

Office Memorandum

TO (Name and Location)	Mr. M. A. John	DATE	November 22, 1978
FROM (Name and Location)	J. C. Susil	REFERENCE NO.	JCS-197-78

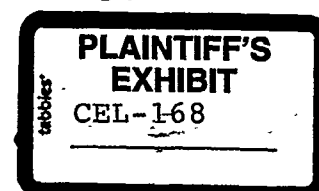
cc: G. L. Cade
G. A. Baumgartner
C. F. Hall
G. E. Wallace

Attached is the end-of-year review of the 1978 Plant Engineering Department Objectives.

J. C. Susil
J. C. Susil

JCS:ds
Attachments

002010



1978 OBJECTIVES REVIEW
PLANT ENGINEERING DEPARTMENT

A) Improve Performance and Efficiency of Department.

- 1) Maintain AVO backlog below 225 monthly average for the year - Average through October is 229.6. Working toward average of 200 for November and December to achieve 225 for year. (See attachment).
- 2) Review all plant standards for revision requirements and include a schedule for revisions in objectives by end of 1st quarter -
 - a) Instrument Standards - working with CCCTC to generate company standard.
 - b) Piping Standards - Revision made to materials selection information. General revision required, but holding for decision on company piping specs.
 - c) Fabricated Equipment - On going. Last revision issued 11/77.
 - d) Rotating Equipment - Working with CCCTC on individual sections.
 - e) Insulation - Issued in 1977.
 - f) Painting - Issued in 1977.
 - g) Welding - Issued 10/77.
 - h) Electrical, Buildings, Foundations - No progress.
 - i) Gaskets - Working; will complete in 1979.
- 3) Project requirements quarterly for contract designers based on approved work - Issued in March and October.
- 4) Require frequent presence in plant of department personnel - Ongoing.

B) Stewardship.

- 1) Identify marginal performers and take appropriate action - Worked with S. R. Lawrence and C. E. Boswell to improve work efficiency. Results reasonable with S. R. Lawrence and ongoing with C. E. Boswell.
- 2) Develop extraordinary opportunities for high potential people.
 - a) Sent F. W. Eilskov to Clear Lake to support plant problem solving.
 - b) Sent G. L. Cade to Brazil to support W. A. Sieme's project.

002011

- c) Assigned \$1MM girdler waste heat RFA to S. K. Smith.
- d) Assigned Roy Lane to demineralizer RFA.
- 3) Develop managerial capabilities of Group Leaders - Continued the assignments of:
 - a) Contract drafting responsibility to G. A. Baumgartner.
 - b) Capital planning responsibility to G. L. Cade.
 - c) Capital planning responsibility to G. E. Wallace during G. L. Cade's tour in Brazil.
 - d) Sent C. F. Hall and G. E. Wallace to PCPR (Personnel Counseling and Planning Review) in Atlanta.
- 4) Analyze Department technical requirements and develop plans to meet requirements which are consistent with stewardship needs - Staffing to support company needs for future projects and plant requirements. Have not generated satisfactory justification for additional Instrument/Electrical specialist as originally planned. Moved Rich Montes to I & E group. Hired Mechanical Engineer to work in Maintenance Engineering Group.
- 5) Staff Department to support plant work and company requirements - Section 4) above.
- C) Contribution to plant operations.
 - 1) Resolve plant potable water pressure problems by year end. Study defined Plastics' problems as being due to inadequate laterals and insufficient operation of booster pumps. Also defined and corrected problem with potable water header PIC. Submitted RFA to provide potable water backup during power outages.
 - 2) Develop log of CP&L rental equipment to check against monthly billing - Should complete by year end.
 - 3) Resolve alternative solutions to storm water RFA and implement by year end - Work in progress to clean up OXO area drainage as first step of Phase III. Completed ditch lining.
 - 4) Set up (formalize) program to ensure availability of critical spare parts - Program is formalized. By year end Area III will be completed and utilities will be started.
 - 5) Improve methods for measuring reformer tube temperatures by third quarter - This has been completed with calibration of optical pyrometers. Work continues on thermocouples. (See attachment).

002012

- 6) Complete inspection of out-of-plant pipelines and issue recommendations and reports by end of second quarter - This work was not completed by second quarter due to loss of two inspectors with only one replacement to date. Work will be completed by year end.

D) Capital Projects.

- 1) Complete all approved projects within funds and within scheduled completion date - Completed 25 RFA's during 1978. Revised one RFA for more funds and 7 RFA's for more time (3 due to MS shutdown, two due to process design not working, two for equipment delivery or equipment problems). See attachment.
- 2) Insure that project scopes are defined and reviewed as necessary before RFA approval - "Mini-team" concept has been implemented to insure that this happens. Also, we are requiring that process stay up to the PAT-64 (Phil Turek) standards for process designs.
- 3) Insure that all projects meet stated objectives - This is an ongoing process, the results of which are difficult to quantify. However, no serious shortcomings have been apparent.
- 4) Project capital and expense expenditures for following month within 10% of actual - For first 10 months of year, capital averaged 17.1% variance and EAWC averaged 53%. This is obviously an unreasonable objective since one delayed billing or invoice payment can swing the monthly total by more than the 10% goal.
- 5) Control EAWC and capital spending within approved budget and plan - No problems in capital or EAWC. Spending has been less than budget on both counts.
- 6) Project year end capital and EAWC as follows:

	<u>Capital</u>	<u>EAWC</u>
- within 20% by end of 1st quarter	6536 - 9804	680 - 1020
- within 15% by end of 2nd quarter	6251 - 8457	771 - 1043
- within 10% by end of 3rd quarter	7402 - 9046	756 - 924

1st quarter - Current projection of \$7913M capital is within 20% range of 6536 - 9804. EAWC projection of \$776M is within range of 680 - 1020.

2nd quarter - Capital projection of \$7913M is within range of 6251 - 8457. EAWC projection of \$776M is just within range of 771 - 1043.

3rd quarter - Capital projection of \$7913M is just within range of 7402 - 9046. EAWC projection of \$776M is just within range of 756 - 924.

002013

- 7) Execute energy projects so that Plant Engineering and Construction are not bottlenecks in implementation - As per the 3rd quarter '78 Energy Conservation Status Report (WHB-63):

- a) For the 15 active projects, either in or through engineering, each project averaged 1.47 quarters in engineering.

10 projects - 1 quarter
3 projects - 2 quarters
*2 projects - 3 quarters

*Girdler waste heat recovery and MS 1-column purif.

- b) Average time in process for those 15 projects was 3.4 quarters.

- c) Of the 15 projects active:

2 - completed
2 - in start-up
2 - in construction
8 - in engineering
1 - in process

See attachment.

- 8) Critique Capital Plan yearly - This is done each January for the preceeding year.

E) Construction

- 1) Maintain ABI overhead cost below 25% of direct labor based on total labor (expense and capital) - The assessment was 30% for the first four months of 1978 and 15% since then. It will be 15% or less for the next few months, so the yearly average is 20%.
- 2) Establish historical base for ABI overhead costs - The ABI overhead cost analysis is published monthly and will document historical costs. See attachments.
- 3) Improve scheduling and planning activity of ABI through quarterly projections of manpower required - These results have not been satisfactory. After several tries, a suitable projection was published by ABI, but now a problem exists with getting adequate projections to ABI from Plastics. Scott Gregoreyk is implementing a procedure similar to ours to solve this problem.

002014

- 4) Insure effective supervision of ABI work - Specific problem areas for the year were:

- a) Potable water line tie-ins.
- b) Instr. shutdowns at #1 boiler house.
- c) Electrical on vent hoods at lab.
- d) Backhoe in electrical at park.

All these were addressed and resolved by ABI in a satisfactory manner. Supervision and planning by ABI for the MS shutdown was fully adequate with good results in time and money spent.

F) Contract Engineering Personnel.

- 1) Perform critical appraisal of need for new or replacement personnel - This is an ongoing process that involves a discussion between G. A. Baumgartner and J. C. Susil in every case and the project engineer if a large project is involved. M. A. John approves all bills of materials to add or replace personnel.
- 2) Charge personnel costs directly to jobs worked on - This has been done and will continue.
- 3) Use lower grade personnel for less demanding work on large projects - We have used two draftsmen and three designers during the year in support of 12 senior designers. See attachment.

002015

OBJECTIVE E-2.) "ESTABLISH HISTORICAL BASE FOR
PCI OPERATING COSTS"

ABI Overhead Cost Analysis
1978

	January		February		March		April		May		June	
	Costs (\$)	%	Costs (\$)	%	Costs (\$)	%	Costs (\$)	%	Costs (\$)	%	Costs (\$)	%
Total ABI Direct Wages (No Markup)	251,343		292,810		307,343		297,413		427,080		519,431	
Unclassified Transfers	13,948	5.55	4,871	1.66	11,841	3.85	8,294	2.79	7,489	1.75	7,968	1.53
901--Salaries	13,869	5.52	15,657	5.35	14,462	4.71	14,884	5.00	17,461	4.09	10,699	2.06
906--Rentals	3,909	1.56	7,571	2.59	20,540	6.68	1,620	0.54	924	0.22	7,102	1.37
908--Janitorial & Clean-up	2,497	.99	1,798	.61	1,841	.60	1,770	0.60	2,091	0.49	6,233	1.20
909--Equipment Repair	4,345	1.73	8,195	2.80	6,279	2.04	13,328	4.48	7,684	1.80	19,905	3.83
912--Office Supplies	174	.07	87	.03	239	.08	289	0.10	32	0.01	472	0.09
917--Testing & Lab Services	236	.09	261	.09	256	.08	64	0.02	561	0.13	110	0.02
919--Show-up Pay	1,839	.73	656	.22	21	.01	80	0.03	31	0.01	1,340	0.26
921--Benefits	34	.01	490	.17	224	.07	157	0.05	661	0.15	277	0.05
922--Temporary Facilities	567	.23	466	.16	86	.03			42	0.01	1,240	0.24
923--Construction Supplies	9,273	3.69	10,055	3.43	11,628	3.78	8,617	2.90	17,567	4.11	12,088	2.33
927--Purchased Equipment	3,927	1.56	389	.13	889	.29	1,666	0.56	265	0.06	323	0.06
Controllable Overhead	54,618	21.73	50,496	17.25	68,306	22.22	50,769	6.98	54,810	12.83	67,757	13.04
ABI Fee (or Markup)	77,343	30.77	88,283	30.15	92,669	30.15	89,876	30.22	124,697	29.20	146,213	28.15
Total Overhead	131,961	52.50	138,779	47.40	160,975	52.38	140,645	47.29	179,507	42.03	213,970	41.19
Credits from Capital Work Orders	67,294	26.77	87,072	29.74	97,619	31.76	82,888	27.87	52,757	12.35	66,513	12.80
Difference between Controllable Overhead and Credits	12,676		36,576		29,313		32,119		(2,053)		(1,244)	
Accumulative Difference	(26,120)		10,456		39,769		71,888		69,835		68,591	

002016

ABI Overhead Cost Analysis

1978

	July		August		September		October		November		December	
	COSTS (\$)	%	COSTS (\$)	%	COSTS (\$)	%	COSTS (\$)	%	COSTS (\$)	%	COSTS (\$)	%
Total ABI Direct Wages (No Markup)	640,698		593,172		524,399		519,431					
Unclassified Transfers	15,657	2.44	18,159	3.06	9,125	1.74	5,268	1.01				
901 - Salaries	9,537	1.49	8,054	1.36	11,681	2.23	9,436	1.82				
906 - Rentals	5,855	.91	10,670	1.80	6,101	1.16	4,687	.90				
908 - Janitorial & Clean-up	2,109	.33	2,250	.38	2,469	.47	1,767	.34				
909 - Equipment Repair	9,186	1.43	12,271	2.07	13,979	2.67	14,613	2.81				
912 - Office Supplies	1,613	.25	1,834	.31	707	.13	243	.05				
917 - Testing & Lab Services	860	.13	0		233	.04	180	.03				
919 - Show-up Pay	47	.01	68	.01	548	.10	50	.01				
921 - Benefits	50	.01	53	.01	59	.01	18					
922 - Temporary Facilities	1,469	.23	11,384	1.92	9,975	1.90	10,223	1.97				
923 - Construction Supplies	12,616	1.97	18,935	3.19	12,896	2.46	16,587	3.19				
927 - Purchased Equipment	379	.06	4,867	.82			6,506	1.25				
Controllable Overhead	59,378	9.27	88,545	14.93	67,773	12.92	69,578	13.40				
ABI Fee (or Markup)	171,754	26.81	130,239	21.96	148,063	28.23	146,213	28.15				
Total Overhead	231,132	36.08	218,784	36.88	215,836	41.16	215,791	41.54				
Credits from Capital Work Orders	74,065	11.56	52,465	8.84	73,067	13.93	52,336	10.08				
Difference between Controllable Overhead and Credits	14,687		(36,088)		5,294		(17,247)					
Accumulative Difference	84,522		40,442		53,736		36,494					

002017