

INTEROFFICE COMMUNICATION

Westlake, Louisiana
December 30, 1970

TO: File

SUBJECT: Furnace Shutdown System

Attached is a chart showing the actions of the various valves in the cracking furnace shutdown systems under different furnace shutdown situations.

The following three valves have been eliminated from the shutdown system:

1. HCV-206 Inlet to quench column.
2. MC-210 Quench to furnace outlet.
3. VS-210 Nitrogen to convection coil.

Valves MC-210 and VS-210 will be replaced with manually operated ball valves. HCV-206 will be replaced with a pneumatically operated gate valve. Also, an operator will be provided on the block valve in the common quench line from the quench column. The operation of these valves will be covered in a future memo.

Two emergency buttons will be provided on the board. In addition, five other situations will be covered by the automated system. In the event that the emergency shutdown button on the board is activated, or in the event of instrument power failure or instrument air failure, the fuel gas to each furnace will be shut off. The convection coil of the furnace will be blocked in and vented. The steam to the vaporizer will be shut off and the emergency quench valve will close. If the fuel gas shutdown button is activated, or if the low fuel gas pressure shutdown or high tube temperature shutdown are activated, the main fuel gas valve to the furnace involved will close. All other valves in the shutdown system will not change.

A high quench temperature system has been added. If the temperature after the quench connection reaches 175° C an alarm will sound. If the temperature continues to rise to 180° C, another alarm will sound and the emergency quench valve will partially open. If the temperature continues to rise, an alarm will sound at 225° C and the fuel gas to the furnace will be shut off. If the temperature continues to rise to 250° C, an alarm will sound and the emergency quench valve will open fully. The position of the emergency quench valve, when in the partially open position, must be adjustable by the operator from the board. Please note that the functions of the emergency quench valve are somewhat different from those described in my memo of December 30, 1970.


R. H. Gerlach

RHG-MC

cc: LNV-DKP-RDG-JDB-JRH-RLH-LRB-DGD-HOA
JDM-FFW-RWE-RWC-CLB

Each w/attachment

CCR 000007885

12-31-70

RUC

CRACKING SYSTEM
SHUTDOWN SYSTEM

CCR 000007886

	EMERGENCY SHUTDOWN SWITCH	FUEL GAS SHUTDOWN SWITCH	LOW FUEL GAS PRESSURE	HIGH TUBE TEMPERATURE	HIGH QUENCH TEMPERATURE	HIGH HIGH QUENCH TEMP	HIGH-HIGH-HIGH QUENCH TEMP	INSTRUMENT POWER FAILURE	INSTRUMENT AIR FAILURE
MC-203 FUEL GAS TO FURNACE	C	C	C	C	ZC	C	C	C	C
FRC-215 STEAM TO VAPORIZER	C	ZC	ZC	ZC	ZC	ZC	ZC	C	C
LIC-215 EDC TO VAPORIZER	C	ZC	ZC	ZC	ZC	ZC	ZC	C	C
V-205 EDC TO CONVECTION COIL	C	ZC	ZC	ZC	ZC	ZC	ZC	C	C
V-201 CONVECTION COIL VENT TO TANK	O	ZC	ZC	ZC	ZC	ZC	ZC	O	O
V-204 EMERGENCY QUENCH	C	ZC	ZC	ZC	A	A	O	C	C
			SET @ 5 PSIG	SET @ 560°C	SET @ 180°C	SET @ 225°C	SET @ 250°C		

VALVE ACTION
 C - CLOSES
 O - OPENS
 ZC - NO CHANGE
 A - PARTIAL OPEN