Sida Evaluation 04/15

Swedish Nuclear Non-Proliferation Assistance Programme in Russia and Latvia

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Department for Europe

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Executive Summary

In the early 1990s, the Swedish government decided to support the capacity building of the Newly Independent States in the field of nuclear non-proliferation. The overall aim was to enhance safety in the Baltic region and impede the spread of nuclear weapons, materials and technologies. The immediate objective was to assist these states in becoming signatories to the Non-Proliferation Treaty as well as to support their membership of the IAEA. This study, which was commissioned by Sida and made by Dr. Thomas Jonter of Stockholm University, analyses this co-operation during the period between 1991 and 2003.

SNNAP – the Swedish Nuclear Non-Proliferation Assistance Programme – is the unit within the Swedish Nuclear Power Inspectorate (SKI) which directs and implements co-operation activities in this field. The SNNAP staff consists of two persons at the SKI office in Stockholm, who work together with a number of specialists in the separate fields of activity. The beneficiaries are primarily national regulatory bodies and various nuclear sites/operators in the concerned countries.

The cooperation has covered all 15 states in Central and Eastern Europe and Central Asia, although the main efforts have been directed to the Baltic States, Russia and the Ukraine. Several projects are carried out and financed in co-operation with other donors, such as Great Britain, Norway, Finland, and Germany, as well as multilateral organisations such as the IAEA and the EU.

The scope of the study is limited to an evaluation of SNNAP co-operation with Russia and Latvia. Russia is one of Sweden's most important co-operation partners, where a wide range of activities have been carried out since 1992 and where co-operation is intended to continue for the foreseeable future. The evaluation focuses geographically on Moscow, Murmansk and S:t Petersburg. In Latvia Swedish bilateral support is now being phased out as a consequence of Latvia's entry into the EU. Since the co-operation covers all the main areas of non-proliferation, Latvia can be used as a test case for the Baltic countries which shows whether the objectives and goals of the co-operation have been achieved.

Initially, the nuclear non-proliferation cooperation projects were administered by the Swedish Ministry for Foreign Affairs, MFA). In 1999, however, the Swedish International Development Co-operation Agency (Sida) was assigned the task of handling and financing the main part of the civil security co-operation. The total costs for all projects run by SNNAP during the whole programme period 1992–2003 is 95 412 250 SEK. The total costs for all projects run by SNNAP in Latvia and Russia is 39 119 300 SEK (5 976 200 SEK and 33 143 100, respectively).

A key conclusion is that the co-operation has been highly successful and resulted in immediate results both in Latvia and Russia. The Swedish support program and its objectives are in accordance with the recommendations of the European Council and the IAEA. Although the co-operation can correctly be described as successful, there are, however, several weaknesses that are discussed in the study. In order to improve the co-operation this evaluation makes the following recommendations:

- To shift from today's project based co-operation to a more long-term program approach in order to avoid the *ad hoc* character of certain projects.
- SNNAP is recommended to enhance the already initiated deepened co-ordination work with IAEA and other donor-states as to avoid overlapping.
- SNNAP should enhance its capability to disseminate important information to the involved parties, i.e. authorities and companies in the recipient states, Sida, the Ministry of Foreign Affairs, as well as other government organisations and consultants in Sweden.

– A general gender policy and strategy should be worked out.

– Consider ways to create structurally based knowledge so that important knowledge does not disappear when individuals leave organisations in the recipient states. Certain ideas about how this can be done are explored at some length, for example the setting up of databases, the production of manuals in native languages, and the creation of libraries containing vital literature and information.

– Consider the possibility of training certain categories of the personnel of the Russian authorities in modern management.

– All these recommendations require a stronger SNNAP with more financial and personnel resources (today only two persons work in the secretariat). This evaluation has explored two alternatives for achieving this improvement. Firstly, this could be worked out with stronger support from SKI, which seems to be hard to realize since the Section of Non-proliferation lacks both the time and the financial resources to support such a development, according to interviews with SKI personnel. Secondly, the strengthening of SNNAP could also be achieved through a creative process using the competence that already partly exists within the present organisation. This could involve the formation of an expert group consisting of the SKI consultants and other experienced individuals in the non-proliferation area. This expert group, or reference group, could deal with vital tasks such as formulating strategies, producing country and regional analyses, making sure that evaluations of the ongoing programmes are carried out, producing and disseminating a newsletter and other kinds of information to the parties involved in Sweden and the recipient states. Such a solution would reduce the pressure on the SNNAP secretariat and enable them to focus on the implementation of the programme and its projects.

1. Background

This study was commissioned by the Swedish International Development Cooperation Agency (Sida) as an evaluation of the Swedish non-proliferation Assistance Programme (SNNAP) at the Swedish Nuclear Power Inspectorate (SKI) in Russia and Latvia. Initially, the nuclear non-proliferation cooperation projects were administered by the Swedish Ministry for Foreign Affairs, (MFA). In 1999, however, the Swedish International Development Co-operation Agency (Sida) was assigned the task of handling and financing the main part of the civil security co-operation. The study covers co-operation assignments carried out by the SKI and Swedish consultants involved in the programme, as well as their counterparts in Russia and Latvia during the period of 1991–2003. Thus, Sida and MFA funded projects will both be included.

SNNAP is the unit within SKI which directs and implements co-operation activities in this field. The SNNAP staff consists of two persons at the SKI office in Stockholm, who work together with a number of specialists in the separate fields of activity (see chapter 2.1). The beneficiaries are primarily national regulatory bodies and various nuclear sites/operators in the concerned countries.

The scope of the study is limited to an evaluation of SNNAP co-operation with Russia and Latvia. Russia is one of Sweden's most important co-operation partners, where a wide range of activities have been carried out since 1992 and where co-operation is intended to continue for the foreseeable future. The evaluation will focus geographically on Moscow, Murmansk and S:t Petersburg. Latvia is an example of a Baltic country where Swedish bilateral support is now being phased out as a consequence of

Latvia's entry into the EU. Since the co-operation covers all the main areas of non-proliferation, Latvia can be used as a test case for the Baltic countries which shows whether the objectives and goals of the co-operation have been achieved.

The purpose the evaluation is laid out in the Terms of Reference, attached as annex 1. In brief, the evaluation assesses the co-operation – on parameters such as relevance, results, sustainability, local ownership, cost-effectiveness, impact – and provides recommendations for the direction of possible future co-operation in Russia (the activities in Latvia having been phased out already).

The evaluation was assigned to Dr. Thomas Jonter, Associate Professor, Department of Economic History, at Stockholm University, as a part-time assignment during the period between January 1 and May 31, 2004. Dr. Jonter has visited various facilities and offices in Latvia and Russia, as well as the IAEA in Vienna, and has interviewed several co-operation stakeholders in various positions. In Sweden, officials at SNNAP, SKI, Sida, MFA, and consultants have been interviewed about different aspects of the co-operation (see annex 2, List of persons interviewed). In addition, Dr. Jonter has carried out archival research and used relevant documentation in the overall analysis of the co-operation projects in Latvia and Russia.

2. Description of the Co-operation

2.1 Background and Goals of the Co-operation

Sweden's support and co-operation programme in the area of nuclear non-proliferation was established shortly after the disintegration of the Soviet Union. The programme was initiated in 1991 and the main goal was to accomplish national means and measures for control and protection of nuclear material and facilities in the Newly Independent States (NIS), in order to minimise the risk of proliferation of nuclear weapons and illicit trafficking of nuclear related substances and equipment. The immediate objective was to assist these states in becoming signatories to the Non-Proliferation Treaty as well as to support their membership of the IAEA. Today, the non-proliferation efforts in the Baltic region form part of the so-called Swedish security enhancement support, covering both the civil and the military areas.

Other parts of this security promotion support are security policy issues, democratic and civil control of defence structures, border management, emergency preparedness, migration and asylum issues.

In the field of non-proliferation, co-operation activities are carried out in five main areas:

- Support for the establishment of nuclear legislation and the establishment of nuclear regulatory agencies;
- the establishment of physical protection of buildings and materials with nuclear activities and materials;
- the installation of control systems for registration and control of the location and movement of nuclear materials;
- prevention of illicit trafficking of nuclear and radioactive substances;
- strengthening the participation of recipient states in international non-proliferation fora and agreements.

The cooperation has covered all 15 states in Central and Eastern Europe and Central Asia, although the main efforts have been directed to the Baltic States, Russia and Ukraine. Several projects are carried out and financed in co-operation with other donors, such as Great Britain, Norway, Finland, and Germany, as well as multilateral organisations such as the IAEA and the EU.

The main task for the Swedish cooperation with Latvia according to the country strategies worked out by both Sida and MFA is to support Latvia's integration into the European Union. The final goal is to support full EU membership. The overall objectives of the Swedish cooperation with both Latvia and Russia are:

- Promoting common security
- Deepening the culture of democracy
- Supporting a socially sustainable economic development
- Supporting environmentally sustainable development

The cooperation should also have a gender perspective and each project should be based on the needs and priorities of the recipient cooperation partner, and should be carried out by the recipient partner.

2.2 Target Groups/Co-operation Partners

SKI's co-operation partners in the recipient states are those government organisations that have been assigned supervision and control responsibility in the nuclear energy area by their respective government. All support and co-operation activities sponsored by SKI are carried out at the request of and in co-operation with these authorities. The primary co-operative partners in Latvia have been the Ministry of Environmental Protection and Regional Development (VARAM), the Environmental State Inspectorate of the Republic of Latvia (VVI), and the subordinated regulatory organisation Latvia Radiation and Nuclear Safety Inspection Authority of the Republic of Latvia, which was established in 1994. In December 2001, the Radiation Control Centre (RDC) was set up, which means that an independent nuclear regulatory authority is now in force.

Secondary co-operative partners have been the state-owned company RAPA (Republic of Latvia Ministry of Environmental Protection Non-Profit State Limited Liability Company), which works with storage of nuclear materials and radioactive substances, and private consultants who made the physical protection and computer installations.

Several projects are carried out and financed in co-operation with other donor states as well as multilateral organisations such as the IAEA and the EU. In these co-operation projects the IAEA has a co-ordinating role so as to avoid duplication by different donor states and increase the efficiency of the non-proliferation efforts. A "Co-ordinated Technical Support Plan" (CTSP) is drawn up for each recipient state. The plan identifies the support need and which resources should be made available by the different donor countries. The plans are updated annually by the IAEA.

In Latvia, SKI has carried out technical co-operation with the United States (Department of Energy), Norway (the Norwegian Radiation Protection Authority, NRPA) and Germany (the German Federal Ministry for the Environment, Nature Conservation and Nuclear safety, BMU).

In Russia, the primary co-operative partner is the civilian nuclear regulatory authority Gosatomnadzor (GAN), which has its head-office in Moscow. GAN has seven regional offices in different parts of Russia, and most of SKI's co-operation and support projects are linked to the northwest region, which is centered in St Petersburg. The co-operation programme is mainly aimed at strengthening the role of

GAN as the state regulatory and supervisory body in the entire area of nuclear non-proliferation management, i.e. material control, physical protection and export/import control. SKI has also established some contacts with the organisation responsible for military issues concerning nuclear related activities, the State Ministry for Atom Energy (Minatom), in order to facilitate an effective and smooth implementation of the support projects. Minatom has functioned as owner and operator of the major part of the Russian nuclear programmes (the organisation disappeared in the beginning of 2004, when president Putin re-organised the Russian government. About the new nuclear infrastructure situation in Russia, see chapter 4.1). Some contacts have also been taken with the State Ministry of Defence.

A secondary co-operative partner has been the Murmansk Shipping Company. The projects carried out in Murmansk are co-ordinated under the supervision of GAN and aimed at improving the physical protection of the nuclear propelled icebreakers and service vessels in Murmansk. SKI is also co-operating with the owner of the icebreakers and vessels, namely Atomflot, and with an advising consultant firm, Escort Center, which is involved mainly in physical protection. Another co-operative partner is the state owned transport-company Izotop which is the only organisation licensed to deal with import and export of nuclear material in Russia. (Other projects have been carried out in Arkhangelsk and the Ural region; however, this evaluation will not deal with these SKI sponsored activities since they are of lesser importance from a broader SKI perspective.)

In Russia, SKI has mainly been co-operating with other donor states such as Norway (NRPA) and Great Britain (British Government Department of Trade and Industry). SKI uses a selected group of Swedish consultants with specialist competence and experience who have been operating in both Latvia and Russia (except Safetech AB which has only been operating in Russia):

- AMC Konsult AB: develops software for nuclear material accountancy and control;
- ANC AB: specializes in physical protection systems and techniques;
- Göran Steen Konsult AB: law and legislation expertise;
- Safetech AB: systems for nuclear material accountancy and control and quality assurance;
- Proment Ltd: management and organisation development: information technology
- ILG Consultant Ltd: technical and scientific secretary functions

2.3 Administrative Structure and Implementation Strategy

The co-operation and support activities are organised as projects. Each project involves a specific country and a specific so-called Project Group, i.e. an area of co-operation within the field of non-proliferation described in chapter 2.1. The objective and goal for each project is formulated by SKI together with the recipient state in order to establish and maintain modern systems for nuclear material control, physical protection and export/import control. When a project is decided, SKI applies a "package principle" which covers systems design, hardware and software, education and training, and also maintenance and support during at least a three-year period after the system has been implemented.

The most essential part of the co-operation is the transfer of knowledge and information, since SKI's support is based on the principle of "help to self-help". This means that the purpose is to help each recipient state assume full responsibility for operating a national non-proliferation system and thereby fulfil the requirements imposed through the international legal instruments and norms. Throughout the project periods education and training are given first priority in order to transfer expert knowledge and know-how to people in leading positions in nuclear authorities, parliaments, ministries and nuclear

facilities. Seminars, work-shops and training courses are organised by the SKI, both in Sweden and in the recipient states.

In order to live up to a high standard of quality in the national systems for nuclear non-proliferation the SKI uses the international legal instruments (treaties, conventions, agreements) worked out by the IAEA. SKI's specialist competence is used as a means of quality assurance with the purpose of determining whether the recipient State will be able to fulfil its non-proliferation obligations. These instruments are:

- The Treaty on the Non-proliferation of Nuclear Weapons (NPT);
- The safeguards Agreements with the IAEA (based on the IAEA document INFCIRC/153 corrected), including the Additional Protocol to the Agreement for the Application of Safeguards (INFCIRC/225/rev. 4);
- The Convention on Physical Protection of Nuclear Material (IAEA INFCIRC/274/Rev. 3) and the IAEA Recommendations on the Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC/225/Rev. 4);
- The Guidelines and Trigger List of the Nuclear Suppliers' GROUP (NSG), published by the IAEA in document INFCIRC/254, as amended.

2.4 Project Allocations

The SNNAP programme budgets for non-proliferation in the former Soviet Union and Eastern Europe have been divided into four different time-periods: 1992–1998, 1999, 2000–2001, and 2002–2003. The total costs for all projects run by SNNAP during the whole programme period 1992–2003 is 95 412 250 SEK.

Latvia, total cost of activities within SKI promoted co-operation, in SEK

1992–1998	*1999*	*2000–2001*	*2002–2003*	*Total*
1 80200	1 606 000	*4 190 000*		7 598 000

Latvia. During the early phase of the Swedish Support Programme, SKI's non-proliferation support activities in the Baltic States centred on Lithuania to a great extent. The support directed to Latvia was limited (for a more detailed description of the projects carried out and the project allocations, see appendix 3).

Russia, total cost of activities within SKI promoted co-operation, in SEK

1992–1998	*1999*	*2000–2001*	*2002–2003*	*Total*
12 387 000	*3 255 000*	*9 100 000*	*8 401 100*	33 143 100

In Russia, a total of 33 143 100 SEK was allocated to different activities during the whole period from 1991 to 2003 (for a more detailed description of the projects carried out and the project allocations, see appendix 3).

3. Findings: Latvia

3.1 The Nuclear Profile of Latvia

The Latvian nuclear infrastructure is rather small compared with the neighbouring state Lithuania with its huge nuclear reactor plant Ignalina. There was no nuclear power production in Latvia during the Soviet time. However, a research reactor was built in Salaspils near Riga, which went critical in 1961. Over the years, different kinds of nuclear related research was conducted with several nuclear substances in the reactor plant. Certain aspects of these research tasks were military related. As a result, different kinds of radioactive materials were used and stored on Latvian soil. For example, when Latvia was liberated in 1991, the country had more than six kilograms of 90 percent enriched uranium-235, which is enough to manufacture a nuclear explosive device.[1] There were also other reactors in operation in Latvia after the collapse of the Soviet Union. A smaller, so called Zero-power reactor was in operation at the Salaspils site; it was called Riga Critical Assembly. The reactor was dismantled in 1993. In addition, there were several industrial and medical applications which contained nuclear substances – and still do. All these nuclear related facilities produced nuclear material for both civilian and military use and these substances are stored in a depository site called Radones. The depository site is run by the state owned company RAPA (Ministry of Environment).

The project of initiating regulations in Latvia began in 1992 and it started with the task of formulating a basic nuclear safety order for Latvia. The responsible bodies in Latvia at that time were the Ministry of Environment and the Ministry of Welfare. In general, it can be said that between 1992 and 2000 all issues in the field of nuclear non-proliferation were discussed within the Latvian authorities and with donor states. Meetings were held, evaluations were made and reports were written on how to continue the work and solve the problems concerning nuclear safety. These efforts resulted in new federal legislation in late 2000: "Law of Radiation Safety and Nuclear Safety", "Physical Protection Regulations", and "on Radioactive Waste Management Regulation".

This domestic development should also be seen in an international perspective. Shortly after the restoration of independence in 1992, Latvia joined the Non-proliferation of Nuclear Weapons Treaty (NPT). Latvia also signed a comprehensive Safeguards Agreement with the IAEA placing all its nuclear materials under IAEA safeguards. The so-called Additional Protocol, which is an agreement between the Republic of Latvia and the IAEA which strenghtens the NPT, was accepted on January 19, 2000, and it was ratified in June of the following year.[2] Latvia has also joined The Convention on the Physical Protection of Nuclear Material (INFCIRC/274/rev.1).[3] In order to live up to the recommendations that the IAEA makes to its member-states, appropriate legislation had to be passed which regulated the nuclear material control, physical protection, export control and non-proliferation issues in general. Another important international aspect which has a great impact on the Latvian nuclear management development is the upcoming EU membership. Since 1991 there have been discussions with the EU concerning possible membership. In 1993, a free trade agreement with the EU was signed and in 1995 Latvia handed in a formal application for EU membership. The integration process in the EU community will also have effects in the nuclear non-proliferation field since Latvia must adjust to the norms issued by the responsible regulatory EU body, namely Euratom. In 2003, Latvia and Euratom began

[1] Historical Survey of Nucear Energy Activities in Latvia, by Illona Ekmane, Ralfs Spade, Zanda Sproge, Dace Satrovska. Radiation Safety Centre, Riga, Latvia, 2003, p. 32.

[2] Historical Survey of Nucear Energy Activities in Latvia, by Illona Ekmane, Ralfs Spade, Zanda Sproge, Dace Satrovska. Radiation Safety Centre, Riga, Latvia, 2003.

[3] Nukleär icke-spridningskontroll i Österled. SKI Rapport 95:22, p. 55.

concrete discussions aimed at effecting a smooth adjustment to EU standards in the management of non-proliferation.[4]

3.2 Co-operation Context

The first contacts between SKI and the Latvian counterparts in the nuclear non-proliferation field were taken in the early 1990s. At that time there were no established organisations with well defined directives and goals concerning non-proliferation and nuclear energy in general in Latvia. In this early phase, for natural reasons, the control system lacked a national legislation regulating the management of nuclear issues. Before the liberation nuclear activities on Latvian soil had been a part of the Soviet nuclear energy and nuclear weapons infrastructure. The security systems and the management of the nuclear related research in the Federal Republic of Latvia were wholly controlled by the Soviet Union. When Latvia became an independent state there was no security system regulating the management of nuclear related matters. During the transition period, the Latvians more or less took over the Soviet nuclear control system and tried to adjust it as well as possible to the new situation. The responsible bodies in Latvia had to improvise on a case by case basis in the non-proliferation field. The lack of financial and personnel resources was obvious.

For this reason, the support programme for the former Soviet Union at SKI initiated discussions with the Latvians regarding what was needed and what sort of support Sweden could provide. Sweden was, of course, not the only Western country that offered support to Latvia and the Newly Independent States (NIS). However, Sweden was one of the first states to begin co-operating with Latvia on nuclear non-proliferation issues. The International Atomic Energy Agency (IAEA) co-ordinated international support to assist the NIS in their attempts to improve their systems for control of nuclear material. To further this effort, a donors' meeting was held in Riga, Latvia, on July 28–29, 1994, which brought together representatives from the IAEA, Finland, Sweden, the United States of America (USA), and the newly founded Radiation and Nuclear Safety Inspection Authority of the Republic of Latvia. The initiative for the meeting came from the Latvian side and resulted in the development of a Coordinated Technical Support Plan (CTSP) which identifies i) the needs to be addressed, ii) the time period during which activities need to be undertaken, and iii) the areas of intended contribution and corresponding tasks to be performed by each of the potential donor countries. This was the first real step towards carrying out a comprehensive SKI co-ordinated program in Latvia in co-operation with other donor states. Task 6 of the CTSP identifies the objective of providing assistance in defining the needs for improved physical protection at nuclear facilities in Latvia. It was also decided that Sweden and the US should be the donor countries. An evaluation should be carried out in order to analyse the needs. In September 1994, such an evaluation was made.

3.3 The Planned and Completed Co-operation Projects Involving SKI and Latvia

There was an important meeting in September 1997 which brought together the three Baltic States and representatives from the Swedish, Finnish, and Norwegian support programmes. In this context, SKI initiated discussions with the Latvian Ministry of Environmental Protection and Regional Development and the nuclear authority VVI concerning the establishment of a support programme. As a result, SKI and the Latvian counterparts agreed in December 1997 on a support package for non-proliferation issues which included counter-measures against illicit trafficking. This broader approach and the cooperation with other states facilitated more efficient planning. The agreement was updated

[4] Landstrategi Lettland, 1 januai–31 decemeber 2001. Regeringskansliet, Utrikesdepartementet, UD 99:094, p. 2. Interview with Agris Ozols and Andres Salmins, RDC, Latvia 17 of February 2004

in February 2000. The Swedish Support Programme for Latvia has now been completed and it comprised:

- transfer of know-how concerning the international non-proliferation regimes;
- support for development of relevant laws and regulations with a special emphasis on future EU membership;
- nuclear material systems based on NPT requirements;
- means and measures for limiting the risk of theft, sabotage or terrorist attacks against nuclear facilities and radioactive material, including combating of illicit trafficking.
- support for establishing the new State Regulatory Authority

3.4 Relevance, Achievements of Objectives and Goals and Results

Latvia is an important cooperative partner for Sweden in the economic and political field. Since the independence the Swedish support has been aimed at stimulating the necessary transformation of the country's economic and political system. There is no doubt that the co-operation projects run by SKI in Latvia are *highly relevant* and in keeping with most of the objectives formulated in the so-called country strategy by the Swedish Ministry of Foreign Affairs. Even if the objectives are rather general and thus can be criticised for being too open to different interpretations, it is clear that the SKI support programmes fit most of the categories constituting the Swedish cooperation with Latvia very well. The SKI objectives and the co-operation in the field of non-proliferation in Latvia can be seen as important activities aimed at *promoting Common security* in the Baltic Sea area. For example, the efforts to create more efficient physical protection and nuclear safeguards systems in Latvia are aimed at reducing the risks of illicit trafficking of nuclear and radioactive material and equipment which can be used in nuclear weapons manufacture. It is in the interest of Sweden, the European Union, and the IAEA, representing the world community, to prevent terrorists and so-called rogue States from getting hold of these nuclear substances and facilities. Latvia has today reached an internationally accepted standard with regard to nuclear material control, physical protection and non-proliferation in general.[5] The SKI activities with their objectives and goals have contributed to the achievement of this high international standard of safety.

In the latest Country strategy for Latvia the objective of promoting common security consists of eight so-called security-enhancing co-operation supports. The SKI activities have been concerned with three of these supports, which have also been completed: non-proliferation of weapons of mass destruction; border surveillance and measures for the reinforcement of external border controls; combating international and organised crime. It is worth mentioning in this respect the work conducted by the Illicit Trafficking Combat Project Group (ITCPG), which used Latvia as a test case for the establishment of an efficient system for reducing the risks of illicit trafficking. Sweden and SKI led this co-operative effort together with different authorities from Finland and Norway. In close co-operation with the Latvian nuclear related organisations and companies, border control, custom authority, police and security police, a model was worked out which is now being used as an important basis in the efforts of the IAEA to develop a new convention on physical protection.[6] Another important result of the efforts to promote common security is the enhanced physical protection of the storage facilities for nuclear

[5] This conclusion is drawn by all consulted experts with knowledge about the Latvian non-proliferation activities and officials at IAEA. The State of Latvia is at present performing a national system for nuclear non-proliferation in accordance with the requirements of IAEA.

[6] About the conclusions of the project, see Report on Combating of Illicit Trafficking. SKI Report 00:3.

material and radioactive substances of the state owned company Radons, and the improvement of the border control. The SKI activities have focused on transferring software know-how and installing complete security systems including camera surveillance, computer technology, and other protection facilities.

All these preventive measures can also be seen as means to *support environmentally sustainable development* in Sweden's immediate neigbourhood. A more secure overall nuclear infrastructure system will certainly contribute to a more sustainable environment both in Latvia and in the whole Baltic Sea region. The Swedish activities in the non-proliferation field – i.e. the transfer of software knowledge through seminars and training courses, the establishment of a national legislation regulating nuclear related issues, and the creation of a regulatory authority – have certainly had a positive impact on the nearby geographic area. Moreover, these actions have resulted in an enhanced national emergency preparedness in the nuclear field.

Modern legislation regulating nuclear management in Latvia in accordance with the demands and recommendations of the IAEA and the European Council can also be seen as important steps towards *deepening the culture of democracy*. The work to adjust the legal system and the management culture regulating the nuclear infrastructure to Western European standards can undoubtedly serve the objective of fostering democratic competence for the benefit of Latvian society as a whole. The Swedish financed projects have had positive effects on the Latvian adjustments to EU standards and norms in the legal field. The Swedish support for the establishment of a regulatory authority, Radiation Control Center (RDC), which was set up in December 2001, is also an important corner-stone with regard to the creation of a more democratic and independent management structure within the nuclear infrastructure in Latvia. Today Latvia has an organisation which is able to fulfil its duties according to the national legislation and the demands from the EU (Euratom) and the IAEA.

On the other hand, it is difficult to argue that the SKI objectives described in chapter 2.1 can be seen as a means to enhance a *socially sustainable economic development*. The same can be said about the *gender perspective* formulated in the so-called country strategy worked out by the Swedish Ministry of Foreign Affairs: "the development co-operation between Sweden and Latvia should be characterized by an equality perspective".[7] It would probably be unrealistic to demand that the SKI projects should seek to enhance a socially sustainable economic development. The SKI activities are directed towards improving the security and management of nuclear related issues, and SKI's expertise does not include economic matters such as growth and distribution. However, there is nothing that says that the objectives and activities of SKI in Latvia or in any other recipient state could not include a gender perspective. It is certainly true that most nuclear research and industry businesses, not only in the former Soviet Union but all over the world, are dominated by a male perspective. This does not mean that there are no reasons for trying to raise the level of consciousness regarding equality between the sexes at the working places within the nuclear field. In general, there is a lack of discussions in the documentation – the formulated objectives, reports, general guidelines and so forth produced by SKI – concerning the gender perspective. It is true that the issue is brought up in some reports where certain figures of female participation at seminars and training courses are presented, and that SKI is aware of the problem and that they are trying to find female counterparts in Latvia for various projects (this is a rather new phenomena which can be observed during the last two years). Despite the problems of a male dominated business and the fact that some efforts have been made, there is a lack of strategy for improving real female influence in the non-proliferation area in Latvia. From a general reading of reports, meetings and agreements, the conclusion is that much more can be done in this field.

[7] Landstrategi för utvecklingssamarbetet med Lettland åren 2002–2004, P. 7. See also Landstrategi Lettland, 1 januari 1999–31 december 2001, p. 5.

In comparison, it can be said from a statistical point of view that the situation for women is good in Latvia. For example, about 60 percent of the staff at RDC are women and 3 out of 5 Unit Heads are women. At the state enterprise RAPA female representation is lower, about 25 percent of the employees are women and two Unit Heads out of six are women. However, the reasons for this dominating female representation have nothing to do with a conscious gender policy strategy. The reasons for the high percentage of women in RDC and women in leading positions at RAPA probably have more to do with the fairly low status and low incomes of public sector jobs (for example, a civil engineer in nuclear technology is much better paid in a private company). Frankly speaking, men tend to find better paid jobs in the private sector. In addition, although there are 3 female Unit Heads out of 5 at RDC, most of the women working there have lower positions in general than the men.

Regarding the question of whether the SKI objectives and activities in Latvia cover the needs and priorities of the participating part, there is without doubt a *high relevance*. The co-operation programmes and projects have developed in a fruitful dialogue between SKI, the regulatory organisations in Latvia and expert consultants in Sweden. Furthermore, these dialogues between Swedes and Latvians have also been coordinated with other donor states and the IAEA. The SKI implementation strategy is very well defined both in theory and practice and this approach has grown out of various experiences in the former Soviet Union and Eastern and Central Europe.[8]

The Swedish support program and its objectives are in accordance with the recommendations of the European Council and the IAEA. In the support projects the international legal instruments such as treaties, conventions and guidelines worked out by the IAEA and the Nuclear Supplier's Group (NSG) have been used in order to evaluate and ensure a high standard of quality.[9]

To sum up the achievement of objectives and goals and the results it is fair to speak of a *high attainment*. This is the case for both the SKI and the Latvian co-operative partners. Given the difficulties and the chaotic situation shortly after the independence it is impressive that so much has been achieved in such a short period of time. In the beginning of 1990s, there were no well functioning authorities with well defined responsibilities, no workable legislation and no efficient physical protection systems. Today Latvia, as an EU member, fulfils the requirements of both Euratom and IAEA. The SKI activities have contributed to this positive development in Latvia. The SKI consultants' contributions have been efficient and the dialogue oriented form of co-operation has been successful. It is worth mentioning here the smooth and effective co-operation between the SKI consultants and the Latvian consulting firms with regard to the installation of physical protection and other technical systems. The procurement of this technology was handled very professionally and there are no signs of briberies or theft or other illegal actions (the Sida "General guidelines on procurement of goods, works and services under Swedish financial assistance" was used).

3.5 Sustainability of the Projects

Latvia's ambition to be a member of the EU has obviously been a driving force behind the establishment of an efficient and internationally accepted non-proliferation system. Today one can speak of a well functioning regulatory authority which is able to fulfil the demands and requirements of the EU and the IAEA. The Swedish activities have mainly been focused on delivering software systems and training Latvian experts in non-proliferation issues. Although it is fair to speak of an impressive development in expertise over the last ten years, there are still some weaknesses that have to be discussed.

[8] A good description of the projects and its purposes, see Swedish Support Programme on Nuclear Non-Proliferation in Central and Eastern Europe and Central Asia, SKI Report 00:23.

[9] Ibid., pp. 13–14.

The first weakness is a very common feature in most development oriented co-operation projects, and it can be defined as a *lack of structural knowledge*. The provided service or the project *per se* is often dependent on a few involved experts. For example, and this happened in reality, a Swedish consultant firm trained an official at the regulatory authority in Latvia in the use of a computer based nuclear material control system. The delivered software system functioned well and conformed to the IAEA recommendations. Suddenly the responsible person died and since he was the only trained official at the authority it caused some difficulties in the accountancy routines. Another person took over the accountancy responsibility; however, he was not informed that there was a technical support program which could have helped him in his efforts to learn the system. Instead of asking for immediate assistance from the Swedish consulting firm he tried to learn the system from the reading of manuals and failed. Two lessons can be learned from this story. Firstly, better back up documentation has to be produced in order to enable other officials to manage and run installed systems. To write manuals in the native language is one measure (which has also been done in some cases regarding manuals for computers and camera-surveillance systems at Radones). Another measure would be to create a library of manuals, booklets, and vital information on certain issues. Secondly, this incident shows that the information situation is not the best. Better routines ought to be created for the transfer of information to the co-operating organisations, consultants and officials.

3.6 Local Ownership

There is no doubt that the facilities and organisations that SKI have promoted in the co-operating projects are functioning very well today. Technically and legally RDC and the nuclear infrastructure in Latvia are prepared to keep up with the demands and requirements of the European Union and the IAEA. However, if one should point to some of the weaknesses in the local ownership it is the already mentioned high degree of employee turnover and the fairly low performance with regard to the dissemination of information. Concerning the high employee turnover, which is not only a Latvian but an international problem, it is difficult to see what SKI and Sweden can do to counter this problem except by taking measures to improve the documentation of certain vital information as was described in chapter 3.5. However, the low performance with regard to the dissemination of relevant information will probably change for the better in future. One must not forget that the Latvian nuclear infrastructure is very young and that it takes time to develop efficient systems in all parts of a high-performance organisation.

3.7 Cost Efficiency

For this evaluation the author did not have the time and resources to make thorough financial analyses of the cost efficiency. Therefore it is difficult to discuss alternative methods to gain better or identical results from a financial point of view. Generally, though, it can be said that the SKI co-ordinated and co-planned activities have increased their cost-efficiency awareness in many respects. SKI as an organisation and the consultants involved have learnt a lot about reducing the costs for arranging seminars and training courses, etc. The procurement of goods, works and services was, as has already been mentioned, effective and handled very professionally. Another positive aspect was that the Swedish consultants involved in the projects made the purchasing process transparent, which meant that all companies could see the offers that other companies had made. As a consequence, the competition increased and the costs for delivering the technology and services were kept low.

3.8 Co-ordination with Other Major Donors

Since Sweden is a small country with limited financial resources it is very important that the Swedish co-operation is co-ordinated with other donor states so as to avoid overlapping. How can this be achieved? Generally speaking, this evaluation sees two alternatives for achieving this goal. The first alternative emphasises the strong role of the IAEA as a co-ordinator. Since the IAEA is an independent supranational organisation with a global perspective, the argument goes, it would only be natural if this organisation took a lead and co-ordinated the co-operation programmes in the former Soviet Union and in Eastern Europe. The IAEA with its huge capability to collect information can deliver the relevant information on what needs to be done and also make sure that the recommendations are followed. The second alternative is sceptical of the idea of a strong co-ordinating role for the IAEA and argues instead that the donor states and recipient states are the only parties that can deal successfully with programmes and projects; they have the "hands-on" knowledge of what is needed and how to implement it. Therefore the co-operation should only be based on bilateral principles, accordning to the adherents of this view. The IAEA should only assume the task of delivering information to all concerned countries about what is going on in the co-operation fields.

In reality none of these alternatives has been chosen. There has been too much duplication of work in the completed programmes seen from an overall perspective. There are several reasons for this. Firstly, it has been a very chaotic time in the former Soviet Union and in Eastern Europe as a whole, especially in the beginning of 1990s. It is thus understandable that performance was often characterised by an *ad hoc* attitude. It was not an easy task to judge which action plans would be best shortly after the independence. All in all, the NIP-states lacked more or less everything that was necessary for a state to operate in the non-proliferation area, i.e. laws, directions, nuclear material accountancy and physical protection systems. The NIP-states had to start from the beginning, and in new languages. Before the independence the legislation, manuals, directions, practically everything, was written and communicated in Russian. Secondly, the planning and design of the programmes in the donor-states was not always the most efficient. Governments gave financial resources on a rather short notice to different authorities and organisation for projects that did not always have a well defined framework of objectives and goals. The lack of experience was obvious among those who were to realize the projects. Despite these complications, what else could be expected given the fact that the world had not experienced a similar situation before and the situation required urgent action.

Despite these critical comments, it is important to underscore that actions were taken by both the SKI and the IAEA to create better co-ordination between the states involved. Several agreements were signed, and in Latvia it is fair to say that some co-operation with other donor-states was successful. The projects realized in co-operation with the Norwegian NRPA and the German BMU were fruitful and carried out in an efficient way. However, the co-operation with the Department of Energy of the United States was not always the best in terms of efficiency. It seems that the parties did not communicate with each other during the project period even though certain agreements were formulated. In general, the structural capacity to disseminate information to the co-operating parties can be improved.

Indeed, both the SKI and the Division of Safeguards at the IAEA are aware of this lack of co-ordination and they have recently discussed how the situation can be improved. The relevant section of the IAEA today has more financial and technical resources which will facilitate a more rational and effective coordination. Several interesting project ideas about how to act with greater focus have been put forward. The IAEA and the SKI are in the middle of a creative process which can best be described as a process of learning lessons from what has been achieved so far in the co-operation area between the concerned states (see also chapter 5, Recommendations, in which several projects are discussed).

3.9 Future bilateral support

The co-operation with Latvia has now been phased out. All the installations have been inspected and accepted and deemed to be in accordance with the stipulated requirements and demands.

4. Findings: Russia

4.1 The SKI Co-operative Profile of Russia

Since the Soviet Union was a nuclear weapons state and a state that based much of its energy production on nuclear energy, the problems were enormous when it disappeared and the Federation of Russia came in its stead. For example, in 1997 a commission stated that there were more than 30 000 warheads either in reserve or in reserve stocks and stockpiles, which represented millions of kilograms of weapons-grade nuclear material.[10] All over Russia there were nuclear facilities that stored nuclear substances and facilities that could be used in the manufacture of nuclear weapons. Russia lacked more or less all necessary means to control and protect the nuclear infrastructure: legislation, nuclear material control accountancy systems, efficient physical protection of nuclear related buildings and materials, and export/import control.

The first SKI contacts aimed at establishing co-operation in the non-proliferation field in Russia were taken in 1992 and the initiative came from the Russian side. GAN became the major co-operation partner from very beginning. The reason for this was that SKI wanted to support the improvement and strengthening of a civil independent agency with the ability to control and supervise nuclear related activities in Russia. It should also be clear that there was competition, and maybe sometimes a conflict, between GAN and Minatom, which not only owned the majority of all nuclear materials in Russia but also had more power as a government organisation dealing with military related nuclear substances. For obvious reasons (Russia being a nuclear weapons state), Minatom was more restrictive and less open to co-operation aimed at creating security systems and regulations in accordance with IAEA norms and Western European standards than GAN. During this early phase, some pilot studies were carried out and certain projects were discussed. However, the only concrete project realized at this time was concerned mainly with nuclear material accountancy and control at a fuel fabrication plant. Already in 1993, SKI discontinued the co-operation because the responsibilities of different Russian authorities were not clearly defined. SKI and GAN decided to resume the co-operation when the situation concerning the division of responsibilities in Russia was clearer. The contacts were taken up again in 1995 since GAN was considered to have undergone an important stabilization process; the organisation now had more clearly defined goals and it was able to formulate the steps that needed to be taken in order to develop a well functioning agency. From now on, SKI considered that GAN had the capability to make the priorities between different needs and that the time was ready for a continuation of the co-operation in the non-proliferation field. As a consequence, a bilateral agreement between Russia and Sweden in the nuclear field was signed in 1997.

In March 2004, President Putin initiated a massive government restructuring project, which resulted in the dissolution of about half of Russia's cabinet-level ministries. Among the ministries affected was the Atomic Energy Ministry, which was transformed into the Federal Atomic Energy Agency (FAEA) and

[10] Canberra Commission on the Elimination of Nuclear Weapons, 1996. See also the SKI Report 2004:15, Eliminating Stockpiles of Highly Enriched Uranium. Options for an Action Agenda in Co-operation with the Russian Federation, p. 8.

placed under the auspices of a new Industry and Energy Ministry. Thus the Minatom does not exist any more. It is hard to judge what consequences this re-organisation will have on the relations between GAN and FAEA since we have only seen the beginning of this process. In fact, when this evaluation was about to be concluded a press release from the Russian government stated that another re-organisation had taken place. In a decree signed on May 20, Putin placed the FAEA under the direct supervision of the Russian government. However, it is important to understand that FAEA will not give directives to GAN, which could be interpreted as meaning that GAN will have more room for manoeuvre. Whatever the consequences, this new structure of power within the Russian government will probably not influence the co-operation between GAN and SKI. After all, GAN will have the same tasks and responsibilities as before the re-organisation, i. e. to control and supervise the civil use of nuclear energy in Russia.

The Swedish Support Programme for Russia has been focused on the same aims as that for Latvia, which was described in chapter 3.3, with the exception that in Russia the safeguards aspects is not included in the co-operation. The reason for this is that Russia is a nuclear weapons state and therefore is not obliged to follow the recommendations and norms worked out by the IAEA. Russia develops and maintains its own safeguards system without any obligation to other parties or states, and since SKI promotes the IAEA standard there has never been any real ground for such a co-operation even if some nuclear material accountancy software systems have been delivered by the Swedish consultant firm AMC.

Here follows a general description of the completed and ongoing projects in Russia:

- *Basic Nuclear Legislation*. To assist GAN and (to a lesser extent) Minatom in the preparation of new drafts of nuclear legislation and regulations, and state regulations regarding non-proliferation matters.

- *Nuclear Material Control*. Delivery and installation of equipments (computers and other technical equipments), and training courses in how to use the equipments for GAN's office in the Ural Region in Jekatarinburg. Management and organisational development for GAN in St Petersburg to improve the administrative competence in the northwestern region. Training of GAN inspectors in various methods such as the operating of Cherenkov Viewing Device (CVD) equipment used for the verification of spent fuel. Another example is the development of a computer-based system for accountancy registration and control systems for navy and nuclear fuel in Severodvinsk.

- *Physical protection*. To improve the physical protection at Murmansk Shipping Company and at the Nuclear Submarine shipyards at Severodvinsk. The nuclear fuel stored or used on these sites or in vessels is highly enriched uranium of weapons-grade quality. The risk for sabotage or theft have been considered high and therefore the objectives are to, first, investigate, analyse and make proposals for physical protection of all icebreakers and vessels, and, second, to implement the equipment and procedures needed in order to create a satisfactory physical protection. The fleet in Murmansk is based at the Atomflot port, and consists of 8 nuclear propelled vessels and 2 non-nuclear support vessels in which fresh and spent fuel assemblies are stored. The nuclear icebreaker fleet is operated for the Russian Ministry of Transportation by the Murmansk Shipping Company.

- *Combating illicit trafficking*. To improve the system for combating illicit trafficking of nuclear material during transport and intermediate storage. In this category, the SKI co-operation with the transport company Izotop and other projects aimed at minimizing smuggling and/or theft of nuclear related materials and facilities.

4.2 Relevance, Achievement of Objectives and Goals and Results

The economic and political development in Russia is of great importance to Sweden. Changes in Russia will also influence Sweden and the European Union as a whole; this is especially true with regard to security related matters where the general Swedish purpose is to *promote common security* in the region in both the civil and military areas. The support should also, according to the so-called country strategy produced by the Ministry of Foreign Affairs, contribute to the improvement of Baltic-Russian relations and the integration of Kaliningrad into a regional co-operation.

There is no doubt that the co-operation projects run by SKI in Russia are *highly relevant* and in accordance with the most of the objectives formulated in the country strategy. The SKI objectives and the co-operation in the field of non-proliferation in Russia can be seen as important activities in order to *promote common security* in the region. The SKI activities have mainly been concerned with three of the supports formulated in the country strategy on October 6, 1999, and these have also been fulfilled in many respects: border surveillance and measures for the reinforcement of external border controls; combating international and organised crime; and achieving emergency preparedness for accidents and catastrophes. In the country strategy for Russia put forward on October 17, 2002 (valid until December 31, 2004), common security is defined somewhat differently. All these supports should now be seen as part of a new support, namely *non-proliferation of weapons of mass destruction.*[11]

All the efforts to create more efficient physical protection and nuclear safeguards systems in Russia are aimed at reducing the risk of illicit trafficking of nuclear and radioactive material and equipments which can be used in nuclear weapons manufacture. A conclusion of this evaluation of the completed and ongoing SKI promoted activities, and their stated objectives and goals, is that these have contributed to the attainment of a high international standard of safety. For example, the SKI promoted physical protection projects in Murmansk aimed at reducing the risk of sabotage and theft of highly enriched uranium of weapons-grade quality in the harbour area and in the vessels have without doubt been highly relevant.

The support for strengthening and improving the competence of GAN has been successful. As a result, it is fair today to speak of a modern and independent regulatory body which is able to control and supervise the management of nuclear related activities in Russia. Certainly there are still problems to be solved; GAN needs to develop different aspects of its organisational structure and improve its competence in certain areas in order to be more efficient. I will discuss these weaknesses and especially how SKI can act in order to be more successful as a co-operative partner below.

The SKI sponsored physical protection activities in Murmansk and Severodvinsk can also be seen as a means to *support environmentally sustainable development* in Sweden's immediate neighbourhood. SKI and Sweden have contributed to solving the acute problems with badly stored radioactive and nuclear substances in these areas. The delivered physical protection system and all the installation of equipment and the training through seminars and courses in non-proliferation issues will certainly have positive impacts for the region. The support to GAN for the creation of a regulatory authority and for the enactment of national legislation regulating nuclear related issues can also be seen in this light. The same is true of the improved national emergency preparedness in the nuclear area.

Modern legislation regulating the nuclear management in Russia in accordance with the demands and recommendations of the IAEA can also be seen as important steps towards *deepening the culture of democracy*. The work to adjust the legal system and the management culture regulating the nuclear infrastructure to Western European standards can undoubtedly serve the objective of developing the democratic

[11] Landstrategi Ryssland. 1 januari 2002–31 december 2004, p. 12.

competence and civil society in Russia. The co-operation in this field has been highly appreciated in Russia and considered a great help in formulating a well functioning legislation and regulations in the non-proliferation field.[12] Furthermore, the close co-operation with GAN can also be seen as a means to promote *local and regional ownership* and *individual organisations* which are aims of the Swedish support as formulated in the country strategy for Russia. Today there is, as has already been mentioned, an organisation with the ability to control and supervise nuclear related activities in Russia in accordance with the norms of the IAEA and Western Europe, namely GAN.

With regard to the purpose of supporting *economic transformation*, *social safety*, and *education and research*, the situation here is the same as that described for Latvia (although it is called *socially sustainable economic development* in the country strategy for Latvia and in the previous strategy for Russia): that is to say, it is difficult to argue that the SKI activities have been successful in this respect since this task is not a part of the SKI field of competence. In addition, the same can be said about the inclusion of a *gender* perspective as was said about Latvia. Despite the problems caused by a male dominated nuclear business and the fact that some efforts have been made, there is still a lack of a strategy for improving real female influence in the non-proliferation area in Russia.

To sum up whether the SKI objectives and activities in Russia cover the needs and priorities of the participating partner, there is no doubt that one can speak of a *high relevance*. The co-operation programmes and projects have developed in a fruitful dialogue between SKI and the responsible regulatory organisation, GAN, as well as expert consultants in Sweden, and other donor states and the IAEA. The SKI implementation strategy is very well defined both in theory and practice and this approach has grown out of various experiences in the former Soviet Union and Eastern and Central Europe.[13] The Swedish support program and its objectives are in accordance with the recommendations of the IAEA. In the support projects the international legal instruments such as treaties, conventions and guidelines worked out by the IAEA and the Nuclear Supplier's Group (NSG) have been used in order to evaluate and ensure a high standard of quality.[14]

However, concerning the results of the projects it is fair to say that the goals and aims have been *attained*, even though it is not correct to describe the attainment as *high* in all respects. Some of the projects have been delayed and especially in the early phase of the co-operation not much was achieved in terms of concrete results; the planning and coordinating at that time had an *ad hoc* character. It is understandable that certain projects have been delayed, especially in the chaotic circumstances that prevailed shortly after the breakdown of the Soviet Union. However, these problems have not always been adequately communicated between the SKI and the organisations in Russia, which would have helped avoiding further complications. Even though it can be argued that SKI was not the main source of these delays, it could nevertheless have been better at informing its partners both in Sweden and in Russia.

Another problem that has to be tackled is the process of procurement of goods, works and services, a situation that can be improved (about this issue, see also chapter 4.4).

[12] It is worth mentioning that GAN often wants the SKI consultants to go through the last review of the legislative drafts instead of the U. S. experts. The main reason for this is that the expertise assistance from Sweden is not only effective but also made in an EU context. After all, as the interviewed officials at GAN told me, Russia is and wants to be closer to Europe than to the United States.

[13] Se for example, Swedish Support Programme on Nuclear Non-Proliferation in Central and Eastern Europe and Central Asia, SKI Report 00:23.

[14] Ibid., pp. 13–14.

4.3 Sustainability of the Project

The SKI support to GAN in St Petersburg has in many ways been successful and contributed to the improvement of GAN as an independent civil regulatory agency. The delivery and installations of equipments and software systems and training of inspectors in various techniques such as Cerenkov Viewing Device have certainly improved GAN's capabilities. Even if much progress has been made it is still possible to talk about an old-fashioned and hierarchical organisational structure in the Russian agencies and companies. The old Soviet leadership style is in many ways embedded in the organisational structure, which means that the work process can be slow and characterised by complicated bureaucratic hierarchical patterns. The transparency in terms of how decisions are made is not well developed.

The SKI promoted project to introduce rational and efficient work routines at the GAN office in St Petersburg (management and organisational development) has therefore been much needed, and it can also be seen as an important measure to create sustainable structures in the GAN organisation. A system worked out and tested at SKI for quality assurance was used in the GAN office where officials were trained in developing transparent and rational work routines. Moreover, even the head-office in Moscow and other GAN offices have now taken part in this project. This co-operation was co-ordinated financially with Norwegian NRPA and SKI experts were used in the training courses.

It is hard to estimate this project's level of sustainability since it has not been followed up in a concrete way through inspections or similar measures. The reason for this is that the project should be seen as "help for self help" and it is not deemed to be within the scope of the project to carry out inspections or otherwise try to evaluate the results of the measures taken. The interviews carried out in Sweden and Russia confirm, however, that the project has been important and resulted in positive changes in structural thinking within the GAN organisation. It is, after all, a real step forward that GAN has opened itself to new ways of thinking, since the management and leadership development strategy, with its emphasis on soft values, does not fit in well with the traditional Soviet methods for improving organisational efficiency.

In Murmansk, the co-operation has gone through different phases and has run into certain problems, especially concerning the process of procurement of goods, works and services, something which illustrates two problems in the Swedish-Russian co-operation. Firstly, it shows that there are two different views on how to design a satisfactory security level. The representatives of the Swedish side argue that the Russian proposals are over-ambitious and cost too much money. The Swedish consultants and the SNNAP secretariat point to the IAEA norms and say that these are the guidelines we have to follow and this is all they require. The Russian side, on the other hand, answers that Russia is a nuclear weapons state and is not a member of the IAEA and therefore has its own and in many ways stricter criteria. Secondly, this example also shows that the procurement procedures in Russia are not the best as seen from a Swedish economic point of view since there is no competition among companies who will carry out the installations of physical protection. There is only one Russian company which is licensed to carry out naval installations, according to the Russian counterpart. The price control made by the Swedish consultants indicates that the Russian proposals cost too much and that the project aims to devote too much work-time to the suggested measures.

How to solve these problems? Regarding the different interpretations of what constitutes an appropriate security level, it is true that there is a real difference of perspective regarding how a satisfactory physical protection should be designed. It would probably be wiser if the SKI took this difference of views into account from the very beginning of a joint project and accepted that Russia has its own experience and tradition in the nuclear energy and nuclear weapons field. For example, a solution could

be that SKI declares that it can only give financial support to projects which are considered to be in accordance with the IAEA norms. If the Russian counterpart has the intention of developing additional installations beyond what the SKI thinks is needed, the Russians themselves or another donor state will have to pay for the additional measures. This approach might also, as a positive consequence, lead to a better coordination with other donor states.

The second problem, concerning the procurement of goods and services, is more complicated. It is hard to recommend any solution besides the practicing of hard price controls which is already being done. The Swedish consultants involved have been very efficient in presenting alternative budgets. In the end, it will be a question of negotiation between the SKI and the Russians parties about pressing the costs of the projects to an acceptable level.

4.4 Cost Efficiency

This evaluation did not have the time and resources to make thorough financial analyses of cost efficiency. Therefore it is difficult to discuss alternative methods for achieving better or identical results from a financial point of view. Generally, however, it is worth repeating what has already been said in chapter 4.3: the practice of price control has been very successful.

It can also be discussed whether it was worthwile to contribute so much financial and personnel resources, comparatively, in the first period, between 1991 and 1992, when the results were poor. Before a final judgement is made, one has to understand that the conditions for a successful co-operation in the years following the breakdown of the Soviet Union were for all practical purposes very bad in a short term perspective. If a longer term perspective is used in judging the results from an economic point of view the picture will be different. All progress had probably not been realised without the trial and error attitude in the beginning of the co-operation with Russia. All the contacts taken, all the enquiries made about what was needed and all the inititated and discontinued projects in Russia in the early phase of the co-operation laid a solid ground for all the later successful projects.

Another issue that can be discussed is whether SKI with is limited budget has been involved in too many projects (not only in Russia). It can be argued that it would have been a better strategy to focus on fewer projects in order to be more efficient in allocating economic resources. There might be some truth in this argument, although this phenomenon can also be seen as a consequence of a lack of coordination with other donor states.

4.5 Coordination with other major donors

SKI has been co-operating with Norway (NRPA), Great Britain (British Government Department of Trade and Industry), and IAEA in order to enhance the level of coordination between the donor states and the recipient states and avoid overlapping. Generally speaking this co-operation has been good even though the level of co-ordination can be improved. The situation described in chapter 3.8 regarding SKI coordination with other major donor states in Latvia applies to Russia as well.

4.6 Future bilateral support

The general conclusion of this evaluation is that the SKI co-operation has a future. Several aspects of the ongoing projects have to be completed, such as the co-operation in the legislation field and the support to Murmansk Shipping Company for making the additional improvement of the physical protection system, and the strengthening of GAN as an independent agency capable of controlling and

supervising civil nuclear energy use in Russia. In chapter 5, more specific recommendations are made concerning how to improve co-operation between SKI and Russia in the non-proliferation field.

5. Recommendations

The recommendations are directed to both to Sida and SKI and they can also inform a discussion about how to develop the organisational ability to conduct co-operation within SNNAP and SKI. It should be noted that the general assumption of this evaluation is that the co-operation in both Latvia and Russia have been important and successful and that it recommends that the co-operation be continued in the Russian Federation (in Latvia the support programme has already been phased out).

General

- SNNAP should consider changing its activities from project oriented to programme oriented co-operation in relation to the recipient states. The SKI co-operation has so far been characterised too much by an *ad hoc* approach. This is understandable given the enormous and acute problems that had to be tackled in the NIP-states and Russia where the situation, at least in the early 1990s, could best described as one characterised by the absence of an independent and efficient nuclear non-proliferation infrastructure. A comprehensive programme orientation with specifically formulated plans in accordance with the formulated country and regional strategies in the non-proliferation field would probably result in better performance with regard to the formulation of goals and the allocation of resources, and with regard to how projects and means are prioritized in order to attain better results.

- SNNAP is recommended to enhance the already initiated deepened co-ordination work with IAEA. The recently held discussions between SNNAP and the Department of Safeguards of the IAEA aimed at improving the co-ordination with other donor states have been very creative, and it seems that lessons are being drawn about how to further this process. One idea is to involve Russian authorities and companies as important partners together with the IAEA in joint projects of assistance to recipient states in the region. For example, a Russian reactor facility can be used as a training centre for inspectors from Central Asia where the situation in the non-proliferation field is very bad. Such a programme has many advantages. First, it involves Russia as an equal partner together with the IAEA and SKI, thus promoting common security in the region. Secondly, Russian *know-how* and facilities will be used, as well as Russian speaking technicians which will probably make it easier to design suitable training-courses. Thirdly, such an arrangement would have advantages from an economic point of view.

- SNNAP should enhance its capability to disseminate important information to the involved parties, i.e. authorities and companies in the recipient states, Sida, the Ministry of Foreign Affairs, as well as other government organisations and consultants in Sweden. If the individuals and organisations involved could receive more valid information on what is going on in the co-operation it would certainly influence the output in a positive way. As a consequence, valuable time could be saved and the consultants and organisations could act more directly and effeciently. This can be done in the form of newsletters and/or through updated checklists for ongoing projects disseminated to the parties involved.

- All these recommendations require a stronger SNNAP with more financial and personnel resources. This evaluation has explored two alternatives for achieving this improvement. Firstly, this could be

worked out with stronger support from SKI, which seems to be hard to realize since the Section of Non-proliferation lacks both the time and the financial resources to support such a development, according to interviews with SKI personnel. Secondly, the strengthening of SNNAP could also be achieved through a creative process using the competence that already partly exists within the present organisation. This could involve the formation of an expert group consisting of the SKI consultants and other experienced individuals in the non-proliferation area. This expert group, or reference group, could deal with vital tasks such as formulating strategies, producing country and regional analyses, making sure that evaluations of the ongoing programmes are carried out, producing and disseminating a newsletter and other kinds of information to the parties involved in Sweden and the recipient states. Such a solution would reduce the pressure on the SNNAP secretariat and enable them to focus on the implementation of the programme and its projects.

- A general gender policy and strategy should be worked out.
- Consider ways to create structurally based knowledge so that important knowledge does not disappear when individuals leave organisations in the recipient states. Certain ideas about how this can be done have already been explored at some length, for example the setting up of databases, the production of manuals in native languages, and the creation of libraries containing vital literature and information.

Russia

- SNNAP is recommended to take measures to improve the handling of the process of procurement of goods and services in order to avoid high costs. Without doubt an effective price control system has been used; however, there might be other, more efficient, methods which can be explored. The best option would be if Russia opens up for competition regarding who is licensed to carry out naval installations, a situation that Sweden and SKI hardly can influence. However, if a more programme oriented strategy is used it would probably be easier to plan projects and allocate the financial means in a more effective way as to avoid higher costs. If a budget is decided from the beginning the parties (and SNNAP) can estimate how much different measures will cost in relation to the whole estimation of costs.
- Consider the possibility of training certain categories of the personnel of the Russian authorities in modern management. The program quality assurance system worked out by SKI for Swedish purposes has been used successfully. However, it seems that much more could be achieved if SKI is willing to develop specialised management training-programmes in order to improve organisational efficiency. It is important that these training-courses are adjusted to Russian traditions.
- SKI is recommended to focus on fewer projects in order to avoid the *ad hoc* character of certain projects. Furthermore, SKI is also recommended to focus mainly on measures within the fields where Sweden and SKI have been successful: nuclear material accountancy, delivery of complete physical protection systems, legislation in the nuclear field, and training courses in quality assurance systems and other areas where SKI has expertise.
- Work out nuclear based country strategies for Russia. Analyse what ought to be done in an overall context in Russia, while also taking into account the Central Asia region where the risk of illicit trafficking is deemed to be very high.

Appendix 1: Terms of Reference

EUROPA/EECA
Ulrika Lindberg 2004-01-22

Diarienummer:
2004–000060

Evaluation of the Swedish Nuclear Non-Proliferation Assistance Programme in Russia and Latvia

1. Background

In the early 1990s, the Swedish government decided to support the capacity building of the Newly Independent States in the field of nuclear non-proliferation. The overall aim was to enhance the safety in the Baltic region and impede the spread of nuclear weapons, materials and technologies. The direct objective was to support these states in becoming parties to the Non-Proliferation Treaty as well as support their integration to and membership in IAEA. Today, the non-proliferation co-operation efforts in the region constitute a part of the Swedish so-called security enhancement support, covering both the civil and the military area. Other parts of this general security promotion support are e.g. security policy issues, democratic and civil control of defence structures, border management, emergency preparedness, migration and asylum issues.

In the field of non-proliferation, co-operation activities are carried out in five main areas:

- Support of the establishment of nuclear legislation and the establishment of nuclear regulatory agencies,
- the establishment of physical protection of buildings and materials with nuclear activities and materials,
- the installation of control systems for registration and control of the location and movement of nuclear materials,
- prevention of illicit trafficking of nuclear and radioactive substances,
- strengthening the participation of recipient states in international non-proliferation fora and agreements.

This cooperation has covered all 15 states in Central and Eastern Europe and Central Asia, though the main efforts have been directed to the Baltic States, Russia and Ukraine. Several projects are carried out and financed in co-operation with other donors, like e.g. Great Britain, Norway, Finland, Germany as well as multilateral organisations such as IAEA and EU.

Initially, the nuclear non-proliferation cooperation projects were administered by the Swedish Ministry for Foreign Affairs, however in 1999, the Swedish International Development Co-operation Agency (Sida) was assigned to handle and finance the main part of the civil security co-operation. From 1999, Sida has allocated about 40 MSEK to nuclear non-proliferation initiatives.

SNNAP – Swedish Nuclear Non-Proliferation Assistance Programme, is the unit within the Swedish Nuclear Power Inspectorate (SKI) who directs and implements co-operation activities in this field. The staff of the SNNAP consists of two persons at the SKI office in Stockholm, who work with a number of specialists in the separate fields of activity mentioned above. The beneficiaries are primarily national regulatory bodies and various nuclear sites/operators in the concerned countries.

In 1998, an evaluation of the whole area of security promotion support was made (R. Ängeby, K. Eduards, UD Ds 1998:30), where the support in general was considered relevant and adequately performed, however the cost effectiveness varied. An evaluation of the bilateral cooperation with Russia and the Baltics as regards nuclear safety, radiation safety and nuclear non-proliferation was conducted also in 1998 (Per Johan Svenningson, 1998). It stated, inter alia, that the co-operation had been relevant as to orientation and volume and that goal attainment and results have been good. In 2002, Sida commissioned an audit regarding systems and routines for the cooperation projects and their administration at the SKI. The results showed that SKI is a competent project administrator and partner, however, some changes were called for in order to shift from today's project based co-operation to a more long term program approach.

The bilateral nuclear non-proliferation co-operation is comparably large in terms of allocated means and concerned co-operation partners. It is the task of Sida to monitor the development cooperation, to see to it that funds disbursed are used in an efficient and adequate manner and whether results are achieved and goals attained. The support to the Baltic countries are now coming to an end, and the cooperation with Russia and Ukraine has moved forward. The earlier mentioned audit/revision of SKI was made in order to enable a more program-oriented approach, where Sida intends to hand over certain responsabilities to SKI as concerns project planning, follow-up and the use of allocated funds. Against this backdrop, it is deemed timely to conduct an evaluation of the co-operation this far.

The evaluation will limit the scope to cover co-operation with Russia and Latvia. Russia as being one of the most important co-operation partners, where a wide range of activities have been carried out since 1991 and where co-operation is intended to continue for the nearest future. The evaluation will here focus geographically on Moscow, Murmansk and S:t Petersburg.

Latvia, as an example of a Baltic country where bilateral support now is being completed in connection to the upcoming EU membership. As the co-operation covers all fields of SKI's main areas of non-proliferation, Latvia can be used as a test case for the Baltic countries to see whether the objectives and goals of the co-operation have been achieved.

2. Purpose and Scope of Work

The *purpose* of the evaluation is:

- to assess relevance, results, effectiveness, sustainability, local ownership, cost-efficiency and methods of the Swedish support to Russia and Latvia within the field of nuclear non-proliferation (physical protection, illicit trafficking, nuclear material control and nuclear legislation).
- to make recommendations regarding content and form for a strategic continued development co-operation in the field of nuclear non-proliferation.

Scope of Work

The evaluation shall cover co-operation assignments carried out by the SKI and Swedish consultants involved in the support as well as their counterparts in Russia and Latvia during the period of 1991–2003. Thus, both Sida and MFA funded projects will be included.

3. The Assignment (issues to be covered in the evaluation)

The evaluation shall:

a) Assess the *relevance* of the co-operation in terms of needs and priorities of the recipients, the recommendations of the European Council and IAEA, EU-alignment and the goals of the Swedish development co-operation with the Baltic States and Russia.

b) Assess whether and to what extent the *objectives and goals* of the co-operation, as outlined in project plans and the goals of the Swedish development co-operation, have been achieved. Discuss the reasons for high or low achievements, with regard to administrative, organisational, financial and other factors within the Swedish and well as recipient institutions.

c) Assess the *results* of the co-operation to date.

d) Assess lasting effects of the co-operation and the *sustainability* of the projects, as well as the (potential for a) transition to a regular operative co-operation.

e) Assess the *local ownership* as to the initiation, planning, implementation and follow-up of the projects. Discuss the consequences of high/low degree of local ownership on the projects and their effects.

f) Discuss the *cost efficiency* of the projects to the extent possible. Discuss whether the same results could have been achieved with fewer resources or an alternative approach.

g) Discuss how the *gender perspective* has been taken into account within the co-operation.

h) Comment on the c*o-ordination with other major donors* in this field.

i) Discuss possible *priorities and methods of co-operation* for future Swedish bilateral support in this field. Make recommendations to changes regarding content and form, taking into consideration a foreseen transition to a regular co-operation between neighbouring states. Discuss *opportunities and threats* with regard to the development cooperation with Russia.

4. Methodology, Evaluation Team and Time Schedule

Methodology

– Identification and study of relevant documentation in Sweden, preparation and design of methodology to be used (1 week, 40 hrs).

– Interviews with relevant actors in Sweden (1 week, 30 hrs).

– Field visits in Russia and Latvia. Interviews with relevant actors, evaluation on work routines, organisation plans and training/education of officials and responsible individuals among the involved authorities and consultants in Russia and Latvia (3 weeks, 120 hours).

– Analysis and completion of the written report, presentation of the findings to relevant parties (3 weeks, 120 hrs).

Evaluation team

The evaluation team will consist of one expert with international experience of non-proliferation issues, Dr. Thomas Jonter.

Time schedule

The estimated time for the fulfilment of the assignment is 7,5 man-weeks. A draft report shall be presented to Sida no later than May 31, 2004.

Undertakings

The Consultant will be responsible for the practical arrangements in conjunction with international missions and other visits and meetings. SKI and Sida will make available written material considered to be of relevance to the evaluation by the Consultant and SKI. SKI will inform the Swedish actors as well as the national authorities and other relevant parties of the chosen countries about the forthcoming evaluation.

5. Reporting

The evaluation report shall be written in English and should not exceed 30 pages, excluding annexes. Format and outline of the report shall follow the guidelines in **Sida Evaluation Report – A Standardised Format** (see annex 2). The draft report shall be submitted to Sida electronically no later than May 31, 2004. Within one week after receiving Sida's comments on the draft report, a final version shall be submitted to Sida, again electronically. The evaluation report must be presented in a way that enables publication without further editing. Subject to decision by Sida, the report will be published in the series *Sida Evaluations*.

The following enclosures shall be attached to the final report:

1. Terms of reference
2. List of persons interviewed
3. List of documentation

The evaluation assignment includes the completion of Sida Evaluations Data Worksheet (Annex 3), including an Evaluation Abstract (final section G) as defined and required by DAC. The completed Data Worksheet shall be submitted to Sida along with the final version of the report.

Annex:

1. Budget
2. Sida Evaluation Report – A Standardised Format
3. Sida Evaluation Data Worksheet

Appendix 2: Bill of Persons Interviewed

Sweden

The Swedish Nuclear Power Inspectorate
Sarmite Andersson, Project Leader, SNNAP

Lars van Dassen, Director, SNNAP

Irene Blom, responsible for quality assurance

Stig Isaksson, Inspector

Ministry of Foreign Affairs
Elisabeth Hellström, (kansliråd)

Sida
Ulrika Lindberg, Programme Officer Civil Security

SSI
Åke Persson, Director, Swedish Radiation and Protection Authority

Consultants
Thomas Eckered, Proment Lmt,

Ann-Margret Eriksson, AMC Konsult

Lars Gunnar Flyghed, ANC AB

Clifford Järnry, AMC Konsult

Stig Rolandsson, Safetech AB

Arne Nilsson, ANC AB

Lars Wredberg, Consultant to t*he Swedish Nuclear Power Inspectorate*

IAEA, Vienna

Valerij Bytchkov, Head, Section OC2, Division of Operations C, Department of safeguards

Jaime Vidaurre-Henry, Section Head, Section for Safeguards Training, Department of safeguards, IAEA

Axel Hagemann, Senior Physical Protection Specialist, Office of Nuclear Safety and Security

Kenji Murakami, Director for Division of Operations C, Department of Safeguards, IAEA

Kristian Maunula, Nuclear safeguards Inspector, Section OC3, IAEA

Anita Nilsson, Head, Office of Nuclear Security, Department of Safeguards and Security

Latvia

Andris Abremenkovs, Director, och Janis Berzins, chef för laboratoriet, RAPA

Agris Ozols, Deputy Head, Radiation Safety Centre

Andres Salmins, Director, Radiation Safety Centre

Spade, Ralfs, Project Analyst, Regional Development, Public Limited Liability Company

Olegs Kopeikins, Chief of Communication and Technical System Centre, State Board Body Guard

Dzintars Zarins, Director, Dozimetrs Ltd.

Russia

Viktor Elizarov, Atomflot

Alexander Kochukai, Manager for Transport, Izoptop, St Petersburg

Valery Maltsev, Security Manager, Murmansk Shipping Company

Martinov, Director of Gozatomnadzor, St. Petersburg

Ludmila Nikitjenko, Advisor to the Swedish Nuclear Power Inspectorate

Vladimir Porakov, Head of Safeguards Division, Adviser to Russian Federation, Gozatomnadzor, St Petersburg

Yuri Volodin, Head, Department of Safeguards, Gozatomnadzor, Moscow

Appendix 3: Project Allocations[15]

Period **1992–99**	Title of the Project	Status	Financing Sida	MFA	Decision No
LATVIA					
LET-1	Nuclear Legislation and Regulations	completed		13200	
LET-2	Proposal for PP System at the Research Facility Salaspils	completed		142000	
LET-A.1.4	Continued Nuclear Legislation Assistance	LET 99/1		115000	UD97/399/EC
LET-C.4.1	Physical Protection at facilities	completed		234000	UD97/399/EC
LET-D.2.1	Export/Import Control	LET 98/4		260000	UD97/399/EC
RUSSIA					
RYS I.1	Seminar on Nuclear Legislation	completed		192000	
RYS II.1	Nuclear Material Control System at MSCO	completed		587000	
RYS II.2	Physical Protecyion at MSCO	RYS 98/7		592000	U11 96-06-19
RYS III.1	Material Control System	completed		497000	U11 96-06-19
					U11 96-06-19
RYS III.2	Equipment for GANs Office NEDD in St.Petersburg	completed		185000	U11 96-06-19
RYS IV.1	Concept for Physical Protection	completed		246000	U11 96-06-19
RYS IV.2				460000	U11 96-06-19
RYS IV.3	Regulations on Physical Protection			238000	
RYS V.1	Export Control Routes	completed		193000	U11 96-06-19
RYS V.2	Seminar on Export/Import Control	completed		111000	U11 96-06-19
RYS B.6.1	Standardised Nuclear Material Control	completed		543000	UD 97/398/EC
RYS D.3.1	Export/Import Control	completed		642000	UD 97/398/EC
1998-99					
LATVIA					
LET 99/1	Legislation Development	completed	511000		SIDA 364/99
LET 98/2	State System for Nuclear Material Accountancy	completed	392000		UD98/1488/EC
LET 99/3	Instruction on Non-proliferation issues	completed	334000		SIDA 364/99
LET 99/3-2			286000		SIDA 364/99
LET 98/4	Project Study on Combating of Illicit Trafficking	completed	630000		UD98/1488/EC

[15] This project allocation table is not complete. Some figures in the first two periods are missing. In the beginning of the co-operation with former Soviet Union and Eastern Europe there was no specific unit within SKI that carried out the projects. Moreover, the project group was changed two times during this early phase of the activities and this might be the reason why it has been hard to collect all the allocation figures. Ever since the mid-90ths the accountancy system at SKI is working well and from then on the figures are correct. The total figures of allocations presented in chapter 2. 4 are, however, correct.

RUSSIA					
RYS 99/1	Basic Nuclear Regulation	completed	689000		SIDA 363/99
RYS 98/2	State Regulations on Non-proliferation matters	completed		329000	UD98/1488/EC
RYS 98/3	Legislation Applied on Excess Material	completed		556000	UD98/1488/EC
RYS 99/4	Equipment for GANs Office in the Ural Region	completed	554000		SIDA 363/99
RYS 99/5	Management and Organisation Development at the GAN NEDD Office	completed	742000		SIDA 363/99
RYS 99/6	Instruction of GAN Inspectors		659000		SIDA 363/99
RYS 98/7	Physical Protection of Nuclear Fuel at MSCO	completed		1068000	UD98/1488/EC
RYS 98/8	Physical Protection at the Nuclear Submarine Shipyards at Severodvinsk			960000	UD98/1488/EC
RYS 99/9	Registration and Control System for the Navy	completed	601000		SIDA 363/99
RYS 98/10	Measures for Combating Illicit Trafficking during Transports			735000	UD98/1488/EC
RYS Y2K	Solving the Y2K Problem for the GAN Tele-communication System	completed	468000		SIDA 607/99
RYS extra			10000		
2000-2001					
LATVIA	Support for Establishing of Nuclear Authority				
LET 2000/1	Improvement of Border Control		1 620 600		SIDA 128/01
LET 2001/2			347 640		SIDA 128/01
LET 2003/3	Physical Protection at the waste Depository, Radones	completed	740 400		SIDA 128/01
RUSSIA					
RYS 2000/1	Basic Nuclear Regulation	completed	511 400		SIDA 47/01
RYS 2000/2	Physical Protection Improvement at MSCO	completed	2 308 850		47/01
RYS 2000/3	Organisational and management Development at Gosatomnadzor	completed	1 292 700		47/01
RYS 2000/4	Training of Inspectors for CVD Equipment	completed	1 188 950		47/01
RYS 2000/5	Physical Protection Requirements vs. Illicit Trafficking	completed	334 850		47/01
RYS 2000/6	Physical protection improvement at GAN Ural Office	completed	651 900		47/01
RYS 2000/7	Information System Development at GAN Ural Office	on-going	903 300		47/01
RYS 2000/8	Physical Protection Improvement at Zvezdochka	on-going	320 000		47/01
RYS 2000/9	Physical Proetction Improvement for Transport at Izotop Enterprose				47/01
RYS 2000/10	Development of Co-operation with Minatom	completed	355 770		47/01
RYS 2000/11	Physical protection improvement at GAN Moscow Office	completed	287 530		47/01
2002-2004	Physical Protection at Gan Office, Moscow				

RUSSIA				
RYS 2002/1	Physical Protection Systemd for Nuclear Icebreakers Yamal and Arktika, MsCO	on-going	3 282 000 1 150 200	SIDA 154/02 47/01
RYS 2002/2	Establishment of Physical Protection at Andreyeva Bay	on-going		
RYS 2002/3	Physical Protection for Nuclear Fuel at Ship Repair	on-going	976 000	SIDA 411/02
	Yard NERPA		3 580 800	SIDA 411/02
RYS 2002/4	Pilot Study on Programme for elimination of HEU	on-going	565 100	SIDA 411/02

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