

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 40-08794/86-01

Docket No. 40-08794

License No. SMB-1408

Priority 3

Category E

Licensee: Molycorp, Incorporated
P.O. Box 54945
Los Angeles, CA 90054

Facility Name: Molycorp, Incorporated

Inspection At: York, Pennsylvania

Inspection Conducted: July 17, 1986

Inspectors: *J.D. Kinneman*
Teresa Hall Darden, Health Physicist

12/8/86
date

Frank M. Costello
Frank Costello, Health Physicist

11/24/86
date

Approved by: *J.D. Kinneman*
John D. Kinneman, Chief, Nuclear
Material Safety Section A

12/8/86
date

Inspection Summary: Inspection on July 17, 1986 (Inspection Report Number 40-08794/86-01)

Areas Inspected: Special unannounced inspection limited to review of storage of residue in drums; stabilization of residue pile, final disposition of waste, a surge pond; surveys and sample collection.

Results: Options for solving the problems associated with disposal of low levels of thorium and uranium contaminated waste are still under investigation.

DETAILS

1. Persons Contacted

William E. Doyle, Plant Manager
Steven Douglas, Environmental Compliance Officer, Radiation Safety Officer (RSO)

2. Background

Molycorp is authorized to process three different starting materials containing licensable quantities of source material (Bastnasite ore, cerium ore, and concentrated cerium ore) for the purpose of extracting cerium and other products at their York Facility. Their products are used to make catalysts by the chemical industry and for various other industrial purposes. During 15 to 20 years of operation a large quantity of contaminated residues has accumulated on the site. A portion is located in a pile near the southeast corner of the property. The pile is partially covered with non-contaminated soil. Several thousand barrels of residues - some badly deteriorated and leaking - are also stored on the site. Most of these containers are located on the northeast and northwest sections of the property. Figure 1 of this report provides a plan view of the site.

3. Storage of Residue in Drums

This licensee estimates that presently there are approximately 15,000 drums of residue stored on site. Each drum contains about 500 pounds of residue with approximately 5.2 pounds of thorium per drum. The RSO states that the site can probably accommodate 25 to 35 percent more drums than are currently stored there. The drums are stored two drums high throughout the site. Presently waste-filled drums are accumulated at a daily rate of from two to six drums. This rate has been as high as fifty drums per day. Inventory records indicate that, as of April 4, 1985, when the most recent physical inventory was performed, there were 13,130 barrels on site.

As a result of corrosion, many of the drums have been repackaged. The repackaging process is continuing at a rate of eight to ten barrels a day. Since February 1986, plastic drums have been used to repackage corroding drums and all recently generated waste is being packaged in plastic drums.

4. Residue Pile Stabilization

Residue has occasionally spilled outside the site fence line as a result of weather conditions and the pile heights. This was verified by measurements done by Oak Ridge Associated Universities (ORAU) and documented in a November 1985 report to the NRC. The licensee has cleaned up the

perimeters of the property by shoveling the spilled residue and depositing it to the landfill area. The area has been covered with rocks and clay. Future stabilization plans include grass planting on the site. Licensee management stated that it planned to have this area completely stabilized by December 31, 1986.

The inspectors surveyed this area with a Ludlum Model 19 Micro R Meter. Readings ranged from less than 0.1 millirem per hour at the site perimeter to less than or equal to 1 millirem per hour at the pile.

5. Final Waste Disposition

Licensee representatives stated that, since available waste storage space is diminishing on the site, and waste disposal to burial grounds is costly, the licensee is considering shipping its waste to its facility in Mountain Pass, California. However, the Mountain Pass facility is not licensed to possess this material. While the licensee continues to consider this approach, licensee representatives stated that it had not yet submitted an application for a license for the Mountain Pass site. The York site Plant Manager is also working on an experimental separation process that will produce a thorium-free rare earth product which would result in approximately 100 drums of thorium-uranium concentrate for disposal. The Plant Manager is encouraged by the progress so far of this ongoing experiment but he stated that he needs more time to perfect this technique for the large scale volume of work. Additionally, this process would have to be set up at Mountain Pass, California and time for plant construction is necessary.

No violations were identified.

6. Surge Pond Cleanup

Approximately three years ago, there was a surge pond on site that held the chemical runoff from various chemical processes performed on site. Licensee representatives, stated that, since then, the pond has been emptied, cleaned and black-topped. On this site, a tank has been built that now holds in-process liquids.

The liquids resulting from the cleanup of the surge pond were treated in accordance with the licensee's routine processing of liquid waste. The solids were sent for disposal as normal trash.

No violations were identified.

7. Surveys

The Radiation Safety Officer performs monthly surveys of the site which includes measurements of radioactivity at selected areas and a visual inspection of the site. Quarterly surveys are more inclusive and include more site areas for measurements. According to the RSO, one measurement

has been made for radioactivity in ground water since 1981. That measurement was performed in July 1982 and analyzed by Radiation Management Corporation in Philadelphia. No levels of radioactivity were found which were above regulatory limits.

No violations were identified.

8. Independent Measurements

At the Olive Street end of the facility (see figure 1) is a small pit that holds rain water run off. This pit is built within the natural slope of the ground and any water overflow from the site runs into the pit. The pit drains directly into a quarry located close to the licensee's property line. The licensee controls when the pit contents are discharged to the quarry. The inspectors took samples from the pit and brought them to the Region I Laboratory for analysis. No radioactivity was detected in the sample.

No violations were identified.

9. Exit Interview

At the conclusion of the inspection, the inspectors met with the individuals identified in Paragraph 1 of this report and discussed the findings of the inspection to date.

The Plant Manager stated that he is not aware of any plans to sell, move or close the York, Pennsylvania site at this time.

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● STACKS

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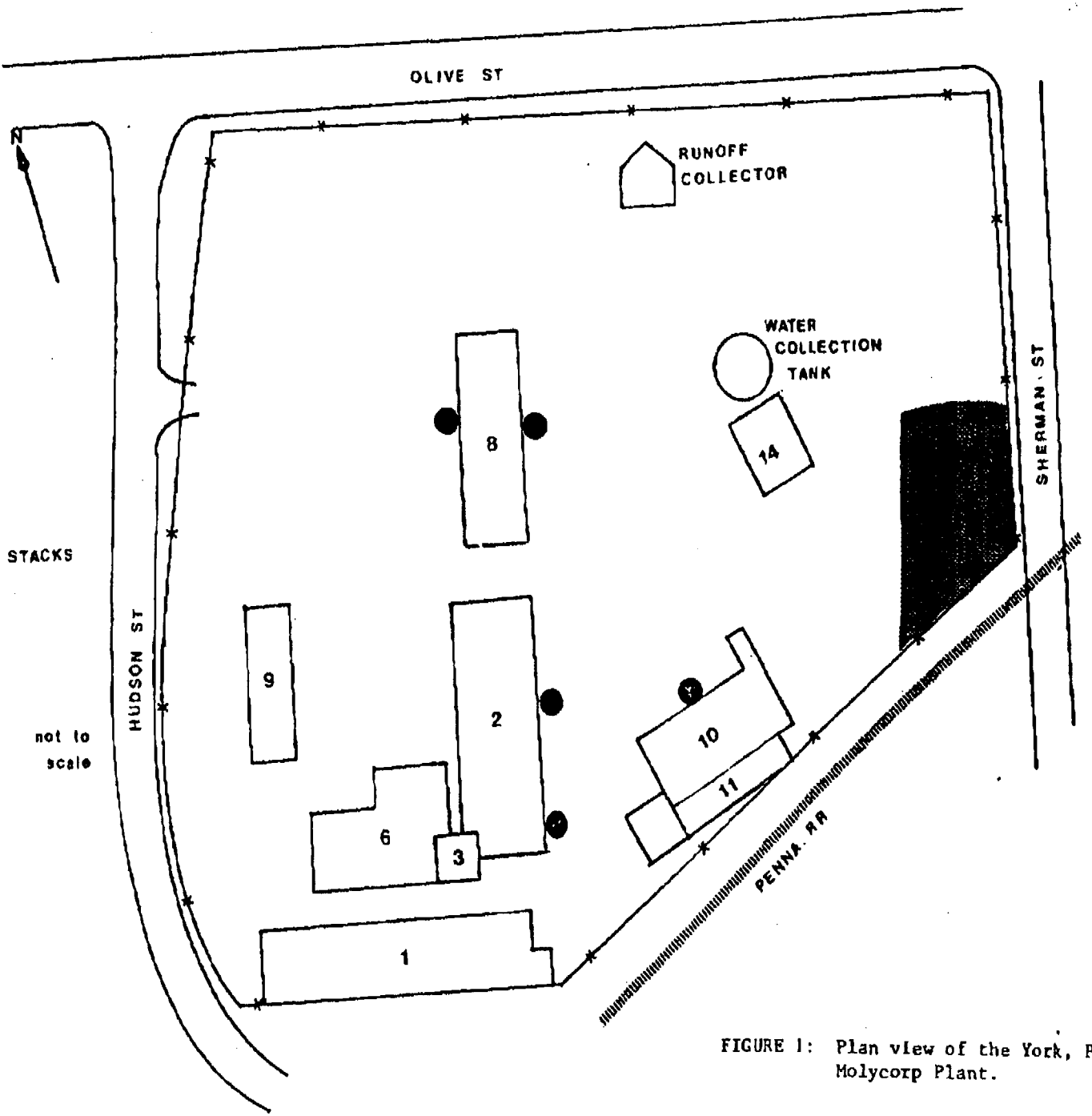


FIGURE 1: Plan view of the York, PA Molycorp Plant.