Monsanto	INSTRUMENT FUNCTION OUTLINE		CED LOOP NO. B-307-1	
	PLANT W. G. Krummrich		ISSUED BY C. J. Hans DATE 7/23/71	PLANT LOOP NO.
DIVISION Organic	BLDG/DEPT 811.00	AUTH NO. 2471	REV. BY / DATE	REV / SHEET 1 OF

FURNACE - 307 - SHUTDOWN SYSTEM

1.0 NEED FOR LOOP

The purpose of this description is to define the furnace shutdown system. The purpose of the system is to protect the plant and personnel against abnormal operating conditions.

1.1 DESCRIPTION OF LOOP

The shutdown loop is composed of several components as follows:

1.1.1 BE 307-1

The furnace is provided with three (one for each burner) ultra-violet flame scanners. A failure of any burner flame will shutdown that furnace burner and signal a "furnace shutdown" alarm.

1.1.2 TIA 307-4

High stack temperature monitor (located in the field cabinet). High furnace stack temperature can be caused by excess fuel feed, abnormal firing conditions or a deficiency of circulating aroclor. Actuation of this alarm will signal a "furnace stack high temperature" alarm and a subsequent "furnace shutdown" alarm.

1.1.3 TJRIA-300-5

Aroclor from furnace high temperature alarm. This alarm is actuated by an alarm contact, associated with point 5, in multipoint recorder TJRI-300. High aroclor temperature can be caused by excess furnace fuel feed, or low aroclor flow. Actuation of this alarm will signal a "aroclor from furnace high temperature" alarm and a subsequent "furnace shutdown" alarm.

1.1.4 FIA 307-5

This is a low flow alarm for aroclor flow through the furnace. Low aroclor flow can be caused by a blockage in the furnace, an aroclor leak in the furnace or a failure of circulating pump 306. The alarm contact is located in FIA 307-5. Actuation of this alarm will signal a "aroclor through furnace low flow" alarm and a subsequent "furnace shutdown" alarm.

1.1.5 TJRIA - 300 - 16

Non-condensables from vent cooler - 324 high temperature furnace shutdown. This shutdown is actuated by an alarm contact associated with point 16, in multipoint recorder TJRI-300. High temperature at this point could result in aroclor pollution of the atmosphere. An actuation of this alarm will signal a "furnace shutdown" alarm. In this case, however, the "furnace shutdown" alarm will be preceded by a "vent cooler exit high temperature" alarm.

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1.1 DESCRIPTION OF LOOP (Cont'd.)

1.1.6 Fuel Pressure Switches

Each burner has four pressure switches, high gas pressure, low gas pressure, low fuel oil pressure and low atomizing steam pressure. When operating on gas the gas pressure switches must be satisfied or the individual burner will shutdown. When operating on fuel oil the gas pressure switches are by passed, and the low fuel pressure and low atomizing steam pressure switches must be satisfied. Pressure switches on one burner do not effect the operation of the other burners. The "furnace shutdown" alarm will sound when the first burner is shutdown. Addition burner failures failures will not alarm in the control building but will alarm at the field cabinet.

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