

CHEMICALS



CAB • FYE

INTEROFFICE / LAKE CHARLES

TO B. J. Green

DATE February 20, 1980

FROM R. Jacobs

SUBJECT System to Incinerate WTU Vent

The attached memo and drawings outline the process requirements for a system to incinerate the organic vent from the Waste Treatment Unit Steam stripper. . This is a high priority environmental project (P-148) because it will correct a vinyl chloride emission which is currently in violation of federal and state laws. An ORC has reviewed and approved the design concept and it is now ready for detailed mechanical design.

Don Haines has been suggested as the person to do the detailed mechanical design and this would be quite satisfactory. It is recommended that he be assigned the detailed mechanical design for this project and that the project be given the highest possible priority commensurate with completion of the other projects on which he is currently working. The Environmental Group has assured me that PPG is on sound footing in this endeavor as long as we are actively pursuing a solution to the problem. Points of contact in Process Engineering are Kamoru Jimoh and myself; in Operations, Larry Mason or Earnie Parsons.

/dr

cc: J. B. Alleman
W. J. Peard
J. G. Peck
E. F. Parsons

SL 073152

CHEMICALS

INTEROFFICE / LAKE CHARLES

TO R. Jacobs
FROM K. Jimoh *KAJ*
DATE February 14, 1980
SUBJECT Process Design for the Incineration of WTU Vent

The analyses of the WTU vent conducted in October 1979 indicated organic emissions of 150 to 450 lb/day. This included a vinyl chloride content greater than 2000 ppm which is environmentally unacceptable. Consequently, it was decided to incinerate this vent and Process Engineering has come up with a design presented as follows.

The WTU system would be operated under enough pressure to force the vent to the incinerator. As shown in Figure 1, a pressure control valve would be installed on the vent header to develop and maintain the operating conditions of the stripper at 5 psig and 227°F. At these operating conditions and the rate at which the unit is being fed with aqueous organics (500 gpm), calculations reveal that the seal loops should be extended by 7 ft. to hold a back pressure of up to 6 psi; otherwise the aqueous organics would overflow to the new separator. (Sizes of the loops are as indicated in the figure.) The vent line which would run from the WTU vent to the incinerator header should be of corrosion resistant pipe (furan or chemtite). To avoid running condensed organics to the incinerator, a knockout pot should be installed within a reasonable distance from the incinerator. The sac number, size and design conditions of a similar knockout pot is as quoted in the figure.

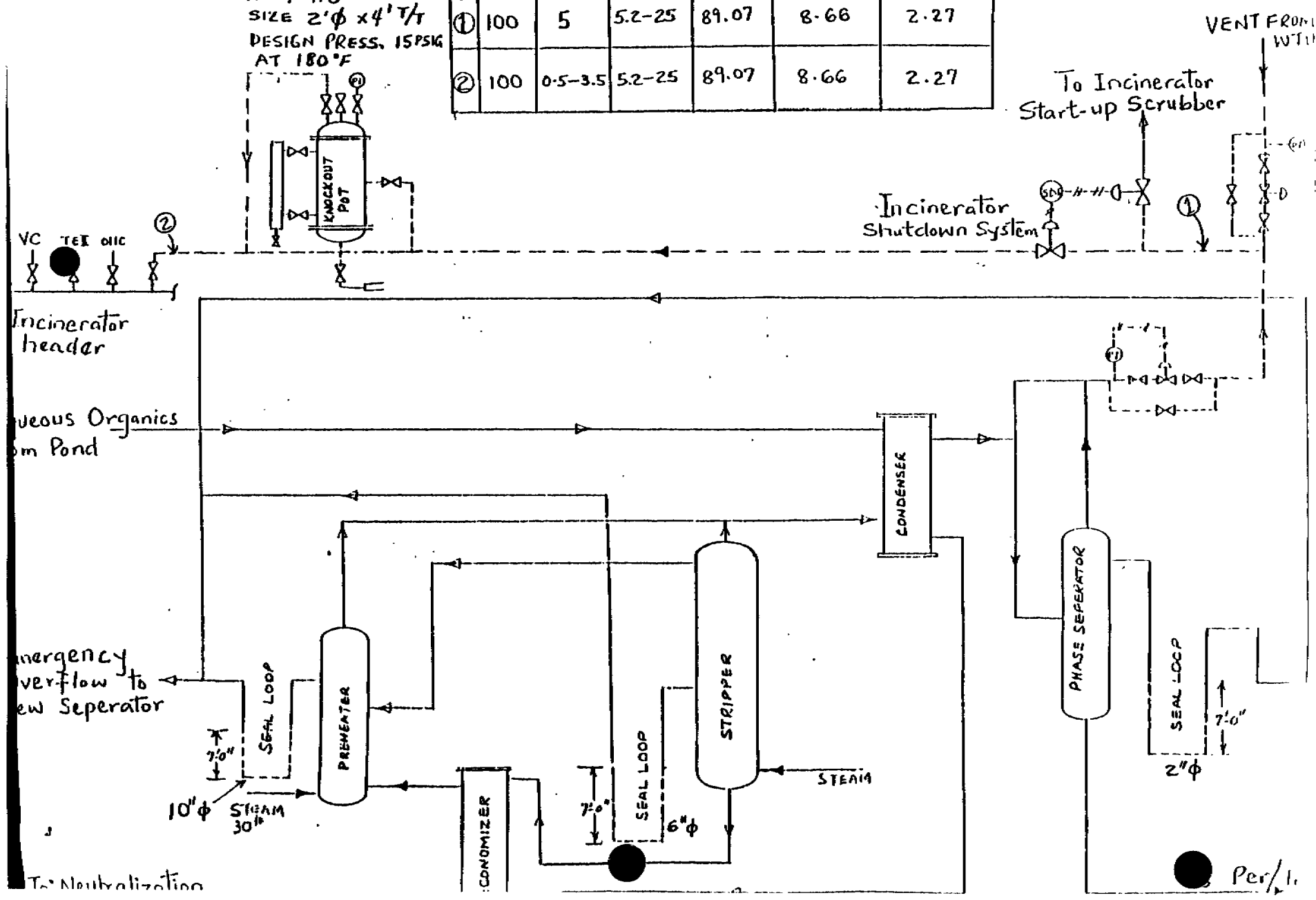
Figure 2 is the detailed instrumentation of the incineration line. Emerging from the stripper head, the vent would pass through pressure control valve designed to fail in an open position. The PCV should also be equipped with a pressure recorder mounted in the control room as well as low and high pressure alarm signals. The manual valves should be installed for the use of operators to initiate the unit start-up by directing the vent to the scrubbers. For safety purposes, the incineration line has been designed with an antiback flow valve having a controlled pressure drop of 0.5 psig at full flow conditions. The installed pressure differential transmitter and switch would sense a reverse vent flow and automatically close this valve. Simultaneously, the PCV on the scrubber line would be opened. Evidently, the installation of the hand switch that would be placed on the control board for the shut-down system creates a duality in instrumentation but it is much more convenient to employ when both WTU are to be started-up at the same time. Only at such times, should the hand switch be used.

/dr

SL 073153

SEE SAC 60-1700
 NO T-118
 SIZE 2'φ x 4' T/T
 DESIGN PRESS. 15 PSIG
 AT 180°F

	Temp. °F	Press (psig)	Flow (ACFM)	% Vol N ₂	Organics lighter than EDC	Organics heavier than EDC
①	100	5	5.2-25	89.07	8.66	2.27
②	100	0.5-3.5	5.2-25	89.07	8.66	2.27



SUBJECT DETAIL INSTRUMENTATION OF THE INCINERATION LINE

