effective. This method indicates that the effect