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BREVARD PLANT
PHOTO PRODUCTS DEPARTMENT

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SOLAR HEAT AIDS SILVER SALVAGE

Most of the "Solar Energy" articles seen today seem to imply that solar energy is still to be developed around technology not yet in existence. No doubt that's true; but solar energy is at work right now, helping the plant recover precious silver. It's working in a very practical way.

Jim Henderson holds a piece of dried material from the solar dryer.

The upward spiral of silver prices makes the recovery of ever smaller amounts of silver worthwhile. Last year, the decision was made to begin recovery of silver which had made its way into the plant's settling pond.

The silver was trapped in a sludge at the bottom of the pond. Most of the sludge was diatomaceous earth from the water clarifiers at the powerhouse. A receptor pit was made in the "borrow pit" north of the plant, and a contractor was hired to pump the sludge from the settling pond around the road to the pit.

The question then became: How do you remove the water? Several steps are necessary to get the silver out of the sludge, and the first one is getting the material to the refiner.

Most of the water must be removed before it is practical to ship the material. Drying several thousand cubic feet of mineral material to the desired 30% moisture or below would require large amounts of energy. Costs of drying by traditional means were prohibitive, so the decision was made to "go solar".

FIRST LOAD: *Arnold Morgan loads the waiting truck as Conley Mathis removes roof panels. When all the dried sludge has been removed, the bins will be filled again and the roof sections reinstalled for the next load.*

The solar sludge dryer is basically a greenhouse, open at one end with a blower at the other. The structure is 200 feet long, 12 feet wide. The clear top is of scrap X4C1 base. The ultraviolet inhibitor in X4C1 prevents the polyester film from degrading in the sunlight. The top is in sections; two men can move a section of the cover. Two side panels are also removable to allow access for machinery used to move the material.

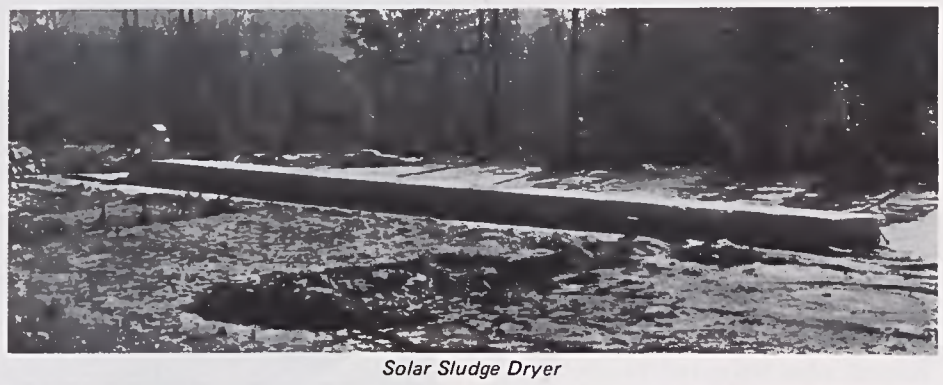
On November 6, the first product of the solar dryer was loaded for shipment to the refiner. The top 4 or 5 inches were very dry, light and powdery. Moisture content increased with depth, but the material was satisfactory for loading. The only fuel-derived energy which had been used for drying was for the 7.5 hp electric motor which moves 15,000 cubic feet of air per minute through the drying tunnel.

Jim Henderson, engineer of the silver recovery project, expects to be able to ship 40,000 pounds of the silver-bearing material every two weeks. The dried diatomaceous earth is loaded into an open topped truck by a front end loader, and the empty dryer filled again with damp sludge.

"There are a few things we would do differently, if we had the job to do again," says Henderson. "I should have sloped the top a bit more, and I've considered giving the inside of the west wall a coat of black paint to increase the heat capture.

"But our construction people did a great job of building it; and all in all, the dryer is working well. We're anticipating a very good return on a relatively small investment. This looked like a natural for solar power."

Many proposed approaches to using the sun's energy give the impression that sophisticated apparatus is required, or that we have to wait for a scientific breakthrough. Meanwhile, over in the borrow pit: plywood, scrap base and a surplus blower are doing a valuable job today—with solar energy, at a very attractive price.



Solar Sludge Dryer

FOCUS: THANKSGIVING

John

The Thanksgiving holiday brings to mind that William Bradford, Governor of Massachusetts, set aside the first Thanksgiving Day as a day of feasting and prayer. This was a way for the early colonists to show their gratitude for still being alive. Over the years Thanksgiving has continued to be an important day where families celebrate with big dinners and happy reunions. I am also aware that many find time for serious religious thinking, church services and personal prayer.

As I think about the events that have affected our plant and employees during the months since the last Thanksgiving Day, I find much for which to be thankful. To name just a few things:

- No one has sustained a serious injury while at work. In fact, as a group we have worked safely over 1,054 days and 7,229,260 man-hours. Each day worked without a disabling injury establishes a new Brevard plant on-the-job safety record.
- Employment has been steady and without layoff. In fact, 39 new employees have been added since January, 1979.
- Employees have risen to the challenge of meeting abnormal production demands during a period of price instability in the world silver markets. This situation continues chaotic, but I am confident the employees at the Brevard plant will continue to help the plant successfully meet the challenges that lie ahead.
- Support of the United Way Campaign was outstanding with contributions totaling about $43,000. This exceeded the plant goal of $39,500 and is further evidence that our employees are concerned for those who are in need of a helping hand. This is in keeping with the spirit of Thanksgiving.

All is not rosy, of course! The news reminds us daily of inflation, oil shortages, economic downturns, the crisis in Iran, and so on. For one day, I counted all my blessings, with particular emphasis on those I take for granted. I am sure if you did the same, you found a long list of items for which to be thankful.

John H. Golden
Plant Manager

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