PLAINTIFF'S EXHIBIT

UC-1808

MAINTENANCE FACILITIES

BROWNSVILLE PLANT

November, 1975

MAINTENANCE FACILITIES TEAM

J. David McMahon

BRE 0055

MAINTENANCE FACILITIES

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J. David McMahon

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MAINTENANCE FACILITIES SURVEY RESULTS

BROWNSVILLE PLANT

The METT Facilities Project Team conducted a Maintenance Facilities Survey of the Brownsville Plant in conjunction with the MOT Maintenance Survey. It was generally found that many improvements had been made in the shops since the last survey. The Central Shops are well equipped, have improved lighting throughout, and are constructed with adequate height and material handling capability. The Field Shops for maintenance crews with plantwide responsibilities are scattered in the plant and their quality range from more than adequate for those in the Old Machine Shop to inadequate for the 930 Field Shop. The three zone shops are very beneficial to the maintenance effort due to their location, size, equipment, and ease of control. In continuing the improvement program for the maintenance shops, it is recommended that:

(1) Better utilization of the Old Machine Shop should be investigated. This is a very sturdy building with more than adequate space, height, and materials handling capabilities than the present shops require. Consideration should be given to moving the Welding/Sheet Metal Shop to this location and constructing smaller shops for the present tenants in location better suited to their needs. Another possibility would be to build a facility with 8 to 10 feet ceiling height to house many of the shops that require low ceilings (process mechanics, carpenter, insulation, glass fitters, etc.).

(2) A general improvement program for personnel facilities should be developed. In numerous shops it was found that the personnel ate at their work benches. This can become an extremely critical problem at some shops such as the Glass Fitters. The guardhouse lunch room and cafeteria are too small or too distant to handle the plant needs. More shop lunchrooms should be considered or possibly an extra shift should be considered

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for the cafeteria. Most shops lacked enough lockers for their personal effects (slicker suits, coveralls, lunches, etc.). Most restrooms were clean and well ventilated but lacked a sufficient number of toilets, urinals, and lavatories. The plant should also start making plans for the installation of female personnel facilities in the maintenance shops. Many of the Kanawha Valley and Gulf Coast plants are already seeing an influx of female maintenance employees in both central shop and field maintenance capacities.

(3) The plant should continue with its present plans for the Fire Station/Safety Equipment Shop and the Mezzanine Feasibility Study for the warehouse. The proposed Fire Station/Safety Equipment Shop would place emphasis on the plant's commitment to individual safety in the plant and would help to insure that adequate and timely safety inspections are made. The warehouse has adequate height to allow a mezzanine and the economic justification of this possibility needs to be investigated.

(4) Portable buildings should be considered to reduce the Maintenance Department's office space problems. The use of portable buildings could reduce some of the crowded office space conditions that exist in the machine shop and 930 field shop. This would also allow the centralization of the planning group and RM-1 Group.

(5) A "house cleaning" program needs to be implemented to improve the storage and safety in the shops. Although it is wise for the shops to maintain a limited amount of spare parts in the shops, this practice is being exceeded. Some shops were found to have so much being kept that the shop personnel really didn't know what they had, work space was being lost, and hazards existed from having to crawl over equipment or tools to retrieve items on shelves.

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MAINTENANCE FACILITIES

BROWNSVILLE PLANT

In November, 1975, a survey of the Brownsville Plant's maintenance facilities was made by the METT-Facilities Project Team in conjunction with the Maintenance Operations Team Maintenance Survey. The attached is a compilation of information regarding these facilities. Included are:

1. Maintenance Facilities - Brownsville Plant.....Page 1

   (A short summary of features, strong and weak points and opinions as to the adequacy of present facilities.)

2. Major Maintenance Shops - Brownsville Plant.....Page 3

   (Charts showing use, size, conditions and features of the larger maintenance buildings and shops.)

3. Maintenance Facilities Description.....Page 7

   (A report provided by maintenance personnel giving a description of maintenance shops, storage areas, office and other facilities.)

4. Maintenance Shop Details.....Page 24

   (Charts showing heating, ventilation, lighting, insulation, utilities and material handling equipment of each shop.)

5. Maintenance Survey Questionnaire-Summary.....Page 29

   (Facilities section of an eleven-part questionnaire completed by maintenance supervisors and engineers.)

6. Maintenance Facilities Location Plan--.....Page 35
   Brownsville Plant

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MAINTENANCE FACILITIES

BROWNSVILLE PLANT

It was generally found that the Maintenance Shops are progressing toward improved, more efficient, less hazardous work places. Although Shop Personnel are pleased with the changes that have been made in the last two years, there is still room for improvement. Most shops were found to be adequate in work area and equipment but were lacking in the areas of storage space and personnel facilities.

CENTRAL SHOPS

The Central Shops are well equipped but the Machine Shop equipment is in need of repair. The improvements that have been made in the Process Mechanics Shop are very beneficial for the plant and the personnel who work in the shop. The recent painting of the Central Shops has improved the lighting throughout. The shops are adequate in height and material handling capability with the possible exception of the Welding/Sheet Metal Shop. The installation of small, specialty shops (corrosion lab, T&I, blacklight room, safety) have disrupted the layout of the shops. This has resulted in crowded conditions in the specialty shops and major shops.

FIELD SHOPS

Most of the Field Shops were found to be adequate in size, equipment, height, and material handling needs except for the 930 Field Shop. Although the 930 Shop is used by approximately 45 personnel who work throughout the plant, the present facilities lack adequate office space for the foremen, utilities to meet their needs, materials handling equipment, and covered work area. The Old Machine Shop (Building 164) is an excellent building that is being under-utilized. The Insulation Shop personnel do most of their work in the Recovery/Reaction Area of the plant (90% according to the foreman) and are located in the opposite end of the plant.

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Field Shops (Cont'd)

The Glass Fitters Shop is located in the Southeast corner of the building and the fiber-glass is drifting to all of the other shops due to the prevailing wind. The black-light room in the building is actively used for 30 to 45 days every 18 months for the "thaw" and essentially idle the rest of the time. The riggers' chokers and equipment is also stored in the Old Machine Shop. One end of the Quonset Hut serves as the Plant Garage and this shop has adequate work and storage space, equipment, and wash facilities. The Sand-blast Yard is in a good location with adequate equipment and outside work area. The Paint Storage Building is well ventilated and the shop building provides very adequate restrooms, lunch room, and Shop Office.

ZONE SHOPS

The three Zone Shops (Reaction, Recovery, and Oxygen/Energy) are all well located in relation to the units that the zone personnel service. All are well equipped with tools and the satellite stores provide much needed assistance. The Recovery Zone Shop would be rated the best of the Zone Shops. The Recovery and Reaction Foremen's Offices are not located at the shops but within the unit boundary. This facilitates their control of their personnel working in the shop and the unit. Unlike the other zone shops, the Oxygen/Energy Shop does not have a lunch room. The personnel are supposed to eat at the Guardhouse lunch room but most eat in the shop.

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MAINTENANCE SHOP DETAILS

BROWNSVILLE PLANT

BLDG. NO.	SHOPS	HEATING	VENTILATION -Shop-	VENTILATION -Spec. Exhaust	LIGHTING (Foot Candles)	INSULATION	UTILITIES	Mat'l Hand'l EQUIPMENT	REMARKS
163	Rigging Loft-Construction Shop	Steam	2 Vents	None	Incandescent OFF-75 Ft.Can. SHOP-55 Ft.Can.	None	Plant Air(90#) 230, 460 VAC	None	
164	Old Machine Shop (Glass Fitters) (Oxygen/Energy Zone Shop)	Steam & Electric Unit	4 Vents		Incandescent OFF-55 Ft.Can. SHOP-45 Ft.Can.	None	Plant Air(90#) Steam(30#) Drinking Water Acetylene Oxygen 115, 230 VAC	Bridge Crane-15-Ton	
164	Old Machine Shop (Insulation Shop)	Steam	Roof Vents	Fan	Incandescent OFF-55 Ft.Can. SHOP-45 Ft.Can.	None	Plant Air(85#) Steam (40#) Drinking Water Fire Water 115, 230 VAC	Bridge Crane-15-Ton	
166	B&R Training Room	Electric-Central & 2 Unit	A/C and Draft Fan	A/C and Draft Fan	Fluorescent	Thick Walls	Drinking Water		
166	Old Cafeteria-Dry Room	Electric-Unit	A/C		Fluorescent Incandescent	Thermal	115 VAC		
424	Central Service Center	Steam-Unit	A/C	None	Fluorescent 45 Ft.Candles	None	Plant Air(90#) 115 VAC		

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MAINTENANCE SHOP DETAILS (Cont'd)

BROWNSVILLE PLANT

BLDG. NO.	SHOPS (Cont'd)	HEATING	VENTILATION -Shop-	VENTILATION -Spec. Exhaust	LIGHTING (Foot Candles)	INSULATION	UTILITIES	Mat'l. Hand'l EQUIPMENT	REMARKS
424	Electric Shop	Steam	Window Fan	None	Fluorescent OFF-50 Ft.Can. SHOP-70 Ft.Can.	None	Plant Air(80#) Drinking Water 115,230,460 VAC	Monorail- 1½-Ton Chair hoist	
424	Machine Shop	Steam & Electric Unit	Fans	None	Mercury Vapor OFF-25 Ft.Can. SHOP-50 Ft.Can.	None	Plant Air(74#) Instrument Air Steam (20#) Drinking Water Cooling Water Fire Water Acetylene Oxygen Other Fuel Gas Storm Sewer 115,230,460 VAC	1-Bridge Crane- 5-Ton	
424	Process Mech./ Instrument Shop	Electric-Unit	A/C	A/C	Fluorescent OFF-75 Ft.Can. SHOP-75 Ft.Can.	Thermal & Sound	Plant Air(80#) Instrument Air Drinking Water Fire Water Vacuum 115, 230 VAC		
424	Welding Shop	Gas	None	Fans to be Installed	Fluorescent OFF-75 Ft.Can. SHOP-55 Ft.Can.	None	Plant Air(70#) Drinking Water Fire Water Acetylene Oxygen Other Fuel Gas Storm Sewer Sanitary Sewer 115,230,460 VAC	1-Overhead Crane-2-Ton	

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MAINTENANCE SHOP DETAILS (Cont'd)

BROWNSVILLE PLANT

BLDG. NO.	SHOPS (Cont'd)	HEATING	VENTILATION -Shop-	VENTILATION -Spec. Exhaust	LIGHTING (Foot Candles)	INSULATION	UTILITIES	Mat'l Hand'l EQUIPMENT	REMARKS
425	Maintenance Office								
461	Garage	None	Fans		Mercury Vapor 35 Ft.Candles	Thermal	Plant Air Drinking Water Cooling Water Fire Water Acetylene Oxygen Storm Sewer Sanitary Sewer 115, 230 VAC	1-Fork Trk. 1-Winch Trk. 14-Pickups	
489	Sand Blast Yard	Electric-Unit	A/C	None	Fluorescent	Thermal	Plant Air Breathing Air Drinking Water Fire Water Storm Sewer Sanitary Sewer 115,230,460 VAC	None	
--	Reaction Zone Shop	None-Open-sided	Open-sided		Incandescent Mercury Vapor 65 Ft.Candles	None	Plant Air(80#) Steam (40#) Drinking Water Cooling Water Acetylene Oxygen CO_2 Process Sewer 115 VAC	Monorail	

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MAINTENANCE SHOP DETAILS (Cont'd)

BROWNSVILLE PLANT

BLDG. NO.	SHOPS (Cont'd)	HEATING	VENTILATION -Shop-	VENTILATION -Spec. Exhaust	LIGHTING (Foot Candles)	INSULATION	UTILITIES	Mat'l Hand'l EQUIPMENT	REMARKS
--	S-3 Field Shop	Electric-Unit	None		Mercury Vapor	None	Plant Air Steam Drinking Water Acetylene Oxygen Nitrogen 115, 400 VAC	1-Monorail(1 Ton) 1-Monorail(3 Ton) 1-Monorail(4 Ton)	
--	930 Field Shop	Steam	A/C	None	Fluorescent	Thermal	Plant Air Drinking Water Fire Water Acetylene Oxygen Storm Sewer 115,230,460 VAC	None	

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MAINTENANCE SURVEY QUESTIONNAIRE SUMMARY

11. Maintenance Facilities

a) Do the maintenance people in your area have adequate personnel facilities in?

¤ Offices?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	8	57.2	5	35.7	1	7.1
Brown & Root	5	55.6	4	44.4	0	0.0
TOTAL RESPONSE	13	56.5	9	39.1	1	4.4

¤ Lunch Rooms?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	9	64.3	4	28.5	1	7.2
Brown & Root	5	55.6	3	33.3	1	11.1
TOTAL RESPONSE	14	60.9	7	30.4	7	8.7

¤ Locker Rooms?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	6	42.8	6	42.8	2	14.4
Brown & Root	4	44.4	5	55.6	0	0.0
TOTAL RESPONSE	10	43.5	11	47.8	2	8.7

b) In your area are the following aspects of the facilities located, designed, and/or equipped to handle work efficiently?

¤ Heating?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO.	%	NO.	%	NO	%
UCC	11	78.5	2	14.3	1	7.2
Brown & Root	7	77.8	2	22.2	0	0.0
TOTAL RESPONSE	18	78.3	4	17.4	1	4.3

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- Ventilation?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	12	85.7	2	14.3	0	0.0
Brown & Root	7	77.8	2	22.2	0	0.0
TOTAL RESPONSE	19	82.6	4	17.4	0	0.0

- Lighting?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	13	92.8	0	0.0	1	7.2
Brown & Root	7	77.8	2	22.2	0	0.0
TOTAL RESPONSE	20	87.0	2	8.7	1	4.3

- Insulation?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	9	68.3	3	21.4	2	14.3
Brown & Root	5	55.6	3	33.3	1	11.1
TOTAL RESPONSE	14	60.9	6	26.1	3	13.0

- Material Handling Equipment?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	8	57.2	4	28.5	2	14.3
Brown & Root	6	66.7	3	33.3	0	0.0
TOTAL RESPONSE	14	60.9	7	30.4	2	8.7

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- Utilities ?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	10	71.4	0	0.0	4	28.6
Brown & Root	5	55.6	3	33.3	1	11.1
TOTAL RESPONSE	15	65.3	3	13.0	5	21.7

- Shop Equipment?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	8	57.2	4	28.5	2	14.3
Brown & Root	5	55.6	3	33.3	1	11.1
TOTAL RESPONSE	13	56.5	7	30.4	3	13.1

- Storage Area?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	6	42.8	6	42.8	2	14.3
Brown & Root	3	33.3	5	55.6	1	11.1
TOTAL RESPONSE	9	39.1	11	47.8	3	13.1

- Transportation Support?

PERSONNEL	YES		NO.		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	7	50.0	6	42.8	1	7.2
Brown & Root	4	44.4	4	44.4	1	11.1
TOTAL RESPONSE	11	47.8	10	43.5	2	8.7

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¤ Layout?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	10	71.4	3	21.4	1	7.2
Brown & Root	7	77.8	2	22.2	0	0.0
TOTAL RESPONSE	17	74.0	5	21.7	1	4.3

c) Do you consider the central shops to be located, designed, and equipped to handle work efficiently?

PERSONNEL	YES		NO		DID NOT ANSWER	
	NO	%	NO.	%	NO.	%
UCC	7	50.0	6	42.7	1	14.3
Brown & Root	7	77.8	2	22.2	0	0.0
TOTAL RESPONSE	14	60.9	8	34.8	1	4.3

d) Are sufficient mobile and portable materials handling and hoisting equipment available to operate effectively?

PERSONNEL	YES		NO.		DID NOT ANSWER	
	NO.	%	NO.	%	NO.	%
UCC	10	71.4	2	14.3	2	14.3
Brown & Root	7	77.8	2	22.2	0	0.0
TOTAL RESPONSE	17	74.0	4	17.4	2	8.6

e) On what basis are tools and equipment replaced, modernized or increased in number?

1. UCC
   a. "Need." (Two responses.)
   b. "Demonstrated need or justification."
   c. "When they break or zone foreman requests repair."
   d. "By attention."
   e. "Yearly."
   f. "When a tool is broken, someone complains about not having a tool."
   g. "At request of Maintenance Supervision."

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