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	PLANT	CONVERSION FROM CFC11 FOAM TO CYCLOPENTANE IN THE PRODUCTION OF REFRIGERATORS AT THE MOGANSHAN ELECTRIC APPLIANCES CO, CHINA
	CUSTOMER CONTRACT N.	UNIDO 2000/120 PROJECT MP/CPR/99/166 PO 05-0-46202

**CONVERSION OF CFC11 FOAM BLOWING
AGENT TO CYCLOPENTANE IN THE
PRODUCTION OF REFRIGERATORS AT THE
MOGANSHAN ELECTRIC APPLIANCES CO,
CHINA**

**FINAL
REPORT**

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C					
B					
A	20/12/02	FIRST ISSUE	M. BARALE		
Rev.	Date	Description	Prepared	Controll.	Approv.

1. INTRODUCTION

With the present document The Contractor wants to describe the works performed at the plant site for the conversion of Moganshan Electric Appliances Industrial Co. to phase out the use of CFC in the production of Refrigerators.

Here below it is briefly summarised the activities performed under the Contract step by step according to The terms of Reference

2- VISIT TO THE PROJECT SITE AND LAY OUT OF THE PLANT (STEPS 1, 2 OF THE TERMS OF REFERENCE)

After the award of the order, the Contractor visited the Counterpart between November 3rd and 4th 2000 in order to verify the conditions of the site and to identify the best engineering solutions for the conversion of the existing foaming lines.

During the visit, the Contractor discussed and checked with the Counterpart the following main subjects:

A - Technical details regarding the supply of the equipment; in particular The Contractor emphasised the Premix Units, the Polyol and Isocyanate Modules, Safeties of the plant (as i.e.: gas sensors, exhaust system with fan groups), cyclopentane pumps and relevant accessories .

B - The suitable site where the new equipment had to be installed and the required modification to the new layout.

After the visit the Contractor prepared the first progress report(November 2000) including the preliminary lay-out and the Basic requirements and specifications for the site Preparation.

The first progress report covered all the subjects listed during the discussion and gave to the Counterpart, as much as detailed as possible at that phase of the project, a list of all the works and materials to be provided by them.

3 TRAINING ABROAD OF THE COUNTERPART TECHNICAL SPECIFICATION AND ENGINEERING DESIGN FOR THE PLANT ERECTION-(STEPS 3÷9 OF THE TERMS OF REFERENCE)

A team of engineers attended the training at Contractor site in February 2001

In March 2001 the Contractor provided the Final Technical Documentation for the Conversion of the plant.

The above mentioned documentation included the following kind of detailed drawings and specifications:

- civil works for the storage pumps and foaming lines
- grounding of the equipment
- piping arrangements and support details
- piping sketches
- box buildings construction
- ventilation construction
- cable run lay-out
- gas sensor positioning
- nitrogen generator assembly
- electrical drawings
- safety requirements

All the documentation was discussed with the Counterpart and some modifications have been agreed during the next period.

4. DELIVERY OF EQUIPMENT, INSTALLATION, COMMISSIONING, TRIAL PRODUCTION OF THE FIRST MODELS, TEST RUN OF PRODUCTION(STEPS 10÷16 OF THE TERMS OF REFERENCE)

In June 2001 all the new equipment have been shipped.

The installation started in September 2001, after the customs clearance of all the equipment.

The Contractor engineers followed the installation phase including the supervision of the job at Counterpart charge.

The Contractor actions basically concerned the following zone of the modified plant:

- Cyclopentane storage tank area
- Wet areas
- Process fluid connection piping between wet and dry area
- Cabinets /doors foaming areas
- Safeties of the plants (ventilation system, fire fighting system et cetera)

The installation phase was completed in July 2002

After the installation, the Contractor performed the Commissioning and start-up phase of the modified plant in accordance with the contract.

The commissioning , trial production and test run phases mainly concerned the following operations:

- Pneumatic and Electric circuit check
- Grounding check
- Flushing of the tanks and the piping with nitrogen

- Pressure test
- Check of the operating sequences
- Operating test
- Service simulation test
- Setting start-up parameters
- Foaming quality check
- Performance test

The training on the job activities has been carried out at the end of commissioning phase (December 2002) (see enclosure A)

In December 2002 the commissioning phase was completed and the Counterpart started the production of the first models of freezers with cyclopentane as blowing agent

The Counterpart signed the final acceptance certificate in December 2002,(see enclosure B)

**5. SAFETY INSPECTION AND CERTIFICATION, FINAL REPORT,
POST CONTRACT MONITORING ACTIVITIES (STEPS 16÷19 OF
THE TERMS OF REFERENCE)**

The safety inspection has been performed in September and December 2002 by TUV ULM ; enclosed please find the TUV final statement letter (enclosure C) .

The post contract monitoring activities have started at beginning of September and will be completed at the end of December 2002

TUV original certificate is in printing now : it will be send to UNIDO by the end of January 2003 .

6. ENCLOSURES

A) TRAINING ON THE JOB REPORT

B) COMMISSIONING ACCEPTANCE

C) TUV FINAL STATEMENT LETTER

A

Cannon

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SISTEMI

TRAINING ON THE JOB REPORT OF UNIDO PROJECT N. MP/CPR/99/166
N. 2000/120 PO 05 0 46202

SUPPLIER: CANNON BONO SISTEMI

BY THIS DOCUMENT MOGANSHAN RONGSHENG CO (ZHONGKE LIFE SCIENCE & TECHNOLOGY CO.,LTD) ACKNOWLEDGES THAT CANNON BONO SISTEMI HAS SATISFACTORILY COMPLETED THE TRAINING ON THE JOB ACTIVITIES OF THE PROJECT.

DATE: 6th Dec. 2002

MOGANSHAN RONGSHENG CO

Lu Bin

2002.12.6

CANNON BONO SISTEMI

[Signature]

B

Cannon

ENVIRONMENTAL TECHNOLOGIES AND SYSTEM ENGINEERING

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SISTEMI

DATE: December 10th 2002

COMMISSIONING ACCEPTANCE OF UNIDO PROJECT N. MP/CPR/99/166
N. 2000/120 PO 05 0 46202

SUPPLIER: CANNON BONO SISTEMI

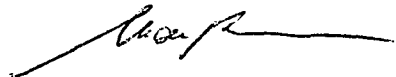
BY THIS DOCUMENT MOGANSHAN RONGSHENG CO.(ZHONGKE LIFE SCIENCE & TECHNOLOGY CO.,LTD) ACKNOWLEDGES THAT CANNON BONO SISTEMI HAS SATISFACTORILY COMPLETED THE COMMISSIONING AND START-UP OF THE PROJECT

MOGANSHAN RONGSHEN CO

CANNON BONO SISTEMI

Qian Dong Da

(张冬达)



C

Barale Monica

Da: Richardt, Karl-Josef [Karl-Josef.Richardt@tuev-sued.de]
Inviato: lunedì 23 dicembre 2002 15.48
A: 'UNIDO Dr. Grof'; 'UNIDO Ms M.Latrech'; 'Bono Sistemi, Ms. Barale'
Oggetto: Inspection of Moganshan

Dear Mr. Latrech,
Dear Mr. Grof,
Dear Mrs. Barale,

despite the unbelievable temperature conditions in China's workshop during this days the final inspection of Moganshan project runs very well. We were very happy about the work done by Bono/Cannon Far East and Moganshan Factory. We can state that all deficiencies mentioned in our report after the first inspection were solved.

In January I will issue a Certificate related this project.

Thank you very much for the good cooperation.

Best regards

Karl-Josef Richardt

Head of Department for Plant Safety
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