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  <b>SISTEMI</b>	DOC. N.	
	PLANT	OBOD ELECTROINDUSTRIJA
	CUSTOMER PROJECT N. CONTRACT	UNIDO PROJECT TF/YUG/02/001 02/ 118 P.O. 16000142

**INSPECTION REPORT  
FACTORY N.1**

0	19/12/05	FIRST ISSUE	MB		
Rev.	Data	Descrizione	Preparato da	Verificato	Approvato

## **1 – INTRODUCTION**

Following Unido's request dated Nov18th included in the contract termination agreement related to Contract no. 02/118, UNIDO project no. TF/YUG/02/001 ( OBOD) , here below it is briefly summarised the result of the inspection related to the visit paid at the site ( Factory n.1 ) on December 13th and 14<sup>th</sup> 2005.

## **2 – SUBJECT OF THE INSPECTION**

The scope of the inspection was to collect on site the necessary data in order to provide a detailed information about the status of the equipment as well as the list of activities required to be completed prior to put into operation at least a parte of the complete project (factory n.1).

The people involved in the inspection are listed herebelow:

### Obod Electroindustria:

- Mr Spadjier
- Mr Vujanovic
- Mr Latkovic

### Bono Sistemi :

- Mrs M. Barale
- Mr. C. Cusinato

The inspection was carried out in each area of the plant and the results are summarized briefly here below.

### C5 STORAGE TANK AREA

The C5 area has not been damaged by the heavy snowfall occurred in February. The control board is not supplied by power, no cable for the power supply has been installed and connected.

The electrical cables have been laid but not connected neither to control board nor to instruments or equipment( no electrical wiring activities has been made yet).

The monitoring system of the jacket for C5 tank and piping is not connected.

The manual valves for the discharge line to sewerage has not been supplied by Obod yet.

The emergency push button has not been installed yet

Some devices like pressure switches on nitrogen supply line have been disassembled and put into the storage area of the factory . According to Obod, the instruments have been removed in order to avoid damage or theft.

Due to lack of power supply connection and missing of all the electrical wiring, Bono Sistemi hasn't had the opportunity to test the mechanical and electrical functioning of the equipment .

### C5 PIPING AND CABLE TRAY

Both C5 piping and cable tray from C5 tank to Factory 1 have been damaged by the snowfall .

It seems that the area involved by the damage is only the part just before the entrance of the C5 piping in factory 1.

It seems that only the shed above the piping has been damaged on all the remaining part.

A detailed investigation is in any case necessary on C5 piping ; it means that before the commissioning activities it will be necessary to plan a pressure test *of the whole piping in order to arrange some repair if necessary*

The electrical cables of the gas sensor (presently broken or interrupted )will have to be replaced with new ones.

For all the other cables related to the exchange signals, proper junction boxes will have to be installed where the electrical cables are broken or interrupted .

### **PREMIX AREA- FACTORY I**

During the heavy snowfall of February the roof fell down on both premix unit and nitrogen generator areas

Presently the roof has not been restored yet.

The equipment formerly installed in that area have been removed and stored in a covered area .

They have been checked visually but it was not possible to test any functioning of the equipment as the equipment were not connected to the control boards and also the power supply was not available

The result of the visual check is the following:

- 1) Raw polyol tank : good condition , no visual damage is present.
- 2) Easyfroth unit: good condition ,no visual damage is present except n.2 flanged connections that are presently broken and have to be replaced.
- 3) Chiller unit: good condition , no visual damage is present.
- 4) Control boards: good condition, no visual damage is present

- 5) Nitrogen generator unit: the casing of the generator is damaged. Some plastic distributors of nitrogen are broken and have to be replaced. The other equipment inside the casing do not show any visual damage.
- 6) Air dryer: good condition , no visual damage
- 7) Air filtering system: n.1 pressure gauge is to be replaced as it is damaged.
- 8) Ventilation fans: good condition, but the motor of the fans are noisy when manually moved. Probably, due to the weight of the snow, the tolerance on some mechanical parts have changed. A deep investigation will be necessary by disassembling the ventilation fans before the commissioning phase.

**BLEND PIPING FROM PREMIX AREA AND FOAMING MACHINE**  
**ISOCYANTE PIPING TO FOAMING MACHINES**  
**CABLE TRAY FROM PREMIX ARE TO FOAMING MACHINES**

The blend piping, the isocyanate piping and the cable tray were completed destroyed by the heavy snowfall as the piping were supported by the roof that fell down

Therefore it is necessary to restore the roof and to proceed to build up brand - new piping and cable tray.

**DOOR LINE AREA**

The door line area is now an “open area” :the roof is only partially destroyed, but the equipment are laying as if they were installed outside.

It means that they are continuously exposed to atmospheric condition ( rain, snow , wind).

During the inspection Bono noted that the floor of the area was partially covered by rain water.

The equipment related to that area have been inspected only visually, as they are not electrically wired and there is no power connection to the control boards.

The result of the visual check is the following:

- 1) Polyol+C5 module: good condition , covered with the internal protection used for the shipment .
- 2) Isocyanate module: good condition, presently covered with the protection used for the shipment.
- 3) Chillers : good condition , presently covered with the protection used for the shipment.
- 4) Ventilation fans: good condition.
- 5) Safety control board: good condition

The dry box has not been completed yet( windows , emergency exit, emergency lamps are missing)

Most of the safety devices have not been installed yet.

The flexible piping have not been installed yet.

### CABINET LINE AREA

With reference to the cabinet line area, the status of the equipment is similar to door line even if the roof above the equipment has not been destroyed at all.

### **GENERAL ITEM**

With reference to the general item, hebelow please find the result of our investigation.

- Back up Power Generator: the equipment is in good condition but has not been electrically installed at all. It means that the control board has not been installed and the electrical wiring is missing
- Remote Control Panel: the equipment has not been installed in the continuously manned room yet.
- Main Distribution panel: Obod has to supply a main distribution panel. That activity is very important in order to achieve the power supply of all the control boards.
- Power cable : all the power cables from the main supply line to all the control panels ( C5 tank , Safety , Foaming machine , nitrogen generator, premix area) have still to be supplied and connected by Obod.
- Grounding : the grounding circuit for each area is not completed yet.

### **3 – CONCLUSIONS**

We hereby enclose the list of the activities to be implemented prior to the commissioning and start-up ( ENCLOSURE A) and some picture of the factory.



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**ENCLOSURE  
A**

<b>No.</b>	<b>ACTIVITY</b>
<b>1.</b>	<b>C5 STORAGE AREA</b>
1.1	Electrical wiring of control board and all the equipment/instruments
1.2	Installation of a power supply to C5 electrical control board
1.3	Connection of the monitoring system to C5 and piping jacket
1.4	Installation of the pressure switches on nitrogen line( the switches removed)
1.5	Gas sensors installation
<b>2.</b>	<b>C5 PIPING AND CABLE TRAY</b>
2.1	C5 piping pressure test
2.2	C5 piping repair or manufacturing where completely destroyed (entrance to factory n.1)
2.3	Cable tray repair
2.4	Covering shed repair
2.5	Replacement of the electrical cable for gas sensors where broken or interrupted
2.6	Replacement of the electrical cable for exchange signal or installation of proper junction boxes where the cables are broken or interrupted
<b>3</b>	<b>PREMIX AREA</b>
3.1	Replacement of the roof above the premix area
3.2	Positioning of all the equipment in the premix room according to the project lay-out-
3.3	Replacement of the damaged part inside the Easyfroth unit
3.3	Laying of the electrical cables and electrical wiring
3.4	Connection piping form Polyol tank to Polyol Pump
3.5	Cable tray installation
3.6	Power supply to electrical control board
3.7	Grounding of all the equipment
3.8	Installation of gas sensor
<b>4</b>	<b>NITROGEN GENERATOR</b>
4.1	Replacement of the damaged parts inside the Nitrogen generator casing
4.2	Positioning of the nitrogen generator in the area according to the lay-out
4.3	Installation of flexible interconnecting piping
4.4	Connection of nitrogen tank to nitrogen network
4.5	Power supply to electrical control board
4.6	Supply of compressed air to nitrogen unit
<b>5</b>	<b>BLEND PIPING</b>
5.1	Manufacturing of a new blend piping from premix area to Penta Modules

5.2	Supply and installation of a cable tray from premiss area to foaming machines
5.3	Supply, laying and wiring of the electrical cables ( communication signals between premiss area and foaming machines )
<b>6</b>	<b><i>ISOCYANATE PIPING</i></b>
6.1	Manufacturing and installation of Isocyanate piping from isocyanate storage tank to foaming machines
<b>7</b>	<b><i>CABINET AND DOOR LINES</i></b>
7.1	Completion of the dry boxes (windows , emergency exit, emergency lamps)
7.2	Positioning of the chillers and connection of the chillers to the foaming machines.
7.3	Installation of the flexible piping on high pressure piping
7.4	Positioning of the safety control board
7.5	Cable trays installation ( completion)
7.6	Electrical wiring of all the equipment
7.7	Installation of all the safety devices ( completion)
7.7	Power supply to all electrical control boards
7.8	Grounding of all the equipment(completion)
7.9	Installation of sprinklers and connection to fire fighting pumps
7.10	Gas sensors installation
<b>8</b>	<b><i>GENERAL ITEM</i></b>
8.1	Supply of a main distribution panel
8.2	Supply of all the power cables to control boards
8.3	Installation and wiring of back up power generator
8.4	Installation and wiring of the remote control panel
8.5	Completion of the grounding of all the equipment

