

ACAP

*Arctic Contaminants Action Program
to Eliminate Pollution of the Arctic*

**ACAP
PROGRESS REPORT
TO SENIOR ARCTIC OFFICIALS**

**By Bob Dyer
Chairman**

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REPORT TO SENIOR ARCTIC OFFICIALS

Work Plan for 2006-2008 approved by SAOs in Salekhard (26 October 2006):

ACAP will continue to implement projects approved by the Ministers to:

- Work with Russia to develop an Integrated Hazardous Waste Management Strategy.
- Complete inventory development and safe storage of obsolete and prohibited pesticides in the remaining five Russian Arctic and sub-Arctic priority Regions.
- Develop and implement control technologies for reduction/elimination of dioxin/furan releases at a pulp and paper facility in the Russian Arctic.
- Complete a feasibility study and initiate a demonstration project for management of mercury-containing waste in Northwest Russia.
- Continue close cooperation with the partnership project in Russia for achieving measurable reductions of uses and releases of mercury at chlor-alkali facilities.
- Develop demonstration projects to address additional mercury-release sectors in Russia (products, coal-fired power plants, non-ferrous metal production).
- Issue the BFR Inventory Report, prioritize and begin implementation of Phase 2 recommended activities to reduce/eliminate BFR-containing wastes and releases.
- Complete the model project on safe handling and storage of local sources of contamination in Nenets Autonomous District and in Chukotka.
- Continue work with the Barents Euro-Arctic Council to address additional “hot spots” in the Arctic.
- Continue close coordination with NEFCO to finance and facilitate implementation of ACAP projects and mobilize the Project Support Instrument.
- Collaborate with SDWG and AMAP to develop the action plan for Human Health Risk Reduction in the Arctic, as a component of the evolving human health cluster.

ACAP PROGRESS SINCE SENIOR ARCTIC OFFICIALS MEETING OF NOVEMBER 2007

INTEGRATED HAZARDOUS WASTE MANAGEMENT STRATEGY (IHWMS) (CHAIR: RUSSIA)

A new Project Steering Group (PSG) was formed at a meeting hosted by Rostekhnadzor on 3 March 2008 in Moscow. Russia will Chair the PSG and Norway and the United States will serve as Co-chairs. Five Arctic Council countries currently participate in this project. Canada and Denmark are considering their participation. A draft Project Management Plan (PMP) and Terms of Reference (TOR) have been developed and the next step is to finalize them. Priority activities are being identified.

The PMP is being developed to include Russian requirements for documentation such as the Technical Assignment, the Technical Project and certification and licensing of equipment, transportation, and storage for hazardous materials. Many Russian Institutes, Organizations and Arctic Regions will participate in the development of the Strategy.

Under the IHWMS new instruments of environmental management will be developed. By summer 2008, Rostekhnadzor will identify one or two demonstration areas in the Arctic to test the strategy being developed. Parallel implementation of this project is critical to the final destruction and management of the hazardous wastes addressed under the ACAP PCBs, obsolete pesticides, dioxins/furans and mercury projects. It was emphasized that reduction of accumulated environmental damage and elimination of environmental impacts of hazardous wastes are of great importance to the Russian Federation.

This project will directly support Russia's 15-year Sustainable Development Program announced in 2007.

Funding for this project has been contributed by Russia and the United States.

ENVIRONMENTALLY-SAFE MANAGEMENT OF STOCKS OF OBSOLETE AND PROHIBITED PESTICIDES IN RUSSIA (CHAIR: FINLAND)

At the initiation of this project, eleven priority Regions impacting the Arctic were identified. Subsequently, two priority Regions, Tomsk and Kamchatka, have been added. Inventory activities have been completed or are ongoing in eleven of these Regions. Work has not yet started in Murmansk or Kamchatka. Consistent with the objectives of this Project Steering Group, Denmark has conducted bilateral projects in Pskov and Vologda to inventory, collect and safely store obsolete pesticides stockpiles. Finland has an ongoing bilateral project to transport to Finland and safely destroy pesticides from the Republic of Karelia.

Status Report:

Altai Krai extended management of obsolete pesticides to 23 out of 60 districts and the progress is limited only by the lack of funding. Eleven districts use local budget to implement all activities. The region had established four centralized storage facilities, which now contain 938.5 tons of safely stored pesticides.

Republic of Altai has inventoried, repackaged and stored an additional 133.5 tons of obsolete pesticides found after completion of ACAP activities in 2006. These pesticides are now stored in two interim warehouses.

Due to lack of funds in early 2007, the PSG was not able to support work in **Krasnojarsk Krai** until September 2007 (10,000 €). The work in Krasnoyarsk has been initiated by local authorities.

Sakha-Yakutia has identified 43 tons of pesticides in 11 districts and has allocated 10M rubles (285,000 €) for management of their obsolete pesticides inventories.

In Tomsk, 121 tons of obsolete pesticides have been identified. Tomsk Region has allocated 3M rubles (84,500 €) to organize safe storage.

Sakha-Yakutia, Tomsk, Altai Krai and Krasnojarsk have confirmed their commitment to the environmentally-sound final destruction of pesticides.

Arkhangelsk and Republic of Komi have disposed of all their obsolete pesticides (63 and 18 tons, respectively) in Krasny Bor landfill near St. Petersburg. Although this activity is consistent with the current Russian legislation, the donor-funding conditions require safe temporary storage awaiting destruction. The use of landfills seriously undermines the objectives of the project. Consequently, the Project Steering Group is working with Rostekhnadzor to determine the present conditions of the pesticides at Krasny Bor landfill and any corrective action that could be taken.

Inventory, collection, repackaging and safe storage for all identified obsolete pesticides in the priority regions could be completed in 2009, if necessary funding is made available.

Funding:

The total donor allocations since 2001 are approximately \$700,000 USD, which includes the cost of fourteen Project Steering Group meetings, development of guidance for performing inventories, and Russian contractor costs.

The table below identifies the allocations of the project funding by the donors and by the regions. Funding has been contributed by Canada, Denmark, Finland, Norway, Russia, Sweden and the United States.

	Donor Funding (\$USD)	Regional Funding (RUR)
Arkhangelsk	22,735	505,600
Komi Republic	25,183	600,000
Magadan	7,707	1,310,900
Omsk	38,080	20,000,000
Tyumen	38,360	6,665,000
Altai Rep.	47,000	720,000
Sakha(Yakutia)	36,500	13,525,000
Tomsk	10,000	2,900,000
Altai Krai	238,042	5,750,000
Kurgan	15,000	
Krasnojarsk	13,636	
Kamchatka		
Murmansk		
		51 976 500 RUR
TOTAL	\$492,243 USD	\$1,856,000 USD

Estimated funding required to complete the project: \$400,000 USD

The final phase of this project is the environmentally-safe destruction of obsolete pesticides and permanent safe storage of mercury-containing pesticides. This phase is

directly linked to the completion of the Integrated Hazardous Waste Management Strategy (reported above).

Results of this project have been reported in three peer-reviewed technical papers and five presentations at international meetings.

Environmentally-Sound Management of Obsolete Pesticides Stockpiles in Republic of Karelia (Finland)

Twelve tons of obsolete pesticides have been repackaged and stored safely in Petrozavodsk, Republic of Karelia. This work has been carried out and funded by the Karelian Ministry of Agriculture, Forestry and Fishery and the experts of agricultural company "Agrohimiya" in full compliance with the practices developed in the ACAP Obsolete Pesticides project. Transportation of pesticides to Finland has been delayed due to problems with importing UN-approved packaging material into Russia.

Next Steps:

- Transportation of pesticides to Finland (expected April 2008)
- Co-funded destruction of the pesticide waste by the Ekokem facility in Finland (expected June 2008)

ENVIRONMENTALLY SOUND MANAGEMENT OF STOCKS OF OBSOLETE PESTICIDES IN THE NORTH WEST REGION OF RUSSIA (DENMARK)

In Vologda, 219 tons of obsolete pesticides were collected and temporarily stored. The Vologda Administration later decided to transport the pesticides to a landfill near Moscow. In Pskov, about 572 tons of obsolete pesticides have been collected and stored in two storage facilities. There are still about 500 to 600 tons of obsolete pesticides to be collected in the Pskov Region. Denmark recommended that the ACAP Obsolete Pesticides Project Steering Group assume the further work to address the remaining pesticides inventory in Pskov.

REDUCTION OF DIOXINS/FURANS RELEASES INTO THE ENVIRONMENT (CHAIR: SWEDEN)

During the second phase, the results of the PCDD/F (dioxins/furans) release inventory have been consolidated using results of the sampling and analysis. The project is also exploring different possible options for implementation of Best Available Technologies (BAT) and Best Environmental Practices (BEP) *e.g.*, legislation prescribing technical measures for reduction of dioxin emissions, setting limit values and voluntary commitments by industry.

Phase II, Feasibility Study Report, will develop recommendations of how technical processes, control technologies, information, education and organisation at individual

enterprises could be improved in order to decrease the release of dioxins/furans and other environmental pollutants.

The focus is on three priority Arctic Regions, Arkhangelsk, Komi and Murmansk (under development). The following facilities participate in this ACAP project:

- Kotlas Pulp & Paper facility (Arkhangelsk Region)
- Vorkutinskiy cement plant (Komi Republic)
- Syktyvkar Timber Mill (Komi Republic) (Cleaner Production program only)

It was further decided to include the Murmansk Incineration Plant (used for Municipal Solid Waste, MSW) into the work plan.

Phase II consists of following tasks:

Task 1: Determination and assessment of various factors impacting the formation of dioxins/furans (**completed**)

Task 2: In-depth study of dioxin emissions through implementation of analytical measurements of concentration of dioxins in gas, liquid and solid wastes at selected plants before implementation of BAT and BEP (**completed**).

Task 3: Selection of the most efficient technological solutions and development of recommendations of measures (**completed**).

Task 4: Implementation of Cleaner Production (CP) Programs followed by selection of the most economically and environmentally efficient projects (**completed**). The Project Steering Group recommends further CP programmes to be implemented at the candidate sites.

Task 5: Preparation of the final report, including project proposals for phase III. Assessment of dioxin emissions reductions through analytical measurements after implementation of measures. For practical reasons the analytical determinations will be performed during Phase III.

Phase II Report titled “ACAP Project on Reduction/Elimination of Dioxin and Furan Emissions in the Russian Federation with Focus on the Arctic and Northern Regions Impacting the Arctic, Phase II” has been prepared in draft and was presented to the Project Steering Group in March 2008.

An additional project has been initiated on the development of a municipal waste management system in the city of Severodvinsk, Archangelsk Region, including a Cleaner Production Programme. The possible participation in this new project will be discussed by the PSG.

Phase III: Implementation of upgrade/retrofitting for source reduction/source elimination of one or more important sources of dioxins and furans. Completion of Phase III is also linked to the development and implementation of the Integrated Hazardous Waste Management Strategy.

Funding:

Funding has been contributed by Norway, Sweden and the United States.

Phase I: Total donor funding was \$185,000 USD.

Phase II: Total donor funding is \$165,000 USD.

Timetable

Phase I: March 2002- April 2005 (**completed**)

Phase II: November 2005 - April 2008 (**ongoing**)

Phase III: Spring 2008 – 2010

REDUCTION OF MERCURY RELEASES FROM ARCTIC STATES (CHAIR: DENMARK)

Phase I: A circumpolar mercury release inventory and a Russian assessment of mercury releases have been published. In addition, a report on “Assessment of existing and planned initiatives addressing mercury sources in the Arctic States and identification of possible measures for follow up” has been completed.

Phase II: Site specific prioritization and selection of demonstration projects (**completed**).

Phase III: Implementation of a demonstration project

Mercury-containing waste was prioritized for a demonstration project. It was decided to prepare a feasibility study on “Improvement of the system for collection, storage, transport and treatment of mercury-containing waste (MCW) in Northwest Region (NW) of the Russian Federation”.

The Feasibility Study will be completed by the end of June 2008.

Objectives:

The objective of the feasibility study is to propose an environmentally-sound and feasible demonstration project for improved management of mercury containing waste in a selected region of NW Russia.

Activities:

- Assess the current system (collection-storage-transport-treatment) for management and handling of mercury-containing waste (MCW) in the Northwest (NW) Region of Russia
- Identify possible gaps;
- Provide an overview of the current situation;
- Screen and propose specific components for a Demonstration Project, which will lead to establishing of an updated system for management and handling of MCW in the Region, replicable for implementation in other regions of Russia;
- Prepare Terms of Reference, Technical Specifications and a financing plan for the Demonstration Project.

Funding

Funding has been contributed by Denmark, Finland, Norway, Russia and NEFCO.

The total budget for Phase III, Collection and Storage, is estimated at 162,000€. **Estimated funding of 40,000€ is presently required for completion of the project**

On 20 February 2008 a successful workshop entitled, “ACAP Feasibility Study on Mercury-containing Waste in NW Region of the Russian Federation” was hosted by Rostechandzor in Moscow. Major stakeholders including federal and regional organizations of Rostechnadzor, regional administrations and representatives from Russian and European industries participated in the Seminar. A Report is in preparation.

OTHER DEMONSTRATION PROJECTS:

COAL-FIRED POWER PLANT MERCURY CONTROL PROJECT (SWEDEN & USA).

The proposed project shall demonstrate the effectiveness of two types of sorbents in reducing mercury emissions at coal-fired power plants using electrostatic precipitators. The project shall test how well these sorbents perform with different types of coal used in Russia and will complement earlier studies in the U.S. and Canada. The project will also test the leaching potential of the associated waste residues expected to be disposed of in a landfill. The information developed, may be useful not only for Russia and Arctic countries but also for countries such as China and India whose emissions impact the Arctic.

Status: This project is moving forward, under the financial and management authority of the International Science and Technology Center (ISTC). Under the U.S. leadership, it has been peer reviewed and detailed planning has commenced.

PROPOSED MULTI-POLLUTANT CONTROL PROJECT AT A RUSSIAN ZINC SMELTER (USA & NEFCO).

The proposed project would reduce mercury and other air emissions (including Particulate Matter (PM), sulphur oxides (SO_x), and nitrogen oxides (NO_x) and releases to land and water at one Russian zinc smelter. This can provide an effective demonstration to stimulate emissions controls at other Russian zinc smelters. Zinc smelters have been identified by the ACAP Mercury Project Steering Group as one of five priority source emission sectors in Russia.

ACAP MERCURY PARTNERSHIP TO REDUCE MERCURY CONSUMPTION AND RELEASES AT RUSSIAN CHLOR-ALKALI PRODUCTION FACILITIES (USA & RUSSIA)

OBJECTIVE:

Reduce environmental and health impacts through developing and implementing model demonstration projects.

TARGET:

Reduce consumption and release of mercury by at least 500 kg annually – a measurable environmental result.

STRATEGY:

- Build on cooperation with Russian industry, with regulatory authorities, international experts, and the donor countries to develop and implement technical demonstration projects
- Implement best available technologies
- Use best environmental practices
- Provide information and technical support to chlor-alkali production facilities
- Use principles of Cleaner Production

Co-benefits can include:

- Energy conservation
- Waste minimization
- Recycling

This project consists of three phases over seven years:

- **Phase 1 (2005-2006)** Training and implementation of Cleaner Production and Best Environmental Practices (**completed**)
- **Phase 2 (2007-2009)** Implementation of technical improvements (**ongoing**)
- **Phase 3 (2010-2011)** Conversion to non-mercury technologies

Partnership Business Plan was submitted to UNEP Chemicals in January 2008. Currently Volgograd “Caustic” is developing a modern waste water treatment system. The Partnership assisted Volgograd “Caustic” with procurement of a special sorbent resin, identified during the partnership technical exchange in 2006. The successful partnership with Volgograd “Caustic” will serve as a model for development of demonstration projects at the two remaining chlor-alkali facilities in Russia. This will achieve measurable reductions of mercury releases.

Volgograd “Caustic” reported that as a result of implementation of additional technical improvements, the facility achieved reductions of mercury consumption and releases by an additional 740 kg per year.

As a result of technical exchange in June 2007, Kirovo-Chepetsky Chemical Combine implemented several technical improvements and achieved 842 kg reduction of mercury consumption and releases.

PHASE-OUT OF PCBs IN RUSSIA (CHAIRS: RUSSIA, USA AND NEFCO)

NEFCO-FUNDED PROJECT

Objectives:

1. Implementation of an environmentally sound technique for emptying and cleaning contaminated PCB-containing transformers,
2. Use of environmentally sound method for destruction of PCB-containing liquids. The technique should also be capable of destroying other hazardous pollutants such as pesticides.

This NEFCO-funded ACAP PCB Project plans to use a vapour-phase solvent cleaning technique to clean and recover the PCBs in transformers. It will also use the high temperature Cyclone Reactor process to destroy the recovered PCBs. Implementation of the project requires securing necessary infrastructure and ancillary facilities, design, construction and operation permits. Activities include:

- Transportation of transformers as well as other containers holding PCBs.
- Recovery of PCBs from transformers/containers and storage.
- Recovery of organic solvent containing PCBs.
- Cleaning of equipment to a level whereby materials can be recycled.
- Disposal of waste (wood, paperboard etc.) in an acceptable manner.
- Destruction of PCB liquids and other toxic organic substances
- Monitor and control of environmental performance and occupational health and safety. Russian standards and applicable EU Directives are to apply.

Status:

The “Cyclone Reactor” technology has received Federal level licensing for destruction of hazardous substance such as PCBs.

NEFCO plans to cooperate with UNDP and Rostekhnadzor to develop project documents for a PCB management project to obtain additional financing through the Global Environment Facility.

Successful completion of this project is also largely dependent on the implementation of the ACAP Integrated Hazardous Waste Management Strategy in Russia.

REDUCTION/ELIMINATION OF SOURCES AND RELEASES OF BROMINATED FLAME RETARDANTS (CHAIR: NORWAY)

The Phase 1, Inventory Report, was made available on the website in September 2007. The data is current through 2005. The ACAP Working Group is considering whether to publish this report.

The Phase I Report provides limited guidance concerning the continuation of the project into more practical Phase II demonstration activities. One suggestion was a possible municipal waste separation/recycling project in Severodvinsk which could include activities also focussing on BFR-containing waste. However, there are currently no countries willing to take the lead to implement a practical demonstration project on management of BFR-containing materials.

There continues to be a general interest among the ACAP Project Steering Group members to participate in an information-exchange network on BFRs. It is recommended that the ACAP Secretariat act as an information-exchange clearinghouse over the next two years. It is considered that the project resources currently available would be adequate to cover the costs associated with the information exchange activity

that has been proposed. After that, based on further information collected, a final decision should be made on whether a practical Phase II demonstration project could be carried out.

The BFR Project Steering Group also suggested that other ACAP Project Steering Groups might wish to include BFRs in the scope of their work and asked the ACAP Chairman to look into this.

Funding:

Total funding for this project to date is approximately \$160,000 USD or 117,000€. Funding has been contributed by Canada, Denmark, Norway, Sweden and the United States.

There is a remaining balance of approximately \$39,000USD (24,000€) currently available for initiation of a Phase II demonstration project.

INDIGENOUS PEOPLES COMMUNITY ACTION INITIATIVE (CHAIRS: RAIPON AND USA)

In 2007, ACAP partnered with the Aleut/Pribilof Islands Association, RAIPON, the Chukotka Red Cross and the coastal indigenous communities of Lorino and Lavrentia in the Chukotka Autonomous District of Russia. ACAP conducted two training sessions for 40 volunteer-residents on identification, analysis and removal of drums and storage tanks containing persistent toxic substances.

Residents of these communities have shown some of the highest PCB blood concentrations in Russia. It is estimated that there are over 200,000 drums containing hazardous substances in the vicinity of these communities.

A pilot demonstration program, which can be replicated in other communities, has been developed to include:

- Characterization of the contents of the drums with estimates of volumes and types of waste (e.g. spent oils, lubricants, paints, insecticides, fuels)
- Collection of the drums
- Disposal/destruction of contents of drums
- Drum cleaning, compaction and recycling

An "Abandoned Drums" Workshop will be conducted on 5-9 May 2008 in Anchorage and Nome, Alaska, USA. Participants will include Alaska Tribes, representatives of RAIPON, Canadian indigenous communities, Chukotka Red Cross, and US and Canadian experts. The Russian delegation will be hosted by the US Alaskan Unga Tribe. Workshop components include: capacity building and raising community awareness, health assessments, developing partnerships, assessing local drum sites, responsible parties, environmental hazards, site security and access issues, regulatory overview, use of basic monitoring equipment, inventory and identification, hazardous materials handling and control, drum characterization, emergency response plans, and record keeping.

A brochure on Arctic Contaminants for elementary and middle-school students is being prepared by RAIPON with support from ACAP, the Northwest Public Health Research Center, and the Russian NGO “Eco-Accord”. This brochure will be approved by the Russian Ministry of Education for use in the Russian Public School system.

CLEANER PRODUCTION PROGRAM (NORWAY, RUSSIA & USA)

The ACAP Cleaner Production Project at Norilsk Nickel Company was completed in 2005. This project focused on pollution prevention, energy efficiency, waste minimization and recycling, the major elements of Cleaner Production. A key objective of the Cleaner Production Program is sustainability.

A representative of Norilsk Nickel’s Trans-Polar Division gave an update on the facility’s follow-on experience with the Cleaner Production Program, initiated under ACAP. Norilsk Nickel self-funded five additional Cleaner Production training sessions and developed more than 377 environmental projects. The sixth session began in February 2008.

Implementation of Cleaner Production Projects became a part the following Norilsk Nickel management activities:

- Technical improvements and reconstruction
- Research and development
- General reconstruction

In comparison with the 1996 baseline, the following environmental results have been achieved:

- 50% reduction of solid waste, including dust
- Recycling of 99% of the solid waste
- 22% reduction of pollutant releases into the water
- 90% of the wastewater is now in the industrial closed cycle

As a result of implementing the Cleaner Production program, Norilsk Nickel was awarded a certificate of compliance with international standards ISO 9001:2000 and ISO 14001:2004 in December 2005. In the same year, Norilsk Nickel and the Russian Cleaner Production and Sustainable Development Center were awarded the Vernadsky Environmental Diploma by the Russian Duma.

Funding has been contributed by Norway, United States and Russia (Norilsk Nickel).

OTHER ACTIONS:

ACAP has developed draft Operating Guidelines consistent with Part IV of the Arctic Council Rules of Procedure. They are currently under final review by the ACAP Working Group.

ACAP CHAIRMANSHIP

The US has chaired ACAP for the past four years and has led its transformation from a “special initiative” to a formal Working Group under the Arctic Council. The Chair would like to thank the SAOs for their support of the ACAP program and its objectives. The Chair would also like to thank the country-representatives for volunteering their time and funding to support the successful ACAP initiatives, through the Project Steering Groups, to achieve measurable environmental results. The Chair would also like to thank the Indigenous Peoples organizations for their continued support and participation in the ACAP Indigenous Peoples Community Action Initiative.

I am pleased to inform the SAOs that the Russian Federation has offered to become the new Chair of ACAP and Finland has offered to become a Vice-chair.