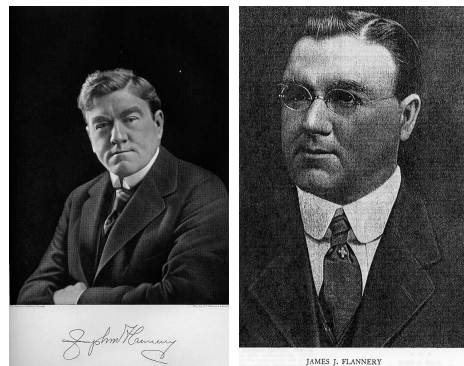


# A BRIEF HISTORY OF STANDARD CHEMICAL COMPANY

*by Joel O. Lubenau, CHP*

Standard Chemical Company (SCC) was the first successful large-scale commercial producer of radium. SCC was established in 1911 by Joseph M. Flannery and his brother, James J., Pittsburgh, Pennsylvania businessmen who had invested in the promotion and production of vanadium alloy steel products. In 1909, a sister became ill with cancer. In a trip to Europe, Joseph Flannery learned that radium could treat the cancer but the supply was limited. Joseph Flannery set out to develop a company to produce radium.



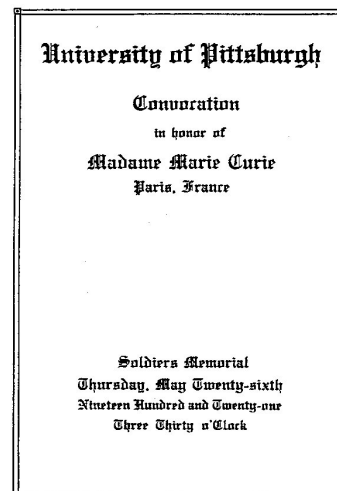
Suitable ore, carnotite, was found and extracted from mines mainly in Paradox Valley, Montrose County, southwestern Colorado. Ore was separated from waste rock by hand at the mines, sacked, and hauled by burros to a mechanical concentrator near present day Uravan, Colorado. The concentrated ore was re-sacked and taken by horse drawn wagons (later by trucks) to Placerville, Colorado to be loaded on narrow gauge trains that were taken to Salida, Colorado. There, the sacks were transferred to standard gauge railroad cars that were delivered to SCC's reduction mill in Canonsburg, PA, south of Pittsburgh. The Canonsburg mill's product, a salt mixture consisting of barium and radium chlorides, was delivered to SCC's refining laboratory in the Vanadium Building on Forbes Avenue in the Oakland section of Pittsburgh by a messenger carrying unshielded containers of the salts on trolleys connecting Canonsburg to Pittsburgh. In SCC's highest production year, the annual radiation dose received by the messenger is estimated to have been 100 rem. In the Vanadium

Building, the solution was refined by fractional crystallization. To make a gram of radium required up to 500 tons of milling ore, 500 tons of chemicals, 10,000 tons of purified and distilled water and 100 tons of coal. The Colorado mines and mill employed 200 workers. Another 150 mill workers were employed in Canonsburg and 15 technical employees worked in the Oakland refining laboratory. Additional workers were engaged in sales and auditing, clerical and management activities. SCC's price for radium was set at \$120,000 per gram, a value at the time greater than the weight based cost of the Hope diamond. Between 1913 and 1921 SCC produced about 75 to 80 grams.

Marie Curie was invited to visit the United States in 1921 to receive a gift of 1 gram of radium from the Women of America presented by President Harding. The gram was produced by SCC. Her tour of the U.S. included three places she specifically asked to visit – the Niagara Falls, the Grand Canyon and the SCC plants in Pennsylvania. On May 26 and 27, 1921, she was an honored guest at the Oakland and Canonsburg plants. Regrettably, the Flannery brothers had passed away and could not share in the honor of her visit.



When the University of Pittsburgh awarded Mme. Curie an honorary degree, Dr. William J. Holland, in his presentation of Mme. Curie, commented that while Pittsburgh is called “The Iron City” it also could be called “The Radium City.” But, this was not to be. Higher grade ore had been discovered in the Congo resulting in much lower production costs for the competing Belgian company using the ore, Union Miniere du Haut

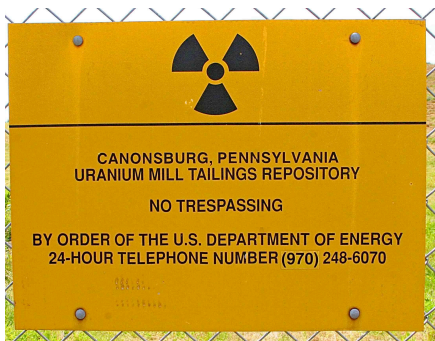


Katanga. SCC ceased production of radium from its own ores then becoming an a sales agent for Union Miniere. That arrangement ended in 1927. After liquidating its assets, SCC was dissolved in 1933.

SCC's concentrator mill in Colorado was acquired in 1929 by U.S. Vanadium that replaced it with a uranium mill in Uravan that operated from 1936 to 1957. SCC's Canonsburg and Oakland sites were, of course, contaminated. The Vanadium Building, later renamed the Flannery Building and today known as the Parkvale Building was the subject of several decontamination efforts. In 2002, decontamination was successfully completed and the building released by the state for unrestricted use.



The Canonsburg mill site was designated in the 1978 Uranium Mill Tailings Radiation Control Act as eligible for federal funds for clean up, the only uranium mill east of the Mississippi River so listed. Under a \$48 million cleanup, the mill site and 163 nearby properties in Canonsburg were remediated. The nearby properties were contaminated as a result of mill tailings from the SCC



operation having been used as road and yard fill in Canonsburg. Residual radioactivity was consolidated into a covered, clay-lined cell at the Canonsburg mill site that is fenced and posted and periodically monitored by the department of Energy and the Commonwealth of Pennsylvania.

### Photo Credits

Flannery brothers – Lubenau Collection

Marie Curie & President Harding – American Institute of Physics

University of Pittsburgh Convocation Program – Historical Society  
of Western Pennsylvania

Vanadium/Flannery/Parkvale Building 2004 – Joel Lubenau

Canonsburg Fence Sign 2008 – Lloyd Hampson, Lubenau  
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