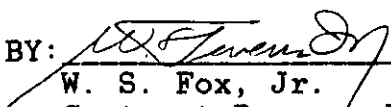


OXYGEN MONITORS

ABERDEEN CHEMICAL PLANT

FEBRUARY 23, 1988

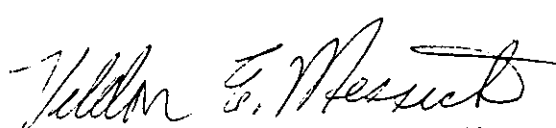
WORK BY:


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REVIEWED BY:


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APPROVED BY:


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OXYGEN MONITORS
ABERDEEN CHEMICAL PLANT

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OXYGEN MONITORS
ABERDEEN CHEMICAL PLANT

I. PURPOSE OF DESIGN

The purpose of this design is to provide continuous monitoring of ambient air oxygen concentrations. The areas to be monitored were identified in the inert gas/nitrogen system surveys. The survey report said that the following areas will be monitored:

- 1.- P-1 east side second floor.
- 2.- The inert gas generator room.
- 3.- Development Lab near liquid nitrogen storage room.
- 4.- Development Lab storage room.
- 5.- Development Lab GC room.
- 6.- Old Module GC room.
- 7.- V-11 dryer bldg. GC room.

OXYGEN MONITORSABERDEEN CHEMICAL PLANTII. DESCRIPTION

The Safety and the Mechanical Department recommend the oxygen analyzer manufactured by Teledyne Analytical Instruments. Several of these instruments have already been purchased as part of the RQIP program for this same purpose. This type of instrument uses a Micro-Fuel oxygen sensor which provides a linear output that is proportional to oxygen concentration. This sensor is an electrochemical design that at the end of its useful life is disposed of like a flashlight battery.

Two alarm levels are provided, one at 19.5 % oxygen and one at 19 % oxygen, per the recommendation of the Safety Department. At each entry into the monitored area 3 alarm lights will be provided. A green light will indicate a safe condition. A yellow light will indicate an oxygen content of 19.5 %. A red light will indicate an oxygen content of 19 % or below. Also in each monitored area an audible alarm will be provided.

The areas in which the oxygen sensors will be installed are as follows:

- 1.- P-1 east side second floor.- Used to detect inert gas leakage when area is shut up due to cold weather.
- 2.- Inert gas generator room.- Used to detect leaks.

The rack with the instruments for the above two areas will be located in the P-1 Bldg. control room. The instrument used will be a TAI Model 322/134-2, which is identical to those purchased for RQIP, except that these racks only hold two instruments instead of three.

- 3.- Development Lab near liquid nitrogen system.- The liquid nitrogen cylinder is stored inside the lab. Relocating the cylinder and/or routing the relief valve discharge outside is not practical and in any case would not eliminate the need for the monitor. Release of nitrogen gas in the past has already occurred.

- 4.- **Development Lab storage room.-** This room has been provided with a carbon dioxide fog blanket fire protection system. It also contains a compressed nitrogen system. Both system can be a source of inert gases.
- 5.- **Development Lab GC room.-** Nitrogen is used by the GC.

The rack with the instruments for the above three areas will be located in the Development Laboratory. The instrument used will be a TAI Model 322/134-3, which is identical to those purchased for RQIP.

- 6.- **Old Module GC room.-** Nitrogen is used by the GC.

The rack with the instrument for the above area will be located in the monitored area, with remote alarm in the vinyl control room. The instrument used will be a TAI Model 322/134-1, which is identical to those purchased for RQIP, except that these racks only hold one instrument instead of three.

- 7.- **V-11 dryer bldg. GC room.-** Nitrogen is used by the GC.

The rack with the instrument for the above area will be located in the monitored area, with remote alarm in the vinyl control room. The instrument used will be a TAI Model 322/134-1, which is identical to those purchased for RQIP, except that these racks only hold one instrument instead of three.

OXYGEN MONITORSABERDEEN CHEMICAL PLANTIII. INSTRUMENT LIST

<u>ITEM</u>	<u>LOCATION</u>
AN-101	P-1 Bldg. Control Room
AN-102	Development Laboratory
AN-103	Old Module GC room
AN-104	V-11 Dryer Bldg. GC room

VISTA**Vista Chemical Company**
GENERAL ENGINEERING
HOUSTON, TEXAS**Specification Sheet****SPECIFICATION DATA SHEET**

PROJECT NO. _____

A.F.E. NO. _____

P.O. NO. _____

MADE BY W. S. Fox, Jr.DATE 2/5/88 APP'D BY _____PLANT Aberdeen.PROJECT Oxygen MonitorsITEM NO.
SERVICEAN-101Vendor: Teledyne Analytical Instruments.Model: TAI Model 322/134-2 Oxygen
Deficiency Monitor.Range: 0 - 25% O₂ read out in Channel ModuleBackground: AirAlarm: (1) CAUTION @ 19.5% O₂
(1) DANGER @ 17.0% O₂
(1) FAILSensor: Class B-3 Micro-fuel CellElectrical: 110 VAC / 60 HzConfiguration: Flush panel mount control unit with
(2) Series 322 oxygen channel modules.
(2) remote mount oxygen probes.SPEC NO. _____ REV. _____
SHEET _____ OF _____

VISTA**Vista Chemical Company**
GENERAL ENGINEERING
HOUSTON, TEXAS**Specification Sheet****SPECIFICATION DATA SHEET**

PROJECT NO. _____

A.F.E. NO. _____

P.O. NO. _____

MADE BY W. S. Fox, JrDATE 2/24/88 APP'D BY _____PLANT Aberdeen PROJECT Oxygen MonitorsITEM NO.
SERVICEAN-102Vendor: Teledyne Analytical InstrumentsModel: TAI Model 322/134-3 Oxygen
Deficiency MonitorRange: 0-25% O₂ readout on Channel ModuleBackground: AirAlarm: (1) CAUTION @ 19.5% O₂
(1) DANGER @ 19.0% O₂
(1) FAILSensor: class B-3 Micro-fuel cellElectrical: 110 VAC/60HzConfiguration: Flush panel mount control unit with
(3) series 322 oxygen channel modules
(3) remote mount oxygen probes.

SPEC NO. _____ REV. _____

SHEET _____ OF _____

VISTA**Vista Chemical Company**GENERAL ENGINEERING
HOUSTON, TEXAS

Specification Sheet

SPECIFICATION DATA SHEET

PROJECT NO. _____

A.F.E. NO. _____

P.O. NO. _____

MADE BY W. S. FoxDATE 2/24/88 APPD BY _____

PLANT

Aberdeen

PROJECT

Oxygen MonitorsITEM NO.
SERVICEAN-103 and AN-104Vendor: Teledyne Analytical InstrumentsModel: TAI Model 322/134-1 Oxygen
Deficiency MonitorRange: 0-25% O₂ readout on Channel ModuleBackground: AirAlarm: (1) CAUTION: @ 19.5% O₂
(1) DANGER @ 19.0% O₂
(1) FAILSensor: Class B-3 MicroFuel cellElectrical: 110VAC/60 HzConfiguration: Flush panel mount control unit with
(1) series 322 Oxygen channel Module
(1) remote mount oxygen probe.SPEC NO. _____ REV. _____
SHEET _____ OF _____