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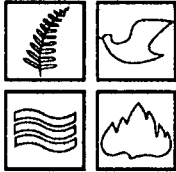
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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

NWICPC



NORTH -WESTERN INTERNATIONAL CLEANER PRODUCTION
AND ENVIRONMENTAL MANAGEMENT CENTRE

cc: Ms Puff

FINAL REPORT

On preparation and holding the International CP Workshop 2, which has taken place in two stages from October till November 2002



TF/RUS/01/001

Strengthening of the International Cleaner Production and Environment
Management Center-Part 1

UNIDO Contract No. 2002/293

Saint – Petersburg
2002

ABBREVIATIONS

| | |
|---------------|--|
| UNIDO | United Nations Industrial Development Organization |
| UNEP | United Nations Environmental Protection Organization |
| NWICPC | North-West International Cleaner Production Centre |
| CNCPC | Slovak National Cleaner Production Centre |
| NWRRF | North-West Region of the Russian Federation |
| CP | Cleaner Production |
| EMS | Environmental Management Systems |
| EMA | Environmental Management Accounting |

TABLE OF CONTENTS

| | Page |
|---|-------------|
| Abbreviations | 2 |
| Table of contents | 3 |
| 1. Basic information on the project | 4 |
| 2. Preparation and holding Awareness Raising seminar on CP project for the directors of NWICPC's eco-cluster enterprises | 4 |
| 3. Preparation and Holding Workshop 2 on Cleaner Production for Working groups | 5 |
| Annexes | 7 |
| Annex 1. List of participants of Awareness Raising Seminar and Workshop 2 | 7 |
| Annex 2. Plan of cooperation work between Slovak experts and the staff of NWICPC on preparation and holding Awareness Raising Seminar in the period of 28 th of October till 7 th of November 2002. | 8 |
| Annex 3. Plan of organization work and holding the international Workshop on Cleaner Production for working groups from 25 th of November till 6 th of December 2002 | 9 |
| Annex 4. The examples of information on enterprises of eco-cluster | 11 |
| Annex 5. The example of Certificate received by the participants of Workshop 2 | 19 |
| Annex 6. The Manual on Implementation of Cleaner Production (Manual.doc) | |
| Annex 7. Presentations for workshop (Workshop-presentetion.ppt) | |

1. BASIC INFORMATION ON THE PROJECT

Within the framework of the UNIDO project for North-Western region of Russia «Strengthening of the International Cleaner Production and Environmental Management Centre» (Project № TF/RUS/01/001 & US/RUS/01/115) the realization of demonstrational project of «Cleaner Production Assessment» programme started in Saint-Petersburg.

The North-Western International Cleaner Production and Environmental Management Centre (NWICPC, St. Petersburg) implement the demo project with the assistance of Cleaner Production and Environmental Management Branch of UNIDO (Vienna) and Slovak National Cleaner Production Centre (Bratislava). NWICPC selected 12 enterprises of St. Petersburg and Leningrad region for the participation in the demo project of «Cleaner Production Assessment» programme.

In February-March of 2002 with the UNIDO help, a mission of international (Slovak NCPC) expert in the field of CP was organized in St. Petersburg. During the course of this mission, the expert got acquainted with some companies acquaintance with some companies from the Eco-cluster of NWICPC and work done for the preparation of the first workshop within the framework of the demonstration project.

In April two representatives of NWICPC visited Slovak National Cleaner Production Centre in Bratislava and completed initial training on organizational matter of Slovak Cleaner Production Centre on the Implementation of CP projects on some Slovak enterprises.

On 23 – 27 of April 2002, an international workshop (Part-1) on Cleaner Production for the enterprises of Eco-cluster of NWICPC was organized and conducted in St. Petersburg. This workshop was conducted in cooperation with Slovak National Cleaner Production Centre and was attended by UNIDO HQs (Vienna) representative. Thereafter the NWICPC started individual work with the enterprises of Eco-cluster aimed at the selection of strategy to increase knowledge in the field of CP and develop plans for Implementation of CP.

In the period from 28th of October till 7th of November 2002 the workshop for NWICPC staff and external teammates was held. Slovak Cleaner Production Center's experts conducted workshop. Main goals of this workshop were: marketing tools, presentation of the cleaner production for TOP managers, CPC's business plan preparing, visits of companies – potential NWICPC's clients.

From 09th till 10th of November the study-tour to SNCPC for representatives of NWICPC was organized. The main goal of this visit was the preparation of the second international workshop for working groups of eco-cluster of NWICPC, as well as to study an organization SCPC, public relations, CP projects in Slovakia, visits companies, where CP were implemented.

In the period of 25th of November till 7th of December 2002, an international workshop (part-2) on Cleaner Production has taken place in St. Petersburg. The workshop was conducted in cooperation with Slovak National Cleaner Production Centre. In the first stage during four days CP teams training was held. Then CP projects have started. SNCPC's and NWICPC's experts conducted the training. Main goals of this workshop were to help NWICPC's experts to lead CP projects – analyzing, main problem selection, solutions generation, evaluation, solving sorting and selection, preparation of realization plans and reports.

After second international workshop on Implementation of CP for working groups, the next stage of the project has started.

2. PREPARATION AND HOLDING AWARENESS RAISING SEMINAR ON CP PROJECT FOR THE DIRECTORS OF NWICPC'S ECO-CLUSTER ENTERPRISES

Preparation of Awareness Raising Seminar started with the visiting of NWICPC by the international expert of UNIDO, director of SNCPC- Viera Feckova. Her mission was to help the new employees of NWICPC in their professional activity, principles of CP, as well as to hold Awareness Raising Seminar on CP for top-managers and representatives of St. Petersburg Administration.

During the preliminary work the huge amount of work was done on preparation and adaptation training material, some documents, lecture, invitations of representatives of eco-cluster's enterprises. There was chosen suitable place for the seminar. Lately, work started on preparation Workshop 2.

In the first part of workshop, during four days, practical trainings were organized for the staff of the NWICPC. The main goal of this part was to help the experts of NWICPC to held CP project - to analyze, emphasize main problems and generate solutions, to carry out assessment of projects. Besides, the support was given on preparation plans of realization of CP projects, as well as preparation of reports

The goal of Awareness Raising Seminar was to train new employees of NWICPC, as well to introduce TOP- managers and representatives of St. Petersburg Administration with advantage of CP from economic and environmental points of view.

Before and after seminar the visits of enterprises of NWICPC's eco-cluster, acquaintance with their problems, first proposals and possibilities to implement some steps of CP conception have taken place.

During 31 of October 2002 Awareness Raising Seminar on Cleaner Production Conception has taken place in St. Petersburg. The TOP managers of NWICPC's eco-cluster companies, the representatives of St. Petersburg Administration, as well the new employees of the Centre have taken part in seminar. The seminar was held with support of Director of the Slovak National Cleaner Production Centre, international expert of UNIDO on CP implementation- Mrs. Viera Feckova.



The main goals of seminar:

- Introduction to CP conception;
- Definition the role of TOP managers in CP project;
- Definition the role of the Centre in CP project;
- Definition the role of working-teams in project,
- Compilation the plan of teamwork.

Themes of seminar:

- Main tendencies of society development;
- Cleaner Production as a part of sustainable development of society;
- Main information on Cleaner Production projects;
- Compilation of association agreement;
- Expected outcomes of realizing CP project.



As a result of seminar the association agreements were signed between NWIPC and enterprises of formed eco-cluster.

In following days they were visits of enterprises of NWICPC's eco-cluster, with the goal to form working groups and to begin Implementation of CP conception. The preparation of Workshop 2 was prolonged.

From 09th till 10th of November the study-tour to SNCPC for representatives of NWICPC was organized. The main purpose of the study-tour in Slovak Cleaner Production Center was preparation of the second workshop on Cleaner Production program in St. Petersburg and studying of CP Implementation on Slovak enterprises.

The Annex 1 contains the list of participants of Awareness Raising Seminar and Workshop 2. The Annex 2 contains the schedule of cooperation work between staff of NWICPC and international experts of UNIDO, national experts of NCPC on preparation and holding Awareness Raising Seminar.

3. PREPARATION AND HOLDING WORKSHOP 2 ON CLEANER PRODUCTION FOR WORKING GROUPS OF NWICPC'S ECO-CLUSTER ENTERPRISES.

After returning back from SNCPC the next step on preparation of International Workshop 2 has started.

During the preliminary work the Manual on CP was adapted and printed as well as the slides on CP were made. All work was done to form the working-groups of eco-cluster enterprises.

From 25th of November till 7th of December 2002, in a framework of the demo-project on Implementation of CP conception, second international workshop on Cleaner Production has taken place in St. Petersburg. The workshop was conducted with direct assistance of international expert of UNIDO, expert of Slovak National cleaner Production Centre- Mr. Yaroslav Burjaniv.

In the framework of the second workshop of Demo-Project, the representatives of chosen companies got acquainted with basic knowledge on CP Implementation. The opportunities on Implementation of CP units on the enterprises of participants were considered.

Jointly with experts, participants prepared their own business-plan on Implementation of CP units, as well as have noted the main difficulties on realization of transition to CP.

Participants of workshop were asked to fill TOP-20 forms, as well as to make the ecological map of their own enterprises.

After the finishing workshop participants were tested, based on result of test participants received Certificates, confirming the participation in workshop.

The following themes were considered:

- Global climate change, industrial impact;
- Acquaintance with philosophy of CP;
- Systems and team approach during solving problems on Implementation of CP ;
- Mechanisms of working group activity during realization of CP;
- Methods of analysis of enterprise's state on Implementation of CP.

Work planning on Implementation of CP.

After the Workshop 2, the second part of CP realization on the enterprises of NWICPC's eco-cluster has started.

The list of participants is included into Appendix 1.

Annex 3 contains the schedule of the workshop 2 and schedule of visits of enterprises.

Annex 4 contains examples of information on enterprises of eco-cluster.

Annex 5 contains the example of Certificate received by participants.

Annex 6 contains the Manual on Implementation of CP.

Annex 7 contains the presentation for workshop

ANNEX 1

LIST OF PARTICIPANTS OF AWARENESS RAISING SEMINAR AND WORKSHOP 2

1. "ELECTROSYSTEMS" Holding
 - I.G. Smimov.- Chief specialist on generating plants of "ELECTROSYSTEMS" Holding
2. "ERG" Company
 - S.V. Karpov- General director of "ERG" company;
 - V.A. Moskalenko- Deputy director of "ERG" company;
3. "PETROHIMTECHNOLOGY" Research and Production Union
 - A.V. Gotovtsev- Chief director assistant of заместитель директора "PETROHIMTECHNOLOGY" research and production union;
4. "ENERGOTECHNOLOGY-3000" Ltd.;
 - G.G. Marchenko- Deputy director assistant of "ENERGOTECHNOLOGY-3000" Ltd.;
5. Administration of St. Petersburg
 - K.V. Avdeev- Head of Department of International cooperation of Foreign Relations Committee of St. Petersburg Administration;
6. "ICAR" Corporation.;
 - A.A. Shedei- Chief director assistant of "ICAR" Corporation;
7. "MERCURY" Ltd.;
 - M.Yu. Sarkisyan- president of "MERCURY" Ltd.;
 - D.V. Kulchtiskaya-administrative director assistant
8. PROFCOMPLEKT" Ltd.;
 - V.P. Soluyanov- General director of "PROFCOMPLEKT" Ltd.;
9. "SECURICOR" Ltd.;
 - V.A. Frolov-manager of household;
 - V.R. Krivov- head of transport department
10. State owned enterprise "St. Petersburg Electrotechnical plant of the Ministry of Railway Transport of the Russian Federation";
 - R.V. Tsapova-engineer-ecologist;
 - N.V. Nikishkin- deputy chief technologist of the plant;
11. State owned enterprise «PASSAZIRAVTOTRANS»;
 - E.Yu Sidorenkova- senior engineer of Plant Engineer department;
 - L.V. Klimenko- engineer-ecologist;
12. Public corporation «ECO-FENIX HOLDING»;
 - E.V. Chekalova- ecologist.

ANNEX 2

PLAN OF COOPERATION WORK BETWEEN SLOVAK EXPERTS AND STAFF OF
 NWICPC ON PREPARATION AND HOLDING OF AWARENESS RAISING SEMINAR IN
 FROM 28TH OF OCTOBER TILL 7TH OF NOVEMBER 2002.

| Date | Time | Activity | Lecturer | Participants | Comments |
|-------|---------|---|--------------------------|---------------------------------|---|
| 28.10 | 20.30 | Arrival to St. Petersburg | <i>Feckova</i> | | |
| Mo. | | | | | |
| 29.10 | 1/2 hr. | Presentation of the project | <i>Startsev, Feckova</i> | Staff of NWICPC | |
| Tue. | 1/2 hr. | Introduction to CP | <i>Feckova</i> | | |
| | 3 hr. | Preparation of presentation for top-managers | <i>Feckova</i> | | |
| | 4 hr. | Adaptation of presentations in Russian conditions | <i>Feckova</i> | | |
| 30.10 | 2 hr. | Communication with staff of NWICPC | <i>Feckova</i> | Staff of NWICPC | |
| Wen. | 6 hr. | Training – participants prepare their own presentations | <i>Feckova</i> | | |
| | | | | | |
| 31.10 | 1 hr. | Preparation of presentation for top-managers | <i>Feckova</i> | Staff of NWICPC | Invitation of top-managers of chosen enterprises. |
| Thu. | 3 hr. | Awareness raising seminar for top-managers | | Top-managers of enterprises | |
| | 4 hr. | Discussion and analysis | | | |
| 01.11 | 8 hr. | Consultation on business-plan preparation | <i>Feckova</i> | NWICPC | |
| Fri. | 22.35 | Arrival to St. Petersburg | <i>Burjaniv</i> | | |
| | | | | | |
| 02.11 | 8 hr. | Preparation of business-plan | <i>Feckova</i> | NWICPC | |
| Sat. | 8 hr. | Preparation of materials for the Workshop 2 | <i>Burjaniv</i> | Assistance to experts of NWICPC | |
| | | | | | |
| 03.11 | | Discussion, joint-work, non-formal communication | | | |
| Sun. | | | | | |
| 04.11 | 8 hr. | Meetings on enterprises, talks with top-managers, consultations on the launching CP projects. Two enterprises per day | <i>Feckova</i> | Experts of NWICPC | "Gotika", "Securicor" |
| Mo. | | | | | |
| 05.11 | 8 hr. | | <i>Burjaniv</i> | CP working teams | "Izolator", "Mercury" |
| Tue. | | | | | |
| 06.11 | 8 hr. | | | Top-managers of enterprises | Electrotechnical plant " |
| Wen. | | | | | |
| 07.11 | 8 hr. | | | | "ICAR", "Eco-Fenix" |
| Thu. | | | | | |
| 08.11 | | Conclusion | <i>Feckova</i> | NWICPC | |
| Fri. | 13.20 | Departure | <i>Burjaniv</i> | | |
| | | | | | |

ANNEX 3

**PLAN OF ORGANISATION WORK AND HOLDING THE INTERNATIONAL WORKSHOP
2 ON CLEANER PRODUCTION FOR WORKING GROUPS FROM 25TH OF NOVEMBER
TILL 6TH OF DECEMBER 2002**

| Date | Time | Activity | Lecturer | Participants |
|--------------------|---------------|--|-----------------|--|
| 24.11.2002 Sun. | | Arrival to SPb | <i>Burjaniv</i> | |
| | | Control of the supporting of the course-evening in hotel | <i>Startsev</i> | |
| 25.11.2002 Mon. | 10.00 - 10.45 | Presentation of UNIDO, NWICPC, SCPC with the aim to start the course on CP | <i>Startsev</i> | CP teams and new employees of the Centre |
| | | | <i>Burjaniv</i> | |
| | 10.45 - 11.30 | Introduction to CP | <i>Burjaniv</i> | |
| | 11.30 - 12.00 | <i>Coffee-break</i> | | |
| | 12.00 - 13.30 | Basic concepts of CP and Environmental Protection | <i>Burjaniv</i> | |
| | | CP project: goals and measures | <i>Burjaniv</i> | |
| | | Examples | <i>Burjaniv</i> | |
| | 13.30 - 14.30 | <i>Lunch</i> | | |
| | 14.30 - 16.00 | CP project - replacement of technologies and products | <i>Burjaniv</i> | |
| | 16.00 - 16.30 | <i>Coffee-break</i> | | |
| | 16.30 - 17.00 | CP project - program and guidance | <i>Burjaniv</i> | |
| | 17.00 - 17.30 | Questions. "Weather" task | | |
| 26.11.2002 Tue. | 10.00 - 10.15 | Review of the previous day | <i>Burjaniv</i> | CP teams and new employees of the Centre |
| | 10.15 - 11.30 | Initial analysis | <i>Burjaniv</i> | |
| | 11.30 - 12.00 | <i>Coffee-break</i> | | |
| | 12.00 - 13.00 | TOP-20 forms | <i>Burjaniv</i> | |
| | 13.00 - 13.30 | ABC method | <i>Burjaniv</i> | |
| | 13.30 - 14.30 | <i>Lunch</i> | | |
| | 14.30 - 16.00 | Creative proposals | <i>Burjaniv</i> | |
| | 16.00 - 16.30 | <i>Coffee-break</i> | | |
| | 16.30 - 17.00 | Function and costs analysis | <i>Burjaniv</i> | |
| 17.00 - 17.30 | Question | | | |
| 27.11.2002 Wen. | 10.00 - 10.15 | Review of the previous day | <i>Burjaniv</i> | CP teams and new employees of the Centre |
| | 10.15 - 11.30 | Team-work | <i>Burjaniv</i> | |
| | 11.30 - 12.00 | <i>Coffee-break</i> | | |
| | 12.00 - 13.30 | Assessment and selection of variants on Implementation CP | <i>Burjaniv</i> | |
| | 13.30 - 14.30 | <i>Lunch</i> | | |
| | 14.30 - 16.00 | Preliminary Report on the project of CP | <i>Burjaniv</i> | |
| | 16.00 - 16.30 | <i>Coffee-break</i> | | |
| | 16.30 - 17.00 | Implementation and reports for supervisors | <i>Burjaniv</i> | |
| 17.00 - 18.00 | Questions | | | |
| 28.11.2002 Thu. | 10.00 - 10.15 | Repeating | <i>Burjaniv</i> | CP teams and new employees of the Centre |
| | 10.15 - 11.30 | Planning of projects | <i>Burjaniv</i> | |
| | 11.30 - 12.00 | <i>Coffee-break</i> | | |
| | 12.00 - 12.30 | CP and ISO 14000 | <i>Burjaniv</i> | |
| | 12.30 - 13.00 | Finishing the course | <i>Burjaniv</i> | |
| | 13.00 - 14.00 | <i>Lunch</i> | | |

| Date | Time | Activity | Lecturer | Participants |
|--------------------|---------------|--|-----------------|------------------------|
| | 14.00 - 17.00 | Evaluation of the course, plans of the project-leaders | | |
| 29.11.2002 Fri. | | Working in teams on enterprises | <i>Burjaniv</i> | Experts of NWICPC |
| 30.11.2002 Sat. | | Working in teams on enterprises | <i>Burjaniv</i> | Experts of NWICPC |
| 01.12.2002 Sun. | | | | |
| 02.12.2002 Mon. | | Working in teams on enterprises | <i>Burjaniv</i> | Experts of NWICPC |
| 03.12.2002 Tue. | | Working in teams on enterprises | <i>Burjaniv</i> | Experts of NWICPC |
| 04.12.2002 Wen. | | Working in teams on enterprises | <i>Burjaniv</i> | Experts of NWICPC |
| 05.12.2002 Thu. | | Working in teams on enterprises | <i>Burjaniv</i> | Experts of NWICPC |
| 06.12.2002 Fri. | 10.00 - 16.00 | Evaluation of the projects. All together. | <i>Burjaniv</i> | NWICPC and CP teams |
| 07.12.2002 Sat. | | Departure | | |

Work in teams on enterprises consists from:

- Choosing the problem;
- Creative proposals;
- Assessment of proposals;
- Reports for руководства.

It's recommended to form five-six teams (enterprises)
Each team consists of 5-10 participants.

ANNEX 4

EXAMPLE OF BRIEF INFORMATION ON NWICPC's ECO-CLUSTER COMPANIES. ST. PETERSBURG ELECTROTECHNICAL PLANT OF THE MINISTRY OF THE RAILWAY TRANSPORT OF THE RUSSIAN FEDERATION.

Name:

St. Petersburg Electrotechnical plant of the Ministry of Railway Transport of the Russian Federation (MRT of RF).

Address:

St. Petersburg Electrotechnical plant of the
Ministry of Railway Transport of RF,
Borovaya str. 116,
192007, St. Petersburg, Russia.

Year of creation

1938.

Number of employees:

700 (31.12.2002).

Main activity:

- Making of relay for railway transportation automation control systems;
- Machine- building and instrument- making enterprising employing electroplating technologies;
- Assembly of automation control systems;
- Making and assembly of automation control systems modules.

Contact person:

Seleznev Evgeny Arkadievich
Chief engineer.

Telephone:

+7(812) 168-57-56

Fax:

+7(812) 166-28-16

Plant CP team:

- Tsapova Raisa Vasilievna
Engineer-ecologist.
Telephone: +7(812) 168-30-32
- Nikishkin Nikolai Vladimirovich
Deputy of chief technologist.
Telephone: +7(812) 167-18-70

Description of the focus area

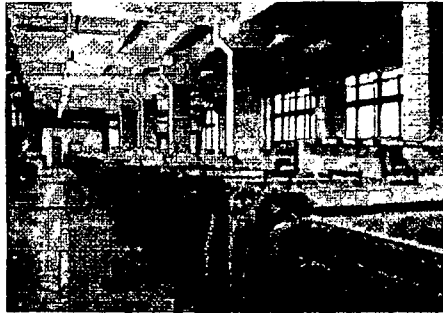
CP project is focused on problems, which could have determining influence on water waste management. Aim of project is to decrease or on the other hand totally eliminate negative influences on water end environment and enhance the efficiency of the plant.

Characterization of the enterprise

St. Petersburg Electrotechnical plant is structural subdivision of MRT of RF. During last years, because of the cutback in government orders, the amount of employees reduced from 925 till 700 persons. The perspectives of development of the enterprise are directly depending on the results of the present restructuring of MRT of RF.

The equipment, which is produced on the plant, is applied in electrical devices and dispatcher centralization, self-locking and for detection of superheated axle-boxes during train operations.

The plant produces automation control systems on the basis of different sorts of relay. The factory produces 100,000 relays per year (twice less than the previous years).



For plotting of galvanic coatings on details of relay, there are two basic electroplating lines and several auxiliary departments. The age of basic lines constitutes 14 years.

Major types of electroplating:

- Zinc-plating;
- Nickel-plating;
- Chromium-plating.

Quality of applied electroplating is satisfactory. The production is certified according to the standards of MRT of the RF.

Main departments of the plant:

- Assembly department of radio equipment;
- Assembly department of relay;
- Instrumental department;
- Mechanical department;
- Mechanical-repair department;
- Plating press department;
- Painting department;
- Shipping department.



Main ecological problems:

Electroplating production:

- High water consumption (more than 60 m³ per day);
- Pulsatory characteristics of toxic waste discharge into the treatment works as a result of supply of rinsing waste waters and concentrated solutions (both for chromium and for acid-base solutions) into one sewer;
- Formation of nonutilizable waste (galvanic sludge) to be buried at the Krasny Bor landfill;
- Exceeding of maximum concentration limits of heavy and non-ferrous metals in wastewater at the end of plant's pipe, which go to municipal collector.

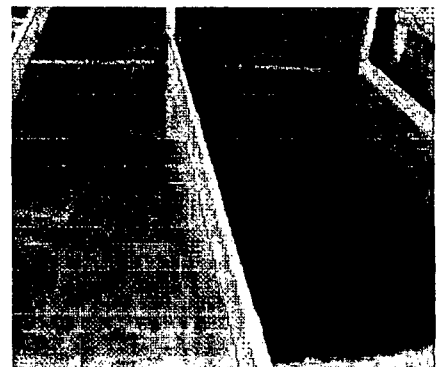
Other ecological problems:

Except problems described above, there are several other problems, which can have negative influence on environment, which are needed to be solved.

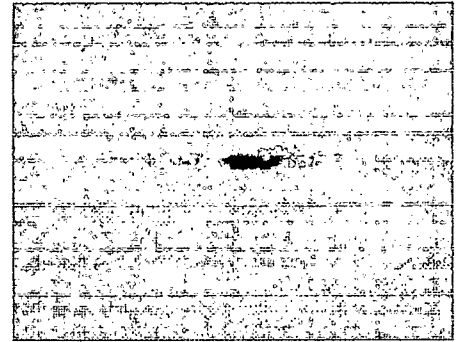
1. Utilization of phenoplasts:
 - During production of phenoplast a big amount of fins is appeared, which usually has taken out on the Krasny Bor landfill.
2. Utilization of hermetically sealed capacitors:
 - Absence of utilization technology of hermetically sealed capacitors, containing mercury.
3. Using of synthetic colours:
 - Old spraying cabins;
 - Atmospheric emission by the evaporation of colours;
 - Working places are technically and physically out-of date;
 - Problem with utilization of the rests of colours.

Proposed measures to improve ecological situation on the plant

1. Electroplating production:
 - Cessation of solution concentrates discharge into the common sewer and organization of their selective processing;
 - Separate utilization and removal of processed electrolytes;
 - Choice a place and allocation of containers, meant for emergency dumping of electrolyte;
 - Installation of final refining system (afterpurification of sewage water system), which will allow to modify waste waters quality so that they will meet maximum concentration limit requirements;
 - Modernization of electroplating lines.



2. Utilization of phenoplasts.
 - Improvement of shapes to produce phenoplastic details;
 - Inclusion of phenoplastic wastes into production chain.
3. Utilization of hermetically sealed capacitors.
 - Choice of more appropriated technology to utilize hermetically sealed capacitors.
4. Using of synthetic colours.
 - Building of the new spraying cabins;
 - Improvement of technological discipline;
 - Better technology for spraying with reduced dissipation lost;
 - Applications of environmentally friendly adulterate colours.



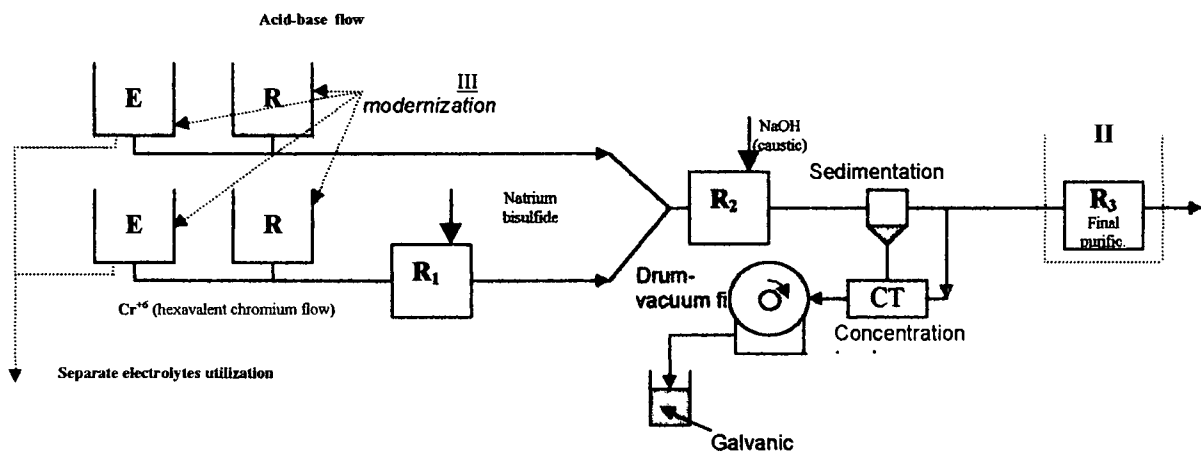
Methods to improve the ecological situation on the plant:

- Creation of CP team on the plant;
- CP seminars for middle managers and technician employees of enterprises;
- Application of TOP-20, brainstorming and brainwriting to create solutions;
- Joint operation for the selection of the appropriate modern electroplating lines and afterpurification of sewage water systems.

Proposed results of CP implementation on the plant:

- ♦ Work stabilization and simplification of treatment works maintenance;
- ♦ Decrease of chemical reagents consumption;
- ♦ Reduction of non-utilized galvanic sludge;
- ♦ Improving of waste water neutralization quality;
- ♦ Reduction of water consumption (in 4-5 times);
- ♦ Considerable reduction of power imputes;
- ♦ Improvement of production quality;
- Reduction of phenoplast wastes;
- Recycling of phenoplast wastes directly in the plant;
- Application of experience in utilization of hermetically sealed capacitors on other enterprises;
- Application of environmentally friendly adulterate colour;
- Preparations for the next step to receive certificate ISO 9001.

Scheme of plant treatment system



Legend:

- | | |
|----------------|------------------------|
| E | - Electrolyte tank |
| R | - Rinsing tank |
| R _n | - Neutralizing reactor |

AUTOSERVICE COMPANY "MERCURY"

Name:

Autoservice company "Mercury" ltd.

Address:

"Mercury" ltd.,
Stasovoi str. H.14,
St. Petersburg, Russia.

Number of employees:

16 (31.12.2002).

Contact person:

General director of autoservice company "Mercury"
Sarkisyan Melik Yurikovich.
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mobile:+7(812) 922-13-87

Plant CP team:

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Tel./fax.:+7(812) 226-10-63;
mobile:+7(812) 922-13-87
- Kulchtskaya Diana Valerievna
Tel./ fax.: +7(812)226-10-63

The brief characteristics of the enterprise



The Company "Mercury" carries out a complex of repair and paint works. It's still developing young company with high potential. Basic volume of work: 130-140 cars per month. The regular staff of employees consists of 16 men. Servicing deport has three hangars, only one of them a suitable for working purpose. Besides hangars, company has own workshop for repairing of car tire covers. The enterprise has own gas boiler system, which is used for the heating of industrial premises.

Bus Park carries out the removal of dangerous wastes. It should be noted, that all kind of servicing deports wastes are considered to be dangerous. The Bus Park also provides sewage water treatment. "Mercury" uses regenerative filters for the air cleaning inside of the hangar. The „Serg" firm carries out the neutralization and replacement of the filters.



As a whole, services deport answers on many requirements, such as ecological safety, observance of working safety, etc.

The enterprise looks like a capable for the further development in the field of Cleaner Production.

The problems are defined:

- Low efficient work of gas-boiler
- Irrational approach of the car drying (irrational usage of the electricity)
- Irrational water consumption
- Utilizing of unsupported wastes
- Utilization of unsuitable automobile tire covers
- There isn't enough good conditions for the work inside of the hangar during the winter time

Possibilities to solve enumerated problems

All problems will be able to solve in short time period, except of the changing of gas boiler.

All possibilities should be divided in two branches: managerial and technical-managerial.

a) Managerial

Some of enumerated problems will be possible to solve immediately only by the managerial decisions, such as direct control of irrational water and electricity consumption (switching on the heating elements for the car drying in preferential time), direct work with employees; warm saving (insulating of the hangar's gates, grooves, etc.).

b) Technical-managerial

The combination of technical improvements and managerial decisions will to remove other part of problems. It's necessary to pay attention at the improvement of gas boiler system, since insulating of the pipes, till the installation of the modern gas boiler.

c) Legislation

Direct work with the government of St. Petersburg will make opportunities to solve some kind of problems, such as utilizing of automobile tire covers. The enterprise carries out huge losses, because of the utilization monopoly on similar wastes.

Implementation steps:

- Consultation and training the staff of servicing depart on CP;
- Finding common solutions;
- Cooperation work between NGO, government and tire covers repairing workshops in the field of tire covers recycling and improvement of legislation conditions;
- Others.

Proposal results

- Reduction of water and energy consumption;
- Improvement of working conditions;
- Separating and minimization of wastes;
- More efficient work of gas boiler system;
- Recycling of used tire covers;
- Possibilities to receive ISO 9001 certificate.

CORPORATION "ICAR"

Name:

Corporation "ICAR"

Address:

Konnogvardeisky boulevard h.7, 190000, St. Petersburg, Russia

Year of creation:

1990

Main activity:

- publishing and exhibiting;
- carry out cultural and educational events;
- the real estate lease.

Contact person:

Chief director assistant
Shedei Aleksei Andreevich

Tel./fax:

+7(812) 325-60-68

E-mail:

sistema-nw@inbox.ru

Web-site:

<http://www.sistema.ru>

CP team:

- Shedei Aleksei Andreevich
Chief director assistant
Telephone: +7(812) 325-60-68
- Antipov Vladimir Alekseevich
Chief engineer
Telephone: +7(812)315-53-37

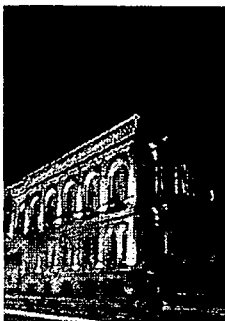
Description of the focus area

The main goal of the project is to exposure possible mechanisms and methods on implementing of energy and resource saving, modern environmentally clean technologies, as well as automatization of control systems and optimization of engineering infrastructure on the example of universal business centre with subsequent formation of recommendations on replication of results on the objects of social and budget sphere, culture, business and trade centres of North-Western region of RF.

Characterization of the company

The company was established in 1990 to manage the group of buildings of prince Kotshubei's mansion (Saint-Petersburg, Konnogvardejskij boulevard, 7) were mainly offices and restaurants are located.

The buildings are situated in the historical center of the city that is in the books of the Governmental Committee on the Problems of Conservation of Monuments (KGIOP). It is a monument of Federal (All- Russian) significance. According to the results of nonprofit contest conducted by KGIOP, the building was given to the "ICAR" on the definite conditions (realization of repair and reconstruction work, usage of the building as a cultural and educational center with the right to give premises on sub- lease).

Characteristic of the buildings

- ◆ Year of construction - 1857
- ◆ Year of the last reconstruction - 1996
- ◆ Total area - 2 683 m²
- ◆ Total area of premises of business center - 1 750 m²
- ◆ Palace area - more than 400 m²
- ◆ Total area of restaurant - 288.7 m² (plus winter garden - atrium)
- ◆ Central water-supply and drainage system
- ◆ Central heating (public corporation "LENENERGO")
- ◆ 3 water heaters, total capacity - 8 kilowatt
- ◆ Sprinkler and intruder alarm and visualization system.

The Kotshubei's mansion consists of main building, two wings and courtyard.

The palace part of the building "ICAR" was reclaimed to carry out cultural and educational events. The main energy consumers are the business center and restaurant.

Two main offices are located in the business center block:

- News agency "Rosbalt" - 496 m²;
- All-Russian Governmental TV and Radio Broadcasting Company department "Saint-Petersburg" - 285.6 m².

Main problems:

- High electric consumption during winter time (usage of electric heaters as a result of ineffecient heat suppl system);
- Pulsatory consumption of hot water and usage of electric boilers for restaurant's purpose.

Proposed measures to improve ecological situation in the company

- Detailed inspection of hot water and heat supply systems;

- Advice to implement heat-generator, operating resources of internal energy of water (transsonic technology) for modernization of the system of hot water supply in the building;
- Launching demo-project on implementation transsonic technology;
- Inspection of results;
- Installation for long-time period.

Methods to improve the situation in the company:

- Creation of CP team in the company;
- Working out the appropriate solutions;
- Launching demo-project.

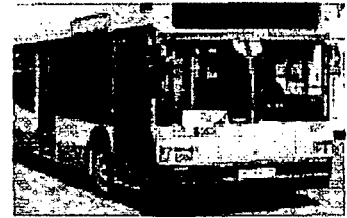
Proposed results of CP implementation in the company:

- Considerable energy saving (reduction of electric supply) and money saving as a result;
- Improvement working conditions during winter time;
- Improvement situation with hot water consumption for restaurant's needs, reduction of electric consumption.

STATE OWNED ENTERPRISE "PASSAZHIRAVTOTRANS"

Name:

State owned enterprise "Passazhiravtotrans"



Address:

Ispolkomskaya str. H.16, 193024, St. Petersburg, Russia

Year of creation:

1926

Number of employees:

14652 (31.12.2002).

Main activity:

- Public transport;
- Repairing and coloring buses ;
- Commercial routes.

Contact person:

Chief mechanical engineer of enterprise

Maevski Sergei Vasilievich



Telephone: +7(812)326-30-11

Web-site:

<http://avtobus.spb.ru>

CP team:

- Principal engineer of Chief mechanical engineer's department
Sidorenkova Elena Yurievna
Telephone: +7(812) 326-30-11
- Engineer-ecologist of the Bus Park №3
Klimenko Elena Vasilievna
Telephone: +7(812) 567-78-09

Characteristic of the enterprise

The state owned enterprise carries out public transportation operations in St. Petersburg. Except of this the enterprise gives additional service- the commercial rent of buses.

The enterprise includes 10 bus parks and training centre in St. Petersburg

The activity of enterprise is built on contractual relationship with city administration's transport department.

The enterprise presents a good opportunity to implement CP.

Main environmental and managerial problems

- The labor safety and production disciplines are not totally observed on enterprise;
- In maintenance station and in repair bus shops are very gaseous;
- Air treatment units don't manage with neutralization of exhaust;
- There is bad illumination in repair shops;
- Besides, there is a problem with discipline of waste separation;
- Some wastes are brought down on the neutral territory;
- There is a problem with liquidation of illegal dumps and requirement the place for scrap in accordance with norms;
- During the ablation of details and cleaning bus engines, waste oils and lubricating materials come to sewerage system without extra purification;
- There are a lot of oil spills on the territory of bus parks;
- High and irrational consumption of oil.

The proposal steps to implement CP

- Launching demo-projects on one or two bus parks;
- First of all, it's necessary to rise the discipline on the enterprises and to conduct series of awareness raising seminars on Cleaner Production, labor safety:
 - a) For representatives directorate of "Passazhiravtotrans" (1-2 hours);
 - b) For top-managers of bus-park (1-2 hours);
 - c) For middle managers of bus-park (1-2 days);
 - d) For the employees of bus-park (2-3 hours);
 - e) For formed CP teams (2-3 days).
- Implementation of resource saving technologies (e.g. automatic oil distribution pumps with oil heating);
- Implementation of positive results on other bus parks.

"GOTIKA" LIMITED SOCIETY

Name:

"Gotika" limited society

Address:

Sampsonievsky ave. H.66, St. Petersburg, Russia

Year of creation:

1996

Number of employees:

50 (31.12.2002).

Main activity:

- Mounting of glass packets;
- Installation of glass packets.

Contact person:

General director
Svetashov Andrei Gennadievich

Tel./fax:

+7(812) 320-75-10

Mobile phone:

+7(812) 967-41-95

Web-site:

<http://www.gotika.ru>

CP team:

- Shedei Aleksei Andreevich

Chief director assistant
Telephone: +7(812) 325-60-68

- Antipov Vladimir Alekseevich
Chief engineer
Telephone: +7(812) 315-53-37

Characteristic of the enterprise:



The company has own working area near downtown, as well as own boiler room based on diesel fuel consumption.

To produce glass-packets the enterprise applies the material of the "Plastmo" company (Denmark), as well as products of national companies.

During production of glass packets, there is spoilage up to 10% of initial volume.

Presently, about 120 companies are involved in production and mounting of glass packet market in St. Petersburg.

The main goal of the company to conquer 25% of the glass

packet market in St. Petersburg during five years.

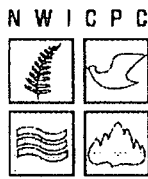
Main problems:

- ◆ High diesel fuel consumption for heating purposes;
- ◆ Low temperature inside of working shop during sever days in winter time;
- ◆ The spoilage and wastes of plastic material during mounting process.

The main possibilities to implement CP on the enterprise:

- ◆ Reduction of waste formation during mounting of glass packets via application of special software, which allows to calculate the material more precisely;
- ◆ Rising discipline;
- ◆ Replacement of heat system in working shop. Application of gas catalytic lamps for heating (development of project to bring the gas pipes from the neighbor plant).





United Nations Industrial Development Organisation
North-Western International Cleaner Production Centre, St. Petersburg
Slovak National Cleaner Production Centre, Bratislava

CERTIFICATE

№ 12/02

Hereby we confirm the successful attendance of

Vladimir Anatolievich

MOSKALENKO

In the course:

"INTRODUCTION TO CLEANER PRODUCTION"

The course content:

- *Environmental global changes. Industrial influence*
- *Introduction to the philosophy of Cleaner Production*
- *System and team approach during implementation of CP*
- *Mechanism of working group's activity during realization of CP on enterprises*
- *Methods of analysis of the state of production for realization of CP*
- *Work planning during implementation of CP*

On behalf of NWICPC

General Director Mr. Alexandre A. Startsev

On behalf of SNCPC

International Expert Mr. Yaroslav Burjaniv

**St. Petersburg
25th - 27th November 2002**
