

TO D. C. Coldiron
C. G. Thompson AT Piscataway DATE July 20, 1977

FROM E. V. Schenke
P. Scheiner AT Burlington COPY TO J. Jacob
J. Sandstedt

SUBJECT ALTERNATE DISPERSION STRIPPING SCHEMES
ESR-1087

Conclusions

1. N₂ stripping in the dispersion plant is not required for the 2000 ppm VCM level.
2. Minimum cost schemes require the elimination of the Nash systems and only the installation of two additional reciprocating compressors and some auxiliaries.
3. There is no longer a need for a large 'EPA' area.
4. Piping, electrical, and structural costs are all reduced.

Recommendations

1. A meeting with Engineering Management is requested for July 25 or 26 to ascertain the correct direction to pursue.

Recent steam stripping tests conducted in the dispersion plant indicate that nitrogen stripping is not required for EPA compliance. The capital requirements necessary to reach EPA levels can accordingly be substantially reduced. The far-reaching consequences of a scheme utilizing a new reciprocating compressor, in lieu of the four Nash units, should be evaluated by the Process Design group.

Preliminary Steam Stripping Test Results

1. Stripping temperatures as high as 140° F have been achieved on each of the four major dispersion products (1730, 1742, 0565, and 1755) without any apparent effect on filterability.
2. Steam stripping to 140° F permits 2,000 ppm levels in the latex to be reached, without nitrogen, within two hours after recovery. This can be compared with the 115° F nitrogen sparge requirement of 3 - 5.5 hours after recovery.
3. VCM levels below 500 ppm have been reached without the use of nitrogen, although it has not been demonstrated that this level can consistently be achieved.
4. The use of nitrogen appears to facilitate achieving the 500 ppm level. The degree of improvement has not been determined as yet.

ESR-1087

E. V. Schenke & P. Scheiner

July 20, 1977

Preliminary Steam Stripping Test Results (cont'd)

5. Extended test runs are necessary to establish whether product quality has been affected. These extended runs should be started within the next few weeks.

Recommended Scheme for Review

A minimum cost dispersion recovery scheme should be reviewed. This scheme would utilize a reciprocating compressor to handle the additional recovery time required for dispersion stripping. The new reciprocating compressor proposed for Ho/Co reactor recovery could serve as a spare dispersion recovery compressor when necessary. This would result in a relatively modest productivity loss in Ho/Co while a dispersion compressor is out of service.

The above scheme would require a change in procedure for meeting vessel entry requirements. Nitrogen, to be utilized for the VCM bullets, would not be tied into a compressor but would vent directly to the incinerator. This would require an extended pressurized procedure. The infrequent occasion for opening a bullet should make the revised procedure acceptable.

The size of the incineration system should be reviewed. Eliminating the nitrogen load from the dispersion strippers could reduce the size of the incinerators as well as the auxiliaries.

The overall equipment layout as well as manning needs could change. The additional reciprocating compressors could be located in the suspension area negating the need for a large building in the EPA area. The need for a designated "EPA" area would also be questionable since a section of the area selected for Rhone Poulenc could be utilized for the water stripper and compressors thereby resulting in substantial savings in piping and electrical racks, as well as a majority of the new pipe rack.

The manpower needs for equipment located adjacent to the suspension plant could be somewhat lower than manning a separate designated "EPA area". Additionally, one reciprocating compressor would require less manning than four Nash type compressors.

Scheduling

The scheme recommended for review would eliminate the delivery problems associated with the Nash vacuum pumps. Nash is projecting one year for delivery of the specified vacuum pumps. Delivery of reciprocating compressors should run approximately nine months.

ESR-1087

E. V. Schenke & P. Scheiner

July 20, 1977

Scheduling (cont'd)

A process review of this scheme should be performed within the next week to avoid unnecessary delay in reaching a decision on which scheme to utilize. The far-reaching effects of this decision may prevent detailed engineering via an outside consultant from beginning, thereby holding up the entire program. Of course, it should be realized that these recommendations will significantly reduce the scope and also the required capital dollars, thereby reducing somewhat the detailed engineering requirements.



E. V. Schenke



P. Scheiner

EVS/mz