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HW-3-1812

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March 2, 1948

To: W. C. Kay
From: L. Squires

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Minutes of SMO Area Conference on
Canyon and Concentration Bldg. (221 - 224) Problems

On February 18, 1948

INV.
9-47

Present: R.N. Evans, P.A. Otto, W.C. Kay, R.N. Millett, J.E. Cole, P.B. Vaughan, J. Fall, W.E. MacCreedy, R.N. Parker, G.M. Patterson, Maj. O.M. Granger, P.W. Crane, B.M. Smith, J.E. Willard, H.F. Aiken, L. Squires.

1) Cell Contamination

Background activity in vessels of Sections 8 and 13 has increased progressively during February processing; the 8-4 tank up to 25% of full charge, the 13-4 tank up to 6% of full charge, indicating accumulation of an insoluble, activity bearing material. Vessels in other sections about 1% of full charge value; no progressive increase.

Monitors from fume and cell cover blocks show that activity is mainly general f.p. contamination with appreciable product content. Section 13 monitors had also about 80% fm. Product activity also present in the scrubber effluent from the 222 Building.

2) Activity in the Dissolver Off Gas

The 222 Building off gas monitoring equipment performing satisfactorily. No evolution during dissolving very reproducible. About twice as much I was given off during the second dissolver run (3-4-4-6). Two peaks found for I evolution during run; second peak may be related to sparging or to reflux rate. I accounting was low and may be related to non-representative sampling in the stack. The advisability of adding inactive I to the dissolver to decrease absorption of active I into the thyroid was discussed.

H.I. has not found any evidence of I or I² in the air during metal solution. Another active patch has been discovered on the ground, maximum reading 0.1 m/hr. The activity is concentrated in the sage brush, none on soil. H.I. feels that the tolerance I concentration could be increased by a factor of 10; since I concentration in the metal will increase by 2 at full pile power, a total increase of 4 due to reheating time could then be taken or a reduction in metal storage time of about 15 days.

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2-3-48

3) Losses in the LAF Product Precipitation Step

Losses in this step have averaged consistently about 5%. Addition of 251 slag recycle was without effect. The high Cu content of the present 254 slag, present water (20-25 mg/l) was pointed out and its effect discussed. Plan to use steam condensate starting with run 05-2-4. Use of triple Ia strike (with same total amount of Ia) will also be used to reduce loss nearer to standards. Losses about certainly due to carryover of LAF fines into waste.

4) Crystalline LAF

The development of a crystalline LAF which settles and centrifuges readily was described. Good carrying obtained in laboratory. Also a crystalline $\text{La}(\text{OH})_3$ can be produced from it by metathesis. Appear to be best possibility to date for increasing yields and reducing time cycles in 254 slag. Further work, including semi-works and plant demonstrations will be planned.

5) Time Cycle Studies

Results of recent time cycle studies were discussed. Values ranged from 16 to 24 hours. The possibilities of combining charges after extraction by the LAF washing procedure was outlined. It was pointed out that this procedure would depend upon raising the present critical mass limitation to 575 grams/batch in order to get 1-2 batches/day per tonnage of full product level. A similar increase would be necessary if a 60 ton/month pushing schedule were adopted. It was agreed that semi-works evaluation of the LAF washing procedure should proceed to obtain further information pointing a re-evaluation of the critical mass limitations.

6) Assessing Flue-Gas Process

It was agreed that a series of 3 runs should be made in the Bond Mill to evaluate the straight $(\text{NH}_4)_2\text{SO}_4$ process recently recommended by Clinton.

7) Total Paper Time

It was suggested that a assay time of 60 days (through 251 slag) be adopted until plant results show that this is not adequate. A study of sampling technique and shipping requirements will be undertaken on Section 3 in order to handle better material resulting from the shorter aging period.

L. J. Quinn
 Engineer, Chief Supervisor
 Exp. Eng. Technical Department

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