

ADDENDUM
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Bruce A. Perreault

WIRELESS TELEGRAPHY **"Radiant Energy"**

Radio in the early years was called "wireless telegraphy." Around the year 1913 *amateur wireless telegraph* stations were set up in the trees and housetops. Aerials and masts dotted the country side. It is estimated that there were almost "a quarter of a million stations." They were used to send and receive *wireless telegraph* signals, not voice. Vacuum tubes were not widely known. These stations had to depend on a spark-gap that was fed from an induction coil.

It was the energy spikes, or surges put out by these spark-gap transmitters that first caught T. H. Moray's attention back in 1903. In 1909 Moray devised a circuit that would draw electricity from these surgings of energy that traveled through the ground. By the fall of 1910 he obtained enough electrical energy from the ground to power a miniature arc lamp. During the Christmas holidays of 1911 he was able to power an old type 16 candle carbon arc lamp at about half of its brightness. He was then able to light a standard 100 watt General Electric light-bulb in June of 1925. This improvement came after he obtained his "stone-like substance" that he found in 1913, in a railroad car. This material was able to keep the incoming power flowing in one direction allowing more energy to be captured by the capacitors that lay nestled within his unique circuitry. By August, 1925 he was able to light a 100 watt light-bulb along with an electric flat-iron that consumed 655 watts.

The problem of drawing power from telegraph stations came when the Federal Radio Commission on Nov. 11, 1928 limited the amount of power to be transmitted and the frequency had to be well defined. Spark-gap transmitters simply could not meet these requirements. Scores of telegraph stations had to be dismantled. Moray still could draw power that was generated from the background radio noise, but only a very limited amount could be obtained. He could also draw a limited amount of energy that was produced by the great cosmos.

Moray thought that if he developed a more favorable detector material he could draw more power. To accomplish this he added radium paint to his stone-like semiconductor material. It was not too long before he ran out of this material that he obtained from the railroad car in Abisko Sweden. He knew what this mineral was and that it is quite common. However, to find another sample that produced the same effects as the original material was another matter. It was at this point that he decided to synthesize this material. Moray applied for a patent for his cold cathode rectifying tube on March 21, 1931, that used this material. It was around World War II when radium paint was banned and this spelled trouble for the future of generating electrical power with this method.