Background Paper

On the

NTI Uranium Policy

Department of Lands and Resources
Nunavut Tunngavik Incorporated
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Preface

NTI has prepared a *Policy Concerning Uranium Mining in Nunavut*—the *Uranium Policy*. This paper is intended to provide the reader of the *Uranium Policy* with additional background information beyond that presented in the policy document. The topics briefly cover many aspects of uranium mining and the nuclear industry in general. Although the topics are organized in the same order as topics are presented in the *Uranium Policy*, there is not an exact link between the headings in the two documents.

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1 Introduction to the Uranium Policy

Nunavut has excellent potential to host economic uranium deposits and, with the recent increase in the price of uranium, considerable exploration activity for uranium and the acquisition of mineral rights is taking place. This represents both an opportunity and—for some people—a source of concern. Some of these concerns were expressed during the review of the 1989 proposal to mine the Kiggavik-Sissons uranium deposit west of Baker Lake. The purpose of the Uranium Policy is to clearly establish and set out NTI's position on uranium mining in Nunavut, with particular emphasis on IOL.

1.1 Lands and Minerals in Nunavut

Under the Nunavut Land Claims Agreement (NLCA), Inuit—through the Regional Inuit Associations (RIAs)—hold title to 356,000 square kilometres of land, called Inuit Owned Lands, or IOL. The IOL on which the Crown owns the minerals (about 98% of Nunavut and 90% of IOL) is referred to as "Surface IOL". The RIAs administer these lands and provide access through the issuance of Land Use Licences and Commercial Leases. The IOL for which NTI holds title to the minerals—the remaining 38,000 square kilometres, or 2% of Nunavut—is referred to as "Subsurface IOL". NTI administers mineral rights on Subsurface IOL (except for rights grandfathered under the CMR) through the issuance of Exploration Agreements, under which the holder has the right to obtain a Production Lease for the purposes of mining if certain conditions are met.

An internal NTI/RIA document called The Rules and Procedures for the Management of Inuit Owned Lands (the Rules and Procedures) establish a comprehensive set of directions to guide the land administrations in the management of IOL. The Rules and Procedures do not have any restrictions pertaining strictly to uranium and thorium, either with respect to surface rights or to subsurface rights.

The federal Department of Indian Affairs and Northern Development (INAC) administers the rights to minerals on all Crown land and all Surface IOL through the Canada Mining Regulations (CMR). It also administers rights to those areas of Subsurface IOL for which there were mineral rights under the CMR when the NLCA came into effect. Mineral rights granted or administered under the CMR do not restrict or prohibit the exploration for or mining of uranium.

Some parcels of IOL have potential for the discovery of uranium deposits and at least one (BL-22) has known deposits. Among the reasons that Inuit selected such parcels were the opportunities to obtain the benefits of future uranium mining and to participate in decisions related to the management of this mining. However, under its Exploration Agreements, NTI currently excludes the right to explore for and mine uranium and thorium.

The RIAs issue access rights for the purpose of exploration and mining –including for uranium—to a party that holds mineral rights granted under the CMR. If the holder of the mineral rights is unable to obtain the consent of the RIA, the NLCA provides that the holder may apply to the Nunavut Surface Rights Tribunal for an entry order for its required purpose.

1.2 NTI's Mining Policy Framework

The NLCA and directives such as NTI's by-laws and the Board's *Results Policies* establish the overall direction for NTI. The *Mining Policy* and other policies and resolutions that relate to lands and resources provide a finer level of detail with respect to specific matters. The Rules and Procedures provide operational details for the management of lands and minerals consistent with the policy directives. Taken together, these provide a framework in which the matter of uranium mining must be considered.

It is useful to briefly examine NTI's existing policies regarding mining and how they relate to the *Uranium Policy*. NTI presently has two policies that are relevant to mining—the *Mining Policy*, and the *Water Policy*. NTI and the RIAs are also developing A *Reclamation Policy*[1], which will be completed soon. The *Mining Policy* has as its subject the "development of mineral resources in Nunavut". As such, it deals in a general way with all aspects of mining and presents NTI's position on mining on all lands in Nunavut. It states that "NTI will support and promote the development of mineral resources in Nunavut if there are significant long-term social and economic benefits for the Inuit of Nunavut, and it is consistent with protecting the eco-systemic integrity of the Nunavut Settlement Area".

The *Water Policy* deals primarily with Inuit rights relating to water use on IOL and establishes guidelines for the use of this water. The *Reclamation Policy* will address the reclamation of IOL following a land use operation, including the reclamation of a minesite. Although none of the policies makes a specific reference to uranium exploration and mining, all have statements about mining or land use activities in general that would be applicable to uranium exploration and mining activity.

In addition to these policies—which can be considered the comprehensive treatment of an issue supported by background information and reflecting a series of discussions and/or consultations—NTI may also state a position on an issue by means of a simple resolution of the Board. In some cases, these can be considered to be an interim position pending a more detailed treatment of a topic. NTI has passed two resolutions that relate to uranium mining.

A 1997 resolution indicated opposition to Greenland's consideration of plans to store nuclear waste and other nuclear material from Russia and the USA. The resolution opposed any plans for the storage of nuclear goods or the transportation of such goods in

[1] At this time, the Reclamation Policy has not yet been approved by the Board of Directors.

the Arctic. In 1999, NTI passed a resolution that recognized the economic, social and environmental issues around uranium mining and directed the Department of Lands and Resources to develop a discussion paper concerning uranium mining in Nunavut and for the NTI Executive Members to authorize a committee to create a draft policy concerning uranium mining for presentation to the NTI Board. The resolution lists various aspects of uranium mining and nuclear energy that should be considered in the policy.

It is important to note that none of NTI's by-laws, policies, resolutions, or Rules and Procedures restrict or prohibit uranium exploration and mining on IOL.

NTI does not just represent Inuit on Nunavut issues, but participates in international groups with respect to broader pan-Arctic issues. The Inuit Circumpolar Conference (ICC) is one such organization. At this time, the only specific policy direction that relates to uranium mining in Nunavut is that expressed by two resolutions of the ICC, of which NTI is one of the Canadian representatives.

The first of these, in 1983, indicated the opposition of the ICC to the testing of nuclear weapons and the use of nuclear reactors in the Arctic, as well as to the "exploration and exploitation of uranium, thorium, lithium or other materials related to the nuclear industry". It appears that the 1983 ICC policy was intended to deal mainly with nuclear weapons and is now in need of clarification and updating. Among the ICC members, only Greenland has actually instituted a prohibition on uranium mining. None of the government jurisdictions representing the four Inuit regions in Canada has such a prohibition and the Kivalliq is the only region of Nunavut that is currently subject to uranium-specific requirements established by a land use plan.

A later ICC resolution in 1998 recognized that uranium exploration is already taking place and that significant deposits exist. This resolution limits the concerns about uranium mining to the "potential environmental and social impacts" of uranium mining and appears to suggest that "new technology in mining" may allow mining to be done in such a way as to minimize the concerns and allow Inuit to realize the "potential economic steps forward for Inuit." It appears that the intent of the resolution is to encourage further research on uranium mining so that the environmental and social concerns may be addressed. The policy thus may be seen as opening the door to uranium mining, following a favourable review by the ICC.

In the Implementation section, the *Uranium Policy* states that NTI will encourage the ICC to review, clarify and update its position on uranium mining.

1.3 Developing the Uranium Policy

Need for a Uranium Policy

If NTI has its *Mining Policy* and other policies, one might ask why it needs a separate policy on uranium. The answer is that the *Uranium Policy* addresses specific issues, as follows:

1. The radioactive nature of uranium and associated elements (e.g. radon and radium) require that special measures be followed in order that the health of the workers and the general population is not harmed and no damage is done to the environment.

2. The possible uses of the product of uranium mining—that is, uranium—are a matter of concern to some people and require consideration.

3. The negative public reaction to the 1989 proposal to mine the Kiggavik deposits west of Baker Lake requires that issues related to uranium mining be examined.

4. Uranium exploration is taking place in several areas of Nunavut, including on IOL, and NTI does not have a clear and consistent position on this activity.

5. There are no provisions in the Rules and Procedures that refer specifically to uranium and there are no terms and conditions in the licences and leases that grant surface access to IOL.

Development of the Policy

Preliminary work on the development of an NTI policy on uranium mining was done in the period between 1996 and 1999. In June, 1999, the NTI Board passed a resolution that the NTI Lands Department begin the development of a discussion paper on issues that are relevant to the creation of a comprehensive *Draft Policy Concerning Uranium Mining in Nunavut* (the Uranium Policy). The Board resolution also provided for the formation of a committee to develop the draft policy, which is then to be presented to the Board for its consideration. Some work on the discussion paper was done over the next five years, but it was not until the late summer of 2004 when, due to increased uranium exploration activity in the Kivalliq and Kitikmeot regions, work on the discussion paper was taken up in earnest. A draft discussion paper with proposed policy elements was completed in March 2005 and presented to NTI and RIA staff and executive members for review.

Discussion and consultation among NTI and RIA staff and members resulted in the development of a Draft Consultation Document and Draft Uranium Policy, prepared by the Lands and Resources Department and presented to the Land Policy Advisory Committee (LPAC) members in March 2006. These documents were then distributed to several Nunavut organizations for their review. Comments and suggestions for

improvement from this process were incorporated into the second draft of the policy document and into the Consultation Document, which became this paper.

1.4 Policy Considerations

In trying to establish a general position on uranium mining, NTI was required to choose between two options as follows:

1. NTI would continue to exclude the rights to explore for and mine uranium on subsurface IOL in the agreements it makes with companies. To be consistent, NTI would also attempt to restrict or prohibit uranium exploration and mining on Surface IOL and possibly even on Crown land.

2. NTI would remove the restrictions that apply to Subsurface IOL and would not oppose uranium mining on IOL or Crown lands. In order to ensure that exploration and mining are done in a way that will provide the greatest possible benefit to Inuit with the least possible negative impact, NTI would recommend or require that certain measures be taken.

If NTI believed that uranium mining could not be carried out in a way that would protect the health of the mine workers and residents of nearby communities as well as the environment, it would be inclined to choose the first option. Concerns about the use of nuclear power or the possibility that Nunavut uranium would end up in nuclear weapons might also result in this choice. Many people still have concerns about nuclear reactors and the proliferation of nuclear weapons, although as discussed in this paper, much has been done to deal with these concerns. With respect to the issues related to the actual exploration and mining operations, NTI has seen that the mining industry is highly regulated and can be carried out in a way that protects people and the environment. The result of this is that many of the concerns expressed by opponents of the Kiggavik-Sissons project with respect to the environmental assessment process, regulatory matters, and issues related to impacts and benefits of exploration and mining operations have been substantially addressed or can be addressed as set out in the Uranium Policy.

An approach based on the first option would present NTI with several other difficulties:

1. Uranium is a common element that occurs in many types of rocks and minerals. Thus, at least small amounts of uranium would likely be mined in any mining operation for other commodities. An attempt to restrict the mining of uranium, but not other substances, raises the question as to what amount of uranium would be allowed in the mining of those substances. An arbitrary limit as to what is a uranium mine and what is not would need to be established.

2. NTI holds the mineral title only to Subsurface IOL, which makes up less than 2% of the land in Nunavut. While Inuit (through the RIAs) are the owners of Surface IOL, the Crown owns the minerals, which includes uranium. Mineral rights

granted under the CMR include the right to explore for and mine uranium. Thus, NTI would be able to enforce its prohibition only on 2% of Nunavut, while exploration and mining would be allowed on the remaining 98%, subject to the regulatory requirements.

3. An attempt to put an arbitrary prohibition on uranium mining on Subsurface IOL would undercut the environmental and socio-economic assessment process—a key element of the resource management regime in Nunavut—in assessing the potential impacts and benefits of a mining project proposal. It would eliminate the possibility of a proponent demonstrating that it could mine uranium with minimal impacts while producing important benefits. An NTI prohibition could also be at odds with a land use plan or with the sentiment expressed by the people of a community or region who may well decide that they want a uranium mining project to proceed.

4. In the land selection process for the NLCA, Inuit selected some parcels of land with identified deposits of uranium or with potential for the discovery of uranium deposits. Inuit would not realize the potential of these parcels through royalties and socio-economic benefits, if uranium mining were not allowed.

In addition to the above reasons why it would be difficult or unattractive for NTI to oppose uranium mining, the following are reasons why NTI would choose the second option:

1. The use of nuclear energy to produce electricity— "nuclear power" —can play an important role in the mix of solutions to reduce the global emission of greenhouse gases and help avoid climate change.

2. Uranium mined in Nunavut may make a contribution to nuclear power and the reduction of greenhouse gases.

3. Nunavut has excellent potential for uranium deposits. The exploration for and mining of these deposits has the potential to bring significant economic benefits to Inuit.

4. Uranium mining can be carried out in a way that minimizes the potential impacts on people and the environment.

5. Other needs and concerns with respect to uranium mining can be addressed as set out in this policy.

1.5 Scope of the Policy

The Uranium Policy is primarily concerned with NTI's position on uranium exploration and mining in Nunavut, with particular emphasis on Inuit Owned Lands. Thus it deals

with the potential benefits and impacts of these activities and the participation of local people in the activities and in decision-making. However, because the main use of uranium is as a source of energy—for both peaceful and military purposes—the NTI Board has required that the policy also address the question of the end use of any uranium produced in Nunavut. For this reason, the policy deals with the use of uranium as a fuel for nuclear reactors that provide a significant part of the electricity used around the globe. The Policy also deals with measures that are taken to ensure that this uranium is not diverted for use in nuclear weapons. Thus the policy expresses NTI's support for the responsible and peaceful uses of nuclear energy and describes NTI's position on the way in which uranium mining should be carried out. It does not deal with the possible use of nuclear reactors in Nunavut. Nor does it deal with the possible disposal of nuclear fuel waste in Nunavut, an option that has already been decided against by the NTI Board.

Although the mining of thorium in Nunavut is not being considered—and may never be—some NTI and ICC statements include a reference to thorium along with uranium. In the policy context, unless the meaning indicates otherwise, reference to "uranium" can be understood to include "thorium". (Thorium is briefly described in the following section.)

2 Uranium and Radioactivity

2.1 Uranium and Thorium

Uranium is a metal and one of the heaviest elements. Its most distinctive physical property is its radioactivity, which contributes largely to the natural background radiation of the earth. Uranium is one of the most abundant elements found in the earth's crust. It can be found almost everywhere in soil, rocks, rivers, and oceans. Traces of uranium are even found in food and human tissue. Uranium is more abundant than gold and silver and has about the same abundance as lead. It can take many chemical forms, but in nature it is most commonly found as an oxide (that is, in combination with oxygen)—U_3O_8.

Concentrations of uranium vary according to the substances with which it is mixed and according to the places where it is found. For example, when uranium is found in granite, a very common rock, there are approximately four parts of uranium per million parts of granite, i.e. 4 ppm. Concentrations of uranium that are economic to mine are considered ore. The most common ore mineral is uraninite, sometimes in the form known as pitchblende. In a low-grade orebody (e.g. 0.1% uranium) the concentration is 1,000 ppm uranium and in a very high-grade orebody (e.g. 20% uranium) the concentration is 200,000 ppm uranium. Uranium deposits are found all over the world, but the only high-grade deposits being mined are located in Canada.

Naturally occurring uranium is made up primarily of two different types of uranium atoms, or isotopes. Approximately 99.3% is uranium 238 (U-238), and 0.7% is uranium 235 (U-235). Under certain conditions the nucleus of U-235 can be made to split, or fission, in a nuclear reactor, producing large amounts of energy in the process. Because of this property, U-235 plays an important role in the generation of nuclear power.

Because some existing policy statements mention thorium, it is useful to briefly describe it. Thorium is a naturally occurring, slightly radioactive metal. It is found in small amounts in most rocks and soils, where it is about three times more abundant than uranium and there are substantial deposits in several countries. It has many industrial applications, either as a pure metal or in its oxide form, and like uranium, can be used as fuel in a nuclear reactor. Much development work is still required before the thorium fuel cycle can be commercialized. India has particularly large reserves of thorium and has planned its nuclear power program to eventually use it exclusively, phasing out uranium. There is currently no thorium production in Canada, nor, to our knowledge, is any planned.

2.2 Radioactivity and Radiation

We are all familiar with some forms of radiation, such as visible light, microwaves, or radio waves. These are known as non-ionizing radiation. In this paper, we are concerned

with ionizing radiation, which has the potential to cause damage in living tissue—we will refer to this simply as "radiation". The earth and all living things on it are constantly bombarded by radiation from space, similar to a steady drizzle of rain. This cosmic radiation varies in different parts of the world due to differences in elevation and the effects of the earth's magnetic field.

All matter is composed of atoms and many atoms are unstable; that is, they are in a constant process of rearranging themselves. When the nucleus of an atom attempts to become more stable, it releases energy—known as radiation. Once this happens the original atom changes into a new atom. The spontaneous change in the nucleus of an unstable atom that results in the emission of radiation is called radioactivity; this process of change is also often referred to as the "decay" of atoms. The types of radiation associated with radioactivity are alpha particles, beta particles and gamma rays. (These types of radiation, as well as the release of neutron particles, are also produced by fission in a nuclear reactor.)

Radioactive material is found throughout nature and continuously releases radiation. This "background radiation" occurs naturally in the soil, water, and vegetation. Low levels of uranium, thorium, and their decay products are found everywhere. Some of these materials are ingested by people with food and water, while others, such as radon, are inhaled. The dose from earth-based sources varies in different parts of the world. All of these kinds of radiation are, at low levels, naturally part of our environment. We are also frequently exposed to low levels of man-made radiation in X-rays—such as, dental and chest X-rays—and from consumer products, such as tobacco (polonium-210), building materials and combustible fuels (gas, coal, etc.).

While exposure to background radiation and the man-made sources described in the preceding paragraph do not appear to be harmful at low doses, exposure to more intense levels of radiation can cause cancer and birth defects and at high levels can cause radiation poisoning and death. Fortunately, such exposure to moderate to high doses of radiation rarely occurs due to the safety precautions employed at nuclear facilities and the strict regulation of all aspects of the nuclear energy industry and all uses of nuclear substances.

Public health studies do not indicate an increased occurrence of cancer for low radiation doses below 100 millisievert (mSv). However, the conservative approach is to assume that any amount of radiation may pose some risk. The 2005 report of the Chernobyl Forum (p. 12) states that while the annual natural background doses of humans worldwide average 2.4 mSv, the typical range is 1 – 10 mSv. The report notes that lifetime doses due to natural radiation would thus be about 100 – 700 mSv. The Canadian Nuclear Safety Commission (CNSC) limit for nuclear energy workers is a maximum of 50 millisieverts (mSv) per year or 100 mSv over five years.

3 Nuclear Power

3.1 Background on Nuclear Power

3.1.1 The Need for Electricity

As of 2004, the generation of electricity made up 16.2% of the world total final energy consumption. The electricity comes from the following sources: 39.8% from coal, 16.1% from hydro, 15.7% from nuclear, 19.6% from natural gas, 6.7% from oil and 2.1% from other sources. [2]

It is estimated that by 2050, the earth's population will increase by 50% from 2000 levels to around 9 billion people. Over 90% of world population growth in the foreseeable future will be in the less developed countries. The increase in global population coupled with the desire of people in less developed countries to improve their standard of living will result in a significant increase in total energy consumption, including electricity. During this 50-year period, it is estimated that humanity will require more energy than the total used in all previous history. At the same time, there are increasing concerns about the environmental impact of energy use and indications that not even the present use is environmentally sustainable.

Much of the required energy will continue to come from coal, oil and natural gas, which are referred to as "fossil fuels" because they are derived from plants and animals that lived millions of years ago. However, many experts estimate that global production of oil has either peaked or is about to and it is likely that shortages will continue to keep prices high. Although global production of natural gas is not predicted to peak for several decades, prices have already increased substantially in recent years and remaining resources of oil and gas may become too valuable for other purposes—such as for transport and for use in the petrochemical industry—to be used for generating electricity. In addition to the looming shortages of oil and gas, the burning of these substances to produce electricity has many drawbacks. Although, the world still has huge supplies of coal, a way must be found to greatly reduce the greenhouse gas emissions and pollution that result from its use. The capture and storage of the emissions is being proposed as a solution, but this will require a commitment to incur the vast expenditures required to perfect the technology and to install the facilities. For these reasons, it is likely that nuclear power will continue to play an important role in the global production of electricity.

It is important to stress that no one is currently proposing that nuclear power be used in Nunavut. This background section on nuclear power is presented so that readers will have a better idea of how uranium mined in Nunavut would be used in other parts of Canada and in other countries to produce electricity.

[2] Key World Energy Statistics 2006; International Energy Agency.

3.1.2 Using Nuclear Energy to Produce Electricity

Electricity is produced in nuclear reactors[3] through the process of nuclear fission (section 2.1). This reaction releases a large amount of heat, which is used to generate steam, which turns turbines, thereby generating electricity. We refer to this electricity as nuclear power.

The term "nuclear fuel cycle" is used to describe the whole cycle by which uranium is used to produce electricity. It is comprised of the initial stages involving exploration, mining, and milling; the intermediate stages of refining, conversion and fuel fabrication; and the final stages involving electricity generation at a nuclear reactor and storage and disposal of the nuclear fuel waste. The *Uranium Policy* focuses on the initial stages of the cycle involving exploration for uranium deposits and the mining and milling of the ore in Nunavut.

Currently in Canada, all mining of uranium is done in Saskatchewan, the intermediate stages are done in several plants in Ontario, and electricity generation is carried out in nuclear reactors in Ontario, Quebec and New Brunswick. Nuclear reactors are always located in areas which have a large population and high energy requirements, such as southern Ontario, which gets about half its electricity from nuclear reactors.

Although some of the uranium fuel used in the reactors comes from the recycling of other nuclear materials, about 60% of it currently comes from mined uranium. Canada and Australia are the world's biggest suppliers of mined uranium, with several other countries making significant contributions. Canada is the world's leading producer of mined uranium, all of it from Saskatchewan mines. This production accounted for 28% of world production in 2005, a share that will increase significantly when the Cigar Lake mine comes into production in about 2009.

The uranium and nuclear industries are very important to the Canadian economy and stand to benefit from the increased global demand for electricity. With 18 operating nuclear reactors[4] and more planned for Ontario, Canada is also a major consumer of uranium.

3.1.3 Concerns about Nuclear Power

Concerns about nuclear energy typically include the safety of the reactors, the economics of producing electricity, the disposal of nuclear waste, and the possible diversion of uranium for use in building nuclear weapons. We will examine each of these briefly.

[3] Although there are many kinds of reactors, our discussion is based on the CANDU reactors used in Canada and a few other countries.

[4] Ontario also has two reactors at the Pickering A station that are out of service and two at the Bruce A station that are under refurbishment and expected to be online in 2009 and 2010.

Safety

Radioactivity and radiation are a serious concern to many people and lie at the root of the opposition to nuclear energy. This is in part because of the fact that although the risk of a serious accident is very low, the consequences of such an accident may be enormous. Thus although the nuclear industry has an excellent safety record in Canada and worldwide compared to the other energy industries—there being only two significant accidents in more than 10,000 reactor-years of commercial operation of nuclear power reactors in 32 countries—it is those two accidents that many people think of when the question of nuclear safety is discussed.

The accident at the Chernobyl nuclear power plant in 1986 was the most severe in the history of the nuclear power industry, causing a huge release of radionuclides over large areas of Europe. The accident was the product of a flawed Soviet reactor design, minimal operator training, and a series of flagrant deliberate violations of safe operating procedures. It was the only accident in the history of commercial nuclear power where radiation-related fatalities occurred. In 2005, several United Nations agencies and representatives of Belarus, Ukraine and the Russian Federation, the three countries most affected, participated in a review of the disaster and its health, environmental and socio-economic consequences. The following comments are taken from a report produced by the Chernobyl Forum[5].

Emergency workers and onsite personnel, about 1000 people, received the highest radiation doses and some (at least 28) of them died as a result. In addition, projections by an international expert group projected that, "among the most exposed populations, total cancer mortality might increase by up to a few per cent owing to Chernobyl related radiation exposure." A high incidence of childhood thyroid cancer caused by radioactive iodine fallout was one of the main health impacts of the accident, accounting for around 4000 thyroid cancer cases by 2002.

An area of approximately 200,000 square kilometres in Europe was contaminated with radiocaesium and over 335,000 persons had to be relocated. The report notes that since 1986, "radiation levels in the affected environments have declined several hundred fold because of natural processes and countermeasures. Therefore, the majority of the 'contaminated' territories are now safe for settlement and economic activity. However, in the Chernobyl Exclusion Zone and in certain limited areas some restrictions on land-use will need to be retained for decades to come."

According to a report by IAEA, the Chernobyl accident "can be said to have flowed from deficient safety culture, not only at the Chernobyl plant, but throughout the Soviet design, operating and regulatory organizations for nuclear power that existed at the time."[6] A

[5] The Chernobyl Forum: 2003-2005: Chernobyl's Legacy: Health, Environmental and Socio-economic Impacts and Recommendations to the Governments of Belarus, the Russian Federation and Ukraine; second revised edition; 2005. (see www.iaea.org).

[6] IAEA's International Nuclear Safety Advisory Group (INSAG), The Chernobyl Accident: Updating of INSAG-1 (INSAG-7, 1992, p.24).

recent analysis[7] says that "the safety of all Soviet-designed reactors has improved vastly. This is due largely to the development of a culture of safety encouraged by increased collaboration between East and West, and substantial investment in improving the reactors." Perhaps this is the major positive outcome of the accident.

The Three Mile Island accident happened in a nuclear reactor near Harrisburg, Pennsylvania. It was due to a combination of equipment failure, inadequately designed instrumentation, and the inability of plant operators to understand the reactor's condition. In contrast to the Chernobyl accident, there were no injuries, deaths or discernable direct health or environmental effects as a result of the Three Mile Island accident.

Economics

With respect to the economics of nuclear power, although the initial costs of building nuclear reactors is high compared to that for other methods of electricity generation, the operating costs tend to be much lower. The overall cost of producing nuclear energy is comparable to or lower than the cost of producing electricity by other means, especially if all the costs of the environmental impacts of the energy sources—including a cost for the emission of greenhouse gases—are considered. Furthermore, new reactor designs incorporate new safety features to ensure that accidents do not happen as well as significantly lower construction and operating costs compared to current operating models.

Nuclear Fuel Waste Disposal and Nuclear Proliferation

The disposal of the waste from a nuclear reactor is considered by some people to be the major drawback of the use of nuclear power. This issue is discussed in section 3.4.

Many people are also concerned about the possibility that uranium intended for use in nuclear reactors may be diverted to the production of nuclear weapons or that nuclear fuel waste from the reactors may be used for this purpose. In section 3.5, we examine the steps that Canada and the international community have taken to prevent this from happening.

For some people the concerns described above are serious enough that they believe that the use of nuclear energy to generate electricity should not be continued, and some European countries have taken steps to end their nuclear power programs. On the other side, however, many countries are convinced of the benefits of nuclear power and are building or planning new reactors.

[7] World Nuclear Association website.

3.2 Future for Nuclear Power and Uranium

3.2.1 Outlook for Nuclear Power

According to a report of the International Atomic Energy Agency[8], there were 441 nuclear power plants in operation as of December 31, 2005 and 27 under construction, of which 16 are in Asia, which is the centre of expansion. These plants provided about 16% of the world's electricity. Some recent analyses of the future use of nuclear power predict that there will be a large increase in the use of nuclear power over the next few decades and the rest of this century. According to the Nuclear Energy Institute, 77 new reactors are currently planned or proposed.

A recent book[9] that examines all energy options and makes the case for the sustainable use of fossil fuels predicts nearly a five-fold expansion of nuclear power by the end of the century—to 2000 plants worldwide, with most of the expansion in the latter half of the century. There are plans for a significant expansion of nuclear power in many countries, including India, China, Japan, the Republic of Korea and the Russian Federation. For example, India now has 15 reactors in operation and eight under construction. It intends to have 31 plants by 2020 and many more by 2050. China currently has nine operating reactors and three under construction. It plans to build 30 new reactors by 2020. Japan plans to add ten units by 2014 and double its nuclear capacity by 2050. Plans have also been announced for new reactors in several other countries including Canada, France, Finland, and the United States. Australia, which has no reactors, is currently reviewing the possibility of nuclear power, and some members of the European Union (e.g. the Netherlands) appear to be changing their positions on phasing out nuclear power.

This renaissance in nuclear power is presumably a reflection of how many governments around the world have weighed both the negative and positive aspects of nuclear power and decided in favour of building new plants and extending the active lives of existing ones. In Canada recently, Ontario and New Brunswick have announced plans to refurbish existing reactors and Ontario has plans to build new units. This will put increasing demand for mined uranium as the primary source of fuel for nuclear reactors.

3.2.2 Outlook for Uranium

The market for uranium has historically been subject to very large price fluctuations. From a recent low of just over $7 at the beginning of 2001, the spot price[10] of uranium has risen to around $60 currently. Many analysts expect the price to stay high or increase over the next several years as global demand for energy sources, especially for electricity, increases and secondary sources of uranium are depleted.

[8] Nuclear Technology Review 2006; report by the Director General of the International Atomic Energy Agency; July 2006.
[9] Jaccard, Mark; Sustainable Fossil Fuels, the Unusual Suspects in the Quest for Clean and Enduring Energy; Cambridge University Press; 2005.
[10] Although most uranium is sold under long-term contracts, some is also sold on the "spot market".

While the estimates of the projected future world-wide demand for uranium for nuclear power generation vary widely, it appears that all projections see at least some increase in the demand. A paper by the OECD/IAEA[11] projects an increase in "world reactor-related uranium requirements" of between 22% and 50% by 2025. Much of this increase is projected to take place in the "East Asia" region and the "Central, Eastern and South East Europe" region. The paper notes that "secondary sources [of uranium] are expected to decline in importance, particularly after 2015" and that reactor requirements will have to be met by the "expansion of existing production capability together with the development of additional production centres or the introduction of alternate fuel cycles"[12].

The paper noted that "there are great uncertainties in these projections as there is ongoing debate on the role that nuclear energy will play in meeting future energy requirements." After describing some key factors that will influence future nuclear energy capacity—base load electricity demand, public acceptance and economic competitiveness—the paper states: "Concerns about longer-term security of supply of fossil fuels and the extent to which nuclear energy is seen beneficial in meeting greenhouse gas reduction targets could contribute to even greater projected growth in uranium demand over the long-term."

To summarize, many recent reports indicate that nuclear power will continue to provide an important part of the world's electricity. This demand has driven uranium prices to the current high levels and may drive them higher. In turn, the high uranium prices have sparked a huge increase in exploration for uranium deposits. This will provide opportunities for those places throughout the world—such as Nunavut—that have known deposits of uranium or the geological conditions that suggest the potential for the discovery of new deposits.

3.3 Nuclear Power and Climate Change

Nuclear energy has the capability to produce the base load electricity required to provide a constant and reliable source of electricity to help satisfy the increasing world demand, while avoiding the negative impacts of electricity produced from fossil fuels.

One of the most important positive aspects of nuclear power is the fact that the production of electricity by this means does not emit carbon dioxide to the atmosphere. Thus it does not contribute to global warming and climate change. Of course, some carbon dioxide is emitted during the various activities related to finding, mining and processing uranium ore, chemically refining and converting the raw material and manufacturing fuel bundles and, of course, in building and operating (and eventually decommissioning) the nuclear power plants and storing and disposing of the nuclear fuel waste. However, a study by the IAEA has shown that the total carbon dioxide emissions

[11] Uranium 2005 – Resources, Production and Demand; 2006; Organization for Economic Co-Operation and Development [OECD] and International Atomic Energy Agency [IAEA]; Executive Summary.
[12] This refers to using fuels such as thorium and plutonium in place of uranium.

from the whole life cycle of nuclear power are much lower than that for electricity generated by the combustion of fossil fuels, such as coal and natural gas, and perhaps surprisingly, may even be lower than that for renewable energy, such as hydro, solar and wind. This fact is a result of the immense amount of energy released during the process of nuclear fission.

The burning of fossil fuels results in pollution and the emission of greenhouse gases that are a major contributor to global warming and climate change. Gases such as carbon dioxide and carbon monoxide are called "greenhouse gases" because they concentrate in the earth's atmosphere, where, like the glass in a greenhouse, they help to prevent heat from escaping into space. The increasing concentration of greenhouse gases in the atmosphere is raising the earth's temperature creating a phenomenon known as global warming. This warming will cause many aspects of the climate to change. As the effects of climate change begin to threaten the sustainability of our eco-system, particularly in northern Canada, it will be increasingly important to greatly reduce fossil fuel emissions throughout the world wherever possible.

The recently released Stern review on the economics of climate change[13] shows several models (including from the IEA; page 235) that include nuclear power in the range of solutions that can achieve important reductions in the emission of greenhouse gases into the atmosphere and help avoid potentially catastrophic climate changes. The other approaches include energy efficiency, greatly expanded use of renewable forms of energy and a means of capturing carbon dioxide from the burning of fossil fuels and storing it underground.

Each of these approaches has challenges. The use of renewable energy sources, such as solar and wind, while desirable alternatives to fossil fuels, have limitations because their energy is diffuse (or spread out) and they are not constant sources. Capturing carbon dioxide and storing it underground is theoretically an excellent solution; however, it has not been demonstrated that this can be done on a large scale at an acceptable cost. As mentioned elsewhere, concerns about the increasing use of nuclear power focus mainly on the challenges of waste disposal and nuclear proliferation; the front-end cost of building the reactors is also another concern. Greater energy efficiency—such as more energy-efficient automobiles and houses—can make up a significant portion of the required reduction in greenhouse gases but, according to the Stern review, all of the other approaches will also be needed to some extent.

Producing electricity by nuclear energy in place of fossil fuels in southern Canada and elsewhere in the world can contribute to lower greenhouse gas emissions and, combined with other measures, can help to slow the onslaught of climate change. Uranium mined in Nunavut can contribute to the production of this nuclear power.

[13] Stern Review: the economics of climate change; HM Treasury; 2006; see http://www.hm-treasury.gov.uk

3.4 Disposal of Nuclear Waste on IOL

The lack of a method of disposing of the waste from nuclear reactors—referred to as "nuclear fuel waste"—is often cited as a major drawback of nuclear power. There is currently no Canadian facility for the long-term storage and disposal of such wastes. However, the matter of this storage and ultimate disposal has been studied for many years in Canada and in other countries that have the same requirement.

A comprehensive study on the disposal of nuclear fuel, released by the Nuclear Waste Management Organization (NWMO) in November 2005, recommends an approach in which storage at nuclear reactor sites, centralized storage, and the placing of used fuel in disposal vaults deep in the granite rock of the Canadian Shield—referred to as Deep Geological Disposal—be combined with a management system called Adaptive Phased Management for the future disposal of nuclear fuel waste. If the Government gives the go-ahead, the NWMO will seek a willing community to host the central facilities. Given issues related to the transportation of the waste material, it is likely that the disposal site would be located in Ontario, where most of the waste is produced.

In a 1997 Board resolution, NTI expressed its opposition to the disposal of nuclear fuel waste in the Arctic. The *Uranium Policy* clarifies NTI's position by stating that it would allow only radioactive waste generated by uranium exploration and mining to be stored and disposed of on IOL. This would include tailings and special waste rock as well as low-level radioactive waste, such as equipment and materials used in the mining operation.

3.5 Use of Uranium for Peaceful Purposes Only

Many people are concerned about the potential for exported uranium to be used in the production of nuclear weapons. Canada, one of the first countries with nuclear capabilities to reject the use of nuclear weapons, has had a long-standing policy of preventing the spread of nuclear weapons and encouraging only peaceful uses of nuclear energy. It has entered into international treaties—such as the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)—and bilateral agreements monitored by the International Atomic Energy Agency (IAEA), the Canadian Nuclear Safety Commission (CNSC) and the Department of Foreign Affairs and International Trade (DFAIT) to prevent uranium exported to other countries from enhancing or contributing to nuclear weapons.

The NPT, signed in 1968, prohibits the development of nuclear weapons and/or the transfer of nuclear weapons technology to other states. Canada is an original signatory to the NPT and has centered its own nuclear non-proliferation policy on the treaty's provisions. At present, 187 states are party to the NPT, including all five declared Nuclear Weapons States. Over 550 facilities and several hundred other locations are subject to regular inspection. The NPT establishes commitments to prevent the spread

of nuclear weapons, promote cooperation in the peaceful uses of nuclear energy and achieve nuclear disarmament.

Bilateral trade agreements contain stringent regulations on the use of uranium exported from Canada. For example, nuclear substance possession licences issued in Canada stipulate limitations that are placed on the licensee importing and exporting the nuclear substances which they are authorized to possess.

The Export and Import Permits Act and the NSCA list substances that require authorization before they can be legally exported from Canada. These lists and regulations are administered by DFAIT through the Export and Import Permits Act and by the CNSC under the Nuclear Safety & Control Act (NSCA).

The CNSC is responsible for regulating domestic nuclear facilities and is also charged with administering the country's safeguards agreement. It was set up in 2000 under the new NSCA and its regulations, as successor to the Atomic Energy Control Board which had served since 1946. The following descriptions of CNSC activities are from the CNSC website:

> "The CNSC is responsible for implementing Canada's nuclear non-proliferation policy which contains two broad, long-standing objectives:
>
> 1. to assure Canadians and the international community that Canada's nuclear exports do not contribute to the development of nuclear weapons or other nuclear explosive devices; and
> 2. to promote a more effective and comprehensive international nuclear non-proliferation regime."

Further, the CNSC "through the [NSCA] and corresponding regulations, implements Canada's NPT commitments: not to receive, manufacture or acquire nuclear weapons or other nuclear explosive devices; to accept [IAEA] safeguards on all nuclear material in peaceful uses in Canada; and to ensure that Canada's nuclear exports to non-nuclear-weapon states are subject to IAEA safeguards."

At the global level, the IAEA was established by unanimous resolution of the United Nations in 1957 to help nations develop nuclear energy for peaceful purposes. The IAEA has a complex system of approaches and measures—commonly referred to as "safeguards"—in place to ensure that countries do not use uranium for the development of nuclear weapons. These include:

- Material accountability: tracking all inward and outward transfers and the flow of materials in any nuclear facility. This includes sampling and analysis of nuclear material, on-site inspections, review and verification of operating records.
- Physical security: restricting access to nuclear materials at the site of use.

- Containment and Surveillance – use of seals, automatic cameras and other instruments to detect unreported movement or tampering with nuclear materials, as well as spot checks on-site.[14]

In summary, international treaties and bilateral agreements monitored by the IAEA, the CNSC and the DFAIT ensure that uranium exported to other countries does not enhance or contribute to nuclear weapons.

3.6 Summary

In the preceding sections, we looked at some aspects of the nuclear industry. It is important to remember that the discussion of many of the aspects described—such as the operation of nuclear reactors and the disposal of the waste from these reactors—is to provide the reader with background information on how uranium mined in Nunavut would be used to produce electricity. The siting of nuclear reactors and the disposal of nuclear waste are *not* being proposed for Nunavut. The *Uranium Policy* is mainly about *uranium exploration and mining*. Now we will look more closely at how exploration for uranium deposits is done and how the deposits are mined and the ore milled (processed).

[14] "Safeguards to Prevent Nuclear Proliferation", World Nuclear Association, November 2003.

4 Uranium Exploration and Mining

4.1 History of Uranium Mining in Canada

4.1.1 The Early Years

The first uranium mine in Canada began operations in 1933 at the Port Radium pitchblende deposit along the east shore of Great Bear Lake in the Northwest Territories. At that time, as uranium had little or no commercial value itself, the ore was mined for the extraction of its radium content, used primarily for medical treatments and luminous dials. The Port Radium Mine began producing uranium in 1942 and this continued until the mine was closed in 1960.

The first exploration boom for uranium began in 1947, when the ban on private exploration of radioactive materials was lifted. In 1949, in what was to be the fore-runner of the Saskatchewan uranium industry, development of a uranium mine in the Beaverlodge area was begun. Shortly after that, in 1953, uranium was discovered in the Elliott Lake area of Ontario. The boom ended in 1959 and the uranium industry went into a long period of decline.

The dangers of exposure to uranium and its daughter products were not fully appreciated in the early years of mining and the regulations permitted far higher levels of exposure than they do now. As a result, workers were exposed to unsafe doses of radiation and there is evidence that some subsequently developed cancer as a result of this exposure.

There were also significant environmental impacts associated with past mining operations in Ontario (especially Elliott Lake), Saskatchewan (especially Beaverlodge), and the NWT (Port Radium). These operations were carried out under less stringent regulations in an operating environment that placed less emphasis on safety and protection of the environment, and at a time when potential dangers of radioactivity were not fully appreciated.

4.1.2 The Modern Era

In the late 1960s, the international market for uranium was revived by the development and expansion of nuclear power. The first large-scale Canadian commercial nuclear power station, at Pickering, Ontario, began operations in 1971. In the 1970s, the price of uranium reached more than $43 U.S. per pound.

In Saskatchewan, the rising uranium prices in the late 1960s and 1970s brought a revival of exploration, resulting in the discovery of a number of moderate- and high-grade deposits of a new type—the unconformity-associated type. The Rabbit Lake, Cluff Lake and Key Lake mines began production in the period from 1975 to 1983. Exploration expenditures in the region peaked during this period, resulting in the discoveries of many

other deposits, including Midwest (1978), McClean Lake (1979), and Cigar Lake (1983). Production of uranium peaked in the early 1980s, however, and prices continued to decline throughout the next several years, eventually falling to the $7 range in January 2001 due to the availability of uranium from the dismantling of Russian weapons.

Shortly after its formation in 1988[15], Cameco discovered the very high-grade McArthur River deposit, which went into production in 1999 after a lengthy review process. Currently, Rabbit Lake, McClean Lake and McArthur River are the only producing uranium mines in Canada. The price of uranium has now climbed to around $60 per pound, sparking a global uranium exploration rush.

4.2 Uranium in Nunavut

4.2.1 Overview

In Nunavut, a significant amount of exploration was done during the 1970s and early 1980s. Large parts of the Thelon Basin (Figure 1) outside the Thelon Game Sanctuary, and parts[16] of the Hornby Bay Basin, were staked and explored by more than a dozen major exploration companies. In the early 1970s, Urangesellschaft Canada Limited (UG) discovered an unconformity-associated deposit it named "Lone Gull"—later renamed "Kiggavik"—and in the 1980s found other nearby deposits—the Andrew Lake and End Grid deposits. We discuss the Kiggavik-Sissons project at greater length in the following section.

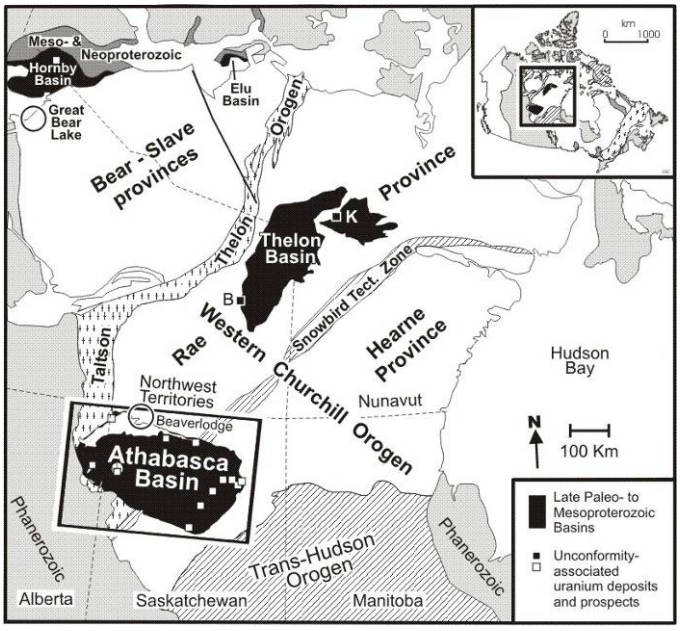

Figure 1. Geological basins (of Proterozoic age) in western Canada with a potential for hosting unconformity-associated uranium deposits. "K" represents Kiggavik. Source: Jefferson *et al.*

In the 1990s, the relatively low grade of the mineralization outlined in the Thelon Basin was overshadowed by the new discoveries in the Athabasca Basin of Saskatchewan. This fact coupled with the decline in uranium prices in the late 1990s and an uncertain

[15] Eldorado Nuclear Limited (formerly Eldorado Mining and Refining) and its subsidiary, Eldorado Resources, merged with the Saskatchewan Mining and Development Corporation (SMDC), a Crown corporation of the Saskatchewan government, to create the privately-owned Canadian Mining and Energy Corporation – Cameco.

[16] Work was concentrated on the area of the exposed basal unconformity.

regulatory environment resulted in companies putting their exploration efforts in this region on hold. Exploration of the Hornby Bay Basin essentially stopped at the same time.

The dramatic increase in the price of uranium from a low in early 2001 has resulted in a very significant increase in uranium exploration over the past three to four years, with a large increase in the staking of claims and the acquisition of prospecting permits. Furthermore there are indications that the Kiggavik-Sissons project has been revived.

4.2.2 The Kiggavik-Sissons Project

To date, there has been no uranium mining and only one proposed mine in the area that is now Nunavut. The Kiggavik-Sissons project, which includes several uranium deposits about 75 kilometres west of Baker Lake, encompasses two discrete projects: the Kiggavik project, now owned 99% by AREVA Resources Canada Inc.[17], which contains the Kiggavik deposit; and the Sissons project (owned 50% by AREVA), which includes the Andrew Lake and End Grid deposits. The area of the mining leases that include these two deposits was subsequently selected by Inuit as a Subsurface IOL parcel during the land selection process. (Although the leases are "grandfathered" under the CMR, INAC will remit all royalties collected from the production of uranium on this parcel to NTI.)

The overall reserves for the three deposits that comprise the Kiggavik-Sissons project are in the order of 50,000 tonnes of uranium (roughly 120 million pounds of U_3O_8) at an average grade of about 0.4% uranium. A 1986 prefeasibility study of the project proposed that the deposits be mined by a combination of open pit and underground methods and that the yellowcake product be transported by truck from the mine to Baker Lake and barged from there.

In 1988, UG completed a full feasibility study and took steps to get the environmental assessment process underway. Local community members as well as individuals and groups from the region and elsewhere in Canada expressed their concern both with the environmental assessment process and the specifics of the proposed project. In March 1990, following a plebiscite in which a large majority of Baker Lake residents expressed opposition to the project, the operator UG decided to delay the project indefinitely.

After becoming operator of the project in 1993, AREVA (known as COGEMA Resources Inc. at that time) carried out diamond drilling and other exploration work on the Sissons part of the project until 1997, the last year of field activity for the company in Nunavut. That year, the company completed a prefeasibility study, the conclusions of which were considered to be negative given the circumstances at that time. In 2000, the company demobilized most of its equipment and fuel supply at the site and has since removed the camp and any remaining materials.

[17] As of June 2005 "AREVA Resources Canada Inc." replaced "COGEMA Resources Inc." as the legal name of the Canadian mining arm of the AREVA group of companies.

In October 2006, AREVA opened an office in Baker. It appears to be that the increase in the price of uranium has created a situation in which, with its Kiggavik-Sissons deposits, AREVA may be considering developing Nunavut's first uranium mine.

4.3 Uranium Exploration, Mining and Milling

Life Cycle of a Mine

The life of a mine can be considered to comprise several stages: exploration, from prospecting and early stage exploration, through evaluation of a potential orebody; development, which includes the construction of the mine; mining and milling (processing) of the ore; and reclamation and decommissioning, including the subsequent monitoring.

None of these operations generally involve high enough radiation fields to cause any immediate threat to health and safety of workers or the public. The main concern is usually with collective dose over long periods of time. We describe each of these stages more fully.

Exploration

Exploration comprises two distinct stages—early-stage exploration, and the evaluation of a potential ore body, which is also referred to as mineral deposit appraisal. (In this paper we will refer to this second more advanced stage as the evaluation stage.) Uranium exploration techniques are very similar to those used to look for other minerals, with the exception that the techniques also include methods – such as radiometric surveys and the testing of rock samples with scintillometers – that measure the natural radioactivity of an area or of samples.

Most exploration techniques have no or negligible effect on the health of the workers or on the environment. However, a worker will come into contact with uranium (and its daughter products) during the handling of rock samples and diamond drill core. There is also a concern that radioactive materials may be deposited on the surface of the land or into water bodies during excavating or drilling processes. Thus, measures must be taken to protect workers and the environment.

Mining

As with exploration, uranium mining—which may include underground and open-pit methods—is basically no different from other kinds of mining, except that it is made somewhat more complicated by the presence of radioactive dust, radon gas and gamma radiation. This potential safety hazard is minimized by using powerful ventilation systems in underground mines and—particularly for high-grade ores—remote-controlled and specially shielded equipment.

As part of the mining process, especially for open pit mines, waste rock above and around the uranium deposit must be removed to provide access to the ore. This rock sometimes contains low levels of radioactive materials, heavy metals or sulphide minerals, such as pyrite. Leaching of sulphide minerals may lead to acid rock drainage. Such "special waste rock" is isolated from the atmosphere in order to prevent any of the undesirable substances from polluting nearly water bodies. It is often returned to the mined-out areas.

Milling

During the milling (also called processing) stage, the ore is crushed and ground to a powder. The uranium is then removed from the rock and put into a saleable product known as "concentrate", which is sometimes referred to as "yellowcake". The wastes from the milling operation are discharged into a tailings management facility (TMF). As the tailings contain most of the radioactivity in the original ore—mostly as radium and radon— operators of uranium mines take great care to ensure that the effluent from the TMF does not pose any danger to humans, plants or wildlife.

Reclamation and Monitoring

In most instances, when a mine is closed and the site reclaimed, the TMF will be covered over or otherwise made stable. However, for some situations, the tailings will require monitoring for many years after the mine has closed. The management of tailings and waste rock is discussed in greater detail in section 4.7.4. Appendix 1 gives more details on the processes described in this section.

4.4 Saskatchewan as a Model for Uranium Mining

As described in section 4.1, Saskatchewan has a long history of uranium mining, extending back to the late 1940s and early 1950s when the Beaverlodge, Gunnar, and Lorado mines were developed. Uranium mining in Saskatchewan has continued to play a large role in the global energy sector and now accounts for about 30% of worldwide uranium mine production. These mines are located in Northern Saskatchewan within the geological feature known as the Athabasca Basin.

There are several reasons why it is useful to examine the recent experience of uranium mining in Saskatchewan in greater detail:

- Saskatchewan currently has the only operating uranium mines in Canada.
- McArthur River is the most recent mine to open in Canada and has the largest production and highest grade of all uranium mines in the world.
- The Cigar Lake mine, the second largest high-grade orebody in the world, has just gone through the permitting process and is under construction.
- The McClean Lake mill is the first new mill in North America in twenty years, and the mill and associated Tailings Management Facility represent the state-of-

the-art for processing ore into uranium concentrate. McClean Lake is also the only northern Saskatchewan operation with open pit mining operations. (See section 1.10 in Appendix 1.)

- The Cluff Lake mine has been almost completely decommissioned, thus serving as an example of how a uranium mine can be decommissioned.
- The Saskatchewan mines demonstrate the most advanced applications of technology and quality management applied to all aspects of the operation.
- Saskatchewan has a comprehensive regulatory framework in place, which includes detailed procedures for environmental assessment.
- The Saskatchewan mining industry pays particular attention to the needs of northerners and consults with residents on both a regular ongoing basis and on specific issues.
- There is a detailed public record of the review process undertaken from the early 1990s up to the present to establish new mines in the region. A wealth of information is available from both private and public sources, including the Federal-Provincial Review Panel and the Federal Government response to the panel reports, which provides an indication of how the Government would deal with or respond to similar issues in Nunavut. Recent environmental assessment documents provide a wealth of information on all aspects of the proposed projects.
- There are similarities between Nunavut and northern Saskatchewan in terms of population, education levels, socio-economic and other factors.
- Inuit have visited the Saskatchewan operations and have an appreciation for the potential benefits and how potential impacts are handled.

By examining the uranium mining industry in Saskatchewan, we can learn a great deal about the entire process through which a mine is developed, operated, and decommissioned. We can also envisage the regulatory framework within which the mining industry operates. Because the Saskatchewan mines have a long track record of technological innovation and environmental protection, they are an excellent model for the uranium industry in Nunavut.

Although environmental regulations, worker safety, and socio-economic standards that would apply to a uranium mine in Nunavut would be similar to those that apply in Saskatchewan, there would, of course, be differences in the two jurisdictions.

For the above reasons, a study of the Saskatchewan operations is essential to provide the information as to how modern uranium mining is carried out and what processes are in place to protect workers, nearby communities, and the environment. In 1999 and again in the fall of 2005, Cameco and AREVA, the two companies operating the Saskatchewan uranium mines, provided tours of their operations for NTI and RIA land managers and executive members. Staff and Board members of the IPGs, Government departments and some Baker Lake residents also visited in 2005. The Nunavut visitors saw that modern uranium mining is highly regulated and controlled (the lead regulator is the CNSC under the Federal Government jurisdiction). They also saw that it can be done safely with no

apparent significant impact on the health of the workers and the local population or on the environment.

Figure 2. NTI and RIA visitors at McClean Lake mine (left) and McArthur River mine in September 2005.

In the consideration of any future uranium mining project in Nunavut, Saskatchewan's experience should be closely studied and, to the extent it is relevant, applied to the Nunavut situation.

4.5 Benefits from Uranium Exploration and Mining

A wide range of benefits could be expected to flow from both exploration and mining activities. Regardless of whether a uranium mine ever goes into production in Nunavut, exploration for uranium deposits is likely to continue for many years. This work provides seasonal employment for many people from the local communities as well as business opportunities for suppliers of good and services. In addition, NTI and the RIAs receive fees with respect to exploration agreements and land use licences and leases.

The potential benefits increase with the scale of the operation, and very significant revenues from taxes and royalties could flow directly or indirectly from any uranium mining operation in Nunavut. We can get an idea of the potential impact from economic modeling carried out separately by NTI and the Government of the NWT (GNWT) for gold and base-metal mines.[18] According to the results of NTI's modeling, a low-profit mine might pay royalties of $35 to $40 million and a high-profit mining operation would be expected to pay royalties of up to $80 or $90 million over the life of the mine. For very rich orebodies, , the royalty could possibly be much higher[19]. If the mine is on Subsurface IOL, the royalty would be received by NTI, and if on lands for which the

[18] We do not have access to economic models for uranium mines in the North.

[19] The McArthur River Mine in Saskatchewan provides an example of the royalties and taxes that can flow from a very profitable uranium mine. For this mine, the total government revenues over the 20-year life of the mine are estimated at about $1.4 billion to $3.7 billion dollars (according to the 1997 Panel report), more than the amount of cash Inuit received under the NLCA. It is unlikely that many uranium mines will be as rich or as profitable as the McArthur River Mine, possibly the richest in the world.

Crown owns the minerals, the royalty would be received by the Federal Government, and a percentage of that would be paid to Nunavut Trust.

The GNWT economic models (Bullen, 2003[20]) show similar results. Sherlock et al[21] summarized the results of the modeling and noted that for a diamond mining operation, "royalties in excess of $600 million over a 25 year mine life are possible." It should be pointed out that this model is "influenced somewhat by the world-class Ekati and Diavik operations in the Northwest Territories", thus not all diamond mines would be expected to pay out royalties of this magnitude. The report continues, "…gold operations are somewhat smaller but could provide about $60 million over a 15-year mine life. Similarly, a base metal operation could provide $20-25 million in royalties over a 20-year mine life." Both the NTI and GNWT models demonstrate the range of royalties that might flow from a mining operation in the north. A uranium mine could be expected to return similar royalties. (It should be kept in mind, that these are only models and that actual operations may provide different results.)

Mining operations are also a big source of government taxes. According to NTI's models, the Nunavut Government would receive an amount of taxes approximately equivalent to the royalties described above and the Federal Government would receive roughly twice this amount in taxes. Taxes paid to the Nunavut Government would help to provide benefits to Nunavummiut, such as improvements in housing, education, and health care.

Perhaps of most importance to the people who live in the area of a mine are the potential benefits that would flow to local residents and businesses. A mining operation could provide many years of steady, well-paid work for hundreds of employees. For an operation on IOL (Surface or Subsurface), the RIA and the company would enter into an Impact and Benefit Agreement (IIBA), which would ensure that many jobs and business opportunities would go to Inuit in the local communities[22] and the region. The community may also benefit from improvements to the local infrastructure, such as roads or docks.

NTI's *Mining Policy* already requires that to the greatest extent possible the benefits of mining will remain in Nunavut. The *Uranium Policy* sets out some additional measures that will help Inuit to maximize the benefits. These apply not just to uranium but to other commodities as well.

[20] Bullen, W. and Zhang, J.; 2003; The economics of mining projects in the Canadian Arctic. *In* Proceedings, Seventh International Symposium on Mining in the Arctic; CIMM, pp. 3-18.
[21] Sherlock et al, ibid.
[22] If the mine is on Crown land, Article 27 of the NLCA requires that the proponent consult with the DIO—NTI—with respect to employment, contracting and many other matters.

4.6 Uranium Potential on Inuit Owned Lands

In this section, we refer to some types of uranium deposit and describe where we think uranium deposits are most likely to be found. (Some technical terminology is used.) The Canadian Shield—an area of old rocks which makes up about half of the area of Canada— is one of the largest storehouses of mineable uranium resources in the world. There are many kinds of uranium deposits, but most of Canada's resources are in two types—paleoplacer and unconformity-associated deposits. The former occur mainly in the Elliot Lake area of Ontario and the latter occur mainly in the Athabasca Basin, which is a large area of sandstones and other flat-lying rocks in northern Saskatchewan. This area is the world's premier uranium district because of the large quantities of high-grade resources of the unconformity-associated type.

Because of the geological similarities between the Athabasca Basin and certain areas of Nunavut, uranium exploration in Nunavut has focused on unconformity-associated deposits. Such deposits are formed as a result of geological changes that occur close to major unconformities between older "basement" rocks and overlying younger undeformed sandstones of Proterozoic age. These deposits constitute approximately 33% of the world's (excluding Russia and China) uranium resources, including some of the largest and richest deposits. The high-grade deposits are exceptionally valuable and profitable to mine.

Although the uranium potential in Nunavut is still very much unproven, there is considered to be excellent potential for the discovery of unconformity-associated uranium deposits in two areas of Nunavut—the Thelon Basin near Baker Lake, and the Hornby Bay Basin south of Kugluktuk. There may also be potential elsewhere, such as in the Elu Basin south of Cambridge Bay (see Figure 1). The Kiggavik-Sissons deposits west of Baker Lake and at least some of the occurrences in the Hornby Bay Basin are of the unconformity-associated type. Uranium exploration in Nunavut is mainly focused on discovering deposits of this type.

As noted in section 1.1, some parcels of Subsurface IOL are considered to have good potential for the discovery of uranium deposits.[23] The *Uranium Policy* recommends that NTI carry out a comprehensive assessment of the uranium potential of these parcels (as well as Surface IOL) in order that it and the RIAs can better plan for the use of the lands. Furthermore, such an assessment would assist NTI in enhancing the terms of the agreements it makes with mining companies, including the optimum terms for a participating interest in future uranium mining projects on these parcels.

4.7 Impacts of Uranium Exploration and Mining

[23] Parcel BL-22 has the Andrew Lake and End Grid deposits that make up part of the Kiggavik-Sissons project.

The potential impacts of any development activity, including mining, can be considered to fall into two broad categories—ecosystemic or socio-economic. According to a guide[24] written by the Nunavut Impact Review Board, "Ecosystemic impacts refer to impacts relating to the complex of a natural community of living organisms and its environment, functioning as an ecological unit in nature. Socio-economic impacts refer to social and economic impacts, including impacts upon the local economy, health, demographics, traditional way of life, cultural well-being, social life, archaeological resources, existing services and infrastructure, and community and local government organizations."

In the *Uranium Policy*, some potential socio-economic impacts of uranium exploration and mining are considered in Objective 3, which deals with the protection of human health, and to some extent in Objective 5, which is concerned with community participation. Under Objective 4, the policy considers some aspects of ecosystemic impacts, including impacts on wildlife and the management of tailings and waste rock. It also considers the regulatory processes that are in place to limit and deal with impacts.

4.7.1 Protection of Human Health

Exposure to uranium and related radioactive elements such as radon can be dangerous to human health (see section 2). Because of this radiation danger as well as related non-radioactive impacts, uranium mining requires special consideration beyond that required for other types of mining. The greatest concern is about direct exposure of mine workers and others in the vicinity of the mine to radioactivity. (More detailed information is given in Appendix 1.)

The result of this special attention is that uranium mining is the most highly regulated type of mining in Canada and precautions are taken to ensure that no worker is exposed to radiation above limits. Indeed, because of the elaborate measures to provide a clean dust-free environment and the constant monitoring of workers and the working environment, workers in Saskatchewan's uranium mines normally receive less than 5 mSv per year – not much above the natural background levels of about 2.4 mSv per year, and far below the maximum permissible limit of 50 mSv per year or 100 mSv over five years established by the CNSC in accordance with international standards. As a result, uranium mining would be expected to have no more impact on the health of workers than other types of mining or similar industrial activities.

In addition to the concern about direct exposure to radioactivity at the mine, there is also a concern about the possible impact on the health of those in the communities and at greater distance through the indirect process of taking up radioactive substances from the environment (e.g. water and air) or by eating contaminated plants or animals. This impact is dealt with through the management of the emissions from the mine. In section 4.7.4, we consider the management related to tailings and waste rock.

[24] Guide to the Nunavut Impact Review Board.

As would be expected, the potential exposure to workers during exploration is much less than during mining operations. Potential impacts during the early exploration stage include exposure of workers to radiation while carrying out diamond drilling, trenching and blasting, or otherwise handling rock samples containing uranium mineralization. There is also the possibility that other people may come into close proximity with stored diamond drill core that includes radioactive substances.

For the evaluation stage, activities are regulated by the CNSC under the UMMR. For early-stage exploration, the UMMR are not applicable. Nevertheless, many companies use procedures based on exploration guidelines developed for use in Saskatchewan. Specific measures employed by the companies mining uranium in Saskatchewan to protect workers should, if appropriate for the specific circumstances, be adopted in Nunavut. The *Uranium Policy* recommends the development or adoption of uniform procedures.

The safety and environmental record of the mining of high-grade uranium deposits in Saskatchewan demonstrates that it is possible to have a mining process that is safe for the workers and the local communities and that protects wildlife and the environment.

4.7.2 Regulatory Requirements

Any proposed uranium project would be subject to all of the regulatory requirements that apply to exploration and mining for other substances, including the conformity requirements of land use plans established by the NPC and the impact assessment process of the Nunavut Impact Review Board (NIRB). In addition, there are special requirements for uranium mining. We examine the requirements in greater detail.

Land Use Plans

All exploration and mining activities in Nunavut must conform with the land use plan for that region, if one exists. The Keewatin Regional Land Use Plan says that uranium mining will not be permitted until the matter is thoroughly studied by the co-management bodies and such mining is supported by the people of the region. NTI supports efforts to clarify exactly how these statements are to be interpreted and how the requirements will be implemented.

Environmental Assessment of Projects

With respect to the environmental assessment of projects, the NLCA provides for a comprehensive screening and review process for all project proposals. NIRB screens all proposals to determine whether a review is required and, if so, to highlight the ecosystemic and socio-economic impacts that are likely to ensue from the project in question. A review of a uranium mining proposal would be done by NIRB under the requirements of Part 5 of Article 12 of the NLCA, or, under Part 6, by a federal environmental assessment panel. The environmental assessment process is very

comprehensive and provides many opportunities for Inuit to participate. An environmental assessment under the Canadian Environmental Assessment Act would also be required by the CNSC, although it is possible that it could be done in conjunction with the NIRB assessment.

Regulation of Operations

The operations of a uranium mine or the evaluation of a potential ore body are regulated by the CNSC under the Nuclear Safety and Control Act (NSCA) and its regulations. As the federal government regulator, the CNSC has clear jurisdiction over nuclear materials and activities in Canada. The regulations under the NSCA apply to any activity involving the handling of a nuclear substance, including the transportation of radioactive samples. The Uranium Mines and Mills Regulations (UMMR) apply at the evaluation stage after a deposit of uranium has been discovered and is being evaluated to determine its economic viability and for all other mining activities through to closure of the mine.

Land Use, Water and Other Permits

There are many regulations that apply to an exploration or mining project. A review of the regulations that apply to Crown land is presented in *Exploration and Mining on Crown Lands in Nunavut Guidebook*, published by INAC. With the exception of regulations and policies that are specific to Crown lands (e.g. the Territorial Lands Act), all of the requirements also apply to IOL.[25]

At this time there are no uranium-specific requirements in land use licences or leases issued by the RIAs for exploration or mining. The *Uranium Policy* recommends that land use terms and conditions be developed or adopted. As an initial step, measures used by uranium companies in Saskatchewan to protect people and the environment during early stage exploration should be reviewed, and to the extent they are applicable, adopted for use on IOL.

Financial Security

To ensure that reclamation of a minesite is carried out after the mining operations have ended, the operator must provide financial security before a mine begins operations. For a uranium mine on IOL, financial guarantees may be required by: CNSC under the NSCA; the Nunavut Water Board for water permits (security held by INAC); and the RIA, with respect to land use under a commercial lease. The role of the RIA in shouldering liability and holding security with respect to a uranium mining operation would need to be thoroughly examined and resolved in the project review process.

Thus, NTI supports the existing regulatory processes, but has identified areas of concern (some of them outside the regulatory processes) where it will require that special attention be paid. The policy also identifies measures that NTI and the RIAs will take with respect to the management of IOL.

[25] NTI is currently drafting a similar guide for IOL.

4.7.3 Wildlife

An important concern for many people is the possible impact a uranium mine could have on caribou and other animals and plants in the area. Many of the concerns that must be addressed are essentially the same as those for an operation that is mining other commodities, such as gold or diamonds. These include the impact of the minesite itself and related infrastructure, such as roads, on the activities of the animals.

In discussing the future of caribou, a report[26] of the Beverly and Qamanirjuaq Caribou Management Board (BQCMB) identifies roads, exploration and mining, including the potential cumulative effects, as land use activities that pose the greatest threat to the Beverly herd. The Qamanirjuaq herd also faces the threat of hydro-electric development. According to the report, activities associated with mining which have potential negative effects on caribou include frequent low-level aircraft flights, construction of roads and airstrips, frequent travel by supply trucks, mine construction and operation, and pollution of land and water by toxic substances. The report stated that these activities can result in loss of habitat, increased human access, and disturbance to caribou; roads may also act as a barrier if traffic volume is high or plowing creates snow walls. It also expressed a concern that climate change may have a large impact on the caribou.

Concern about the possible impact of uranium mining is not limited to the physical impact of the operations on caribou and other mammals. There is also a worry that radioactive and other potentially toxic substances could enter the food chain and be taken up by caribou and other mammals, fish and birds and the smaller organisms on which they feed and eventually be consumed by humans. There are similar concerns about plants, especially those that produce edible berries. It is not only mining operations that concerns people. In correspondence to NTI[27], the BQCMB identifies "the effects of radioactive dust" and "damage to vegetation and water sources from contamination or physical alteration" as potential impacts from exploration.

In considering the possibility that wildlife may become ill or contaminated by ingesting material contaminated with radioactivity derived from a uranium mining operation, it is informative to look at the findings from environmental monitoring by community groups near Northern Saskatchewan communities. The monitoring found no significant effect of the mining operations, even for samples taken from the area around the community of Wollaston Lake near the Rabbit Lake mine. The report of sampling for Wollaston Lake found that "[a]ll key parameter levels in fish, plants, and wildlife were low and gave no indication that they would not be safe to eat with respect to these parameters."

It is also of interest that the Arctic Study found that caribou in Canada's Arctic have higher than expected levels of radioactive substances. The study attributes this not to any

[26] 20th Anniversary Report of the Beverly and Qamanirjuaq Caribou Management Board
[27] Letter dated May 1, 2006, providing comments on the draft Uranium Policy and draft Consultation Document.

global uranium mining but to the fallout from nuclear testing and the Chernobyl accident, events from the 1970s and 1980s. Caribou apparently show no ill effects from these elevated levels, nor do the people who eat the caribou.

All concerns about the impacts of mining on caribou and other wildlife and plants would be fully addressed in any future environmental assessment of a uranium mining project, which would require that all potential impacts be considered and resolved. The assessment process should require extensive monitoring and testing of wildlife and plants in the vicinity of the mine to ensure that these were not being exposed to radiation or being affected by the mine in any other way. Caribou protection measures, which are currently in place to further protect caribou during the calving and post-calving periods, would also have to be respected.

4.7.4 Management of Tailings and Waste Rock

Mine wastes and tailings contain rock brought from underground to the surface. Waste rock is broken and includes material of all sizes; tailings are crushed and ground to the consistency of sand or silt. This process may bring deleterious substances such as radioactive substances, heavy metals or other undesirable metals, and acid-generating minerals into contact with the atmosphere and with humans. Although radioactive substances will slowly become less radioactive and other minerals will stabilize with time, much of this material will be a potential hazard for many years – for some substances, virtually forever. As the obligation to protect human health and the environment applies to future generations as well as the present ones, measures must be implemented to minimize the hazards from these materials.

The industry's long-term goal is to return the site of the operations as close as possible to a natural state suitable for future uses. All operating mine sites must post financial security to ensure adequate funds are available for proper decommissioning of each mine site after the ore has been mined out. The long-term management of special waste rock (rock that contains substances that could cause some environmental harm[28]) and tailings requires particular attention. Special mine wastes are normally returned back to the mine after the operation has ended, and tailings are commonly deposited in open-pits from which ore has been removed and which have been specially engineered to receive them. Appendix 1 describes in greater detail some of the measures currently employed at Saskatchewan mines.

The long-term monitoring of any special waste rock and tailings that remain after a mining operation has ended will likely be necessary to protect future generations from unacceptable impacts related to these materials. The possible need for such monitoring of these materials, particularly the tailings, would receive special consideration in the assessment of any uranium mining proposal. Furthermore, the CNSC requires that a fund be established to finance the long-term monitoring and possible remediation of tailings facilities and that an authority be set up to oversee it.

[28] See Appendix 1, section 1.6 for more information.

CNSC Regulatory Policy P-290 (2004) describes the principles that are taken into account by the CNSC "when making a regulatory decision concerning radioactive waste management". Furthermore, the draft *Reclamation Policy* being developed by NTI and the RIAs for application to IOL includes principles for the reclamation and decommissioning of a mining operation on IOL. Although DIAND's *Mine Site Reclamation Policy for Nunavut* applies mostly to developments on Crown lands, there may be some aspects that would also apply to a mining operation on Surface IOL.

The *Uranium Policy* recommends that matters related to tailings and special waste rock, including the possible need for long-term monitoring, receive special consideration in any uranium mining proposal. It also recommends the involvement of the people of the affected communities in the environmental monitoring of uranium mines in Nunavut, for both operating mines and for the period after the mines have ceased operations and have been decommissioned.

4.8 Community Participation

Socio-economic Matters

In addition to concerns about human health, the environment and wildlife (that is, the ecosystem), there are also socio-economic matters to consider. As described in section 4.5, there may be many economic benefits from a uranium mine. The NLCA guarantees that Inuit will have an opportunity to participate in those benefits. Nevertheless, there are concerns about the impact of economic development on Inuit culture, way of life, and community well-being. These concerns must be addressed if Inuit are to take full advantage of the economic opportunities.

Communication and Consultation

In addressing the potential impacts—and the benefits—of a project, it is vital that the project proponent or operator communicate effectively with community members. The failure of both parties to do so may result in an inadequate environmental assessment process and concerns and misunderstandings about the impacts and benefits which may continue during the operating phase of a mine. In part, this may be a result of insufficient attention paid by the proponent/operator to the community consultation process, but it can also be due to the challenge of communicating details about the scientific and technical aspects of the operation.

5 Acronyms and Initialisms

CMR	Canada Mining Regulations
CNSC	Canadian Nuclear Safety Commission
DFAIT	Department of Foreign Affairs and International Trade
DIO	Designated Inuit Organization
EIS	Environmental Impact Statement
IAEA	International Atomic Energy Agency
ICC	Inuit Circumpolar Conference
INAC	Indian and Northern Affairs Canada
IOL	Inuit Owned Lands
KRLUP	Keewatin Regional Land use Plan
NIRB	Nunavut Impact Review Board
NLCA	Nunavut Land Claims Agreement
NORM	Naturally Occurring Radioactive Materials
NPC	Nunavut Planning Commission
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
NSCA	Nuclear Safety and Control Act
NTI	Nunavut Tunngavik Incorporated
RIA	Regional Inuit Association
UMMR	Uranium Mines and Mills Regulations

Appendix 1 Exploration, Mining and Milling of Uranium

1.1 Introduction

The life of a mine can be considered to comprise several stages: exploration, from prospecting through evaluation of a potential ore body; development, in which category we include planning, permitting, siting and construction; mining and milling (processing) of the ore; and reclamation and decommissioning, including the subsequent monitoring. Each of these stages entails many different processes. In this appendix[29], we present additional information to supplement that provided in section 4.3. This brief overview includes the processes involved in these stages, the risks relating to the health and safety of the workers and local populations, the impact on the environment, and the methods employed to minimize these risks.

1.2 Exploration

1.2.1 How Exploration is Done

Exploration for uranium deposits uses most of the same techniques employed for finding deposits of other metals. The main difference is that uranium exploration includes methods to detect radioactivity that results from the decay of the uranium.

Exploration methods include prospecting, boulder tracing, rock sampling, and geological mapping, all of which include the use of a scintillometer carried by the worker to detect uranium. Other standard methods include geochemical methods to detect uranium and related elements in soils, unconsolidated surficial deposits, vegetation and water. This process is sometimes also done with the assistance of a "reverse circulation drill" which collects samples of surficial materials at depth. In all these methods, samples are collected and sent away for analysis.

Geophysical methods include both ground and airborne surveying, using both direct methods to detect radioactivity and indirect methods, such as magnetic, electromagnetic and gravity surveys to indicate favourable geological conditions.

After these various surveys have indicated anomalies which suggest the possible occurrence of a uranium deposit, the anomalies are tested by diamond drilling. As with exploration for other commodities, such as gold or zinc, the drilling extracts a core of the bedrock. The core is examined and, if a part of it looks encouraging, this section is split into two halves, one of which is sent away for analysis. The un-split core plus the remaining half of the core that was split are stored on the site in core boxes and placed on core racks or in stacks.

[29] The information is extracted from an internal NTI report titled "Discussion Paper – Policy Concerning Uranium Mining In Nunavut", 2005.

On some projects, pits and trenches may be excavated so that samples can be taken. For the evaluation stage of exploration projects, the deposit may be explored underground by way of a shaft or decline.

1.2.2 Health and Safety and Environmental Measures

Most of the exploration techniques described above have no or negligible effect on the health of the workers or on the environment. However, a worker will come into contact with uranium (and its daughter products) during the handling of rock samples and diamond drill core. Furthermore, there is a potential that radioactive materials may be deposited on the surface of the land or in water bodies during excavating or drilling processes.

Companies carrying out uranium exploration undertake many measures to protect human health and the environment, including:

- all persons working at the exploration site must wear a gamma radiation dosimeter;
- no person shall be exposed to a whole body dose of more than 1 millisievert (mSv) in a 12 month period unless classified and trained as a Nuclear Energy Worker (NEW); the CNSC limit for a NEW is 50 mSv per year or 100 mSv over a 5-year period;
- in areas where radon gas may accumulate, monitoring equipment will be used and work areas are to be well ventilated;
- all workers are given safety instructions so that they will minimize their exposure to radiation;
- all diamond drill holes are "probed" with instruments and the core is checked for radioactivity;
- where drilling encounters radioactive rock intervals, these intervals in the holes are sealed with concrete so that there will be no discharge of radioactive waters into the environment;
- all drilling waters are re-cycled and re-used to the greatest extent practicable; this minimizes the release of radioactive waters to the environment
- care is taken that no materials contaminate the water supply;
- radioactive diamond drill cuttings are separated out from the drill water, collected in bags and drummed for future shipment for processing or disposal;
- after the drill has been moved from a site, the site is checked to ensure safe levels of radioactivity; when needed, contaminated material is cleaned up.

Exploration for uranium is subject to all of the other regulatory requirements that would apply to exploration for any other minerals, including environmental assessment, water licences, land use permits and licences and conformity with land use plans.

1.3 Mining

1.3.1 How Mining is Done

Generally speaking, uranium mining is no different from other kinds of mining except that it is complicated by the presence of elevated levels of gamma radiation, radioactive radon gas, and dust containing low levels of radioactivity. These potential safety hazards are minimized by the well-known principles of time, distance and shielding to minimize exposures to gamma radiation, and by using powerful ventilation systems in underground mines to control radon levels and dust. For high grade ores, remote-controlled and specially shielded equipment is also used.

Where ore bodies lie close to the surface, they are usually accessed by open-pit mining, involving a large pit and the removal of much overburden as well as a lot of waste rock. The Kiggavik-Sissons deposits are close to surface and would be mined mainly by such methods. In Saskatchewan, after the ore bodies are mined, such pits are used for the permanent storage of tailings and for some types of waste rock which pose potential long term environmental risks if left permanently.

Figure 3. Deilmann open pit at Key Lake mine, in 1994. In 1996, the pit was converted to a tailings management facility and now receives tailings from the McArthur River mine.

Where ore bodies are deeper, underground mining is employed, involving construction of access tunnels and shafts but with less waste rock removed and less environmental impact. The McArthur River mine and the Cigar Lake mine (currently being developed) are underground mines. Some mines, such as the McClean Lake mine in Saskatchewan, employ a combination of open-pit and underground mining.

In the United States, Australia, Kazakhstan, and elsewhere, a mining method called *in-situ leach* (ISL) mining is used. Some ore bodies lie in groundwater in porous unconsolidated material and may be accessed simply by oxygenating the groundwater and making it more acidic or alkaline so that it dissolves the uranium. The groundwater solution, with the dissolved uranium, is then pumped to the surface, where the uranium is recovered at a treatment plant. This method, which is not used in Canada, would not be applicable to Nunavut.

Over half of the world's primary uranium production now comes from underground mines, about 27% from open-pit mines and 19% from ISL.

1.3.2 Health and Safety and Environmental Measures

The practices of the 1940s and 1950s in which miners and other workers in the uranium mining industry were exposed to dangerous levels of radioactivity is thought to have contributed to a high incidence of cancer and other diseases among these workers. This is particularly true of the miners who worked at Port Radium in the NWT and at the Beaverlodge mines in Saskatchewan. Our discussion will deal only with modern mining methods, which are many times safer than the old practices.

Most hazards associated with uranium mining are common to the mining of other substances. Uranium itself is only slightly radioactive. However radon, a radioactive gas, is released to the atmosphere in very small quantities when the ore is mined and crushed. Although radon occurs naturally in most rocks and minute traces of it are present in the air which we all breathe, at the relatively high concentrations associated with uranium mining, radon is a potential health hazard.

Special precautions taken during the mining and milling of uranium ores to protect the health of the workers include:

- Efficient dust control, because the dust may contain radioactive constituents and emit radon gas.
- Limiting the radiation exposure of workers in mine, mill and tailings areas so that it is *as low as reasonably achievable* (ALARA principle), and in any event does not exceed the allowable dose limits.
- The use of specially shielded equipment by miners to reduce exposure to radiation. Mining of very high-grade ore is undertaken solely by remote control techniques.
- The use of radiation detection equipment in all mines.
- The use of good forced ventilation systems in underground mines to ensure that exposure to radon gas and its radioactive daughter products is ALARA and does not exceed established safety levels. The radon is diluted in very large volumes of air and released into the atmosphere.
- Imposition of strict personal hygiene standards for workers handling uranium oxide concentrate. (Uranium oxide has a chemical toxicity similar to that of lead oxide if it is ingested. Similar precautions to those in a lead smelter are taken when handling it.)

The McArthur River mine in Saskatchewan – which has very high-grade ore – uses remote, "non-entry" mining methods. Measures include remote underground crushing and grinding facilities, transportation of ore in shielded containers and the use of specially shielded receiving stations at the mill. Worker exposure to the high-grade ore is virtually eliminated[30]. The Cigar Lake mine will employ similar measures.

[30] Natural Resources Canada, Energy Sector web site.

1.4 Milling of Uranium Ore

1.4.1 How Milling is Done

After ore is removed from the ground, either by underground mining or from an open pit, it is milled. The milling process, in which the ore is crushed and treated with chemicals, extracts the ore's uranium content, leaving a waste product known as mill tailings. The process is illustrated in the following figure.

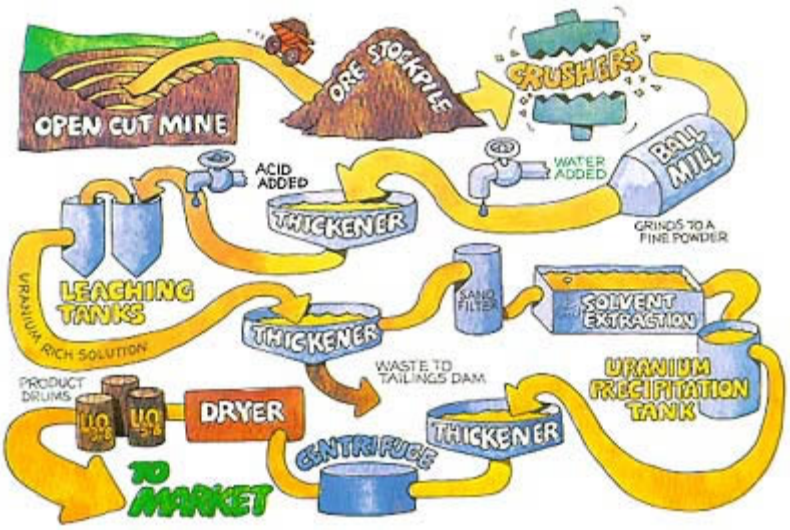

Figure 4. Overview of the milling process. Source: World Nuclear Association web site.

In Saskatchewan's McArthur River mine, the crushing and grinding part of the milling process takes place underground at the mine and the resulting ore slurry is trucked in containers to an off-site mill (Key Lake mill) where the rest of the milling process takes place.

Figure 5. Key lake mill processes ore from McArthur River mine. Tailings are deposited in the Deilmann open pit. Source: Cameco Corporation.

At the McClean Lake mill, run-of-mine ore from the open pit mines is received into the mill grinding circuit. Most of the ore – that is, the part remaining after the uranium has been dissolved – remains un-dissolved in the leaching process, and these solids or 'tailings' are then separated from the uranium-rich solution in a series of tanks where the washing solution flows through the tanks in one direction and the washed solids are

moved in the opposite direction. The liquid containing the uranium is filtered and the uranium then separated from other impurities dissolved from the ore using a solvent extraction process.

Finally the uranium is recovered in a chemical precipitate which is filtered and dried to produce a uranium oxide concentrate, or "yellowcake", about 99% U_3O_8. The yellowcake is then packed into "45-gallon" steel drums which are sealed for shipment. The U_3O_8 is only mildly radioactive: the radiation level one metre from a drum of freshly-processed U_3O_8 is about half that from cosmic rays (from the sun) on a commercial jet flight. The tailings solids from the leach circuit are combined with other waste streams in the tailings preparation circuit, further treated with reagents to achieve the desired characteristics and pumped to the tailings management facility (TMF).

Figure 6. Left - Yellowcake is produced at the mill and sent to Blind River for further processing or exported. Right - Barrels of yellowcake ready to be shipped.

1.4.2 Health and Safety and Environmental Measures

Most of the discussion dealing with health and safety issues relating to mine workers is also relevant to workers in the uranium mills. The main concerns in the mill as in the mine are dust (containing radioactive particles), radon gas and gamma radiation (primarily from the ore, not from the uranium after it has been separated from the tailings). The dust is collected and fed back into the process. Radon gas is diluted and dispersed to the atmosphere in large volumes of air.

The main environmental concern is the discharge of "contaminated" water from the milling process. According to a report by the CNSC[31], "[t]he volume of water that is generated from mining and milling processes is too large to be stored indefinitely. At most mines a portion of this water can be reused in the milling process; however, much of it must be discharged to the environment. Before this can happen, the water is treated by the addition of certain chemicals. For example, barium chloride is added to remove

[31] Canadian National Report for the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management; Produced by the Canadian Nuclear Safety Commission; May, 2003.

radium by precipitation. The water discharged from uranium mines and mills in Canada is monitored to ensure that it meets limits on chemical concentrations that have been prescribed by the Canadian government. These limits ensure that the impact on the environment is minimal. Recently, legislation has been introduced to require that these discharges are not acutely toxic to fish."

1.5 Radioactivity in Mining and Milling Wastes

The earth naturally contains a variety of radioactive materials – uranium, thorium, radium and the radioactive gas radon. The mining and milling of uranium and some other ores brings these radioactive materials into closer contact with people, and in the case of radon and its daughter products, speeds up their release to the atmosphere.

Residual wastes from the milling operation contain the remaining radioactive materials from the ore, such as radium. These wastes are discharged into tailings management areas designed to retain the remaining solids and prevent any seepage of the liquid. Eventually the tailings may be put back into the mine or they may be covered with rock and clay, then re-vegetated.

The radioactivity content of the tailings is approximately the same as in the original ore, and is primarily associated with the solids. That is, the radioactive elements were either not dissolved, or were largely precipitated in the tailings preparation circuit. Uranium oxide (U_3O_8) produced from the mining and milling of uranium ore is only mildly radioactive – most of the radioactivity in the original ore remains at the mine site in the tailings. The various radioactive isotopes have half lives ranging from fractions of a second to minutes, hours or days, through to billions of years. Radioactivity decreases with time as these isotopes decay into stable, non-radioactive ones. The rate of decay of an isotope is inversely proportional to its half life; a short half life means that it decays rapidly. Hence, for each kind of radiation, the higher the intensity of radioactivity in a given amount of material, the shorter the half lives involved.

Three general principles are employed in the management of radioactive wastes of all levels:

- Concentrate and contain
- Dilute and disperse
- Delay and decay.

The first two are also used in the management of non-radioactive wastes. The waste is either concentrated and then isolated, or it is diluted to acceptable levels and then discharged to the environment. "Delay and decay", however, is unique to radioactive waste management; it means that the waste is stored and its radioactivity is allowed to decrease naturally through decay of the radioisotopes in it.

1.6 Management of Waste Rock

The two main waste streams associated with uranium mining and milling are tailings and waste rock. Tailings are managed in engineered TMFs, as described in the following section. Waste rock is material that must be removed from the deposit in order to gain access to the ore. This material can amount to millions of cubic metres of rock, especially at an open pit mine. Some of this waste rock could actually be mineralized material that is low-grade ore or contain high concentrations of accessory minerals. The cut-off grade for benign waste rock is typically 0.03% uranium, with material greater than 0.03% but less than an economic grade defined as "special waste."

"Acid rock drainage" (ARD) means low pH (that is, acidic) surface or ground water that results from the oxidation of sulphide minerals or the dissolution of acid-generating minerals found in rocks and coal. This ARD, if it finds its way into nearby water bodies, can acidify these and create a toxic acidic environment. It can also dissolve other metals in the waste rock and allow these to enter into the environment.

The CNSC report on the Cigar Lake environmental assessment says, "In Saskatchewan, some waste rock contains secondary arsenic and nickel minerals, often to the point that it is the long-term care and control of these non-radioactive contaminants that drive the level of care needed to manage the waste rock, not its radioactivity." Molybdenum and selenium levels are also a concern at some mines and require special treatment, as is the case at the Cigar Lake mine now under construction.

Historically, waste rock has been stockpiled on the surface or used as backfill in underground mines. However, if left exposed on the surface indefinitely, some of this "special waste rock" could generate acid or release metals at rates that could harm the environment. The current method of managing special waste rock is to isolate it from atmospheric conditions (e.g., locating it at the bottom of a flooded pit).

1.7 Management of Tailings

1.7.1 Introduction

Solid waste products from the milling operation are pumped as a slurry of solids and liquids to a TMF as described in section 1.5. The solids consolidate – as a silty or sandy material – and the water, or effluent, drains off.

Operators of uranium mines take great care to ensure that the tailings they produce do not cause damage to the environment. The waste management objective is to control and limit the release of potentially harmful substances from the TMF into the environment. Care is taken to ensure that the effluent from the TMF does not pose any danger to humans, plants or wildlife. The effluent is treated and tested before it is released into the environment to ensure that it meets all water standards.

1.7.2 Nature of the Tailings

The solid tailings that settle out from the slurry in the TMF are generally similar in composition to the ore that was originally extracted from the ground, but also contain some secondary minerals and chemical precipitates introduced in the milling process.

As with tailings from other types of mining, such as gold mining, tailings from a uranium mine may contain heavy metals that were not extracted during the milling process. (In this way, the tailings are similar to special waste rock as described in section 1.6). In the Saskatchewan mines, these may include nickel, arsenic, molybdenum and selenium. They may also contain sulphide minerals such as pyrite that can result in the generation of acidic waters in the effluent that leaves the tailings facility.

Of particular significance to this paper, however, tailings from a uranium mine may contain small amounts of radioactive minerals or the dissolved gas, radon. Tailings comprise most of the original ore (i.e. rock that has been processed in the mill) and they contain most of the radioactivity in it. In particular they contain radium that was present in the original ore. When radium undergoes natural radioactive decay one of the products is radon gas. Because radon and its decay products are radioactive, measures are taken to minimize the emission of radon gas.

The solid tailings contain no more hazardous substance than the original rock, but their chemical form has often been modified. Although the substances may, as a consequence, be more mobile (i.e. can be dissolved in groundwater and surface waters), the fact that they have already been subjected to strong leaching conditions in the milling process means that such residual minerals are not easily leached in the less aggressive natural conditions in the TMF.

1.7.3 Management of Tailings

Historically, tailings were used as backfill in underground mines or placed in low areas on the ground surface and confined by dams. Surface tailings could be left bare, covered with soil, or flooded. However, in recent years, regulatory requirements with respect to tailings have been made much more stringent.

Recent tailings management methods now include the chemical treatment of the tailings before they are discharged into the TMF; and, the containment structures that hold surface tailings have become more rigorously engineered for long-term stability. In some mines, tailings are returned underground for permanent storage. During an active operation, tailings are covered by water to reduce surface radioactivity and radon emission. As described in sections 1.3.1 and 1.4.1, ore treatment is often remote from the mine at a centralized facility and disposal of tailings is in engineered open pits that remain from earlier mining that took place at these sites.

On completion of the mining operation, a common practice is for the tailings to be covered with some two metres of clay and topsoil to reduce radiation levels to near those

normally experienced in the region of the orebody, and for a vegetation cover to be established.

Uranium mine and mill tailings constitute one of the three categories of radioactive waste. Tailings sites thus fall under the regulatory responsibility of the CNSC. Although the management of tailings during the period the mine is operating is a significant challenge, the long-term management of tailings for many years after the mine has shut down, as discussed in the following section, constitutes one of the greatest challenges in the planning and operation of a modern uranium mine. Of potential concern in the North is the predicted thawing of permafrost brought about by climate change. This may have an impact on the long-term stability of the structures used to impound the tailings and would clearly be given special consideration in their design and construction.

1.8 Reclamation and Decommissioning

After the ore at a mine has been exhausted, the site is reclaimed and the mine is decommissioned. Reclamation involves the removal of all buildings and structures at the site and the returning of the site to as near its original natural condition as practicable. The term "decommissioning" may also be used to describe the process taken following the permanent closure of the mining operation. A primary objective of decommissioning is to dispose of all hazardous materials in such a manner that no continued effluent treatment is required. Monitoring programs are required to demonstrate that this objective is being met.

The regulations under Nuclear Safety and Control Act contain requirements for decommissioning planning and financial assurances before a project receives an operating licence. (Matters relating to liability and financial security are discussed in section 4.7.4 of this paper.) During the operation, the plan is periodically reviewed and modified as necessary. When the decision is taken to shut the operation down permanently, detailed planning and environmental assessment commences. The environmental assessment may include a public hearing, at the discretion of the regulatory agencies. When the federal and other regulatory agencies are satisfied with this work, a decommissioning licence is issued and actual decommissioning commences.

During decommissioning, all the regulations for radiation protection, general safety and environmental protection continue to apply. These require such things as cost-benefit analysis to demonstrate that work is being done in a manner to control radiation exposures as low as reasonably achievable, economic and social factors being taken into account.

After completion of decommissioning, a period of monitoring follows to demonstrate that the site is performing as expected in the environmental assessment. When this has been demonstrated, permission is given for the operator to relinquish its licence(s) from the regulator(s) – referred to as “abandonment” in the CNSC regulations. Responsibility for

the site, including any long-term needs for monitoring or land use controls, then reverts to the Crown or other owner of the land. (A discussion paper to advance development of the provincial long-term institutional control framework was expected in Saskatchewan in 2005.)

It should be emphasized that uranium operations generally do not involve high enough radiation fields to cause any immediate threat to health and safety of workers or the public. The main concern is usually for reducing potential collective dose over long periods of time.

1.9 Monitoring

1.9.1 Monitoring Programs

Extensive monitoring programs are carried out both during the mining process and after the mine is decommissioned to ensure that radioactive material is not spread to the vegetation or into the air or water, and from these taken up by animals and eventually humans. These include:

- Compliance-based monitoring that demonstrates that regulatory conditions required by government agencies are met. This monitoring, done at the mine sites, involves air and water sampling to confirm that any emissions are within regulatory requirements.
- Environmental effects monitoring that ensures that the environment is not significantly adversely affected by mining and related activities. This monitoring of air, water, animals, fish and plants takes place on and off the mine sites.

1.9.2 Long-Term Monitoring of Tailings

In most instances, when a mine is closed and the site reclaimed, the TMF will be covered over or otherwise made stable. However, there may be situations in which the tailings will require monitoring for many years after the mine has closed, possibly even on a "perpetual' basis, that is, for as long as there is still a potential problem, which may extend for many, many years into the future.

For example, the 1997 report of the Federal-Provincial panel on the proposed Cigar Lake uranium mine in Saskatchewan said: "It is recommended that long-term monitoring be introduced to protect future generations from unacceptable impacts." The report went on to say, "Arrangements should be made to monitor this site in perpetuity, and resources retained to mitigate any undesirable impacts." The panel recommended that a fund be set up to finance this work and an authority be set up to oversee it.

We note that every mine would have its own unique circumstances and such long-term monitoring will not necessarily be required. We also point out that such long-term

monitoring would presumably be carried out by workers from the nearby community and would provide at least a modest source of income for many years.

1.10 McClean Lake Operation

The McClean Lake operation is one of the three currently producing uranium mines in Saskatchewan. The operation, which includes open pit mines and a mill, was one of the two uranium mining operations visited by NTI and the RIAs as well as other Nunavut groups in the fall of 2005.

Uranium mineralization was first discovered at the McClean Lake site in 1979, with additional orebodies discovered during the 1980's.[32] The project is operated by AREVA Resources Canada Inc., part of the AREVA Group of companies (AREVA). Ownership of McClean Lake Operation is AREVA (70%), Denison Mines (22.5%), and OURD Canada (7.5%). Uranium production started in 1999, with annual production of approximately 6 million pounds of U_3O_8. The mill has since been upgraded and the current licensed capacity of the operation is 12 million pounds U_3O_8 annually. As of December 2004, the remaining stockpiled and in-situ reserves were reported as 32.9 million pounds of U_3O_8 at an average grade of 1.7%.[33]

Open pit mining of the JEB orebody began in 1995. Once the ore was removed and stockpiled, the JEB pit was developed as the tailings management facility (TMF). Open pit mining of the five Sue ore bodies is in progress, leaving the McClean ore body for future underground mining. Open pit mining of the Sue ore bodies progresses as required to supply ore to the mill with the first (Sue C) completed in 2002, and the next (Sue A) planned to start in 2005. This will immediately be followed by Sue E, pending regulatory approvals.

Figure 7. Open pit mining at McClean Lake mine.

The McClean Lake Mill (JEB mill) has been designed both to efficiently produce a high quality uranium concentrate, and to provide a high level of protection for workers and the environment while processing high grade ores. The mill uses standard proven processes

[32] Some of the Information about McClean Lake was supplied by AREVA.
[33] http: //www.arevaresources.com/operation/mcclean/index.html

to leach uranium from the ore, and to recover the uranium product from the resulting uranium-bearing solution. The product is dried at high temperature and final concentrate packaged into drums for transport.

Figure 8. Mill at McClean Lake mine/mill operation.

The mill contains many special features to protect workers and the environment. Radiation shielding and containment of potential contaminants are extensively incorporated. The ventilation system is designed to maintain pressure differences. A positive pressure is maintained with fresh air supply to clean areas (for example, control rooms) and a lower pressure in potentially contaminated enclosures (for example the shielded cells for the leaching tanks), from where is air is exhausted. Five years of operating experience have confirmed that all regulatory requirements have been consistently achieved, with large margins between actual performance and minimum required performance.

The McClean Lake Tailings Management Facility (TMF) provides a state-of-the-art approach for protection of health, safety and environment. The TMF has been designed to provide environmental protection both over the operational period and for the long term. For example, tailings are transported from the mill to the TMF through a continuously monitored pipe-in-pipe containment system. Depositing the tailings in the TMF under water protects the operating staff from potential radiation and airborne emissions, and prevents freezing of the tailings during winter operation. Environmental protection is based on hydraulic containment of the TMF during operation and long-term safety after decommissioning without the need for any active system. Features of the preparation of tailings, such as converting arsenic (a potential contaminant present originally in the ore) to a stable form further increase environmental protection. The TMF is also designed for the decommissioning that will eventually take place, leaving an impervious, covered “plug” of tailings within the much more permeable surrounding sandstone bedrock. This will provide a passive means of protecting the environment from the release of contaminants over the long term.

Figure 9. Left – overview of McClean (JEB) mill with ore stockpiles to the left, JEB Tailings Management Facility (TMF) in the foreground and the camp to the right; Centre and right – JEB TMF with tailings covered by water.

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ᓄᓇᑲᒪᒥ ᐱᐅᔨᒪᓕᐊᓗᖏᓪᒣ ᐱᑕᖏᖅᑐᐃᓇᓕᐊᖏᖅᖏᒪᑕ ᓄᓇᒥᐅᑕᓂᒃ ᑭᓇᐅᔾᑕᐅᑕᐅᔨᓴᓇᖅᑐᓂᒃ ᓄᖓᓯᐃᔪᑎᑐᑕᓂᓂ ᐅᔾᖏᖏᖅᑐᒥᒃ, ᐊᒪᒪᓗ Ḷᓴᓇᔾᖅ ᐊᑎᓕᐊᒪᐅᖅᑎᑦᓗᑎᑦ ᐊᑭᓐᑦ ᓄᖓᓯᐃᔪᑎᑐᐃᑦ, ᐊᒥᓱᑭᓕᐊᖅᓯᒪᔪᑦᓭᓕᓕᖏᑦ ᓇᓂᓇᓱᐊᖏᖅᒥᒃ ᐱᑕᓕᐊᖅᖁᔨᑦ ᓄᖓᓯᐃᔪᑎᑐᒥᒃ ᐊᒪᒪᓗ ᐅᖏᖏᖅᑐᓂᖅᓯᒪᔪᑦ ᐱᔨᓴᓕᐅᕆᑦ ᐱᔨᔪᖏᐅᑦᓴᓕᖅᓯᒪᓕᖅᑐᓂᒃ. ᑕᒪᒃᑯᐊ ᐃᓕᓐᓄᐅᔨᑦ ᑕᒪᐃᓄᑦ ᐱᕕᒃᓴᐅᓕᖅᖢᓂᒃ ᐊᒪᒪᓗ - ᐃᓕᖅᑎᓄᑦ ᐃᓄᖅᓄᑦ - ᐃᓱᒪᓕᑕᐅᔨᑦᓭᒃ. ᐃᓕᖅᑎᑦ ᑕᒪᒃᑯᐊ ᐃᓱᒪᓕᑕᐅᔨᑦ ᐅᖏᖅᑐᐅᓕᐅᖅᑲᒪᔨᑦ ᖁᑭᖅᖁᖅᑕᐅᓂᖅᑎᓄᓂᓄᑦ 1989-ᒥ ᐱᑎᐊᖅᑎᑕᐅᔨᖅᓴᓕᓕᐅᖅᑐᓄᑦ ᐅᖏᖅᓄᓂᐊᖅᕐᒪᑦ ᑭᒪᔭᐃᑦ ᓄᖓᓯᐃᔪᑎᑐᖅᑎᓂᖅᓄᓂᓄᑦ ᓄᓇᒥ ᐱᖅᑐᓇᖅᑎᓂ ᖁᖅᓂᓕᓴᐅᑦ. ᑕᐃᒪᓕᑦ ᐱᓕᑎᑦᓴᐅᔨᑦ ᐊᑐᐊᕐᖃᖅᑎᑦᓗᑎᑦ ᐊᑐᐊᕐᖃᖅᑎᓂᖅᑎᓂᖅ ᓴᖅᑭᑎᓯᔨᑕᐅᓂᖅᑐᒥᒃ ᐅᓪᓗᓈᖅᑕᐅᓂᖅᑐᒥᒃ ᑐᖅᑐᖅᑐᒥᒃ ᑐᵒᖏᓚᵇᑯᵒᓂ, ᐱᔨᔪᑎᖅᖁᖅᑐᓂᒃ ᓄᖅᓯᐃᔪᑎᑐᑦ ᔨᓱᓂᕆᓴᒪᒧᑦ ᐅᖏᖅᐅᓯᖅᓴᐃᑦ ᓄᓇᒥᒃ, ᐱᓗᐊᖅᑐᒥᒃ ᐃᓄᐃᑦ ᓄᓇᕐᔪᑎᖅᑐᓂᒃ.

1.1 ᓄᓇᐃᑦ ᓄᓇᒥᓗ ᐅᖏᖅᑎᐃᑦ ᐃᓗᓕᖅᖢᖅᑐᑦ ᐱᔨᓴᐅᔨᓂᒃ ᓄᓇᒥᒃᒥ

ᐊᑐᐃᓕᑦ ᓄᓇᒥᒃᒥ ᓄᓇᑦᑭᑎᑦ ᐊᖅᑎᑭᑎᐊᐃᓕᑦ, ᐃᓄᐃᑦ - ᐊᖅᔪᑎᑕᐅᓕᓓᑎᒃ ᐊᐃᑲᖅᓯᒪᓂᐅᔨᓂ ᐃᓄᐃᑦ ᑲᑐᔾᖅᑲᑎᑎᕆᑦᑦ - ᑎᐃᒥᐊᖅᑎᐅᖏᓪᓕᑕ ᐊᖅᑎᓂᓂᖅᑲᑎᑦ 356,000 ᑭᒡᓴᓵᑐᓂᒃ ᑭᓪᒥᑐᓂᒃ ᓄᓇᓂᒃ, ᑕᐃᔾᐅᔨᓂᒃ ᐃᓄᖅᓄᑦ ᐱᖓᔪᖅᑎᑦᓗᑎᑦᓂᒃ ᓄᓇᓂᒃ, ᖃᒃᓗᓴᓚᑎᑐᑦ IOL-ᓂᒃ. ᐃᓄᖅᓄᑦ ᐱᖓᔪᖅᑎᑦᓗᑎᑦ ᑯᐃᓐᒧᑦ (ᑲᓇᑕᒧᑦ) ᐱᑎᑲᐅᑎᒡᓗᒍ ᓄᓇᒋᑦᑐᑦ ᐃᓗᓕᖅᖢᖅᑐᑦ (ᖃᒃᓂᑎᑲᖅᑭᖅᓴᕐᑐᑦ 98% ᓄᓇᖅᓂᒥ ᐊᒪᓗᓗ 90%-ᐃᓄᖅᓄᑦ ᐱᖓᔪᖅᑎᑦᓗᑎᑦᓂᒃ ᓄᓇᓂ) ᑕᐃᔾᐅᕐᓴᑦ ᐃᒧᒃ "ᓄᓇᐅᑦ ᖃᒃᖅᑭᖅᓴᕐᑐᑦ ᐃᓄᖅᓄᑦ ᐱᖓᔪᖅᑎᑦᓗᑎᑦ ᓄᓇᐃᑦ". ᐊᖏᖅᑐᓂᖅᓯᒪᓂᐅᔨᓂ ᐃᓄᐃᑦ ᑲᑐᔾᖅᑲᑎᑎᕆᑦᑦ ᐅᑭᐅᖅᑕᐅᓂᖅᑐᒥᒃ , ᑐᓂᓯᖃᑦᑕᕐᓗᒍ ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᔨᔪᑎᖅᑭᑐᓂᒃ ᓴᐃᔾᔨᓂᒃ ᐊᒪᓗᓗ ᑭᐅᔾᑕᐅᑕᐅᔨᓄᑦ ᐊᑐᖅᑕᐅᔨᔪᑎᑐᓄᑦ. ᐃᓄᖅᓄᑦ ᐱᖓᔪᖅᑎᑦᓗᑎᑦ ᓄᓇᐃᑦ ᑐᵒᖏᓚᵇᑯᵒᓂ ᓄᓇᒥᐅᑕᖅᑭᖅᓴᕐᑐᑦ ᓄᓇᕐᔪᑎᖅᑐᓂᒃ, - ᐊᒥᐊᵇᑯᖅᖁᖅᑐᑦ 38,000-ᓂᒃ ᑭᒡᓴᓵᑐᓂᒃ ᑭᓪᒥᑐᓂᒃ, 2%-ᖅᑎᑦ ᓄᓇᕐᓂ- ᖁᒃᐅᔨᐅᓚᑎᑦᓗᑎᑦ ᑕᐃᔾᐅᓂᐊᒧᑦ ᐃᒧᒃ "ᓄᓇᐅᑦ ᐃᓗᐊᓂᑦᑐᑦ ᐃᓄᖅᓄᑦ ᐱᖓᔪᖅᑎᑦᓗᑎᑦ ᓄᓇᐃᑦ". ᑐᵒᖏᓚᵇᑯᓂ ᐊᐅᓪᓚᑦᓴᐅᔨᑦ ᓄᓇᒥᐅᑕᓕᖅᑎᑎᓂᒃ ᐱᔨᓴᐅᓂᒃ ᓄᓇᖅᑐᓂ ᐊᑕᓵᓂᑐᓂᒃ ᐃᓄᖅᓄᑦ ᐱᖓᔪᖅᑎᑦᓗᑎᑦ ᓄᓇᒥ (ᐱᓕᑎᑦᓴᐅᔨᓄᑦ ᐱᔨᓴᐅᓂᒃ ᐱᔨᔪᖏᐅᑦᓴᓕᖅᑐᓂᒃ ᒪᑭᓯᑕᐅᓯᒪᔪᑦ ᐊᑕᓵᓂᑐᓂᒃ CMR-ᑯᓂ) ᑐᓂᔾᐅᖅᑲᑕᖅᓂᖅᓴᓗᑦ ᖁᓕᓂᐊᖅᑲᐅᓇᓕᓂᔭᒋᑦ ᐊᖅᑭᖅᑎᑎᔾᔪᑎᑦ, ᐊᑕᓵᓂᑦ ᑎᓗᒥᐊᖅᑲᑦ ᐱᔨᓇᐅᑎᖅᑲᖅᓯᒪᓂᒃ ᐱᔨᓇᓂᓂᖅ ᓴᓇᘐᖅᑲᑎᓂᔭᒋᑦ ᐊᑐᐊᕐᖃᖅᑐᓂᒃ, ᐅᖏᖅᐅᓯᖅᓴᐃᔪᐅᓇᖅᑐᓂᒃ, ᒪᑕᑎᓂᒃ ᐊᓯᖅᑐᓂᒃ ᒪᑕᓵᓗᒍᑎᓂᒃ.

ᐃᓗᐊᓂ ᑐᓐᖓᕕᒃᑯᑦ/ᐃᓄᐃᓪᓗ ᑲᑐᔾᔨᖃᑎᒌᖕᒋᓐᓂ ᑎᑎᖃᖃᖅᑐᑦ ᑕᐃᔭᐅᔪᓂᒃ ᒪᓕᒋᐊᓖᑦ ᐊᒻᒪᓗ ᐱᖅᑯᓯᕆᔭᐅᔭᕆᐊᓖᑦ, ᐊᐅᓚᑕᐅᓂᖕᒋᓐᓄᑦ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔪᑦ ᓄᓇᐃᑦ (ᒪᓕᒡᒃᓴᐃᑦ ᐱᖅᑯᓯᐅᖁᔭᐅᔪᓪᓗ), ᐊᒥᓱᓂᒃ ᑕᒻᑭᖅᑐᓂᒃ ᓇᓗᓇᐃᒃᑯᑕᐅᔪᑦ ᓄᓇᓂᒃ ᑲᒪᒋᔭᐅᖃᑦᑕᖅᑐᓄᑦ ᒪᓕᒃᑕᐅᔭᕆᐊᓖᑦ ᐊᐅᓚᑦᑎᔨᐅᓂᖕᒋᓐᓂ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔪᓂᒃ ᓄᓇᓂᒃ. ᒪᓕᒋᐊᓖᑦ ᐊᒻᒪᓗ ᐱᖅᑯᓯᕆᔭᐅᔭᕆᐊᓖᑦ, ᐊᔪᖅᓇᖅᑎᑦᑎᔪᖃᖕᒋᑦᑐᑦ ᐱᔾᔪᑎᖃᑐᐃᓐᓇᖅᑐᓂ ᔪᕈᓂᔭᒻᒥᒃ ᑐᐊᕆᔭᒻᒥᓗᓐᓃᑦ (Uranium ᐊᒻᒪᓗ Thorium-ᒥ) ᓄᖑᔪᐃᑦᑐᓂᒃ, ᓇᓪᓕᐊᖕᓂᑐᐃᓐᓇᖅ ᓄᓇᐅᑉ ᖃᖓᓂ ᐱᔪᓐᓇᐅᑎᓂ ᐅᕙᓗᓐᓃᑦ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᓂᒃ ᐱᔪᓐᓇᐅᑎᓂ.

ᑲᓇᑕᒥ ᐃᖃᓇᐃᔭᕕᖕᖓ ᐃᓄᓕᕆᔩᑐᖃᒃᑯᑦ, ᐊᐅᓚᑦᑎᔨᐅᕙᒃᑐᑦ ᐱᔪᓐᓇᐅᑎᓂᒃ ᓄᓇᒥᒃ ᐅᔭᕋᓕᕆᔪᓐᓇᕐᓂᕐᒥᒃ ᑕᒪᐃᓐᓂ ᑲᓇᑕᐅᑉ ᑎᒍᒥᐊᑕᖕᒋᓐᓂ ᓄᓇᓂ ᐊᒻᒪᓗ ᑕᒪᐃᓐᓂ ᖃᖕᒋᓐᓂ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔪᓂ ᓄᓇᓂ, ᐊᑐᖅᑕᐅᓪᓗᑎᒃ ᑲᓇᑕᒥ ᐅᔭᕋᖕᓂᐊᕐᕕᓕᕆᓂᕐᒧᑦ ᒪᓕᒐᓪᓗᑐᐃᑦ (CMR-ᑯᑦ). ᐊᐅᓚᑦᑎᔨᐅᖃᑦᑕᕐᒥᐊᑦ ᐱᔪᓐᓇᐅᑎᓂᒃ ᑕᐃᒃᑯᓇᓂ ᓄᓇᓂ ᓄᓇᐅᐊ ᐃᓗᐊᓃᑦᑐᓂ ᐃᓄᖕᓄᑦ ᐱᖁᑎᔭᒋᔭᐅᔪᓂ, ᓄᓇᒥᐅᑕᐃᑦ ᐅᔭᕋᐃᑦ ᐱᔪᓐᓇᐅᑎᖃᕐᕕᒋᓪᓗᓂᒋᑦ ᐊᑖᒍᑦ CMR-ᑯᑦ (ᑲᓇᑕᒥ ᐅᔭᕋᖕᓂᐊᕈᓐᓇᕐᓂᕐᒧᑦ ᒪᓕᒐᓪᓗᑐᐃᑦ), ᑕᐃᔅᓱᒪᓂ ᓄᓇᕗᒻᒥ ᓄᓇᑖᕈᑏᑦ ᐊᖏᕈᑏᑦ ᐊᑐᓕᖅᑎᑕᐅᒐᒥᒃ. ᐅᔭᕋᐃᑦ ᐱᔪᒪᔭᐅᔪᖅᑲᖅᑐᑦ ᐱᔪᓐᓇᐅᑏᑦ ᑐᓂᔭᐅᔪᑦ ᐊᐅᓚᑕᐅᓯᒪᔪᓗᓐᓃᑦ ᐊᑖᒍᑦ CMR-ᑯᑦ ᐊᔪᖃᖅᑎᑦᑎᖕᒋᑦᑐᑦ ᐅᕙᓘᓐᓃᑦ ᓄᖃᖅᑎᑦᑎᔪᓐᓇᖕᒋᑦᑐᑦ ᖄᓂᕈᒪᓂᕐᒥᒃ ᐅᔭᕋᖕᓂᐊᕐᓂᕐᒥᒡᓗᓐᓃᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ.

ᐃᓚᖕᒋᑦ ᓄᓇᐃᑦ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔫᑦᑐᑦ ᓄᓇᓂ, ᐃᓗᓕᖅᑐᐃᓐᓇᕆᐊᖅᑲᖅᒪᑕ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕐᒥᐅᑕᖅᑲᖅᑐᓂ ᐊᒻᒪᓗ ᐊᑕᐅᓯᖅ (BL-22-ᒥᑦᑐᖅ) ᖃᐅᔨᒪᔭᐅᔪᖅ ᐃᓗᓕᖅᑲᖅᓂᖕᖓᓂᒃ. ᐃᓄᐃᑦ ᓂᕆᐅᓚᐅᖅᑐᑦ ᑕᒪᒃᑯᓂᖕᖓ ᓄᓇᓂᒃ ᐱᕕᒃᓴᖃᕈᓐᓇᖅᓂᖕᒋᓐᓄᑦ ᐃᑲᔫᑎᒃᓴᓂᒃ ᓯᕗᓂᒃᓴᒥ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᔫᒫᖅᓂᖕᒋᓐᓂ ᓄᖑᔪᐃᑦᑑᑦ ᐊᒻᒪᓗ ᐃᓚᐅᔪᓐᓇᖅᓂᖕᒋᓐᓄᑦ ᐃᓱᒪᓕᐅᕈᓐᓇᖅᓂᖅ ᐊᐅᓚᑦᑕᐅᓂᐊᖅᓂᖕᒋᓐᓂᒃ ᑕᐃᒃᑯᓂᖕᖓ ᐅᔭᕋᖕᓂᐊᕈᒫᖅᑐᑦ. ᑭᓯᐊᓂ, ᐊᑖᒍ ᖃᓂᕈᓐᓇᖅᓂᖅᒧᑦ ᐊᖏᕈᑎᒃᑯᑦ, ᑐᓐᖓᕕᒃᑯᑦ ᒫᓐᓇᐅᔭᖅ ᐱᔪᓐᓇᖅᑎᑦᑎᓐᖏᑦᑐᑦ ᖃᓂᕈᓐᓇᖅᓂᖅᒥᒃ ᐊᒻᒪᓗ ᐲᔭᐃᔪᓐᓇᖅᓂᖅᒥᒃ ᓄᖑᔪᐃᑦᑐᖅᑲᖅᑐᓂᒃ ᐅᔭᕋᖕᓂᒃ ᔪᕈᓂᔭᒻᒥᒃ, ᑐᐊᕆᔭᒻᓗᒃ thorium-ᒥᒃ.

ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖕᒋᑦ ᐱᑖᖅᕕᐅᖃᑦᑕᖅᒪᑕ ᐊᑐᕈᓐᓇᖅᓂᖅᒥᒃ ᐱᔪᓐᓇᐅᑎᓂᒃ ᖃᓂᕈᒪᔪᓄᑦ ᐊᒻᒪᓗ ᐅᔭᕋᖕᓂᐊᖅᑭᒪᔪᓄᑦ - ᐃᓚᒋᓪᓗᑎᒃ ᓄᖑᔪᐃᑦᑐᑦ ᔪᕈᓂᔭᒻ - ᑐᓂᔭᐅᓯᒪᔪᓄᑦ ᐅᔭᕋᖕᓂᐊᕈᓐᓇᖅᓂᖅᒧᑦ ᐱᔪᓐᓇᐅᑎᑖᖅᑎᑕᐅᓯᒪᔪᓄᑦ ᐊᑖᒍ CMR-ᑯᑦ, ᑲᓇᑕᒥ ᐅᔭᕋᖕᓂᐊᖅᑐᓕᕆᓂᕐᒧᑦ ᒪᓕᒐᓪᓗᑐᐊᒍᑦ. ᑕᐃᓐᓇ ᑎᒍᒥᐊᖅᑐᖅ ᐅᔭᕋᖕᓂᐊᕈᓐᓇᖅᓂᖅᒧᑦ ᐱᔪᓐᓇᐅᑎᓂᒃ ᐊᔪᕈᓂ ᐊᖏᖅᑕᐅᓯᒪᓂᕐᒥᒃ ᐊᕕᒃᑐᖅᓯᒪᓂᐅᔪᒥ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᒋᓐᓂᒃ, ᓄᓇᕗᒻᒥ ᓄᓇᑖᕈᑏᑦ ᐊᖏᕈᑎᖕᒋᑦ ᑎᑎᕋᖅᓯᒪᔪᖅᑲᖅᐳᑦ

ᑭᓇᑐᐃᓐᓇᖅ ᑎᒍᒥᐊᖅᑐᖅ ᐆᑐᕈᓐᓇᖅᑐᖅ ᓄᓇᕗᒥ ᓄᓇᐃᑦ ᖄᖏᓐᓄᑦ ᑲᑎᒪᔩᕐᔪᐊᓄᑦ ᓄᓈᕈᓐᓇᐅᑎᒥᒃ (ᐃᑎᕈᑎᒥᒃ) ᒪᓕᒃᑕᐅᔪᓇᐊᖅᑐᒥᒃ ᐱᔪᒪᑐᓂ, ᐱᓕᓇᐊᓇᔪᒪᔪᒥᓄᑦ.

1.2 ᑐᓐᖓᕕᒃᑯᑦ ᐅᓯᕋᖕᓂᐊᕐᓂᕐᒧᑦ ᐊᑐᐊᒐᓂᒃ ᐃᓱᒪᒋᖄᖅᓯᒪᔭᖏᑦ ᐊᑐᐊᒐᓕᐅᓇᐊᓚᐅᖏᓐᓂᖏᓐᓂ

ᓄᓇᕗᒥ ᓄᓇᑖᕈᑎᓄᑦ ᐊᖏᕈᑏᑦ ᐊᒻᒪᓗ ᐊᓯᖏᑦ ᒪᓕᒃᑕᐅᔪᓇᐊᓖᑦ ᓱᕐᓗ ᑐᓐᖓᕕᒃᑯᑦ ᒪᓕᒐᖁᑏᖏᑦ ᐊᒻᒪ ᑲᑎᒪᔩᑦ ᓴᕿᑦᑎᕙᓪᓕᐊᓂᕐᒧᑦ ᐊᑐᐊᒐᖏᑦ ᐋᕿᐅᒪᔭᐅᔪᑦ ᖃᓄᐃᓕᐅᖅᑲᑦᑕᓇᐊᖃᕐᓂᖏᓐᓂ ᑐᓐᖓᕕᒃᑯᑦ. *ᐅᓯᕋᖕᓂᐊᕐᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ* ᐊᓯᖏᓪᓗ ᐊᑐᐊᒐᐃᑦ ᐱᖁᓵᕗᖔᕈᐲᑦᓗ ᐱᔾᔪᑎᖃᖅᑐᑦ ᓄᓇᓂᒃ ᓄᓇᒥᐅᑕᓂᓪᓗ, ᐅᖃᑦᓯᒪᑦᑎᐊᕐᓂᖅᓴᐅᔪᑦ ᖃᓄᐃᓕᖓᔪᓇᐊᖃᕐᓂᖏᓐᓂ ᓱᓇᓄᑦ ᐱᔾᔪᑎᖃᓚᓇᒃᑐᓄᑦ. ᒪᓕᒋᐊᖏᑦ ᐱᖅᑯᓯᓇᔭᐅᔪᓇᐊᖏᓪᓗ ᐊᑐᖅᑐᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᖃᓄᐃᓕᐅᓇᐊᖃᕐᓂᖏᓐᓂ ᐊᐅᓚᑦᑕᐅᓂᖏᓐᓂ ᓄᓇᐃᑦ ᐊᒻᒪᓗ ᐅᓯᖃᐃᑦ ᐱᔪᒪᔭᐅᔪᖃᖅᑐᑦ, ᒪᓕᒃᑕᐅᔪᓇᐊᖃᖅᓯᑎᒃ ᐊᑐᐊᒐᕐᓃᑦᑐᑦ ᓇᑐᓇᐃᒃᑯᑕᐃᑦ. ᑕᒪᕐᒥᒃ ᑖᒃᑯᐊ ᑕᑯᓪᓗᒋᑦ, ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᖄᖅᓯᒪᔪᑦ ᑲᒪᒋᔭᐅᓕᖅᑎᓪᓗᒋᑦ ᓄᐡᔪᐃᑦᑐᓂᒃ ᐅᓯᕋᖕᓂᐊᖅᑐᖃᕋᔭᖅᐸᑦ.

ᐃᑲᔪᕐᓂᖃᕐᓂᐊᖅᑐᖅ ᐅᓂᒃᑳᖅᑕᐅᑲᓐᓇᕈᑎᒃ ᑐᓐᖓᕕᒃᑯᑦ ᒫᓇᐅᔪᒥ ᐊᑐᐊᒐᖏᑦ, ᐱᔾᔪᑎᖃᖅᑐᓂᒃ ᐅᓯᕋᖕᓂᐊᕐᓂᕐᒥᒃ ᐊᒻᒪ ᖃᓄᖅ ᐃᓚᒋᔭᐅᖕᒪᖓᑕ ᓄᐡᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ *ᐊᑐᐊᒐᕐᓄᑦ.* ᑐᓐᖓᕕᒃᑯᑦ ᒪᓇᐅᔪᖅ ᒪᕐᑰᖕᓂ ᐊᑐᐊᒐᖃᕐᒪᑕ ᐱᔾᔪᑎᖃᖅᑐᓂᒃ ᐅᓯᕋᖕᓂᐊᕐᓂᕐᒥᒃ - *ᐅᓯᕋᖕᓂᐊᕐᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ,* ᐊᒻᒪᓗ *ᐃᒪᓕᓇᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ.* ᑐᓐᖓᕕᒃᑯᑦ ᐊᒻᒪᓗ ᐃᓄᐃᑦ ᑲᑐᔾᔮᖃᑎᒌᖏᑦ ᓴᓇᕖᑦᓕᐊᓕᕐᒥᔪᑦ *ᓴᓗᒪᖅᓴᐃᓂᕐᒧᑦ ᐊᑐᐊᒐᕐᓂ*[1], ᐱᔭᕇᖅᑕᐅᓵᓕᓖᓕᖅᑐᓂᒃ. *ᐅᓯᕋᖕᓂᐊᕐᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ* ᐃᓚᖃᖅᑐᑦ ᐅᖃᐅᓯᐅᓗᐊᖅᑐᓂᒃ "ᓴᓇᔭᐅᖃᑦᑕᕐᓂᖏᓐᓂᒃ ᐅᓯᕋᐃᑦ ᐱᔪᒪᔭᐅᔪᖃᖅᑐᑦ ᓄᓇᕗᒥ". ᑕᐃᒪᐃᑎᓪᓗᒋᑦ, ᖃᓄᖅᑑᕈᑕᐅᔪᑦ ᑕᒪᐃᓐᓂ ᖃᓄᓕᒫᖅ ᐱᔾᔪᑎᖃᖅᑐᓂ ᐅᓯᕋᖕᓂᐊᕐᓂᕐᒥᒃ, ᐊᒻᒪᓗ ᐅᓂᒃᑲᖅᓯᒪᓪᓗᑎᒃ ᑐᓐᖓᕕᒃᑯᑦ ᖃᓄᐃᓕᖓᓂᑯᖏᓐᓂᒃ ᐅᓯᕋᖕᓂᐊᕐᓂᕐᒥᒃ ᐱᔾᔪᑎᖃᖅᑐᓂᒃ, ᑕᒪᐃᓐᓂ ᓄᓇᓂ ᓄᓇᕗᒥ. ᐅᖃᖅᓯᒪᔪᖃᖅᐳᖅ ᐃᒫᒃ "ᑐᓐᖓᕕᒃᑯᑦ ᐃᑲᔪᖅᓯᐃᓂᐊᖅᑐᑦ ᐊᒻᒪᓗ ᐱᒋᐊᖅᑎᑦᑎᓇᓱᐊᕐᓂᐊᖅᑐᑦ ᓴᓇᔭᐅᓂᖏᓐᓂᒃ ᐱᔪᒪᔭᐅᔪᑦ ᓄᓇᒦᑦᑐᑦ ᓄᓇᕗᒥ, ᐱᒻᒪᕆᐅᔪᓂᒃ ᐊᑯᓂᐅᔪᒧᑦ ᐃᓅᓯᕐᒧᑦ ᕿᓇᐅᔭᓕᐅᖃᑕᐅᔪᓐᓇᕐᓂᕐᒧᑦᓗ ᐃᑲᔪᕐᓂᖃᕈᓐᓇᕐᓂᐊᖅᐸᑕ ᐃᓅᖕᓄᑦ ᓄᓇᕗᒥ, ᐊᒻᒪᓗ ᒪᓕᒃᑯᑎᒃ ᐊᔾᔨᖏᑦᑑᑎᑦ ᐱᕈᖅᑐᑦ ᐆᒪᔪᐃᑦᓗᓐᓃᑦ ᐱᑕᖃᖅᑐᑦ ᓄᓇᒥ, ᐃᒪᕐᓂᓗ ᖃᓄᐃᑕᐅᑕᐃᓕᒪᔭᓇᐊᖃᕐᓂᖏᓐᓂ ᓄᓇᕗᒥ ᓄᓇᑖᖃᕙᐅᓯᒪᔪᑦ ᐃᓗᐊᓂ".

ᐃᒪᕐᓄᑦ ᐊᑐᐊᒐᐃᑦ ᐱᔾᔪᑎᖃᓗᐊᖅᑐᑦ ᐃᓄᐃᑦ ᐱᔪᓐᓇᐅᑎᖏᓐᓂᒃ ᐃᒪᐃᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᕐᓂᖏᓐᓂ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔪᓂ ᓄᓇᓂ ᓇᓗᓇᐃᒃᑯᑕᐅᓪᓗᒋᓪᓗ ᖃᓄᖅ ᐊᑐᖅᑕᐅᔪᓐᓇᕐᓂᖃᕐᒪᖔᑕ ᑕᒫᓂᑦᑐᑦ ᐃᒪᐃᑦ. *ᓴᓗᒪᖅᓴᐃᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ*

[1] ᒫᓇᐅᔪᖅ, ᓴᓗᒪᖅᓴᐃᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ ᓱᓕ ᐊᖏᖅᑕᐅᓯᒫᓂᖏᓪᒪᑕ ᑲᑎᒪᔩᓄᑦ ᑐᓐᖓᕕᒃᑯᓐᓂ.

ፈጋናσፈხጋና ʎ⊃ʎᒪናხʎናხርᐅሥᒪʎጒፈናხናσᖁቦᵒᓄና ልᓄᖁᓄና ለናძበቦʎᐅᐯና ᓄዉልና, ዖᖁሠσፈσ ᓄዉልና ፈጋናልᐅርᐅხናሥበᵇ, ልርናხናሥበᑦ⊃ ʎ⊃ʎᒪናხʎናხርᐅʎጒፈናხናσᖁቦᵒ ᐅʎናᖁσፈናልልỏና. ርᒪᵇძፈ ለርናხᖁቦხ⊃ፈናხበᓵ⊃ቦና ፈጋፈሀልና ᐅናხᐅሥናხᓵ⊃ጋናხጋቦᵇ ᓄᖁሠልናጋσᵇ ሩጒσᵗሥᒪቦᵇ ናዖσᵗናσᒪቦᵇ ፈዛᒪ⊃ ᐅʎናᖁσፈናσᵗናቦᵇ, ርᒪናቦᵇ ᐅናხናርᐅሥᒪሩና ᐅʎናᖁσፈናσᵗናገና ᓄዉልᓵ⊃ ፈጋናხርᐅσᖁቦᵒσ ለርጒፈᖁᖁᓄና ርᒪልᵒσ ፈጋናხርᐅጒᓄናხጋና ᓄᖁሠልናጋቦᵇ ሩጒσᵗሥᒪቦᵇ ናዖσᵗናσᒪቦᵇ ᐅʎናᖁσፈናσᵗናገና ᓄዉልᓵ⊃ ፈጋናხርᐅσᖁቦᵒσ ለርጒፈᖁᖁᓄና ᓄዉልᓵ⊃ ፈጋናልᐅርᐅσᖁቦᵒσ ፈዛᒪ⊃ ᐅʎናᖁσፈናσᵗናገና ለርጒፈናხበᓵ⊃ጋᒍ.

ʎσፈσ ርᒪᵇძፈ ፈጋፈሀጒʎᐅሥ - ናხᐅᒪʎᐅሥᵒጒናხጋና ርᒪልᵒσᵇ ናხᓄልርᐅᑭርᐅσᖁᖁᵒσ ልሥᒪʎ⊃ርᐅሥσᵇ, ልხሥናხርᐅሥᒪᓵ⊃ቦᵇ ናხᓄና ለቦፈናᒽხርᐅሥᒪᖁᒪᓵ⊃ቦᵇ ናხᐅᒪʎᐅሥᒪᖁᒪᓵ⊃ቦᵇ ፈዛᒪ⊃ ʎናᑭᖁናበናቦሥሰናርᐅᓵ⊃ቦᵇ ፈገሥσᵇ ᐅናხᐅሥᐅሥᒪσᖁᖁᵒσᵇ ፈዛᒪ⊃/ᐅᙰ⊃ᵒỏና ጋᑭሥσፈናልᐅሥᒪσᖁᖁᵒσᵇ - ጋᵒᖁᒪልᵇძና ᐅናხᑭᵒጒናገሥና ናხᓄልርᖁᒪσናገσᵇ ልሥᒪʎ⊃ርᐅሥσᵇ ለናძᔭᖁᒽᑭበበሀና ხበᒪᔭσᖁᒽናხጋσᵇ. ልርᖁᑦᵒσ ርᒪᵇძፈ, ልሥᒪርʎᐅሥᵒጒጒናገና ሥʔ⊃ ናხᓄልርᖁᒽʎᐅხልጒናፈናσፈናხጋσᵇ, ᐅርናᑭʎᐅσᖁᖁᵒσ ᐅσᵇხናበፈናሥʎሥናხʎᐅሥ ሥጒጋልᵒጒσᵇ ለʎሥበናხናʎናხጋσᵇ. ጋᵒᖁᒪልᵇძና ᒪናᑐᖁσᵇ ለናძᔭᖁᒽᑭበበሀና ხʎሥበናሥᒪርናხጋና ለʎሥበናხናხጋσᵇ ᓄᖁሠልናጋσᵇ ᐅናხᐅሥናσᵗናገᵇ. ለናძᔭᖁᒽᑭበበሀና ፈዖናხጋልᐅሥᒪናხጋና ናხᓄልናጋልጒσᵇ ለናძበσᵇ ᐅርሥᒪσᵇ ፈሥᒪናხጋσᵇ ᓄᖁሠልናጋσᵇ ᐅናხᐅሥናσᵗናገᵇ ፈዛᒪ⊃ ፈገፈርხበᐅσᖁᖁᵒσ.

1997-ገ ለናძᔭᖁᒽᑭና ᐅናხናሥᒪርᐅናხጋናხ ፈዖናናხጋልσᵗናገᵇ ፈძዖርጋናገᐅና ልሥᒪʎናናሥᐅጋበቦሥʎᖁᖁᵒσᵇ <ናቂልσᵗናხ ልርᐅናხልበናበʎᵒቂናσᵗናხ ፈጋጋᵒỏᵗናጋσᵇ ᓄᖁሠልናጋσᵇ ፈᵇርძσᵇ ፈሥᖁᵒσᵗ⊃ ᓄᖁሠልናጋናხናጋልσᵗናσᵇ ለናძበσᵇ ᐅርሥᒪᵇ ፈዛᒪ⊃ ፈገፈርხገᐅσᵇ. ለናძᔭᖁᒽᑭና ፈዖናናხጋርᐅናხጋናხ ናხᓄልናጋጋልቂσᵇ <ናቂᐅበσᵇ ጋናძናხርᐅቂናσᖁᖁᵒσ ᓄᖁሠልናጋና ለናძበና ᐅᙰ⊃ᵒỏና ፈᐅ⊃ርናხበርᐅσᖁᖁᵒσ ርᒪᵇძፈ ለናძበና ᐅᑭᐅናხርናጋገᐅσ. 1999-ገ, ጋᵒᖁᒪልᵇძና ხʎሥበናበርᐅናხጋና ለናძᔭᖁᒽᑭዛᒪᵇ ልርርናᵇሥሥᒪʎገᵇ ᑭቂᐅᔨርᐅናხርᐅσᵗናገᵇ, ልᑯናხበበᑦᖁσᵗናገᵇ, ፈᙰበገᑦ⊃ ልሥᒪ⊃ርᐅʎገσᵇ ᓄᖁሠልናጋσᵇ ᐅናናᖁσፈናσᵗናገᵇ ፈዛᒪ⊃ በርᔨᐅ⊃በᵇ ልናხቂልናልᖁᑦና ᓄዉልና ᓄዉገᐅርᓄᵉ⊃, ʎናᑭናበናძᔨᐅ⊃ቦᵇ ᐅናხᐅሥʎᐅσፈናσᵗናገᵇ በበናხσᵇ, ለʎሥበናხናገσᵇ ᓄᖁሠልናጋσᵇ ᐅናናᖁσፈናσᵗናገᵇ ᓄዉዖገ ፈዛᒪ⊃ ጋᵒᖁᒪልᵇძና ፈᐅርናበእና ხበᒪᔭᖁᑦና ፈᖁᑦናርናხጋናልᐅሥᒪᓵ⊃ቦᵇ ხበᒪᔭናሪσᵇ ʎ⊃ʎᐅσፈናσᵗናገᵇ በበናሥናხርᐅʎናხጋσᵇ ፈጋፈሀናσᵇ ᓄᖁሠልናጋσᵇ ᐅናናᖁσፈናσᵗናገᵇ ጋσናᑭርᐅሠᒪናხጋσᵇ ხበᒪᔭᓄና ጋᵒᖁᒪልᵇძᵒσ. ለናძᔭᖁᒽᑭበና ልርናხናጋና ፈገሥσᵇ ᓄᖁሠልናጋσᵇ ᐅናናᖁσፈናσᵗናገᵇ ፈዛᒪ ᓄᖁሠልናጋσᵇ ᐅዛᒪናძበᐅᓄናხጋσᵇ ልሥᒪʎናናሥᐅጋበቦሥʎᖁᖁᵒσᵇ ፈጋፈሀናσᵇ ᐅናናᖁσፈናσᵗናገᵇ ፈዛᒪ⊃ ᓄዉልና ለናძበቦʎᐅᐯσ ᓄዉσ.

ለዛᒪᓵᐅሠናხ ᐅᔨᑭᓗᖁσᵗናხ ለርናხᖁቦዛᒪርር ጋᵒᖁᒪልᵇძና ᒪርᑕናሪᖁቦና, ፈጋፈሀᖁቦና, ለናძᔭᖁᒽᑭበᖁቦና, ᐅᙰ⊃ᵒỏና ᒪርᑕናሪᖁቦና, ᐅᙰናხበናቦᒪሠᓵ⊃ና, ፈሠናხበናቦሠና ፈዛᒪናᖁᖁᵒσᵇ⊃ ᓄᖁሠልናጋσᵇ ᐅናናᖁσፈናσᵗናገᵇ ናዖσᵗናσᒪናσᵗናገᵇ ᐅናናᖁσፈናσᵗናገᵇ ᓄዉልና ለናძበቦʎᐅᐯσ ᓄዉσ.

ᑐᓐᖓᕕᒃᑯᑦ ᑭᒡᒐᖅᑐᐃᔾᑐᐃᓐᓇᐅᖅᑎᒻᒪᑕ ᐃᓄᖕᓂᒃ ᓄᓇᕗᒻᒥ ᐃᓱᒫᓗᑕᐅᔪᓂᒃ, ᑭᓯᐊᓂᑦᑕᐅᖅ, ᐃᓚᐅᕐᑲᑦᑕᕐᒥᔪᑦ ᓯᓚᕐᔪᐊᕐᒥ ᑎᒥᐅᔪᓂ ᐱᔾᔪᑎᖃᖅᑐᓂ ᐅᑭᐅᖅᑕᖅᑐᓕᒫᒥ ᓄᓇᕐᔪᐊᕐᒥ ᐃᓱᒪᓗᑕᐅᔪᓂᒃ. ᐃᓄᐃᑦ ᓯᓚᕐᔪᐊᕐᒥ ᑲᑎᒪᔾᔪᕐᔪᐊᑦ ᑕᐃᒪᐃᑦᑑᕗᑦ. ᑕᒪᑐᒪᓂ, ᐊᑐᐊᒍᐃᑦ ᑐᖅᑮᑦᓚᓇᒃᑐᑦ ᓄᖑᔪᐃᑦᑐᓕᖅᓂᒃ ᐅᔾᔨᖅᓂᐊᕐᓂᕐᒥᒃ ᓄᓇᕗᒻᒥ ᓴᖅᑭᑕᐅᓯᒪᔪᑦ ᒪᕐᕉᖅᓂ ᐱᖅᑯᔾᔭᓄᖅᒑᕈᑎᓂ ᐃᓄᐃᑦ ᓯᓚᕐᔪᐊᕐᒥ ᑲᑎᒪᔾᔪᖅᑎᓐᓂ, ᐃᓚᖓ ᑐᓐᖓᕕᒃᑯᑦ ᑲᓇᑕᒥᐅᑕᐅᕐᑲᑕᐅᕕᑎᒡᓗᓂᐅᒃ.

ᓯᕗᓪᓕᖅᐹᕐᒥ ᑖᒃᑯᓇᖓᑦ, 1983-ᒥ, ᐅᖃᕈᑕᐅᓚᐅᖅᑐᑦ ᐊᑭᕋᖅᑐᐃᓂᖅᑎᓐᓂ ᐊᐃᓯᔩᒃᑯᑦ (ICC) ᖃᐅᔨᓴᖅᑕᐅᓗᑎᒃ ᐆᒃᑐᕋᖅᑕᐅᓂᖅᑎᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᑦ ᐅᓇᑕᕈᑏᑦ ᐊᒻᒪᓗ; ᐊᑐᖅᑕᐅᓂᖅᑎᓐᓂ ᓄᖑᔪᐃᑦᑐᑦ ᐃᓗᓕᖅᑎᓐᓂᒃ ᐊᐅᓚᑦᑎᔾᔪᑎᓂᒃ, ᐊᒻᒪᓗ "ᕿᓂᖅᑕᐅᓂᖅᑎᓐᓂ ᐊᑐᖅᑕᐅᓂᖅᑎᓐᓂᓗ ᔪᕇᓂᔭᒻᒥ, ᑐᐊᕆᔭᒻ, ᓕᑎᔭᒻ ᐊᓯᖏᓪᓗ ᐱᖁᑏᑦ ᓄᖑᔪᐱᑦᑐᖃᖅᑐᓂᒃ ᐃᓗᓕᑏᑦ ᓴᓇᖅᑭᑕᐅᓰᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ" (Nuclear reactors). 1983-ᖑᑎᓪᓗᒍ ᐊᐃᓯᔩᒃᑯᑦ (ICC) ᐊᑐᐊᒐᑦ ᑐᖅᑮᖓᓗᐊᓚᐅᖅᓯᒪᔪᖅ ᖃᓄᖅᑑᕈᑕᐅᓪᓗᓂ ᓄᖑᔪᐃᑦᑐᓕᖅᓂᒃ ᐅᓇᑕᕈᑎᒃᓴᓂᒃ, ᒫᓐᓇᐅᔪᕐᓕ ᑐᑭᓯᓇᑦᑎᐊᒃᑲᓐᓂᕆᐊᖃᓕᖅᐳᖅ ᐊᒻᒪ ᓄᑖᕈᕆᐊᖅᑕᐅᓗᓂ. ᐃᓚᒋᔭᐅᔪᓂ ᐊᐃᓯᔩᒃᑯᓐᓂ, ᐊᑯᑭᑦᑐᖅᒥᐅᑦ ᑭᓯᐊᓂ ᐃᓕᓯᓯᒪᕗᑦ ᐊᔪᖃᖅᑎᑦᑎᓂᕐᒥᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔾᔨᖅᓂᐊᕈᓐᓇᖅᓂᖅ. ᐱᑕᖃᖅᑎᑦᑐᖅ ᒐᕙᒪᒋᔭᐅᔪᓂ ᓯᑕᒪᓂ ᐃᓄᐃᑦ ᓄᓇᖁᑎᖏᓐᓂ ᑲᓇᑕᒥ, ᐊᔪᖅᓇᖅᑎᑦᑎᓯᒪᔪᑦ ᑭᒻᒥᓕᕐᒥᐅᓪᓗ ᐊᕕᒃᑐᖅᓯᒪᓂᐅᔫᓪᓗᑎᒃ ᓄᓇᕗᒻᒥ ᒫᓐᓇᐅᔪᖅ ᒪᓕᒃᑲᑦᑕᖅᑐᑦ ᓄᖑᔪᐃᑦᑐᓄᑦ ᑐᖅᑮᖓᓗᒃᑲᓪᓚᕆᒃᑐᓂᒃ ᐃᓚᖃᖅᑐᒥᒃ ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᓂᖅᑎᓐᓄᑦ ᐸᕐᓇᐅᑎᓖᑦ.

ᑭᖑᓂᐊᒍᑦ ᐊᐃᓰᔩᒃᑯᑦ ᐱᖁᔭᕗᖕᒫᕈᒻᒥᒃ ᓴᖅᑭᑎᓚᐅᖅᓯᒪᔪᑦ 1998-ᒥ ᐃᓕᑕᖅᓯᓯᒪᔪᒥᒃ ᓄᖑᔪᐃᑦᑐᓕᖅᓂᒃ (ᔪᕇᓂᔭᒻᒥᒃ) ᕿᓂᖅᑲᑦᑕᓕᕇᕐᒪᑕ ᐊᒻᒪᓗ ᐊᖏᔪᒥᒃ ᐅᔾᔨᖅᑲᖅᓱᑎᒃ ᓄᖑᔪᐃᑦᑐᓕᐅᕈᑎᒃᓴᖃᖅᑐᓂᒃ ᓄᓇᒥᖏᓐᓂ. ᑖᓐᓇ ᓄᑖᖑᓂᖅᓴᖅ ᐱᖁᔭᕗᖕᒫᕈᑎᑦ ᐃᓱᖃᖅᑎᑦᑎᔪᖅ ᐃᓱᒪᓗᑕᐅᔪᓂᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔾᔨᖅᓂᐊᕐᓂᓕᕆᓂᕐᒥ ᐃᒪᐃᓕᖓᔪᓄᑦ "ᐊᕙᑎᒥᒃ ᐃᓅᓯᕐᒥᒡᓗ ᐊᒃᑐᐃᑐᐃᓐᓇᕆᐊᖃᖅᐸᑕ" ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔾᔨᖅᓂᐊᕐᓂᖅ, ᐊᒻᒪᓗ ᑐᑭᓯᓇᖅᑑᔭᖅᑐᖅ ᐃᓱᒪᒃᓴᖅᓯᐅᕐᑯᓯᓂᖅ ᑕᒪᒃᑯᐊ "ᓄᑖᑦ ᓴᓇᖅᑭᑎᐅᕙᓕᖅᑐᑦ ᐅᔾᔨᖅᓂᐊᕐᓂᕐᒥ" ᐊᔪᕆᓗᑕᐅᓂᐊᖅᑐᑦ ᐅᔾᔨᖅᓂᐊᕈᓐᓇᕐᓂᖅ ᐃᒫᒃ ᒥᑭᓪᓕᕚᓪᓕᕈᑕᐅᓇᔭᖅᑐᓂᒃ ᐃᓱᒪᓗᑕᐅᔪᓂᒃ ᐊᒻᒪᓗ "ᐃᓄᐃᑦ ᐃᓚᐅᔪᓐᓇᓗᑎᒃ "ᐆᓇᐅᔭᓕᐅᖃᑕᐅᕙᓪᓕᐊᔪᓐᓇᕐᓂᖏᑦ." ᑐᑭᖃᖅᑎᑕᐅᓇᓱᐊᖅᑑᔭᖅᓯᒪᔪᑦ ᐱᖁᔭᕗᖕᒫᕈᑎᑦ ᑲᔪᓯᒃᑲᓐᓂᖁᔭᓂᖅ ᖃᐅᔨᓴᖅᑕᐅᓂᖅᑎᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔾᔨᖅᓂᐊᕐᓂᖅᒥᒃ ᑕᐃᒫᒃ ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᐃᓅᓯᓕᕆᓂᕐᒧᓪᓗ ᐃᓱᒪᓗᑕᐅᔪᑦ ᐅᖃᐅᓯᐅᑦᑎᐊᕈᓐᓇᕐᓂᐊᕐᒪᑕ. ᐊᑐᐊᒐᐃᑦ ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᑕᑯᔭᐅᔭᖅᑐᑦ ᓯᕗᓗ ᒪᑐᐃᖅᓯᓯᒪᔪᒥᒃ ᐅᒃᑯᐊᕐᒥᒃ, ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔾᔨᖅᓂᐊᕐᓂᕐᒧᑦ, ᐱᐅᔪᒥᒃ ᕿᒥᕐᕈᐊᖅᑕᐅᓚᐅᖅᑎᓪᓗᒋᑦ ᐊᐃᓯᔩᒃᑯᓐᓄᑦ.

ᐊᑐᓕᖅᑕᐅᓃᑦᓕᐊᓂᖕᒋᓐᓂ ᐃᓗᓕᖕᒋᓐᓂ, ᓄᕗᔭᐃᑦᑐᓄᑦ ᐊᑐᐊᒐᐃᑦ ᐅᖃᖅᓯᒪᔪᑦ ᑐᓐᖓᕕᒃᑯᑦ ᐱᔾᔨᒥᓴᐃᓂᐊᖅᑐᑦ ᐊᐃᓯᓲᒃᑯᓐᓂᒃ ᕿᒥᕐᕈᐊᕐᑯᔨᓂᖅ, ᓇᓗᓇᐃᔭᐃᓂᖅ, ᓄᑖᕈᕆᐊᖅᑎᑦᑎᓂᕐᓗ ᖃᓄᐃᓕᖓᓂᕐᒥᓂᒃ ᓄᕗᔭᐃᑦᑐᓂᒃ ᐅᔾᔨᖕᓂᐊᕐᓂᕐᒧᑦ.

1.3 ᓴᓇᔪᓂᖕᒋᑦ ᓄᕗᔭᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ

ᐱᑕᖃᕆᐊᖃᕐᓂᖕᒋᑦ ᓄᕗᔭᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ

ᑐᓐᖓᕕᒃᑯᑦ ᐅᔾᔨᖕᓂᐊᕐᓂᕐᒧᑦ ᐊᑐᐊᒐᖃᖏᑦ ᐊᓯᖕᒋᓂᓗ ᐊᑐᐊᒐᕐᓂᒃ, ᐊᐱᕆᔪᖃᕈᓐᓇᖅᑐᖅ ᐃᓱᒪ ᐃᖕᒥᒃᑰᖅᑐᒥᒃ ᐊᑐᐊᒐᖃᕆᐊᖃᕐᒪᖔᑕ ᓄᕗᔭᐃᑦᑐᓕᕆᓂᕐᒧᑦ. ᑭᐅᔾᔪᑕᐅᕙᖅ ᐃᒫᒃ ᓄᕗᔭᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ ᐅᖃᐅᓯᖃᑦᑎᐊᕐᒪᑕ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᑦᑎᐊᖅᑐᓂᒃ, ᒪᑯᓂᖓ:

1. ᐊᐅᒪᒃᓴᖃᖅᑐᑐᖃᐅᓂᖕᒋᑦ ᓄᕗᔭᐃᑦᑑᑦ ᔪᕉᓂᔾᓪ ᐃᓕᒋᔾᔨᖕᒋᓪᓗ ᐃᓗᓕᖕᒋᑦ (ᓱᕐᓗ Radon ᐊᒻᒪᓗ Radium) ᐱᔾᔪᑕᐅᓪᓗᑎᒃ ᐅᔾᔮᖅᑐᖅᑕᐅᑎᐊᕆᐊᖃᖅᑐᒻᒪᕆᐅᖕᒪᑕ ᑕᐃᒫᒃ ᖃᓂᒻᒪᒃᑐᖃᕐᓂᐊᖕᒋᒪᑦ ᓴᓇᔩᓂᒃ ᐊᒻᒪᓗ ᐃᓄᖅᑯᑎᒋᔭᐅᔪᑦ ᖃᓄᐃᓕᑦᑕᐃᓕᒪᔭᕆᐊᖃᖅᓯᑎᒃ, ᓱᕈᖅᑕᐅᔭᕆᐊᖃᖕᒋᓱᓂᓗ ᐊᕙᑎᐅᔪᖅ.

2. ᐊᑐᖅᑕᐅᔪᓐᓇᕐᓂᖕᒋᑦ ᓴᓇᔪᓯᒪᔪᓐᓇᖅᑐᑦ ᓄᕗᔭᐃᑦᑐᓕᖕᓂᒃ ᐅᔾᔨᖕᓂᐊᕐᓂᕐᒥᒃ - ᔫᕈᓂᔾᓪᒥᒃ - ᐃᓱᒪᔫᑕᐅᖕᒪᑕ ᐃᓕᖕᒋᓐᓄᑦ ᐃᓄᖕᓄᑦ, ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᑦᑎᐊᕆᐊᖃᖅᓯᒪᔪᑦ.

3. ᓈᒻᒪᒋᔭᐅᓚᐅᖕᒋᑦᑐᑦ ᑕᐃᒪᓂ ᐃᓄᓕᒫᓄᑦ 1989-ᒥ ᐅᔾᔨᖕᓂᐊᕐᕕᒃᑖᕈᒪᔪᖅᑲᖅᑎᓪᓗᒍ ᑭᒡᒐᕕᖕᒥ ᖃᒪᓂᑦᑐᐊᑉ ᐱᖕᖓᖕᓇᖕᖓᓂ, ᐱᔾᔪᑕᐅᔪᖅ ᐃᓱᒪᔫᑕᐅᔪᑦ ᓄᕗᔭᐃᑦᑐᓕᖕᓂᒃ ᐅᔾᔨᖕᓂᐊᕐᓂᖅ, ᖃᐅᔨᓴᖅᑕᐅᑎᐊᕆᐊᖃᕐᓂᖕᖓᓂᒃ.

4. ᓄᕗᔭᐃᑦᑐᓕᖕᓂᒃ ᕿᓂᕐᓂᖅ ᑲᔪᓯᓕᐊᓂᒃᑐᖅ ᐊᒥᓱᒐᓴᖕᓂ ᓄᓇᕗᒻᒥ, ᐱᖃᑕᐅᓪᓗᑎᒃ ᐃᓄᐃᑦ ᐱᕐᑯᑎᖕᒋᑦ ᓄᓇᐃᑦ, ᑐᓐᖓᕕᒃᑯᓪᓗ ᑐᑭᓯᓇᑲᐅᑎᒋᔪᒪᔪᑦ ᑕᐃᒪᐃᖕᒋᓇᕐᓂᐊᖅᑐᒥᒃ ᖃᓄᐃᓕᖓᓂᕕᖃᖁᑎᒃ ᑕᒪᒃᑯᓇᓂ ᐱᓕᕆᐊᖑᔪᓂ.

5. ᐱᑕᖃᖕᒋᓪᒪᑕ ᒪᓕᒋᐊᓕᖕᓂ ᐊᒻᒪᓗ ᐱᖅᑯᓯᕆᔭᐅᔭᕆᐊᓕᖕᓂᒃ ᐱᔾᔪᑎᖃᖅᑐᓂᒃ ᓄᕗᔭᐃᑦᑐᓪᓚᕆᖕᓂᒃ, ᐊᒻᒪᓗ ᒪᓕᒃᑕᐅᔫᒃᓴᖃᕋᓂ ᖃᓄᐃᓕᐅᕆᐊᖃᕐᓂᖕᒋᓐᓂ ᓚᐃᓴᓐᓯᑖᖑᔪᓂ ᐊᒻᒪᓗ ᐊᑐᖅᑐᐊᕈᓐᓇᐅᑎᓂ ᑐᓂᔭᐅᖃᑦᑕᖅᑐᓂ ᓄᓇᐅᑉ ᖄᖕᒋᓅᑦᑐᓂᒃ ᐊᑐᕈᓐᓇᕐᓂᖅ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔪᓂ ᓄᓇᓂ.

<u>ᓴᓇᔭᐅᓂᖏᑦ ᐊᑐᐊᒐᐃᑦ</u>

ᓯᕗᓪᓕᖅᐹᑦ ᐱᓕᕆᐊᖑᓯᒪᔪᑦ ᓴᓇᔭᐅᕙᓪᓕᐊᓂᖏᓐᓂ ᑐᓐᖓᕕᒃᑯᑦ ᐊᑐᐊᒐᖏᑦ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᔭᕐᖓᓂᐊᕐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᓚᐅᖅᓯᒪᔪᑦ ᐊᑯᓐᓂᖏᓐᓂ 1996 ᐊᒻᒪᓗ 1999. ᔫᓐ 1999-ᖑᑎᓪᓗᒍ, ᑐᓐᖓᕕᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐱᕐᑯᔨᕗᖓᕈᒻᒥ ᑲᔪᓯᑎᑦᑎᓚᐅᖅᓯᒪᔪᑦ ᑐᓐᖓᕕᒃᑯᑦ ᓄᓇᓕᕆᔨᒃᑯᖏᑦ ᓵᕐᕿᑦᑎᕐᑯᔭᐅᓪᓗᑎᒃ ᐅᕐᑲᐅᓯᒃᓴᐅᓂᐊᖅᑐᓄᑦ ᑎᑎᕐᑲᓂᒃ ᐃᓱᒪᑰᑖᐅᔪᓂᒃ ᐱᔾᔪᑎᕐᑲᖅᑐᓂᒃ ᓴᓇᔭᐅᔪᒦᕐᓂᖏᓐᓂ ᑕᒪᐃᓐᓄᑦ ᑐᕌᖓᓂᐊᖅᑐᑦ *ᑎᑎᕋᖅᑕᐅᓵᖅᓯᒪᔪᑦ ᐊᑐᐊᒐᐃᑦ ᐱᔾᔪᑎᕐᑲᖅᑐᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕐᖓᓂᐊᕐᓂᕐᒥᒃ* ᓄᓇᕗᒻᒥ (ᓄᖑᔪᐃᑦᑐᓄᑦ ᐊᑐᐊᒐᐃᕐ). ᑲᑎᒪᔩᑦ ᐱᕐᑯᔨᕗᖓᕈᑎᖏᑦᑕᐅᖅ ᐅᕐᑲᖅᓯᒪᔪᕐᑲᖅᑐᑦ ᓵᕿᑦᑕᐅᓂᖏᓐᓂ ᑲᑎᒪᔨᕋᓛᑦ ᑎᑎᕋᖅᐸᓪᓕᐊᓂᐊᖅᑐᑦ ᐊᑐᐊᒐᒃᓴᓂᒃ, ᑐᓂᕐᕈᑕᐅᔫᖅᑐᓂᒃ ᑲᑎᒪᔨᓄᑦ, ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᓂᐊᕐᒪᑕ. ᐃᓚᖏᑦ ᐱᓕᕆᐊᖑᓯᒪᔪᑦ ᐅᕐᑲᐅᓯᒃᓴᓂᒃ ᐸᐃᐹᓂ ᐱᓕᕆᐊᖑᓚᐅᖅᑐᑦ ᑕᓪᓕᒪᓂᒃ ᐊᕿᒍᓂᒃ, ᑭᓯᐊᓂ ᐊᐅᔭᐅᓕᖅᑎᓪᓗᒍ 2004-ᒥ, ᐊᒥᕈᖅᐸᓪᓕᐊᑐᐃᓐᓇᖅᑎᓪᓗᒋᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᕿᓂᖅᐸᓪᓕᐊᔪᑦ ᑭᙵᓪᓕᕐᒥ ᐊᒻᒪᓗ ᕿᑎᖅᒥᐅᓂ, ᐱᓕᕆᐊᖑᕆᐊᓪᓚᕆᓕᓚᐅᖅᑐᑦ. ᑎᑎᕋᖅᑕᐅᓵᖅᓯᒪᔪᑦ ᐅᕐᑲᐅᓯᒃᓴᓕᐅᕈᑏᑦ ᑎᑎᕐᑲᐃᑦ ᐱᒋᐊᖅᑎᑕᐅᔪᒪᓂᒃ ᐊᑐᐊᒐᐃᑦ ᐃᓗᓕᕆᓇᔭᖅᑕᖏᓐᓂᒃ ᐱᑕᕐᑲᖅᑐᑦ, ᐱᔭᕇᖅᑕᐅᓚᐅᖅᑐᓂᒃ ᒫᔾᔨ 2005-ᖑᑎᓪᓗᒍ, ᑐᓂᕐᕿᑕᐅᓪᓗᑎᒃ ᑐᓐᖓᕕᒃᑯᑦ ᐃᓄᐃᓪᓗ ᑲᑐᔾᔨᕐᑲᑎᒌᖏᓐᓄᑦ ᐃᕐᑲᓇᐃᔭᖅᑎᓄᑦ, ᐊᒻᒪᓗ ᐊᐅᓚᑦᑎᔾᔭᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ, ᕿᒥᕐᕈᐊᕐᓂᐊᓚᐅᕐᒪᖏᑦ.

ᐅᕐᑲᐅᓯᐅᓂᖏᓐᓂ ᐊᒻᒪᓗ ᑐᑭᓯᓂᐊᕐᕕᐅᓂᖏᓐᓂ ᑐᓐᖓᕕᒃᑯᑦ ᐃᓄᐃᓪᓗ ᑲᑐᔾᔨᕐᑲᑎᒋᒋᓐᓂ ᐃᕐᑲᓇᐃᔭᖅᑎᓂ ᐊᒻᒪᓗ ᑲᑎᒪᔨᓂ ᒪᓕᒃᑕᐅᓪᓗᑎᒃ ᓵᕐᕿᑎᓕᓚᐅᖅᑐᑦ ᑎᑎᕋᖅᑕᐅᓵᖅᓯᒪᔪᓂᒃ ᑐᑭᓯᓂᐊᕈᑎᒃᓴᓂᒃ ᑎᑎᕐᑲᓂᒃ ᐊᒻᒪᓗ ᑎᑎᕋᖅᑕᐅᓵᖅᓯᒪᔪᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐊᑐᐊᒐᕐᓂ, ᓴᓇᔭᐅᓯᒪᓪᓗᑎᒃ ᑐᓐᖓᕕᒃᑯᑦ ᓄᓇᓕᕆᔨᖏᓐᓄᑦ ᐊᒻᒪᓗ ᓄᓇᒥᐅᑕᓕᕆᔨᖏᓐᓄᑦ ᐃᕐᑲᓇᐃᔭᕐᕕᖕᒧᑦ ᐊᒻᒪᓗ ᑐᓂᕐᕈᑕᐅᓪᓗᑎᒃ ᓄᓇᐃᑦ ᐊᑐᐊᒐᒃᓴᖏᓐᓄᑦ ᐅᕐᑲᐅᔾᔨᒋᐊᖅᑏᑦ ᑲᑎᒪᔨᕋᓛᖏᓐᓄᑦ, ᒫᔾᔨ 2006-ᒥ. ᑖᒃᑯᐊ ᑎᑎᕐᑲᐃᑦ ᑐᓂᐅᕐᑲᖅᑕᐅᓕᓚᐅᖅᑐᑦ ᐊᒥᓱᓄᑦ ᓄᓇᕗᒻᒥ ᑲᑐᔾᔨᕐᑲᑎᕈᖑᔪᓄᑦ, ᕿᒥᕐᕈᐊᖅᑕᐅᕐᑯᓪᓗᒋᑦ. ᐅᕐᑲᐅᓯᒃᓴᐃᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᕐᑯᔭᐅᔪᓪᓗ ᐱᐅᓯᒋᐊᖅᑕᐅᔪᓐᓇᕐᓂᖏᓐᓄᑦ ᑕᒪᒃᑯᐊ ᐊᑐᖅᑕᐅᓂᖏᓐᓂ ᐃᓚᔭᐅᓚᐅᖅᑐᑦ ᑑᓕᕆᔭᐅᔪᓂ ᑎᑎᕋᖅᑕᐅᓵᖅᓯᒪᔪᓂ ᐊᑐᐊᒐᒃᓴᓄᑦ ᑎᑎᕐᑲᓄᑦ, ᐊᒻᒪᓗ ᑐᑭᓯᓂᐊᕈᑕᐅᔭᕆᐊᕐᑲᖅᑐᓄᑦ ᑎᑎᕐᑲᓄᑦ, ᓵᕐᕿᑎᔾᔪᑕᐅᓕᓚᐅᖅᑐᑦ ᑖᒃᑯᓂᖓ ᑎᑎᕋᖅᓯᒪᓕᖅᑐᓂᒃ.

1.4 ᐊᑐᐊᒐᐃᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᔭᕆᐊᕐᑲᕐᓂᖏᑦ

ᓵᕐᕿᑎᓇᓱᐊᕐᓂᖏᓐᓂ ᑕᒪᐃᓐᓄᑦ ᖃᓄᐃᓕᖓᓂᕆᓂᐊᖅᑕᖏᓐᓂᒃ ᐱᔾᔪᑕᐅᔪᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᔭᕐᖓᓂᐊᕐᓂᕐᒥᒃ, ᑐᓐᖓᕕᒃᑯᑦ ᓂᕈᐊᕆᐊᖃᓚᐅᖅᑑᑦ ᒪᕐᕉᖕᓂᒃ ᐊᑐᓕᕈᓐᓇᖅᑕᒥᓂᒃ, ᐃᒪᐃᓕᖓᔪᓂᒃ:

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1. ᑐᓐᖓᕕᒃᑯᑦ ᑲᔪᓯᓇᔭᖅᑐᑦ ᐃᓚᐅᑎᑦᑎᖕᒋᓐᓂᖅ ᕿᓂᕋᓐᓇᕐᓂᖅ ᐊᒻᒪᓗ ᐅᔾᔨᖕᓂᐊᕈᓐᓇᕐᓂᖅ ᓄᖑᔪᐃᑦᑐᓂᒃ ᓄᓇᐃᑦ ᐃᓗᐊᓃᑦᑐᓂᒃ ᐃᓄᖕᓄᑦ ᐱᕐᑯᑎᒋᐅᔪᓂ ᓄᓇᓂ ᐊᖕᒋᕈᑎᓕᐊᓇᖁᒃᑕᖕᒋᓐᓂ ᑲᒻᐸᓂᐊᔪᓂᓗ. ᐊᔾᔨᒌᖕᒋᓐᓇᓇᐊᕐᑲᕐᓂᖅ ᐱᔾᔪᑕᐅᓂᖕᖓᓄᑦ, ᑐᓐᖓᕕᒃᑯᑦ ᐱᓇᓱᐊᕋᔾᔭᕐᓇᕗᑦ ᐊᔪᕐᓇᖅᑎᑦᑎᓂᖅ ᓄᕐᑲᖅᑎᑦᑎᓂᕐᓗᓐᓃᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᕿᓂᕐᕕᐅᔪᓐᓇᕐᓂᖅ ᐊᒻᒪᓗ ᐅᔾᔨᖕᓂᐊᕐᕕᐅᔪᓐᓇᕐᓂᖕᒋᓐᓂ ᐃᓄᖕᓄᑦ ᐱᕐᑯᑎᒋᔭᐅᔪᑦ ᓄᓇᐃᑦ ᖄᖕᒋᓐᓂ ᐊᒻᒪᓗ ᐃᒻᒪᕐᖄᓗᓐᓃᑦ ᑯᐃᓐ (ᑲᓇᑕᐅᑉ) ᓄᓇᕐᑯᑎᖕᒋᓐᓂ.

2. ᑐᓐᖓᕕᒃᑯᑦ ᐲᖅᓯᓇᔭᖅᑐᑦ ᐊᔪᕐᓇᖅᑎᑦᑎᔪᓂᒃ ᐊᑐᓕᐊᓕᖕᓂᒃ ᓄᓇᐅᑉ ᐃᓗᓕᖕᒋᓐᓂ ᐃᓄᐃᑦ ᐱᕐᑯᑎᖕᒋᓐᓂ ᓄᓇᓂ, ᐊᒻᒪᓗ ᐊᑭᕋᖅᑐᕋᔭᖕᒋᑦᑐᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᒥᒃ ᐅᔾᔨᖕᓂᐊᖅᑐᓂᒃ ᐃᓄᖕᓄᑦ ᐱᕐᑯᑎᒋᔭᐅᔪᓂ ᓄᓇᓂ ᐅᕙᓗᓐᓃᑦ ᑯᐃᓐ (ᑲᓇᑕᐅᑉ) ᓄᓇᕐᑯᑎᖕᒋᓐᓂ. ᑕᒪᒃᑯᐊ ᐅᔾᔮᖅᑐᑦᑎᐊᕈᒪᓪᓗᒋᑦ ᕿᓂᕐᕕᐅᔪᑦ ᐊᒻᒪᓗ ᐅᔾᔨᖕᓂᐊᕐᓂᐅᔪᑦ ᑲᔪᓯᕐᑯᓪᓗᒋᑦ ᐃᑲᔪᖅᑕᐅᓂᖅᐹᖑᕐᑲᑕᕐᓂᐊᕐᓗᑎᒃ ᐃᓄᐃᑦ ᐱᐅᖕᒋᑦᑐᒃᑯᑦ ᐊᒃᑐᖅᑕᐅᑕᐃᓕᒪᓗᑎᒃ ᖃᓄᓕᒫᖅ ᐊᔪᕐᓇᖕᒋᓐᓂᖕᖓᓂ, ᑐᓐᖓᕕᒃᑯᑦ ᐊᑐᓕᕐᑯᔮᓇᔭᖅᑐᑦ ᐅᕙᓗᓐᓃᑦ ᒪᓕᒐᖅᑎᑦᑎᓗᑎᒃ ᑕᐃᒪᐃᓕᐅᕈᑎᒃᓴᓂᒃ.

ᑐᓐᖓᕕᒃᑯᑦ ᐅᒃᐱᕈᓱᒃᑐᑦ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐅᔾᔨᖕᓂᐊᕐᓂᖅ ᑲᔪᓯᔪᓐᓇᕋᔭᖕᒋᑦᑐᖅ ᐃᒫᒃ ᓴᐳᓐᓂᐊᖅᑕᐅᓗᑎᒃ ᐅᔾᔨᖕᓂᐊᖅᑏᑦ ᐃᓄᐃᓪᓗ ᖃᓂᒋᔭᖕᒋᓐᓂ ᓄᓇᓕᖕᓂ ᐊᒻᒪᓗ ᐊᕙᑎᖕᒋᑦ, ᓯᕗᓪᓕᖅᐹᕐᒥᒃ ᓂᕈᐊᕋᔭᖅᐸᑕ. ᐃᓱᒪᒌᑕᐅᔪᑦ ᐊᑐᖅᑕᐅᖃᑦᑕᕐᓂᖕᒋᓐᓂ ᓄᖑᔪᐃᑦᑐᓂᖕᖓᖅᑐᑦ ᐆᒪᑎᑦᑎᕖᑦ ᐅᕙᓗᓐᓃᑦ ᓄᓇᕗᒻᒥ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐅᔾᔨᖕᓂᐊᕐᕕᒃᑖᑐᐃᓐᓇᓇᐊᕐᑲᕐᓂᖅ ᓴᓇᕋᑕᐅᓇᔭᖅᑐᖅ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᓇᑕᕆᑎᓂᒃ, ᓴᕿᑦᑎᔪᓐᓇᕐᒥᔪᖅ ᑖᒃᑯᓇᓂ ᓂᕈᐊᖅᑕᐅᔪᓂ. ᐊᒥᓱᑦ ᐃᓄᐃᑦ ᓯᓕ ᐃᓱᒪᒌᑎᕐᑲᕐᒪᑕ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐊᐅᒪᓕᖕᓂᒃ ᐆᒪᖅᑎᑦᑎᕕᐅᕙᒃᑐᓂᒃ ᐊᒻᒪᓗ ᓴᓇᔭᐅᓇᔭᕐᓂᖕᒋᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐅᓇᑕᕆᑎᓂᒃ, ᐅᖃᐅᓯᐅᓯᒪᓪᓗᑎᒃ ᑖᒃᑯᓇᓂ ᐸᐃᕚᕐᓂ, ᐊᒥᓱᑦ ᑲᒪᒋᔭᐅᓯᒪᕗᑦ ᑕᒪᒃᑯᐊ ᐃᓱᒪᒌᑕᐅᔪᑦ ᑲᒪᒋᔭᐅᓪᓗᑎᒃ. ᐱᔾᔪᑕᐅᓂᖕᒋᓐᓂ ᐃᓱᒫᒌᑕᐅᔪᑦ ᕿᓂᖅᑕᐅᓪᓚᓇᓕᕐᓂᖕᒋᓐᓂ ᐅᔾᔨᖕᓂᐊᖅᑕᐅᓪᓚᓇᓕᕐᓂᖕᒋᓐᓂᓗ, ᑐᓐᖓᕕᒃᑯᑦ ᑕᑯᓯᒪᔪᑦ ᐅᔾᔨᖕᓂᐊᕐᕕᖕᒥ ᓴᓇᕕᐅᔪᑦ ᓴᖕᒋᔪᒻᒪᓇᖕᓂᒃ ᒪᓕᒐᖅᑎᑕᐅᔪᑦ, ᐊᐅᓚᑕᐅᔪᓐᓇᖅᓯᓂᑎᒃ ᐃᓄᐃᑦ ᐅᓗᓇᐊᓇᖅᑐᒦᖕᒋᓪᓗᑎᒃ ᐊᒻᒪᓗ ᐊᕙᑎᖕᖓ. ᑕᐃᒃᑯᐊ ᐊᒥᓱᒪᓂᑦ ᐃᓱᒪᒌᑕᐅᓚᐅᖅᑐᑦ ᐊᑭᖃᖅᑐᖅᑐᖅᓂ ᑭᒻᒪᕕᖕᒥ ᓴᓇᔪᒪᓚᐅᖅᑐᓂ ᐊᕙᑎᒥᒃ ᖃᐅᔮᓴᐃᓂᐅᕙᒃᑐᓂᒃ, ᒪᓕᒐᓇᔭᐅᕙᒃᑐᓂᒃ, ᐊᒻᒪᓗ ᐅᔾᔨᖕᓂᐊᕐᕖᑦ ᐊᐅᓚᑕᐅᓂᖕᒋᓐᓂ, ᐊᖕᒋᔪᒥᒃ ᐅᖃᐅᓯᐅᓯᒪᓕᖅᑐᑦ ᐅᕙᓗᓐᓃᑦ ᐅᖃᐅᓯᐅᓯᒪᑦᑎᐊᕈᓐᓇᖅᑐᑦ ᓄᖑᔪᐃᑦᑐᓕᖏᓂᕐᒧᑦ ᐊᑐᐊᒐᕐᓄᑦ.

ᖃᓄᖅᑑᕈᑏᑦ ᒪᓕᒃᑲᔭᖅᑐᑦ ᓯᕗᓪᓕᖅᐹᕐᓂ ᓂᕈᐊᖅᑕᐅᓇᔭᖅᑐᓂ ᑐᓐᖓᕕᒃᑯᓐᓄᑦ ᐊᓯᖕᒋᓐᓂᒃ ᐊᔪᕐᓇᕈᑎᖃᓕᕋᔭᕐᒥᔪᑦ.

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1. ᓄᖑᔪᐃᑦᑐᓖᑦ ᔪᕱᓂᔮᒥ, ᐃᓗᐊᓅᖅᑳᑦᑕᖅᑐᑐᖅᑲᐅᒐᒥᒃ ᐊᒥᓱᓂᒃ ᐊᔾᔾᒍᒌᖏᑦᑑᑎᓂ ᐅᔭᕆᓂ ᓯᐅᕋᕐᓂᓗ. ᑕᐃᒪᐃᓐᓂᖏᓐᓄᑦ, ᒥᑭᑦᑑᑎᑯᓗᐃᓪᓗᓐᓅᑦ ᓄᖑᔪᐃᑦᑐᓖᑦ ᐅᔭᕆᓂᐊᖅᑕᐅᖅᑕᐅᓇᔭᖅᑐᑦ ᖃᓄᐃᑦᑐᑐᐃᓇᓂᒃ ᐅᔭᕆᓂᐊᖅᑐᖅᑲᕆᓗᐊᖅᑎᓪᓗᒍ ᐊᓯᖑᖏᓐᓂᒃ ᐱᔪᒪᔭᐅᔪᓂᒃ. ᐱᓇᓱᐊᖅᑐᖅᑲᕆᔭᖅᐸᑦ ᐊᔪᖅᑎᑦᑎᓂᖅ ᐅᔭᕆᓂᐊᖅᑕᐅᔪᓐᓇᕐᓂᖏᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᐃᑦ, ᐊᓯᖏᓪᓗ ᖃᓄᐃᓕᒋᔭᐅᖏᓪᓗᑎᒃ, ᐊᐱᖅᑯᑕᐅᓕᕆᔭᖅᑐᑦ ᖃᓄᑎᒋ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐱᔪᓐᓇᖅᑎᑦᑎᖃᑦᑕᕆᔭᕐᒪᖔᑕ ᑕᒪᒃᑯᓇᓐᖃᑕᐅᔪᓂ. ᓇᓚᐅᑦᑖᖅᑕᐅᑐᐃᓐᓇᖅᑐᒥᒃ ᐱᔭᐅᔪᓐᓇᖅᑐᒥᒃ ᐃᓱᖃᖅᑎᑕᐅᔪᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᕆᕕᖕᒥ ᐅᔭᕆᓂᐊᕐᕕᖕᒥ, ᐊᒻᒪᓗ ᐱᔭᐅᑦᑕᐃᓕᒪᔭᕆᐊᖅᑲᖅᑐᓂᒃ ᐊᖏᓂᖏᓐᓂᒃ ᐃᓱᖃᖅᑎᑕᐅᔪᓂᒃ ᐋᕿᔭᕆᐊᖃᓕᖅᑲᔭᖅᐳᑦ.

2. ᑐᓐᖓᕕᒃᑯᑦ ᑎᒍᒥᐊᖅᑎᐅᖓᑕ ᓴᕕᖃᔭᒃᓴᖅᑲᖅᓂᖏᓐᓂ ᐱᔪᒪᔭᐅᔪᓂᒃ ᓄᓇᒦᑦᑐᓂᒃ, ᑭᓱᐊᓂ ᓄᓇᐅᑉ ᐃᓗᐊᓅᓐᓂᖏᓐᓂ, ᐃᓄᐃᑦ ᐱᖁᑎᖏᓐᓂ ᓄᓇᓅᑦᑐᓂ, ᐊᖏᓂᖅᑐᐃᓐᓇᖅᑐᒥᒃ 2%-ᒥᒃ ᒥᑭᓂᖅᓴᒥᒃ ᓄᓇᓂᒃ ᓄᓇᕚᒥ. ᐃᓄᐃᑦ (ᐊᖅᑯᑕᐅᓗᑎᒃ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖅᑲᑎᒌᖏᑦ) ᓇᖕᒥᓂᖅᑲᖅᑎᐅᒐᓗᐊᖅᑎᓪᓗᒋᑦ ᖄᖏᓐᓂᒃ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔪᓂ ᓄᓇᓂ, ᑯᐃᓐ (ᑲᓇᑕ) ᓇᖕᒥᓂᖅᑲᖅᐳᖅ ᓴᕕᖃᔭᒃᓴᖅᑲᖅᓂᖏᓐᓂᒃ ᐱᔪᒪᔭᐅᔪᓂᒃ, ᐃᓚᒋᔭᐅᓪᓗᑎᒃ ᓄᖑᔪᐃᑦᑐᖃᖅᓂᖏᑦ. ᐱᔪᒪᔭᐅᔪᓂᒃ ᐅᔭᕆᓅᑦᑐᓂᒃ ᐱᔪᓐᓇᐅᑏᑦ ᐊᑖᓅᑦᑐᑦ ᑲᓇᑕᒥ ᐅᔭᕆᓂᐊᕐᓂᕐᒧᑦ ᒪᓕᒋᓪᓗᑐᖅᓂ, ᐱᖃᑕᐅᔪᑦ ᐱᔪᓐᓇᕐᓂᖅ ᕿᓂᕈᓐᓇᕐᓂᖅ ᑕᐃᒃᑯᓂᖓ ᐊᒻᒪᓗ ᐅᔭᕆᓂᐊᕈᓐᓇᕐᓂᖅ ᓄᖑᔪᐃᑦᑐᓂᒃ. ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᑐᓐᖓᕕᒃᑯᑦ ᐊᑐᓕᖅᑎᑦᑎᔪᓐᓇᖃᔭᖅᑐᑦ ᑭᓱᐊᓂ 2%-ᑐᐃᓐᓇᖓᓂᒃ ᓄᓇᕚᒥ, ᕿᓂᕝᕙᐅᓇᔭᖅᓱᑎᒃ ᐊᒻᒪᓗ ᐅᔭᕆᓂᐊᕝᕙᐅᓇᔭᖅᑐᑦ 98%-ᖏᓐᓂᓐᓇᔭᖅᓱᑎᒃ, ᒪᓕᒃᑕᐅᓗᑎᒃ ᒪᓕᒐᖅᑎᒍᑦ ᒪᓕᒃᑕᐅᓪᓚᕆᒍᑏᑦ.

3. ᐋᕿᓇᓱᐊᕐᕋᔭᖅᐸᑕ ᑕᐃᒪᐃᓕᖓᑐᐃᓇᖅᑐᒥᒃ ᐊᔪᖅᑎᑦᑎᓂᐊᖅᑐᒥᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᔭᕆᓂᐊᕐᓂᕐᒥᒃ ᐃᓗᐊᓅᑦᑐᓂ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔪ ᓄᓇᓂ, ᓇᑲᑎᕆᓇᔭᖅᑐᖅ ᐊᕙᑎᒧᑦ ᐊᒻᒪᓗ ᐃᓅᓯᕐᒧᑦ ᐃᓅᓯᓕᐅᖅᐸᓪᓕᐊᔾᔪᑕᐅᔪᓐᓇᖅᑐᓄᓪᓗ ᖃᐅᔨᓴᖅᑕᐅᓂᐅᕙᒃᑐᓂᒃ-ᐱᒪᓕᕆᐅᑎᓪᓗᒍ ᓄᓇᒥᐅᑕᓂᒃ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐱᖅᑯᓯᕆᔭᐅᔪᓂ ᓄᓇᕗᒻᒥ-ᖃᐅᔨᓴᔭᐅᓇᓱᐊᕐᓂᖏᓐᓂ ᖃᓄᖅ ᐊᒃᑐᐃᔪᓐᓇᕋᔭᕐᒪᖔᑕ ᐊᒻᒪᓗ ᐃᑲᔪᖅᐹᓪᓕᕈᓐᓇᕐᕋᔭᕐᒪᖔᑕ ᐅᔭᕆᓂᐊᕝᕕᖕᓂ ᐱᒋᐊᖅᑎᑕᐅᔪᖅᑲᕋᔭᖅᐸᑦ. ᓴᕿᓐᓇᔭᖕᒋᑦᑐᑦ ᐊᑐᕋᔭᖕᒋᒻᒪᑕ ᒪᑯᐊ ᖃᓄᐃᓐᓇᔭᕐᓂᖕᒋᑦ ᑲᒻᐸᓂᐅᔪᑦ ᐅᔭᕆᓂᐊᕈᒪᔪᑦ ᐅᔭᕆᓂᐊᕈᓐᓇᕐᒪᖔᑕ ᖃᐅᔨᔭᐅᓗᑎᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ, ᐊᓱᐃᓐᓕᖅᓯᓗᐊᖅᑕᐃᓕᒪᓗᑎᒃ, ᑕᒡᕗᓇᕐᓴᐃᓐᓇᖅ ᐱᒪᕆᐅᔪᓂᒃ ᐃᑲᔫᑎᒃᓴᓂᒃ ᓴᕿᑦᑎᓯᒪᖃᑕᐅᓗᑎᒃ. ᑐᓐᖓᕕᒃᑯᑦ ᐊᔪᕐᓇᖅᑎᑦᑎᒍᑎᒃ ᐃᒡᓗᐊᓄᖔᖅ ᐊᑐᖃᔭᖅᑐᑦ ᐱᖁᔭᐅᔪᓂᒃ ᓄᓇᐃᑦ ᐊᑑᑎᒃᓴᖏᓐᓄᑦ ᐸᕐᓇᐅᑎᓕᐊᖑᓯᒪᔪᓂᒃ, ᐅᕙᓗᓐᓅᑦ ᐃᓄᐃᑦ ᐱᖁᔭᖏᓐᓂᒃ ᐃᓱᒪᓕᐅᖃᔭᖅᐸᑕ ᐃᖕᒥᓂᒃ ᐱᑕᖅᑯᖅᓯᓕᕐᓗᑎᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᔭᕆᓂᐊᕐᕕᒃᑖᕐᑯᖅᓯᓗᑎᒃ.

4. ᓄᓇᓂ ᓂᕈᐊᖅᑕᐅᓯᒪᔪᓂ ᐊᑖᒍᑦ ᓄᓇᕗᒻᒥ ᓄᓇᑖᕈᑎᓂ ᐊᖏᕈᑎᓂ, ᐃᓄᐃᑦ ᓂᕈᐊᓚᐅᖅᑐᑦᖅ ᓄᓇᓂᒃ ᖃᐅᔨᒪᔭᐅᔪᓂᒃ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᓂᒃ ᐃᓗᓕᖃᖅᑐᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ, ᐅᕙᓘᓐᓃᑦ ᐱᑕᖃᕈᒥᓇᕐᓂᕋᖅᑕᐅᓯᒪᔪᓂᒃ ᓇᓂᓯᕕᐅᔪᓐᓇᖅᑐᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ. ᐃᓄᐃᑦ ᑕᒪᒃᑯᓂᖓ ᑕᑯᓇᔭᖕᒋᑦᑐᑦ ᐃᑲᔪᖅᑕᐅᕕᒋᔪᓐᓇᕋᔭᖅᑕᖏᓐᓂᒃ ᓄᓇᓂᒃ ᐊᑭᓖᒐᓖᖃᑦᑕᕆᐊᖃᕋᔭᕐᒪᑕ ᑲᒻᐸᓂᐅᔪᑦ ᓄᓇᒥᒃ ᐱᔭᐅᓂᕐᒧᑦ ᐊᑭᓕᐅᑎᓂᒃ ᐊᒻᒪ ᐃᓅᓯᕐᒧᑦ-ᕿᓇᐅᔭᓕᐅᖅᑕᐅᓂᕐᒧᑦᑐ ᐃᑲᔫᑎᓂᒃ, ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᖕᓂᐊᖅᑐᖅᑲᕈᓐᓇᕋᔭᖕᒋᑉᐸᑦ.

ᐊᒻᒪᓗ ᓴᓂᐊᓂ ᖁᓖᓂ ᐅᖃᐅᑕᐅᔪᓂ, ᐊᔪᕐᓇᕋᔭᖅᑐᖅ ᐅᕙᓘᓐᓃᑦ ᐱᐅᔫᓇᔭᖕᒋᑦᑐᖅ ᑐᓐᖓᕕᒃᑯᑦ ᐊᑭᖃᖅᑐᕋᔭᖅᐸᑕ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᓂᕐᒥᒃ; ᒪᑯᐊ ᐱᔾᔪᑕᐅᒐᑦ ᑕᒡᕙ ᑐᓐᖓᕕᒃᑯᑦ ᓂᕈᐊᕈᑎᒋᓇᔭᖅᑕᖕᒋᑦ ᑐᓪᓕᕆᔭᐅᖕᒫᖅᑐᓂᒃ ᓂᕈᐊᒐᒃᓴᒥᒃ.

1. ᐊᑐᖅᑕᐅᓂᖕᒋᑦ ᓄᖑᔪᐃᑦᑐᑦ ᐆᒻᒪᕐᑯᑏᑦ ᓴᓇᔭᐅᓂᖕᒋᓐᓄᑦ ᐅᒻᒪᕐᑯᑎᒃᓴᓕᐅᕈᑏᑦ-"ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᕐᑯᑏᑦ'-ᐱᒻᒪᕆᐊᓗᖕᒥᒃ ᐊᑑᑎᖃᕈᓐᓇᕐᒪᑕ ᐊᔾᔨᒌᖕᒋᑦᑑᑎᓂᒃ ᖃᓄᖅᑑᕈᑕᐅᓕᖅᑐᓂ ᒥᑭᓪᓕᑎᖅᑕᐅᔪᒪᓂᖕᒋᓐᓄᑦ ᓯᓚᕐᔪᐊᕐᒥ ᐳᔪᕐᓗᓕᐊᖑᕙᒃᑐᑦ ᐊᒻᒪᓗ ᓱᒃᑲᐃᓕᑎᕈᒪᓂᓕᕐᒧᑦ ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖓ.

2. ᓄᖑᔪᐃᑦᑐᓖᑦ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᒍᑎᒃ ᓄᓇᕗᒻᒥ, ᐃᑲᔪᕐᓂᖅᑲᕈᓐᓇᖅᑐᖅ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᐅᕐᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓱᕈᕐᓇᖅᑐᓂᒃ ᐳᔪᕐᓗᓕᐅᖕᒋᓐᓂᖅᓴᐅᓗᑎᒃ.

3. ᓄᓇᕗᒻᒥ ᐱᐅᔪᒻᒪᕆᖕᓂᒃ ᐱᑕᖃᕈᒥᓇᖅᑐᖅ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐅᔭᕋᖃᕐᓂᖅ ᓄᓇᒥ. ᓇᓂᔭᐅᓇᓱᐊᕐᓂᖕᒋᑦ ᐊᒻᒪᓗ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᓂᖕᒋᑦ ᑕᒪᒃᑯᐊ ᐃᓗᓕᖕᒋᑦ, ᐊᑐᕈᓐᓇᖅᑐᑦ ᐊᖏᔪᒻᒪᕆᐅᓗᖕᒥᒃ ᓴᕿᑦᑎᓗᑕᐅᓗᑎᒃ ᕿᓇᐅᔭᒃᑯᑦ ᐃᓅᓯᓕᐅᑦᑎᐊᒃᑲᓐᓂᕈᑎᒃᓴᓂᒃ ᐃᓄᖕᓄᑦ.

4. ᓄᖑᔪᐃᑦᑐᑦ ᐅᔭᕋᖕᓂᐊᕐᕖᑦ ᐊᐅᓚᑕᐅᔪᓐᓇᖅᑐᑦ ᐃᒫᒃ ᒥᑭᓪᓕᖅᑕᐅᓯᒪᕐᔪᐊᕐᓗᑎᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖕᒋᑦ ᐃᓄᐃᑦ ᐊᕙᑎᖕᒋᓪᓗ.

5. ᐊᓯᖕᒋᑦ ᐱᑕᖃᕆᐊᓖᑦ ᐃᓱᒪᓘᑕᐅᓂᖕᒋᓪᓗ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᓂᕐᒥᒃ ᐅᖃᐅᓯᐅᓯᒪᖕᒥᔪᑦ ᑖᒃᑯᓇᓂ ᐊᑐᐊᒐᕐᓂᒃ.

1.5 ᓇᒧᑦ ᐊᑐᕐᓂᐊᕐᒪᖔᑕ ᐊᑐᐊᒐᐃᑦ

ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ ᐱᔪᐊᖅᑐᒥᒃ ᐱᔾᔪᑎᖃᖅᑐᑦ ᑐᓐᖓᕕᒃᑯᑦ ᖃᓄᐃᓕᖓᓂᖏᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᓇᓂᓯᓇᓱᐊᖃᑕᕐᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᓂᖏᓐᓄ ᓄᓇᕗᒻᒥ, ᐱᔪᐊᖅᑐᒥᒃ ᐃᓱᒪᒋᔭᐅᓪᓗᑎᒃ ᐃᓄᖕᓄᑦ ᐱᕐᑯᑎᒋᔭᐅᔪᑦ ᓄᓇᐃᑦ. ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᐅᖃᐅᓯᐅᓯᒪᔪᑦ ᐃᑲᔫᓯᐊᖅᑖᕆᔭᐅᔪᓐᓇᖅᑐᑦ ᐊᒻᒪᓗ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖏᑦ ᑕᒪᒃᑯᓇᖓᑦ ᐱᓕᕆᐊᖑᔪᓂᑦᒃ, ᐊᒻᒪᓗ ᐃᓚᐅᓂᖏᓐᓂ ᓄᓇᓕᖕᒥᐅᑦ ᐃᓄᐃᑦ, ᐱᓕᕆᐊᖑᔪᓂ ᐃᓱᒪᓕᐅᕈᑕᐅᔪᓂᓗ. ᑭᓯᐊᓂ, ᐊᑐᖅᑕᐅᕙᔪᖕᓂᖅᐹᖑᓂᖓᓄᑦ ᓄᖑᔪᐃᑦᑐᖅ ᐆᒻᒪᖁᑎᓕᐅᕈᑎᓄᑦ-ᑕᒪᐃᓐᓄᑦ ᐅᓇᑕᕐᓂᐅᖏᑦᑐᒧᑦ ᐊᒻᒪᓗ ᐅᓇᑕᒃᑐᒃᓴᓄᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᓄᑦ-ᑐᓐᖓᕕᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐱᕐᑯᔨᓯᒪᕗᑦ ᐊᑐᐊᒐᐃᑦ ᐅᖃᐅᓯᖃᓪᓗᑐᕐᑯᔭᐅᓪᓗᑎᒃ ᓴᓇᔭᐅᕌᓂᒃᓯᒪᔪᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐊᑐᖅᑕᐅᓂᐊᕐᓂᖏᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐃᓚᖃᖅᑐᓂᒃ ᓄᓇᕗᒻᒥ ᐱᔭᐅᓯᒪᔪᓂᒃ. ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᐊᑐᐊᒐᐃᑦ ᖃᓄᖅᑑᕈᑎᖃᖅᐳᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᕐᓂᖏᓐᓂ ᐃᓚᒃᓴᕆᔭᐅᓂᖅ ᓄᖑᔪᐃᑦᑐᓄᑦ ᐊᐅᓚᓕᐅᕐᕕᖕᓄᑦ, ᐊᖏᔪᒻᒪᕆᖕᒥᒃ ᐃᓚᑖᓇᔭᐅᓇᔭᖅᑐᓂᒃ ᐆᒻᒪᖁᑎᓂᒃ ᐊᑐᖅᑕᐅᓕᖅᑐᓂ ᓯᓚᕐᔪᐊᕐᒥ. ᐊᑐᐊᒐᐃᑦ ᐅᖃᐅᓯᖃᕐᒥᔪᑦ ᖃᓄᐃᓕᐅᖅᑕᐅᓂᐊᖅᑐᓂ ᐅᔾᔨᖅᑑᑕᐅᓗᑎᒃ ᓄᖑᔪᐃᑦᑐᓖᑦ ᐊᑐᖅᑕᐅᔭᕆᐊᖃᓐᖏᓐᓂᖏᓐᓂᒃ ᐅᓇᑕᕈᑎᒃᓴᓄᑦ. ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᐊᑐᐊᒐᐃᑦ ᐅᖃᖅᓯᒪᔪᖃᖅᐳᑦ ᑐᓐᖓᕕᒃᑯᑦ ᐃᑲᔪᖅᓱᐃᓂᖏᓐᓂᒃ ᑲᒪᑦᑎᐊᕐᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐅᓇᑕᕈᑕᐅᖏᑦᑐᓄᑦ ᑭᓯᐊᓂ ᐊᑐᖅᑕᐅᔭᕆᐊᖃᕐᓂᖏᓐᓂ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᒻᒪᖁᑎᒃᓴᐃᑦ ᐊᒻᒪᓗ ᐅᓂᒃᑳᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᑐᓐᖓᕕᒃᑯᑦ ᖃᓄᐃᓕᖓᓂᖏᓐᓂᒃ ᐊᑐᖅᑕᐅᔪᓐᓇᕐᓂᖏᓐᓂ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐅᔭᕋᖕᓂᐊᕐᓂᐅᓇᔭᖅᑐᓂᒃ ᓄᓇᕗᒻᒥᒧ. ᐅᓂᒃᑳᖅᓯᒪᖏᑦᑐᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᕐᓂᖏᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐊᐅᓚᓕᐅᕐᕖᑦ ᓄᓇᕗᒻᒥ. ᐅᖃᐅᓯᖃᖅᓯᒪᖏᑦᑐᑦ ᐊᑐᖅᑕᐅᑐᐃᓐᓇᓇᐊᖃᖅᑐᓂᒃ ᐊᒃᑕᖅᑕᐅᓂᖏᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐊᒥᐊᒃᑯᐃᑦ ᐊᒃᑕᑯᓂᒃ ᓄᓇᕗᒻᒥ, ᑕᒪᒃᑯᐊ ᐃᓱᒪᓕᐅᕈᑕᐅᓯᒫᓂᖕᒪᑕ ᐊᖏᖅᑕᐅᓯᒪᒐᑎᒃ ᑐᓐᖓᕕᒃᑯᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ.

ᐅᔭᕋᓐᓂᐊᖅᑕᐅᓂᖏᑦ ᑐᐊᓇᔭᒻ (ᓄᖑᔪᐃᑦᑑᖃᑕᐅᔪᖅ) ᓄᓇᕗᒻᒥ ᐃᓱᒪᒋᔭᐅᖃᑕᐅᖏᒃᑲᓗᐊᖅᑎᓪᓗᒍ - ᐃᓱᒪᒋᔭᐅᓕᖏᑐᐃᓇᓇᐊᓕᒃᓗᓐᓃᑦ - ᐃᓚᖏᑦ ᑐᓐᖓᕕᒃᑯᓐᓂ ᐊᐃᓯᓯᒡᒃᑯᓐᓂᓗ ᐅᖃᐅᓯᐅᓯᒪᔪᑦ, ᐅᖃᐅᓯᖃᖃᑕᐅᓯᒪᖕᒪᑕ ᑐᐊᓇᔭᒻᒥᒃ, ᓴᓂᐊᓂ ᔪᕉᓂᔭᒻ, ᐊᔾᔨᒋᖏᑕᖏᑦ ᓄᖑᔪᐃᑦᑑᑦ. ᐃᓗᐊᓂ ᐊᑐᐊᒐᐃᑦ ᐃᓱᒪᒋᔭᐅᔪᓂ, ᐊᓯᐊᓂᒃ ᑭᓯᐊᓂ ᐅᖃᖅᓯᒪᓪᓗᑐᖅᐸᑦ ᑐᑭᖃᖅᑎᑦᑎᓂᐊᕐᓗᓂ, ᐅᖃᐅᓯᐅᔪᑦ ᔪᕉᓂᔭᒻᒥ, ᐅᖃᐅᓯᖃᖃᑕᐅᓂᐊᖅᑐᑦ ᑐᑭᖃᖅᑐᒥᒃ ᑐᐊᓇᔭᒻᒥᒃ (ᑐᐊᓇᔭᒻ ᖃᓄᐃᑦᑐᑦᓚᓇᐅᖕᒪᖏᑦ ᐅᓂᒃᑳᖅᑕᐅᓯᒪᔪᖅ ᐊᑖᓂ).

2 ᓴᓚᖅᓴᒻ ᓄᓇᕗᑦᑐᑦᓯᖅ ᐊᒻᒪᓗ ᐊᐅᒪᕆᔭᖅᓂᖏᑦᑕ ᐊᖓᑎᐊᔪᑦ

2.1 ᓴᓚᖅᓴᓴᒥ ᐊᒻᒪᓗ ᑐᐊᓚᓴᒻ ᓄᓇᕗᑦᑐᑦᓯᓪᓗᑦ

ᓴᓚᖅᓴᒻ ᓴᐃᕆᕝᕕᒃᓴᓪᒪᑦ ᐅᕆᑯᒪᐃᐅᖅᑐᓇᓄᕐᑐᑦᑐᓂᓗ ᐱᕆᑯᑎᓗ. ᐊᔨᐅᐅᖏᓪᓴᓗᑎᑕᓗᐊᕆᑦᑕᖏᓐᓄ, ᐊᑕᓴᕆᖅᓯᒪᑦ ᕆᑲᐅᒪᖅ, ᐊᖏᑎᓴᒥᒃ ᓯᐊᓪᒪᓇᖅᑐᑦᑕᒥᒃ ᓯᕆᕈᖅᑐᑎᑐᑦ ᓄᓇᒥ ᐊᖖᑎᒍᑦ, ᓄᓇᕆᓴᐊᕆᒥ ᑕᐃᒪᐃᑐᑐᑦᑕᕆᐅᖅᑐᖅᓯᓄᑦ ᐱᔨᓴᑕᐅᓕᖅᑐᑦ. ᓴᓚᖅᓴᒻ ᓗᖏᓴᐃᑦᑐᖅ ᐱᑕᕆᖅᓂᖅᑰᖏᓪᓕᕆᑕᐅᓴᖅ ᓄᓇᒥᐅᑕᓂ, ᓄᓇᕆᓴᐊᑦ ᕆᖏᖅᓂ ᐊᖖᓗᐊᓂ. ᓇᓂᔨᐅᓴᓇᖅᑐᖅ ᓇᓂᑐᐃᓇᒃᓴᑎᐊᖅ ᓯᐅᑕᕆᒥ, ᐅᔨᑕᖅᓂ, ᑯᖏᓂ, ᑕᓚᐅᕆᒥᓗ. ᐱᑕᕆᖅᑉᓭᓯᖏᓴᑦᓗᓂᓗ ᓂᕆᑭᓂ ᐊᒻᒪᓗ ᐃᓗᐃᑦ ᐱᑕᕆᖅᓂᖅᑲᐅᓴᑦ ᑕᐃᒪᐃᑐᖅ ᐱᑕᕆᖅᓂᖅᑰᖏᑦᓗᓂ ᕆᖅᓴᖏᑲᓴᕆᓂᖅ (lead-ᒥᖅ). ᐊᒥᓯᓂᖅ ᑕᐅᑐᕆᖅᑕᓯᖏᓚᐅᐊᖅᑲᖅ, ᓯᕆᓗ ᐊᒥᓯᓂᖅ ᐊᖏᔪᓂᕐᑕᑎᓂᖅ ᐃᑕᖅᑲᐅᔨᑭᓐᓇᖅᑐᑦᑐᖅ, ᑭᓯᐊᓂ ᑕᑯᖏᐅᓴᖅᑐᑦᑐᖅ ᐊᖅᑲᐃᑦᖏᓪᓗᓂᓂ (oxide, ᐊᓂᕆᓂᖅᑲ ᐊᒻᒪᓗ ᐅᓴᖅᑯᑎᑕᐅᓯᓕᖅᑐᖅ ᑲᑎᖅᑯᓂᓪᓗᓂᖅᑲ ᑲᖅᑎᑦᑎᓂᖅᑲᓂᖅ ᑐᓂᓴᖅᑯᑎᑕᐅᓯᖅᑐᖅ U_3O_8.-ᒥᖅ).

ᐊᖏᓂᓖᓂᑦ ᓴᓚᓂᖅᓴᒻ ᓄᓇᕗᑦᑐᑦᓯᓪᓗᑦ ᐊᖖᑎᖅᑲᑦᑕᖏᓂᑦᑐᑦ, ᓯᓇᒧᑦ ᐊᑯᑕᐅᓯᒪᔪᓂ, ᐊᒻᒪᓗ ᓇᑭᑦ ᓇᓂᖅᐅᓯᒪᔪᓂ ᒪᑕᖅᓯᓂ. ᐱᑕᕆᖅᑎᓴᖅᑐᖅ ᐅᖅᑲᖅᓂ granite-ᒥ, ᐅᖅᑲᖅ ᓇᓂᑐᐃᓐᓇᓯᓴᖅ, ᐊᖏᔪᖅᑕᐅᓯᒪᔨᓴᖅᑎᖅᑐᖅ ᓯᑕᒪᓂᖅ ᐊᖏᓂᕆᓂᖅ ᓴᓚᓂᖅᒪᒥᒃ ᓄᓇᕗᑦᑐᑦᑕᖏᓂᖅ, 1 ᒥᑕᒃᖏᓂᒋᓂᓂ ᐊᖏᓂᕆᖅᑎᖅᑐᑦᑐᓂ ᐅᖅᑲᖅᓂ granite-ᒥ ᓯᔪᓗ 4ppm (ᓯᑕᒪᐃᑦ 1 ᒥᑕᒃᑕᒧᒋᓂᑦ) ᐊᖏᓂᖅᓂᑦ ᓴᓚᓂᒃᒪᓕᖅᑎᖅᑐᑦ ᓄᓇᕗᑦᑐᑦᑕᒥᒃ ᑭᓇᐅᒃᑕᐅᕈᑕᐅᔪᖅᓇᖅᑐᑦ ᐅᖅᑲᖅᓂᐊᕆᓂᖅᑐᑦ, ᐃᓗᑕᕆᖅᑎᓂᕆᖅᑎᐅᖅᑐᑦ ore-ᒥᖅ. ᐱᑕᕆᖅᓂᖅᑰᖓᓯᖅ ᐅᖅᑲᐃᑦ ore-ᖅᑎᖅᑐᑦ ᐃᓗᑕᕆᖅᑎᑦ ᐱᔪᒪᓴᐅᔪᓂᖅ ᑕᐅᓴᐅᔪᑦ ᖅᑲᓗᓇᑎᑐᑦ ᓄᓇᕗᑦᑐᑦᑕᖅᑎᓂᖅᓂᖏᑦ ᐃᒧᖅ uranite, ᐃᓕᓴᓂᒃᑯᑦ ᖅᑲᐅᓕᒪᓴᐅᖅᒥᔪᑦ ᖅᑲᓗᓇᑎᑐᑦ pitchblende-ᒥᖅ ᐊᑯᓯᒪᔪᒥᖅ. ᐱᑕᕆᖅᑕᐊᖏᓂᓴᖏᓂᓴᓂ ᐃᓗᑕᕆᖅᑎᖅᑐᑦ ᐅᖅᑲᖅᓂ (ᓯᔪᓗ ᐅᒃᑐᑎᑎᑕᒍ 0.1%-ᒥ ᓴᓚᓂᖅᒪᓕᖅᑎᖅᑐᖅ) ᐊᖏᓂᕆᖅᑲᓯᑦ 1,000-ᓂᒃ ᒥᑕᒃᖏᑦᑎᑐᒃ ᓴᓚᓂᖅᒪᒥᒃ, ᐊᒻᒪᓗ >ᖅᑐᑦᓴᐊᓗᓇᓂᓂᒃ ᐃᓗᑕᕆᖅᑎᖅᑐᑦ ᐱᔪᒪᓴᐅᔪᓂᖅᑐᑦ ᐅᖅᑲᖅᓂᐃᑦ (ᓯᔪᓗ 20%-ᒥ ᓴᓚᓂᖅᒪᓕᖅᑎᖅᑐᑦ), ᐊᖏᓂᕆᖅᑎᖅᑐᑦ 200,000-ᓂᒃ ᐊᑕᐅᓯᕐᒥ ᒥᑕᒃᖏᑦᒥᒃ ᐅᖅᑲᖅᓂ ᓄᓇᕗᑦᑐᑦᑕᓂᑦ. ᓄᓇᕗᑦᑐᑦᑕᓂᑦ ᓴᓚᓂᖅᒪᒥᒃ ᓄᓇᒥᐅᑕᓂᑦ ᓇᓂᑦᓯᒪᓕᖅᑐᒃ ᐱᑕᕆᖅᑎᖅᑐᑦ ᓄᓇᕆᓴᐊᑕᒪᓕᒪᒥ, ᑭᓯᐊᓂ ᐊᖏᓂᔪᓚᓇᖅᓂᒃ ᐃᓗᑕᓂᑦ ᓴᓚᓂᖅᒪᒥᒃ ᐅᖅᑲᖅᓂᐊᖅᑎᐅᖅᑐᒃ ᐱᑕᕆᖅᑎᖅᑐᑦ ᑲᓇᑕᒥ.

ᑕᐃᒪᐃᖏᓂᓇᖅᑐᑐᖅᑎᐃᑦ ᐱᑕᓂᑦ ᓴᓚᓂᖅᒪᒥ, ᓄᓇᕗᑦᑐᑦ, ᒪᕐᕉᐃᑕᖅᑲᖏᓚᐅᒃ ᐱᓇᓱᒪᓂᖅᑲᖅᐳᑦ ᓴᓚᓂᖅᒪᒥᒃ ᕿᑎᐊᓂ ᐃᓗᑕᕆᖅᑎᖅᑐᓂᓂᒃ. ᖅᑲᓂᑦᑯᖏᓂ 99.3% ᓴᓚᓂᖅᒪᖏᓕᓴ 238 (ᑎᑎᕆᔨᖏᓂᑦ U-238 ᐃᑕᑕᓱᐅᓂᖏᓐᓄᓇᓄᑦ) ᐊᒻᒪᓗ 0.7% ᓴᓚᓂᖅᒪᖏᓪᓕᑕᓂ 235-ᒥᒃ (U-235-ᒥᒃ ᓇᓗᓇᐃᒃᑯᑕᑦᒃ). ᑲᒪᑦᑯᐅᑦᑎᐊᖅᖏᓪᓗᒥᒃ, ᐃᓗᑕᖏᓂᑦ ᕿᑎᐊᔨᓂᑦ U-235-ᒥ ᓄᓇᕗᑦᑐᔨᑦ, ᐊᐃᒃᑕᐅᔭᓴᓇᖅᑎᑕᑦ ᖅᑐᑦ, ᖅᑲᖅᑎᑕᐅᑦᓗᑎᒃ, ᓄᓇᕗᑦᑐᑦᑕᖅᑎᒥᒃ ᖅᑲᖅᑎᑎᑎᓇᓐᓂᒥᒃ, ᓴᖅᑭᑦᓯᔨᑎᑎᒃ ᐊᖏᓂᔪᓚᓇᖅᐊᓗᐃᑦ

ᐊᐅᒪᐃᑦ, ᐅᓪᒪᖅᑯᵒᖓᓄᖅᑎᑕᐅᓂᑦ. ᑕᐃᒪᐃᑐᖅᖃᖅᓂᖅᑕᵒᓄᑦ, U-235 ᓄᖓᓴᐃᕐᑐᑦ ᐱᓪᒪᓗᐅᓗᵒᓂ ᐊᑐᖅᓂᖅᑯᖅᑐᑦ ᓴᓇᓵᐅᓂᖅᑕᵒᓂ ᓄᖓᓴᐃᕐᑐᓕᕆᓂᵒᖓᔪᖅᑐᑦ ᐅᓪᒪᖅᑯᑏᑦ.

ᐱᓵᕆᐅᕐᓗᑎᒃ ᐃᓕᖏᑦᓂ ᑎᑎᕋᖅᓯᒪᓴᓂ ᐅᖅᑲᐅᓯᐅᓯᒪᖏᒪᑕ ᑐᐊᓗᓴᒪ ᓄᖓᓴᐃᕐᑐᐃᑦ, ᐊᑐᖅᓂᖅᑲᖅᓂᐊᖅᑐᖅ ᐅᓂᒃᑲᓗᐅᑲᐅᒃᐃᓇᖅᐸᑕ. ᑐᐊᓗᓴᒪ ᓄᖓᓴᐱᕐᑐᖅ, ᐱᑕᖅᑲᓇᖅᑐᖅ ᐅᑭᖅᓂᖅ ᐃᓕᓴᕐᓂᖅ ᐊᐅᒪ, ᐱᖏᓯᓱᐃᖅᑕᖅᓯᒪᓴᒥᒃ ᐱᑕᖅᑲᓂᖅᐸᐅᕐᓗᑎᓂ ᓴᓗᓂᔪᒪᒥᒃ, ᐊᖏᒪᓗ ᐊᖏᑎᔨᑎᓂᒃ ᓄᓇᒥᑕᐅᖅᑲᖅᑐᓂ ᐊᒥᓯᓂ ᓄᓇᓕᒫᓂ ᓄᓇᕐᔪᐊᖅᑎᒥ. ᐊᓇᕐᑐᑎᖅᑲᓄᑦ ᐊᑐᖅᑕᐅᓕᖏᑐᑦ, ᐃᒧᑦ ᑲᓇᑕᖅᑲᓂᐊᕐᓂᐊᖅᑐᑎᒃᓴᓂᐊᖅᑐᑦ (chemical-ᖃᓪᓗᓂᓂ) ᓴᓗᓂᔪᒪᒥᑎᑐᑦ, ᐊᑐᖅᑕᐅᔨᓇᖅᑐᖅ ᐃᓕᓴᐱᐅᓂᓂ ᓄᖓᓴᐃᕐᑐᑎᒃᑲᓂᖅᑐᑦ ᖃᐅᖅᑎᑐᑎᕐᓗᒍᑦ. ᐱᓕᕆᐊᖃᖏᓕᕆᐊᖅᑲᖅᓯᐊᖅᑐᑦ ᓯᓕ ᑐᐊᓗᓴᒪᒥᒃ ᐅᖅᓯᐊᓂᓴᓕᐅᕕᓴᖅᑐᓕᕆᐊᑭᓇᖅᓯᓕᐅᖅᓯᓕᐅᓂ. ᐃᓇᑎᒃᓂᓂ (India) ᐱᓂᐊᖅᑐᒥᒃ ᓄᓇᒥᐅᑕᖅᑲᓕᓚᵇᑐᑦ ᑐᐊᓗᓴᒪᒥᒃ, ᐊᖏᒪᓂ ᕿᓇᵇᓯᒪᓕᓂᑎᒃ ᓄᖓᓴᐃᕐᑐᑦᓂᐅᖅᑲᐦᑦᓂᐊᖅᑐᖅ, ᓇᖕᒥᑐᖅ ᐊᑐᐸᒻᖅᑐᑕᐊᓚᖕᖓᓂᖅ, ᐊᑐᐸᓂᖅᑎᑕᐅᖅᑯᑦᓕᐊᑎᒃ ᓴᓗᓂᔪᒪᓂᒃ, ᐃᒪᓕᒃᓂᐊᖅᑐᑦ ᐃᓕᓴᐱᐅᓂᑦ ᐅᑭᐅᖅᑕᐅᓂᒃ ᐃᓕᓴᐱᐅᓂᑦ - ᓯᑦᓗ ᑎᒥᑦ ᐅᑕᕐᓇᖅᑐᑐᓂᒃ "ᐅᑕᕐᓇᖅᑐᒃ"ᓂᕆᑐᐃᓇᕐᓂᐊᖅᑕᐅᓕᑦ". ᓯᓚᕐᔪᐊᖅᒥᓪᒧᑦ ᑕᒪᖅᑎᓗ ᐅᒪᔪᑦ ᐱᕈᖅᑐᓗᒃ ᑕᐃᒪᖖᑦᓚᒧᖅ ᐊᐅᑐᖅᑕᐅᕐᓂᐊᖅᑐᓕᕆᐊᖅᑕᐅᓂᑦ ᑎᑎᕋᐅᖅᑕᐅᓇᖅᓯᑎᒃ ᐅᑭᖅᑕᐅᓂᒃ, ᓯᑦᓗ ᒪᓕᒐᓴᐃᖅᑎᑎᑐᑦ ᐃᓕᓴᐱᐅᓂᑦ ᐊᓂᓴᖅᑐᖅᑕᐅᓂᑦ ᐃᓕᓴᐱᐅᓂᑦ (magnetic field).

ᑕᒪᖅᑎᒃ ᓯᓇᓕᒫᓂᐊᖅᑲᖅ ᐊᑕᓚᖅᑐᒃ ᐃᓗᓕᓂᖅᑕᐅᓂᑦ ᐊᖏᒪᓗᖅᑐᑦ, ᐊᒥᓯᓗ ᐊᖏᒪᓗᖅᑐᑦ ᐃᓗᓕᓂᖅᑕᐅᕐᓂ ᖃᑎᖅᑎᑦ ᒪᑕᕐᓇᓇᑕᐊᖏᑦᑕᒪᓕᑦ; ᓯᑦᓗ ᐊᖅᑎᑕᐊᖅᐸᓕᓂᐊᖏᓇᓇᓕᖅᑕᑦᐸᑕ ᐃᖏᕕᓇᖅ. ᖃᑎᐊᑉᑦᑐᑦ ᑕᑯᔪᐊ ᐊᖏᒪᓗᖅᑐᑦ ᐊᖅᑎᑕᐊᖅᑯᖅᑐᓕᕆᐊᖅᑲᐦᑎᒃ ᒪᑎᑕᑎᐊᖅᑲᖅᓇᓇᓕᖅᑲᐦᑎᒃ, ᓄᐃᑎᑎᖅᑕᑎᒪᓕ ᐅᒪᔪᑦ, ᐅᑕᕐᓇᖅᑐᑐᓂᒃ ᖃᑎᖅᑎᑦ ᐊᖅᑎᑕᐊᖅᑐᑦᓂᐅᖅᑲᖅᑐᓕᕆᐊᖅᑕᐅᓂᑦ ᐃᓕᓴᐱᐅᓂᑦ ᐊᖅᑎᑕᐊᖅᑐᑦᓂᐅᖅᑲᖅᑐᓕᕆᐊᖅᑕᐅᓂᑦ.

ᓴᕿᑲᓚᖅᑦᑕᖅᑐᑦ ᐊᓯᔾᔨᖅᑐᑦ ᕿᑎᐊᓂ ᒪᑭᑕᔪᓐᓇᑦᑎᐊᕐᕆᑦᑐᑦ (ᐋᕿᐅᒪᑦᑎᐊᕐᕆᑦᑐᑦ) ᐊᖕᒪᓗᖅᑐᑦ ᐱᖁᑎᓕᐅᕈᑏᑦ ᐊᓯᐃᑢᒃ, ᓄᐃᑦᑎᓕᖅᑦᑕᖅᑐᑦ ᒪᕿᔪᑎᑐᑦ ᐆᑦᑐᓐᓇᖅᑐᓂᒃ, ᑕᐃᔭᐅᔪᓂᒃ ᐊᐅᓚᔪᓂᒃ ᖃᐅᒪᓂᒃ; (ᑕᒪᒃᑯᐊ ᐊᐅᓚᔪᓂᒃ ᖃᐅᒪᓖᑦ, ᐊᒻᒪᓗ ᓴᑯᑕᐅᓲᖕᕆᓂᖕᕆᑦ ᐃᓗᓕᖕᕆᑦ ᑕᐃᔭᐅᔪᑦ Neutron particles-ᓂᒃ ᓴᕿᖃᑦᑕᕐᒥᔪᑦ, ᖃᖅᑎᑕᐅᕙᓪᓕᐊᖃᑦᑕᕐᒥᔪᑦ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐊᐅᒪᓕᐅᕝᕙᖕᒥ. ᑖᕚᓃᓕᖅᑎᓪᓗᕆᑦ ᐊᓯᔾᔨᖅᑎᓪᓗᕆᑦ ᐅᖃᐅᓯᐅᓰᑦ "ᓲᕈᓕᕐᓂᕋᖅᑕᐅᓪᓗᑎᒃ" ᐊᖕᒪᓗᖅᑐᖕᕆᑦ ᐱᖁᑎᓕᐅᕈᑏᑦ. ᑕᐃᒪᐃᑦᑐᒥᒃ ᐆᑦᑐᓐᓇᖅᑐᓕᖕᓂᒃ ᓴᖅᑭᓯᒪᔪᑦ ᐊᐅᓚᔪᓂᒃ ᖃᐅᒪᓂᒃ, ᓴᖕᕆᔫᒻᒪᓇᖕᓂᒃ ᐃᓚᖅᑲᖅᑐᑦ, ᓴᓐᖕᑮᓐᓂᖅᓴᓂᒃ ᐃᓚᖅᑲᖅᑐᑦ ᐊᒻᒪᓗ ᖃᐅᒪᔫᒻᒪᓇᖕᓂᒃ ᑕᑯᒃᓴᐅᖕᕆᑦᑐᓂᒃ ᓴᕿᐅᒪᔪᓂᒃ. (alpha particles, beta particles ᐊᒪᓗ gamma rays-ᓂᒃ). ᑕᒪᒃᑯᐊ ᐆᑦᑐᓐᓇᖅᑐᖃᕐᓂᖕᕆᑦ, ᐊᒻᒪᓗ ᓄᐃᑕᐅᔭᕌᖕᖓᑕ neutron-ᖃᕐᓂᖕᕆᑦ ᐃᓗᓕᖕᕆᓃᑦᑐᑦ, ᐊᕙᒃᑐᖅᑕᐅᕙᖕᒥᔪᑦ ᖄᖅᑎᑕᐅᓪᓗᑎᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐆᒻᒪᑎᑦᑎᕙᖕᒥ.

ᓄᖑᔪᐃᑦᑐᒥᒃ ᐊᐅᓚᔪᒥᒃ ᖃᐅᒪᖅᑲᕐᓂᖕᕆᑦ ᐱᑕᖃᐅᖅᑐᑦ ᓇᓂᑐᐃᓐᓇᖅ ᓯᓚᒥ ᐊᕙᑎᒥᓗ, ᑕᐃᒪᖕᖓᓪᓕᒫᕐᓗ ᒪᕿᕙᓪᓕᐊᔪᑦ ᐅᕙᑑᓐᓃᑦ ᑎᖕᒥᒂᖅᑐᑦ ᑕᑯᒃᓴᐅᖕᕆᑦᑐᒥᒃ ᐆᑦᑐᓐᓇᖅᑐᓕᖕᓂᒃ. ᑕᒪᓐᓇ ᐱᑕᖃᐃᓇᖅᑐᖅ "ᐃᖕᕆᕋᐃᓐᓇᖅᑐᖅ ᐆᑦᑐᓐᓇᖅᑐᖅ ᑕᑯᒃᓴᐅᖕᕆᑦᑐᖅ" ᐱᑕᖃᐃᓐᓇᖅᑐᖅ ᐃᐸᔪᕐᒥ, ᐃᒪᕐᓂ, ᐱᕈᖅᑐᓂᓗ. ᐊᑦᑎᒃᑐᓂᒃ ᐱᑕᖃᕐᓂᖕᕆᑦ ᔪᕼᓂᔭᒻᒥᒃ, ᑐᐊᕆᔭᒻᒥᒃ ᐊᒻᒪᓗ ᐊᒃᑕᑰᖅᐸᓪᓚᓂᖕᕆᓐᓂᒃ ᐱᑕᖅᑐᑦ ᓇᓂᑐᐃᓐᓇᓚᒫᖅ. ᐃᓚᖕᕆᑦ ᑕᒪᒃᑯᐊ ᐆᑦᑐᓐᓇᖅᑐᒃᓴᔭᐃᑦ ᓂᕆᔭᐅᕙᓪᓚᐊᖃᑦᑕᖅᑐᑦ ᐃᓄᖕᓄᑦ ᓂᕿᒃᑯᑦ ᐃᒥᖅᑕᐅᔪᓄᓪᓗ, ᐊᒻᒪᓗ ᐊᓯᖕᕆᑦ ᓲᕐᓗ radon-ᖑᔪᑦ ᓴᓃᕐᓗᑯᐃᑦ, ᐊᓂᖅᓵᖅᑐᖅᑕᐅᕙᒃᑐᑦ. ᐊᖕᕆᓂᖕᕆᑦ ᐱᑕᖃᕐᓂᖕᕆᑦ ᓄᓇᒦᑦᑐᑦ, ᐊᑦᑎᒃᑐᒦᑦᑐᑦ ᐊᖕᕆᓂᖕᕆᑦ, ᐃᓚᕆᔭᐅᖕᒪᑕ ᐊᕙᑎᑐᖃᑦᑎᓐᓄᑦ. ᑕᖁᖃᑦᑕᕐᒥᔪᒧᑦ ᐊᑦᑎᒃᑐᓂᒃ ᐃᓄᖕᒧᑦ ᓴᓇᔭᐅᓯᒪᔪᓂᒃ ᐆᑦᑐᓐᓇᖅᑐᖃᖅᑐᓕᐊᖑᓯᒪᔪᓂᒃ, ᓲᕐᓗ ᐊᔾᔨᓕᐅᕈᑎᓂᒃ (ᑦᕋᖅᑐᖅᑕᐅᔾᔪᑎᓂᒃ) - ᓲᕐᓗ ᑭᒍᑎᓂᒃ ᐊᔾᔨᓕᐅᓕᕌᖕᒐᒥᒃ, ᐅᕙᓗᓐᓃᑦ ᓯᕝᕙᐊᕐᒥᒃ ᐊᔾᔨᓕᐅᓇᔪᖃᕌᖕᖓᑦ - ᐊᒻᒪᓗ ᓂᐅᕙᐊᒃᓴᓂᒃ ᓴᓇᓯᒪᔪᓂᒃ ᓲᕐᓗ ᑎᕚᑯᒥᒃ (ᐃᓚᖃᖃᑦᑕᕐᒪᑕ polonium-210-ᒥᒃ) ᓴᓇᕈᑎᓪᓗ ᐃᒡᓗᕐᔪᐊᓕᐅᕈᑏᑦ ᐊᒻᒪᓗ ᖄᕈᓐᓇᖅᑐᑦ ᐅᖅᓱᒃᓴᐃᑦ (ᖓᓴᓖᓐ, ᐊᐅᒪᒃᓴᖅ, ᐊᓯᖕᕆᓪᓗ).

ᐊᒃᑐᖅᑕᐅᓯᒪᔫᓐᓇᕐᓂᖅ ᐱᑕᖅᑐᑐᖃᕐᓄᑦ ᐆᑦᑐᓐᓇᖅᑐᖃᖅᑐᓄᑦ ᐊᒻᒪᓗ ᐃᓄᖕᒧᑦ ᓴᓇᔭᐅᓯᒪᔪᓂᒃ ᖁᑢᓂ ᐅᖃᐅᓯᐅᓯᒪᔪᓂ ᐊᒃᑐᖅᑕᐅᓯᒪᓗᓂ ᖃᓄᐃᓕᓐᓇᖕᕆᑦᑐᑦ, ᐊᑦᑎᓈᖅᓯᒪᒍᑎᒃ ᐱᑕᖃᕐᓂᖕᕆᑦ ᐆᑦᑐᓐᓇᖅᑑᑦ, ᑭᓯᐊᓂᓚ ᓴᖕᕆᓂᖅᓴᓂᒃ ᐆᑦᑐᓐᓇᖅᑐᖃᖅᑐᓂᒃ ᖂᓐᓱᑖᕈᑕᐅᔪᓐᓇᖅᐳᑦ, ᐊᒻᒪᓗ ᐃᓅᔪᑦ ᑕᐃᒪᐃᑦᑎᐊᕐᕆᓪᓗᑎᒃ ᑎᒥᐊᒍᑦ, ᐊᒻᒪᓗ ᓴᖕᕆᔫᒻᒪᓇᖕᓂᒃ ᐳᖅᑐᔫᒻᒪᓇᖕᓂ ᐆᑦᑐᓐᓇᖅᑐᖃᕐᓂᕐᒥᒃ, ᐆᑦᑐᓐᓇᖅᑐᓂᒃ ᑐᖁᓐᓇᖅᑐᖅᑖᕈᓐᓇᖅᑐᑦ ᑐᖁᔪᓐᓇᖅᓱᑎᒡᓗ. ᑕᐃᒪ ᓈᒻᒪᑦᑎᐊᖅᐳᖅ, ᑕᐃᒪᐃᑕᐅᖃᑦᑕᖅᑐᑦ ᐊᒃᑐᖅᑕᐅᓂᖅ ᐳᖅᑐᔪᒥᒃ ᐆᑦᑐᓐᓇᖅᑐᓕᖕᓂᒃ, ᐊᑐᖅᑕᐅᖓᔪᕆᑦᑐᒻᒪᓇᐅᔪᑦ, ᐅᔾᔨᖅᑐᐃᓐᓇᓇᐊᖃᕐᓂᕐᒧᑦ ᑲᒪᑦᑎᐊᕐᕆᓐᓇᓇᐊᖃᕐᓂᕐᕆᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᓇᕙᖕᓂᒃ (ᐅᒻᒪᖅᑎᑦᑎᕙᖕᓂ) ᑕᒪᐃᓐᓂᓗ ᐊᑐᖅᑕᐅᓂᖕᕆᓐᓂ ᓄᖑᔪᐃᑦᑐᖃᖅᑐᓂᒃ.

ᐃᓄᓕᒫᑦ ᖃᓄᐃᵃᓂᖅᓕᑦ ᖃᓂᒪᒥᓂᖅᑮᖏᓂᕆᑯᑦ ᐅᖃᖅᓯᒪᖅᓕᑦᑐᑦ ᐊᒥᓯᑐᓚᐊᖅᓯᒪᓂᖅᑭᵃᓂ ᑲᵃᓴᑮᖅᓯᒪᓕᕐᑦ, ᐊᖏᑎᑐᑐᒪᓚᖅᓂᕆᖅ ᐊᕆᑐᖅᑕᐅᓯᒪᓕᕐᓂ (ᐊᑮᓂ ᐅᕆ⅁ᖏᐅᑎᐅᓯᑦ 100 milisievert [mSv]). ᑭᓯᐊᓂ, ᐱᓗᐊᖅᑕᐃᓕᒪᖏᑦᔨᓂᓗᓂ ᐃᓯᒪᓕᕐᖃᖅᖢᑦ, ᐃᓯᒪᓴᓇᖅᑐᑦ ᖃᓄᐃᖏᑐᑐᐃᓇᐃᑦ >ᖅᑐᓂᖃᖅᑐᑦ ᐅᑕᕐᓇᖅᑐᑦ ᐃᓕᓴᖅᑐᓂᓄ ᐃᓕᖅᑲᒪᔪᑦ ᐅᓗᓚᐊᓇᖏᓂᖃᖅᖃᖅᑐᑦ. 2005-ᒥ ᐅᓂᄆᑦᑕᐊᖏᑕᖅ ᐅᓪᓗᓯᐊᒥᐅᓂ ᐅᑕᕐᓇᖅᑐᓂᄆ ძᕕᓯᕐᖃᑦᑕᐅᖅᓯᒪᕐᓂ Chernobyl-ᒥ ᑲᑎᒪᒪᐅᑕᐅᖃᑦᑕᑕᐃᓇᑕᖅᑐᒥ, ᒪᄆᐱᖏᓕᓂ 12-ᒥ ᐅᖃᖅᓯᒪᕐᖃᖅᖃᖅᐳᖅ ᑕᐃᄆძᐊᖅᑐᒍᑕᒫᖅ ᑕᐃᒪᐃᖅᑐᑐᖃᐃᑦ ᐱᑕᖃᖅᐃᓇᓇᖅᑐᑦ ᐊᄆᑐᖅᑕᐅᖃᖅᑕᕐᑐᓂᕆᑦ ᐃᓄᓕᒫᑦ ᓯᓚᕐᔪᐊᖅᒥ ᖃᄆᓂᕆᓴᕆᓂᕐᑎᓚᑦ 2.4 mSv-ᒥ ᐅᄆᑐᖅᐅᑎᓂ, ᐅᕝᓂᑦᓴᓇᄆᑦ >ᖅᑐᓂᓚᕆᒥ ᐊძᓂᕆᑐᓂᄆ 1-10 mSv-ᓂᄆ. ᐅᓂᄆᑲᓚᐊᑦ ᐅᖃᖅᓯᒪᓕᕐᑦ (ᐅᓴᐅᓯᄆᓯᒪᓕᕐᑦ) ᐃᓅᓯᓚᒪᖅᒥ ᐊᄆᑐᖅᑕᐅᓂᖅ ᖃᄆᓂᕆᓴᕆᓂᓇᓴᖅᑐᖅ ᐊძᓂᕆᑐᓂᓂ 100 – 700 mSv-ᒥᄆ. ᑲᓇᑕᒥ ᓄᖓᕐᔪᐊᔨᑦ⅁ᓚᓂᕐᒧᑦ ᐅᑐᓚᐊᓇᖅᑐᑐᓚᓂᕐᒧᑦ ᑲᒥᔭᓂᓯᑦ ᑲᑎᒪᓴᕐᔪᐊᖏᓚᑦ ᐃᓯᖅᑲᖅᑎᑎᔪᑦ ᓄᖓᕐᔪᐊᔨᑦ⅁ᒥᄆ ᐱᓚᓗᓴᑦ ᐊᄆᑐᖅᑕᐅᓯᒪᔪᓇᓇᓂᕆᑐᓂᓂᄆ >ᖅᑐᓂᖅᓵᒧᑦ ᑎᑭᓯᒪᔪᖅ 50 millisieverts-ᓂᄆ [mSv]) ᐊᖏᖃᒧᒪᖅᑲᖅ, ᐅᕝᑐᓂᓂᑦ 100 mSv-ᓂᄆ ᑕᒡᓚᒪᑕᒧᓂ ᐊᖏᖃᒧᓂ.

3 ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒪᕐᑯᑏᑦ

3.1 ᖃᓄᖅ ᐱᒋᐊᖓᖅᓯᒪᒻᒪᖖᑦ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐆᒪᕐᑯᑏᑦ

3.1.1 ᐱᑕᖃᕆᐊᖃᕐᓂᖅ ᐆᒪᕐᑯᑎᓕᐅᕈᑎᓂᒃ

2004-ᒥ, ᐆᒪᕐᑯᑎᓕᐅᖅᑐᑦ ᐊᖏᓂᖃᓚᐅᖅᑐᑦ 16.2%-ᒥ ᓯᓚᕐᔪᐊᕐᒥ ᑕᒪᐃᓐᓂ ᓴᓇᔭᐅᕖᓂᒃᓯᒪᔪᓂ ᐆᒪᕐᑯᑎᓂᒃ ᐊᑐᖅᑐᓂᒃ. ᐆᒪᕐᑯᑏᑦ ᓴᓇᔭᐅᖃᑦᑕᕐᒪᑕ ᒪᑯᓇᖖᖅᑐᓂᒃ: 39.8% ᐊᐅᒪᒃᓴᓂᒃ, 16.1% ᐃᒪᖅᑐᖅᑐᓂᒃ, 15.7% ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ, 19.6% ᒫᓴᓖᓐᓂᒃ, 6.7% ᐅᖅᓱᐊᓗᖕᒥᒃ ᐊᒻᒪᓗ 2.1% ᐊᓱᖏᓐᓂᒃ. [2]

ᓇᓚᐅᑦᑖᖅᑕᐅᓯᒪᔪᖅ ᐊᕿᒡᒥ 2050-ᒥ, ᓄᓇᕐᔪᐊᓕᒫᒥ ᐃᓄᐃᑦ ᐊᒥᓲᕆᐊᕈᒫᖅᑐᑦ 50%-ᒥᒃ 2000-ᒥᓂᒃ ᐊᒥᓰᓂᕆᓚᐅᖅᑕᖓᓂᒃ, ᑎᑭᑦᑐᒋᑦ 9 ᐱᓕᔭᓐᓄᑦ ᐃᓄᖕᓄᑦ. ᐅᖓᑖᓂ 90% ᓯᓚᕐᔪᐊᕐᒥ ᐃᓄᐃᑦ ᐊᒥᕈᖅᐸᓪᓕᐊᓂᖏᑦ ᓇᓚᐅᑦᑖᖅᑕᐅᔪᑦ ᓯᕗᓂᒃᓴᒥ, ᐃᓅᓂᐊᖅᑐᑦ ᐊᔪᖅᓴᖅᔪᐊᖅᑐᓂ ᓄᓇᕐᔪᐊᓕᖕᓂ. ᐊᒥᕈᕆᐊᕐᓂᖏᓐᓄᑦ ᐃᓄᐃᑦ ᓯᓚᕐᔪᐊᕐᒥ, ᐃᓄᐃᓪᓗ ᐊᔪᖅᓴᕐᔪᐊᕐᓇᖅᑐᓂ ᓄᓈᑦ ᐊᔪᖅᓴᕈᓃᖅᐸᓪᓕᐊᔪᒪᓂᖏᓐᓄᑦ, ᐃᓅᓯᕐᒥᓂ ᐱᐅᓂᖅᓴᓂᒃ ᐱᕐᑲᑕᐅᔪᒪᓂᖏᓐᓄᑦ, ᐊᖏᔫᓚᕆᐅᓂᐊᖅᑐᑦ ᐊᑐᕐᑲᑕᐅᔭᕆᐊᕐᑲᕐᓂᐊᖅᑐᑦ ᐆᒪᕐᑯᑎᓂᒃ, ᐱᓗᐊᖅᑐᒥᒃ ᖃᐅᑕᒫᖅ ᐃᒡᓗᒥ ᐅᒪᕐᑯᑎᓂᒃ. ᑕᒡᕙᓂ 50-ᓂᒃ ᐊᕿᒍᓂ ᐊᑐᖅᑐᓂ, ᓇᓚᐅᑦᑖᖅᑕᐅᔪᖅ ᐃᓄᐃᑦ ᐱᓂᖅᓴᐅᔭᕆᐊᕐᑲᕐᓂᐊᖅᑐᑦ ᐊᑐᕐᓂᖅ ᐆᒪᕐᑯᑎᓂ, ᓴᓂᐊᓂ ᑕᐃᒪᖓᓪᓕᒫᖅ ᐊᑐᖅᑕᐅᖃᑦᑕᕆᐊᓚᐅᖅᓯᒪᓂᖏᓐᓂ ᐆᒪᕐᑯᑏᑦ. ᑕᒡᕗᓇᑦᓴᐃᓐᓇᖅ, ᐊᒥᓲᖅᐸᓪᓕᐊᑐᐃᓐᓇᖅᑐᑦ ᐃᓱᒪᓘᑖᐅᔪᑦ ᐊᕙᑎᐅᑉ ᐊᒃᑐᖅᑕᐅᓂᖓ ᐆᒪᕐᑯᑎᓂᒃ ᐊᑐᕐᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᓗᓇᕈᓃᖅᑐᔅᓂᖏᑦ ᒫᓐᓇᐅᔪᒥᓗᓐᓃᑦ ᐊᑐᖅᑕᐅᓂᖏᑦ ᐊᕙᑎᒧᑦ ᑲᔪᓯᕕᐅᔪᓐᓇᐃᓕᓕᖅᑐᑦ.

ᐊᖏᔪᒥᒃ ᐆᒪᕐᑯᑎᑐᕈᑕᐅᔭᕆᐊᓖᑦ ᑲᔪᓯᓂᐊᖅᑐᑦ ᓴᓇᔭᐅᕙᓪᓕᐊᓗ;ᑎᒃ ᐊᐅᒪᒃᓴᓂᒃ, ᐅᖅᓱᐊᓗᖕᒥᒃ ᒫᓴᓖᒥᒡᓗ, ᖃᐅᔨᒪᔭᐅᔪᓂᒃ ᐃᒫᒃ ᑕᐃᔭᐅᓰᓂᒃ ᐅᖅᓱᓗᒃᓴᔭᓂᒃ (ᐆᒪᔪᕕᓃᑦ ᖃᖓᓴᓪᒪᕆᐊᓗᒃ ᓄᓇᒥ ᓴᐅᔭᐅᓯᒪᔪᓂᖖᖅᑐᑦ) ᐱᔾᔪᑕᐅᓂᖏᓐᓄᑦ ᐱᔭᐅᓯᒪᖕᒪᑕ ᐱᕐᑯᖅᑐᕕᓂᕐᓂᒃ ᐅᒪᔪᕕᓂᐅᓚᐅᖅᑐᓂᒡᓗ ᒥᓕᔭᓐᖏᓃᑦᑐᓂᒃ ᐊᕿᒡᒍᓂᒃ ᐊᓂᒍᖅᓯᒪᔪᓂ. ᑭᓯᐊᓂ, ᖃᐅᔨᒪᔨᑕᐃᑦ ᓇᓚᐅᑦᑕᖅᓯᒪᔪᑦ ᓯᓚᕐᔪᐊᕐᒥ ᐅᖅᓱᐊᓗᓕᐅᖅᐸᓪᓕᐊᓂᖏᑦ ᐳᖅᑐᓂᖅᐹᕆᔪᓐᓇᖅᑕᖓᓃᓕᐊᓂᒃᑐᖅ, ᐳᖅᑐᓂᖅᐹᕆᓂᐊᓕᖅᑕᒥᓃᓂᐊᓕᖅᑐᕐᓗᓐᓃᑦ ᓴᓇᔭᐅᔪᓐᓇᕐᓂᖏᓐᓂ, ᕿᓚᒥᑯᓗᒃ, ᐊᒻᒪᓗ ᐊᒥᒐᕐᓂᖏᑦ ᐊᑭᑦᑐᔾᔪᑕᐅᑐᐃᓐᓇᕐᓂᐊᖅᑐᑦ ᐅᖅᓱᐊᓗᐃᑦ. ᓯᓚᕐᔪᐊᓕᒫᒥ ᐅᖅᓴᐊᓗᒃᓴᐃᑦ ᓴᓇᔭᐅᓂᖏᑦ ᓱᓕ

2.ᓯᓚᕐᔪᐊᓕᒫᒥ ᐱᓪᓕᕆᐅᔪᑦ ᐆᒪᕐᑯᑎᓕᐅᖅᑕᐅᔪᓂᒃ ᓈᓴᖅᑕᐅᓯᒪᔪᑦ 2006; ᓯᓚᕐᔪᐊᕐᒥ ᐆᒪᕐᑯᑎᓕᕆᔩᑦ ᑲᒪᔩᖏᑦ.

ᐳᖅᑐᓂᖅᐸᕐᒥᓐᓂᐊᕋᓱᒋᔭᐅᖏᒃᑲᓗᐊᖅᓱᑎᒃ ᓱᓕ ᐊᒥᓱᒐᓴᙳᑦ 10-ᖏᓐᓃᑦᑐᓂ ᐊᕿᔫᒐᓴᐅᓂᐊᖅᑐᓂ , ᐊᑭᖏᑦ ᐊᖏᔫᒪᓇᖕᒥ ᐊᑭᑦᑐᓇᐊᖅᓯᒪᓕᐊᓂᒃᑐᑦ, ᐊᒻᒪᓗ ᐊᒥᐊᒃᑯᖏᑦ ᐅᖅᓱᐊᓗᐃᑦ ᒑᓴᓖᓪᓗ ᐋᓂᕐᓇᖅᓯᓗᐊᕐᓂᐊᖅᑐᒃᓴᐅᔪᑦ ᐊᓯᖏᓐᓄᑦ ᐊᑐᖅᑕᐅᔭᓇᐊᕐᑲᓂᖏᓐᓄᑦ-ᓱᕐᓗ ᐊᐅᕁᕈᑎᒃᓴᓄᑦ ᐊᒻᒪᓗ ᐅᖅᓱᐊᓗᓕᐅᕐᓂᕐᒧᑦ ᐃᓚᒃᓴᐅᔪᓄᑦ-ᐊᑐᖅᑕᐅᓇᔭᕐᓂᖓᑕ ᓴᓂᐊᓂ ᐅᒻᒪᕐᑯᑎᓕᐅᕐᓂᐅᑉ. ᐊᒻᒪᓗ ᓴᓂᐊᓂ ᓯᕗᓂᒃᓴᒥ ᐊᒥᒐᒃᓯᓂᐊᕐᓂᖅᑐᓂ ᐅᖅᓱᐊᓗᖓ ᒑᓴᓖᓂᓪᓗ, ᐆᑕᐃᔭᐅᕐᑲᑦᑕᕐᓂᖏᑦ ᑕᒪᒃᑯᐊ ᐆᒻᒪᕐᑯᑎᓕᐅᕐᑎᓪᓗᒋᑦ, ᐊᒥᓱᓂᒃ ᐱᐅᖏᓐᓂᕐᑲᖅᑐᑦ. ᓱᓕ ᓯᓚᕐᔪᐊᕐᒥ ᐱᑕᕐᑲᓕᐊᓘᒐᓗᐊᖅᑎᓪᓗᒋᑦ ᐊᐅᒪᒃᓴᐃᑦ, (ᐊᐅᒫᓗᐃᑦ), ᕐᑲᓄᐃᓕᐅᓇᐊᕐᑲᓪᓚᓇᓕᕐᒪᑕ ᐳᔪᕐᓗᓕᐅᓗᐊᖅᑕᐃᓕᒪᔭᓇᐊᕐᑲᓕᕐᓂᖏᓐᓄᑦ ᐊᒻᒪᓗ ᓱᕈᕐᓇᕐᑲᑦᑕᕐᓂᖏᓐᓄᑦ ᑕᒪᒃᑯᐊ ᓴᓇᔭᐅᓚᖓᒥᒃ. ᐱᔭᐅᓂᖏᑦ ᑐᖅᑯᖅᑕᐅᓂᖏᓪᓗ ᐳᔪᐃᑦ ᐋᕐᐰᒍᑕᐅᓂᐊᕐᓂᕋᖅᑕᐅᓯᒪᔪᑦ, ᑭᓯᐊᓂ ᑕᐃᒫᒃ ᐱᓂᐊᕐᓂᕐᑲᖅᑐᐃᓐᓇᐅᔭᓇᐊᕐᑲᓕᕋᔭᖅᑐᑦ ᑮᓇᐅᔭᓂᒃ ᐊᖏᔫᒪᓇᐊᓗᖓᓂᒃ ᐊᑐᕈᒫᕐᓂᖅ ᓴᓇᕐᕈᑏᑦ ᓴᓇᔭᐅᕐᑳᓇᐊᕐᑲᕐᓂᖏᓐᓄᑦ ᐱᐅᔫᒪᓇᐅᓗᑎᒃ ᐊᒻᒪᓗ ᐃᓕᐅᕐᑲᖅᑕᐅᓗᑎᒃ ᓴᓇᔭᐅᕐᑳᓚᐅᕐᓗᑎᒃ ᐱᐅᔪᑦ. ᑕᒪᒃᑯᐊ ᐱᔾᔪᑕᐅᓪᓗᑎᒃ, ᓇᓗᓇᖏᑦᑐᖅ ᓄᕌᔪᐃᑦᑐᓕᖕᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᐅᕐᓂᖅ ᐱᓪᒪᓇᐊᓘᓕᕐᓂᐊᖅᑐᖅ ᓯᓚᕐᔪᐊᕐᒥ ᐆᒻᒪᕐᑯᑎᓕᐅᓇᐊᕐᑲᕐᓂᕐᒧᑦ.

ᐱᓪᒪᓇᐅᔪᖅ ᕐᑲᐅᔨᒪᑎᑦᑎᓂᖅ ᐱᔪᕐᑲᖏᒪᑦ ᒫᓐᓇᐅᔪᒥᒃ ᐱᒋᐊᖅᑎᑦᑎᔪᒪᓂᖅ ᓄᕌᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᖅᑯᑎᓂᒃ ᐊᑐᖅᑕᐅᕐᑯᔨᓂᖅ ᓄᓇᕗᒻᒥ. ᑖᒃᑯᐊ ᕐᑲᓄᖅ ᐱᒋᐊᖓᓚᐅᖅᓯᒪᖕᒪᖕᒑᑦ ᐅᓂᒃᑳᑦ ᓄᕌᔪᐃᑦᑐᒥᒃ ᐆᒻᒪᕐᑯᑎᓕᐅᕐᓂᕐᒥᒃ ᐅᕐᑲᐅᓯᕐᑲᖅᑐᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ ᑕᐃᒫᒃ ᐅᕐᑲᓕᒫᖅᑐᑦ ᕐᑲᐅᔨᒪᑦᑎᐊᕐᓂᖅᓴᐅᓂᐊᕐᒪᑕ ᕐᑲᓄᖅ ᓄᕌᔪᐃᑦᑐᑦ ᔪᕇᓂᔭᒻᒥ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᔪᑦ ᓄᓇᕗᒻᒥ ᐊᑐᖅᑕᐅᓇᔭᕐᒪᖕᒑᑕ ᐊᓯᖏᓐᓂ ᓄᓇᓕᐅᔪᓂ ᑲᓇᑕᒥ, ᐊᓯᖏᓐᓂᓗ ᓄᓇᕐᔪᐊᓕᖕᓂ ᓯᓚᕐᔪᐊᕐᒥ, ᐅᒻᒪᕐᑯᑎᓕᐅᕐᓂᖏᓐᓂ.

3.1.2 ᐊᑐᖅᑕᐅᓂᖏᑦ ᓄᕌᔪᐃᑦᑐᑏᑦ ᕐᑲᐅᒪᖏᑦ ᐆᒻᒪᕐᑯᑎᓕᐅᕐᓂᕐᒧᑦ

ᐆᒻᒪᕐᑯᑏᑦ ᓴᓇᔭᐅᕐᑲᑦᑕᕐᒪᑦ ᓄᕌᔪᐃᑦᑐᓕᖕᓂ ᐅᒻᒪᖅᑎᑎᕖᖕᓂ[3] ᐃᓗᓕᖏᑦ ᐊᖕᒪᓗᖅᑐᑦ ᕐᑳᖅᑎᑕᐅᓪᓗᑎᒃ (ᐃᓗᓕᖏᑦ 2.1-ᒥᑦᑐᑦ). ᑕᐃᒪᒃ ᐊᕕᒃᑐᖅᑕᐅᒑᖕᒐᒥᒃ ᐃᓗᓕᖏᑦ ᐊᖏᔫᒪᓇᐊᓗᖕᒍ ᐆᓐᓇᕐᓂᖅ ᓴᓇᔭᐅᕐᑲᑦᑕᕐᒪᑦ, ᐊᑐᖅᑕᐅᕙᒃᑐᖅ ᕐᑳᖅᑎᑦᑎᓂᕐᒧᑦ, ᑲᐃᕕᑦᑎᒍᑕᐅᓂᐊᖅᑐᓂᒃ ᐊᒃᓴᓗᐊᕐᔪᐊᕐᓂᒃ, ᑕᐃᓪᕙᖕᒐᑦ ᐆᒻᒪᕐᑯᑏᑦ ᓴᕐᑭᑉᐸᒃᓱᑎᒃ. ᑕᒪᓐᓇ ᐅᕐᑲᐅᓯᓇᕙᒃᑕᕗᑦ ᐅᒻᒪᕐᑯᑎᓂᒃ ᓴᓇᔭᐅᓯᒪᔪᓂᒃ ᐊᑐᖅᑕᐅᓪᓗᑎᒃ ᓄᕌᔪᐃᑦᑐᓕᖕᓂᒃ ᐆᒻᒪᖅᑎᑦᑕᐅᓯᒪᔪᓂᒃ.

ᑕᒪᒃᑯᐊ ᐅᕐᑲᐅᓯᐅᔪᑦ "ᓄᕌᔪᐃᑦᑐᓕᖕᒥ ᐃᒻᒥᖅᑐᐃᕙᓪᓕᐊᖏᓐᓇᕐᓂᖅ" ᐊᑐᖅᑕᐅᕙᒃᑐᖅ ᑐᑭᕐᑲᕋᒥ ᑕᒪᐃᓐᓂᒃ ᑲᐃᕕᑉᐸᓪᓕᐊᖏᓐᓇᖅᑐᒥᒃ ᐅᐃᔾᔫᕐᓂᐅᔪᒥᒃ ᔪᓇᓂᔭᒻ

[3] ᐊᒥᓱᐊᓘᒐᓗᐊᖅᑎᓪᓗᒋᑦ ᓄᕌᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᖅᑎᑦᑎᕖᑦ ᐊᔾᔨᒌᖏᑦᑑᑏᑦ, ᐅᕐᑲᐅᓯᕐᑲᖅᑐᑦ CANDU-ᓂᒃ ᐆᒻᒪᖅᑎᑦᑎᕕᖕᓂ ᐊᑐᖅᑕᐅᕙᒃᑐᓂ ᑲᓇᑕᒥ ᐊᓯᖏᓐᓂᓗ ᕐᑲᔾᔫᓐᓇᑯᓗᖕᓂ ᓄᓇᕐᔪᐊᓕᖕᓂ.

ᐊᑐᖅᑕᐅᓲᖑᓂᖓᓂ, ᐅᒻᒪᕐᑯᑎᓂᒃ ᓴᓇᓂᕐᒧᑦ. ᓯᕗᓪᓕᐹᕐᒥ ᐱᒋᐊᕐᔭᖅᑐᑦ, ᓇᓂᓯᓇᓱᐊᖅᓂᕐᒥᒃ ᕐᑭᓂᕐᓂᕐᒥᒃ, ᐅᔭᕋᖕᓂᐊᕐᓂᕐᒥᒃ, ᐊᕕᒃᑐᖅᑕᐅᓂᖏᓐᓂ ᓯᕐᑲᓕᖅᑎᑕᐅᓗᑎᒃ, ᓯᕗᓪᓕᕐᒥ ᓴᓗᒻᒪᖅᓴᖅᑕᐅᓂᖏᑦ, ᐱᔭᖅᑕᐅᓂᖏᑦ ᐊᒻᒪᓗ ᐃᓚᒃᓴᓐᖑᖅᑎᑕᐅᓂᖏᑦ; ᐊᒻᒪᓗ ᑭᖑᓪᓕᕐᒥ ᐅᒻᒪᕐᑯᑎᓕᐅᕈᑕᐅᓕᕐᓗᑎᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐆᒻᒪᖅᑎᑦᑎᕕᖕᓂ, ᐊᒻᒪᓗ ᑐᖅᑯᖅᑕᐅᑦᑎᐊᕆᐊᕐᑲᖅᓯᑎᒃ ᐃᒋᑕᐅᓯᒪᑦᑎᐊᕆᐊᕐᑲᖅᓯᑎᓪᓗ ᐊᒥᐊᒃᑯᖏᑦ ᓄᖑᔪᐃᑦᑐᓖᑦ ᐊᒃᑕᑰᓕᖅᑐᑦ. ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ ᑕᑯᓇᓗᐊᖅᐳᑦ ᓯᕗᓪᓕᖅᐹᖑᔪᓂᒃ ᐱᓕᕆᐊᖑᕚᒃᑐᓂᒃ, ᕐᑭᓂᕐᓂᕐᒥᒃ ᓇᓂᓯᓇᓂᕐᒥᒃ ᓄᖑᔪᐃᑦᑐᕐᑲᖅᑐᓂᒃ ᓄᓇᒥᒃ ᐊᒻᒪᓗ ᐅᔭᕋ ᖕᓂᐊᖅᑕᐅᓂᖏᓐᓂ, ᓯᕐᑲᓕᖅᑎᑕᐅᓂᖏᓐᓂᓗ ᐅᔭᕋᐃᑦ ᐃᓗᓕᓖᑦ ᓄᓇᕗᒻᒦᑦᑐᑦ.

ᒫᓐᓇᐅᔪᖅ ᑲᓇᑕᒥ, ᑕᒪᕐᒥᒃ ᔪᕉᓂᔭᒻᒥᒃ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᔪᑦ ᓴᔅᑳᑦᓯᐋᓐᒦᑦᑐᑦ, ᕐᑭᑎᐊᓃᑦᑐᑦ ᐱᓕᕆᐊᒃᓴᐃᑦ ᐱᓕᕆᐊᖑᓪᓗᑎᒃ ᐊᓯᖏᓐᓂ ᐃᕐᑲᓇᐃᔭᕐᕕᐸᐅᔭᓂᒃ ᐋᓐᑎᐅᕆᔫᒥ, ᐊᒻᒪᓗ ᐅᒻᒪᕐᑯᓯᐅᖅᑕᐅᕙᒃᓯᑎᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᕐᑯᓯᐅᕐᕕᖕᒥ ᐋᓐᑎᐅᕆᔫᒥ, ᑯᐸᐃᒃ, ᐊᒻᒪᓗ ᓂᐅ ᐳᕋᓐᔅᐅᐃᒃᒥ. ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᒻᒪᕐᑯᓯᐅᕐᕖᑦ ᐃᓂᕐᑲᐃᓐᓇᓯᑏᑦ ᓄᓇᓕᖕᓂ ᐊᒥᓱᓂᒃ ᐃᓂᕐᑲᕐᓂᐅᔪᓂ, ᐊᖏᔪᒥᒃ ᐅᒻᒪᕐᑯᑎᑐᖅᑐᓂᒃ, ᓲᕐᓗ ᐋᓐᑎᐅᕆᔫᑉ ᓂᒋᐊᓂᕐᒥᐅᑕᓂ, ᓇᑉᐸᓪᓗᐊᖏᑦ (ᐊᕝᕚᓪᓗᐊᖏᑦ) ᐆᒻᒪᕐᑯᑎᑐᖅᐸᓪᓕᐊᓯᖑᑎᓪᓗᒋᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᒻᒪᕐᑯᓯᐊᕕᓂᐅᔪᓂᒃ ᐊᑐᖅᓯᑎᒃ.

ᐃᓚᖏᑦ ᔪᕉᓂᔭᒻᒥᖕᓛᖅᑐᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐊᐅᓚᑎᔾᔪᑎᓕᐊᖑᔪᑦ ᐊᑐᖅᑕᐅᓲᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐅᒻᒪᖅᑎᑦᑎᕕᖕᓂ, ᐱᔭᐅᕐᑲᑦᑕᖅᒥᔪᑦ ᐊᓯᖏᓐᓂᒃ ᐊᑐᖅᑕᐅᒃᑲᓐᓂᕐᓂᐊᖅᑐᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐊᒥᐊᒃᑯᕕᓂᕐᓂᒃ, ᕐᑲᓂᒋᔭᖕᒋᓐᓃᑦᑐᑦ 60% ᒫᓐᓇᐅᔪᖅ ᐱᔭᐅᕐᑲᑦᑕᖅᑐᑦ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᓯᒪᔪᓂᒃ ᔪᕉᓂᔭᒻᒥᒃ. ᑲᓇᑕᑯᑦ ᐋᔅᑐᕉᓕᔭᒃᑯᑦᓗ ᐊᖏᓂᖅᐹᓂᒃ ᐱᑖᕐᕕᐅᕐᑲᑦᑕᖅᑐᑦ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᓯᒪᔪᓂᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᔪᕉᓂᔭᒻᒥᒃ, ᐊᒥᓱᒐᓴᐃᑦᑕᐅᖅ ᐊᓯᖏᑦ ᐱᕕᐅᕐᑲᑦᑕᕐᓗᐊᓇᑦᑎᓗᒃ. ᑲᓇᑕ ᓯᕗᓕᐅᖅᑎᐅᔪᖅ ᓴᓇᔨᐅᔪᓂ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᓯᒪᔪᓂᒃ ᔪᕉᓂᔭᒻᒥᒃ, ᓄᖑᔪᐃᑦᑐᒥᒃ, ᑕᒪᕐᒥᒃ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᕐᑲᑦᑕᖅᓯᓂ ᓴᔅᑳᑦᓯᐋᓐᒥ. ᑖᒃᑯᐊ ᓴᓇᔭᐅᕙᒃᑐᑦ ᐊᖏᓂᕐᑲᓚᐅᖅᑐᑦ 28%-ᒥᒃ ᓯᓚᕐᔪᐊᕐᒥ ᓴᓇᔭᐅᔪᓕᒫᓂ 2005 ᐊᕐᕋᒍᖓᓂ, ᐃᓚᒋᔭᐅᔪᖅ ᑕᒪᓐᓇ ᐊᖏᓂᖓ, ᐊᖏᓪᓕᒋᐊᖅᑐᐃᓐᓇᕐᓂᐊᖅᑐᖅ ᐊᖏᔪᒻᒪᓇᖕᒥ ᐱᕈᕐᓗᓂ, Cigar Lake-ᒥ ᑕᓯᕐᒥ ᓴᓇᒋᐊᓕᕐᒥᒍᑎᒃ 2009 ᕐᑲᓂᒋᔭᖕᒐ.

ᔪᕉᓂᔭᒻᒥ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐊᒻᒪᓗ ᓄᖑᔪᐃᑦᑐᓕᕆᕕᖕᓂ ᓴᓇᔭᒃᓴᕐᑲᕐᑲᑕᐅᔪᑦ ᐱᒻᒪᕆᐊᑑᔪᑦ ᑲᓇᑕᐅᑉ ᑮᓇᔭᐅᓕᐅᕐᑲᑕᐅᔪᓐᓇᕐᓂᖓᓄᑦ ᐊᒻᒪᓗ ᕐᑭᑭᒋᐊᕈᑎᒋᕐᔪᐊᕐᓂᐊᖅᑕᖕᒐ, ᓯᓚᕐᔪᐊᕐᒥᐅᓕᒫᑦ ᐱᔪᒪᕙᓪᓕᐊᑐᐃᓐᓇᖅᑎᓪᓗᒋᑦ ᐅᒻᒪᕐᑯᑎᓂᒃ. 18-ᖑᓪᓗᑎᒃ ᐊᐅᓚᑕᐅᔪᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᖅᑎᑦᑎᕖᑦ[4] o a major

[4] ᐋᓐᑎᐅᕆᔫᒥ ᒪᕐᑰᖕᓂ ᐆᒻᒪᕐᑯᑎᓕᐅᕐᕕᕐᑲᖅᑐᑦ Pickering A-ᒥ ᓴᓇᕕᖕᒥ, ᐃᖕᒋᕐᕋᔪᓐᓃᖅᑐᒥᒃ ᐊᒻᒪᓗ ᒪᕐᑰᖕᓂ Bruce A-ᒥ ᓴᓇᕕᖕᒥ, ᒫᓐᓇᐅᔪᖅ ᓴᓇᒋᐊᖅᑕᐅᓯᒪᓕᖅᑐᒥᒃ ᓂᕆᐅᒋᔭᐅᔪᖅ ᐱᒋᐊᒃᑲᓐᓂᕈᒫᕐᓂᖅ 2009-ᒥ ᐊᒻᒪᓗ 2010-ᒥ.

ᐊᒻᒪᓗ ᐊᒥᓱᕐᖅᑕᐅᒃᑲᓐᓂᕈᒪᓪᓗᑎᒃ ᐋᓐᑎᐅᕆᔫᒥ, ᑲᓇᑕᖅ, ᐊᙱᓂᖅᐹᖑᕐᑲᑕᐅᔪᓂᒃ ᐊᑐᖅᑲᑕᐅᒻᒪᕆᐅᕗᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᔪᕇᓂᔾᔭᒻᒥᒃ.

3.1.3 ᐃᓱᒪᒍᑕᐅᔪᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᖅᑎᑕᐅᓯᒪᔪᑦ

ᐃᓱᒪᒍᑕᐅᙱᑕ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᒻᒪᕐᑯᑎᓚᐅᕐᓂᖅ ᑕᐃᒪᐃᒐᔫᒃᑐᖅ ᐱᕐᑲᑕᐅᓪᓗᑎᒃ ᐅᓗᕆᓇᕐᓂᖏᑦ ᖃᖅᑎᑎᕆᕖᑦ (ᐊᕕᒃᑐᐃᕖᑦ), ᐊᑭᑐᓂᖏᓪᓗ ᐅᒻᒪᕐᑯᑎᓚᐅᕈᑎᒋᓪᓗᒋᑦ, ᐊᒃᑕᖅᑕᐅᑦᑎᐊᕆᐊᕐᑲᕐᓂᖏᓪᓗ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐊᒥᐊᒃᑯᕕᓃᑦ, ᐊᒻᒪᓗ ᐊᑐᖅᑕᐅᑐᐃᓐᓇᕆᐊᕐᑲᕐᓂᖏᑦ ᓄᖑᔪᐃᑦᑐᓂᖖᒑᖅᑐᑦ ᓴᓇᔭᐅᓂᖏᓐᓄᑦ ᓄᖑᔪᐃᑦᑐᓕᖏᓂᒃ ᐅᓇᑕᕈᑏᑦ ᑐᕐᑯᕋᐃᔾᔪᑎᒃᓴᐅᓗᑎᒃ. ᑕᒪᒃᑯᐊ ᕿᒥᕐᕈᐊᑲᐃᓐᓇᕐᓂᐊᖅᑕᕗᑦ ᓇᐃᓇᕐᓗᒋᑦ.

<u>ᐅᓗᕆᐊᓇᕐᓂᖅ</u>

ᖃᐅᒪᖃᕐᓂᖏᑦ ᐊᒻᒪᓗ ᐆᑕᕐᓇᖅᑐᖃᕐᓂᖏᑦ ᐱᒻᒪᕆᐊᓘᓪᓗᑎᒃ ᐃᓱᒪᒍᑕᐅᙱᑕ ᐊᒥᓱᓄᑦ ᐃᓄᖕᓄᑦ, ᐊᒻᒪᓗ ᑐᓐᖓᕕᐅᓪᓗᑎᒃ ᐊᑭᕋᖅᑐᖅᑕᐅᓂᖏᓐᓄᑦ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐆᒻᒪᕐᑯᑎᓚᐅᕐᓂᖅ. ᐃᓚᖓᓂᒃ ᐱᔾᔪᑕᐅᔪᖅ ᑕᒪᓐᓇ ᓯᓚᕐᔪᓂᖓᓄ ᑕᒪᒃᑯᐊ ᐅᓗᕆᐊᓇᖅᑐᒥᒃ ᐱᒻᒪᕆᐅᔪᒥᒃ ᐱᓂᕐᓗᒃᑐᕐᑲᕋᔅᖅᐸᑕ ᐊᑐᕋᔪᐃᑦᑐᒻᒪᕆᐊᓘᑎᓪᓗᒍ, ᐱᓂᕐᓗᒃᑐᕐᑲᕋᔅᖅᐸᑦ ᐱᓂᕐᓗᓐᓂᕐᔪᐊᒻᒪᕆᐅᓇᔅᖅᑐᖅ ᐊᖏᔫᒻᒪᕆᐅᓗᓂ. ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒥᒃ ᐃᕐᑲᓇᐃᔮᖑᔪᑦ ᐱᐅᔫᒻᒪᕆᖕᒥᒃ ᐱᓂᕐᓗᓚᐅᖅᓯᒪᖕᒋᑎᓪᓗᒋᑦ ᑲᓇᑕᒥ, ᐊᒻᒪᓗ ᓯᓚᕐᔪᐊᕐᒥ, ᓵᓂᐊᓂ ᐊᓯᖕᒋᓐᓂ ᐆᒻᒪᕐᑯᑎᓚᐅᖅᑎᐅᕐᑲᑕᐅᔪᓂ-ᒪᕈᐃᑐᐃᓐᓇᖅᓱᑎᒃ ᐱᓂᕐᓗᒃᓯᒪᔪᖅᑲᖅᐳᑦ ᐃᓄᐃᑦ ᐃᓱᒪᒋᕙᒃᑕᖏᓐᓂᒃ, ᐊᐱᕐᑯᑕᐅᓕᕋᐃᒐᒥᒃ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒥᒃ ᐅᓗᕆᐊᓇᖅᑐᑦ ᐅᖃᐅᓯᐅᑎᓪᓗᒋᑦ.

ᐱᓂᕐᓗᒃᑐᕐᑲᓚᐅᖅᓯᒪᖓᒪᑦ Chernobyl-ᒥ ᕋᓯᐊᕐᒥ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᕐᑯᓯᐅᕐᕕᖕᒥ, 1986-ᖑᑎᓪᓗᒍ, ᐱᒻᒪᕆᐅᓂᖅᐹᖑᓯᒪᔪᖅ ᐱᓂᕐᓗᒃᓯᒪᔪᓂ ᑕᐃᒪᖓᓕᒫᖅ ᐊᑐᕆᐅᓚᐅᖅᓱᑎᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᓴᓇᕕᖕᓂᒃ, ᐊᖏᔫᒻᒪᕆᐅᓗᖕᒥ ᓯᐊᒻᒪᒃᑎᖅᕕᐅᓯᒪᔪᑦ ᐆᑕᕐᓇᖅᑐᓂᒃ radionuclides-ᓂᒃ, ᓇᓂᑐᐃᓐᓇᖅ ᐊᖏᔪᒥ ᓄᓇᐅᓂᕐᒥᒃ ᔪᐊᕆᑉᒥ (Europe). ᐱᓂᕐᓗᓚᐅᖅᑐᑦ ᐱᔾᔪᑕᐅᓪᓗᑎᒃ ᓴᓇᓯᒪᓐᓂᕐᒪᑕ ᕋᓯᐊᒥᐅᑦ ᓈᒻᒦᓂᖕᒋᑦᑐᒥ ᖃᖅᑎᑦᑎᕆᓂᒃᑯᑦ ᐅᒻᒪᕐᑯᖅᑎᑦᑎᕕᖕᒥᒃ ᓴᓇᔭᐅᓯᒪᓂᖓᒍᑦ, ᐃᓕᓐᓂᐊᖅᓯᒪᑦᑎᐊᕐᒋᓗᐊᕐᓂᕐᒥ ᒥᑭᓐᓂᖅᐹᒥᒃ ᐃᓕᓐᓂᐊᖅᑕᐅᔭᕆᐊᓕᖕᓂ ᐃᓕᓐᓂᐊᖅᓯᒪᓪᓗᑎᒃ, ᐊᒻᒪᓗ ᐊᒥᓱᒐᓴᖕᓂᒃ ᑭᖑᓕᕇᒃᑐᓂᒃ ᐱᔮᕆᔭᐅᓪᓗᑎᒃ ᒪᓕᖕᒋᓐᓂᖕᒋᓐᓂᒃ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᔪᓂ ᒪᓕᒐᕐᓂᒃ ᐱᖅᑯᓯᕆᔭᐅᔭᕆᐊᖃᖅᑐᓂᒃ. ᑕᐃᓐᓇᑐᐊᑦᑎᐊᖅ ᐱᓂᕐᓗᖕᓂᕕᓂᐅᔪᖅ ᖃᐅᕌᒪᔭᐅᔪᓂ ᓴᓇᔭᐅᖃᑦᑕᖅᑎᓪᓗᒋᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᒻᒪᕐᑯᑏᑦ ᓂᐅᕈᑎᒃᓴᐅᓪᓗᑎᒃ ᐆᑕᕐᓇᖅᑐᓂᒃ ᐊᓐᓂᐊᔪᖅᑲᕐᓂᖖᒍᓄᑦ

ᑐᖁᔪᖅᑲᖅᓯᒪᔪᖅ. 2005-ᒥ, ᐊᒥᓱᒐᓴᐃᑦ ᓯᓚᕐᔪᐊᕐᒥᐅᓕᒫᓄᑦ ᑲᑎᒪᔨᕐᔪᐊᑦ ᐃᖅᑲᓇᐃᔭᕐᕕᖁᑎᖏᑦ ᐊᒻᒪᓗ ᑭᒡᒐᖅᑐᐃᔩᑦ Belarus/ᐱᐊᓪᓗᕋᔅᒥᒃ, Ukraine/ᔪᑯᕆᓐᒥᒃ, ᐊᒻᒪᓗ Russian/ᕋᓯᐊᒥᐅᑦ ᑲᑐᔾᔨᖅᑲᑎᒌᒡᔪᐊᖏᓐᓂ, ᐱᖓᓲᖓᒪᑕ ᐊᒃᑐᖅᑕᐅᓂᖅᐹᖑᓯᒪᔪᑦ ᓄᓇᕐᔪᐊᓖᑦ, ᐃᓚᐅᓚᐅᖅᑐᑦ ᕿᒥᕈᐊᖅᑕᐅᓕᖅᑎᓪᓗᒋᑦ ᖃᓄᖅ ᐱᓂᕐᓗᓚᐅᕐᒪᖔᑕ ᐊᒻᒪᓗ ᐊᓐᓂᐊᖅᑲᖏᓐᓂᕐᒧᑦ, ᐊᕙᑎᒧᑦ, ᐃᓄᓯᕐᒧᓪᓗ/ᐃᓅᓯᓕᐅᕈᑎᓄᓪᓗ ᖃᓄᐃᓕᕈᑕᐅᓚᐅᕐᒪᖔᑕ. ᐅᑯᐊ ᑕᒡᕙ ᐊᑖᓃᑦᑐᑦ ᐅᖃᐅᓯᐅᔪᕕᓂᑦ ᑎᑎᖅᑲᖏᓐᓂᒃ ᐱᔭᐅᔪᑦ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᔪᓂᒃ Chernoby/ᓲᓄᐳᓪᒥ ᑲᑎᒻᒪᐅᑕᐅᓂᕕᓂᖓᓂ:[5]

ᑐᐊᕕᕐᓇᖅᑐᓕᕆᔩᑦ ᐱᓕᕆᔨᖏᑦ ᑕᐃᑳᓃᑦᑐᓪᓗ ᐃᖅᑲᓇᐃᔭᖅᑏᑦ, 1000 ᖃᓂᒋᔭᖏᑦ, ᓯᐊᒻᒪᐃᕕᐅᓚᐅᖅᑐᑦ ᐳᖅᑐᓂᖅᐹᓂᒃ ᐆᑕᕐᓇᖅᑐᓂᒃ ᐊᒻᒪᓗ ᐃᓚᖏᑦ (ᖃᔅᓲᓐᓇᐅᓂᖅᐹᑦ 28-ᖑᔪᑦ) ᑐᖁᓚᐅᖅᑐᑦ ᑕᐃᑲᓐᖓᑦ. ᐊᒻᒪᑦᑕᐅᖅ, ᓇᓚᐅᑦᑖᖅᑕᐅᓯᒪᔪᑦ ᓯᓚᕐᔪᐊᕐᒥᐅᓕᒫᓂ ᖃᐅᔨᒪᔨᑕᕆᔭᐅᔪᑦ ᐱᓕᕆᔩᑦ ᓇᓚᐅᑦᑖᓚᐅᖅᑐᑦ ᐃᒫᒃ "ᐊᒃᑐᖅᑕᐅᓯᒪᓂᖅᐹᓂ ᐃᓄᖕᓂ, ᑲᑎᓪᓗᒋᑦ ᑳᓐᓴᒥᒃ ᑐᖁᔪᓐᓇᕐᓂᖏᑦ ᐳᖅᑐᓯᒋᐊᕈᓐᓇᖅᑐᑦ ᖃᔅᓲᓐᓇᑯᓗᖕᓂᒃ ᐳᓴᓐᑎᓂᒃ, Chernobyl/ᓲᓄᐴᒥ ᐆᑕᕐᓇᖅᑐᓄᑦ ᓯᐊᒻᒪᐃᕕᐅᔪᕕᓂᐅᖏᓐᓄᑦ ᐊᒃᑐᖅᑕᐅᓪᓗᑎᒃ." ᐳᖅᑐᔪᒻᒪᕆᖑᐦᕕᑦᑐᑦ ᓱᕈᓰᑦ ᕿᓕᖅᓯᓇᕐᒥᒍᑦ ᑳᓐᓴᑖᕈᓐᓇᖅᑐᑦ ᓄᖑᔪᐃᑦᑐᑦ ᖃᐅᒪᖅᑲᕐᓂᖏᑦ ᑲᑕᒐᖅᓯᒪᓂᖏᓐᓄᑦ, ᐱᒻᒪᕆᐅᓂᖅᐹᖑᒧᒥᒃ ᐊᒃᑐᐃᓂᖅᑲᖅᑐᖅ ᖃᓂᒪᒍᑕᐅᔪᓂᒃ ᐱᓂᕐᓗᒃᓯᒪᔪᓂ, ᑕᐃᒪᐃᓂᕕᓂᖓᓄᓪᓗ ᐱᔾᔪᑕᐅᓯᒪᓪᓗᓂ ᖃᓂᒋᔭᖏᓐᓂ 4000 ᕿᓕᖅᓯᓇᒃᑯᑦ ᑳᓐᓴᑖᖅᓯᒪᓕᖅᑐᓂ ᐊᕐᕋᒎᒧᑦ ᑎᑭᓪᓗᒍ 2002-ᒧᑦ.

ᓄᓇᐃᑦ ᐊᖏᓂᖅᑲᖅᑐᑦ ᖃᓂᒌᔭᓂ 200,000 ᑭᐹᓈᒃᑐᓂ ᑮᓕᒥᑐᓂᒃ Europe\ᔪᐊᕆᑉᒥ ᓯᐊᒻᒪᑎᕐᕕᐅᓚᐅᖅᑐᖅ ᑲᑖᕕᐅᓪᓗᓂ ᐆᑕᕐᓇᖅᑐᒥᒃ radiocaesium-ᒥᒃ ᐅᖓᑕᓃᑦᑐᓪᓗ 335,000 ᐃᓄᐃᑦ ᐊᓯᐊᓄᑦ ᓅᑕᐅᔭᕆᐊᖅᑲᓚᐅᖅᑐᑦ. ᐅᓂᒃᑳᓕᐊᓂ ᐅᖃᖅᓯᓚᒧᑦ ᑕᐃᒪᓐᖓᑦ 1986-ᒥ, "ᐆᑕᕐᓇᖅᑐᖅᑲᕐᓂᖏᓐᓂ ᐳᖅᑐᓂᖏᑦ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓂ ᐊᕙᑎᓂ, ᒥᑎᒡᓕᒋᐊᖅᓯᒪᔪᑦ Hᐊᓚᐃᑕᖅᓯᒪᔪᓂ (ᐊᒥᓲᓂᒃ 100-ᖏᖅᑕᖅᓯᒪᔪᓂᒃ) ᐱᔾᔪᑕᐅᓪᓗᑎᒃ ᐊᕙᑎᐅᑉ ᐋᕿᐅᒪᔪᑐᖅᑲᐅᓂᖓ ᐊᒻᒪᓗ ᐃᑲᔪᖅᑕᐅᓯᒪᓂᖏᓐᓄᑦ ᐱᓂᕐᓗᓗᐊᖅᑕᐃᓕᒪᓂᕐᒧᑦ. ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᐊᒥᓲᓂᖅᓴᐃᑦ 'ᓱᕈᖅᑕᐅᓯᒪᔪᑦ' ᓄᓇᐃᑦ ᒫᓐᓇᐅᓕᖅᑐᖅ ᐅᓗᕆᐊᓇᕈᓐᓃᖅᑐᑦ ᓄᓇᒋᔭᐅᔪᓐᓇᕐᓂᖅ ᐊᒻᒪᓗ ᐃᓅᓯᓕᐅᕐᕕᐅᔪᓐᓇᕐᓂᕐᒧᑦ ᐱᓕᕆᕐᑲᑕᐅᓂᕐᒧᑦ. ᑭᓯᐊᓂ, ᓲᓄᕕᒻᒥ/Chernobyl-ᒥ ᐃᑎᖅᑕᐅᔭᕆᐊᖅᑲᓐᖏᑦᑐᓂ ᓄᓇᓂ ᐊᒻᒪᓗ ᐊᓯᖏᓐᓂ ᐃᓚᖏᑦ ᐅᐸᒃᑕᐅᔭᕆᐊᖅᑲᖏᑦᑐᓂ, ᐊᑐᖅᑕᐃᓕᒪᑎᑕᐅᔪᑦ ᓄᓇᓂᒃ ᐊᑐᖅᑕᐅᓕᕈᓐᓇᔮᖏᑦᑐᑦ ᓱᓕ ᐊᒥᓱᓄᑦ ᖁᓕᖏᓃᑦᑐᓄᑦ ᐊᕐᕋᒎᓂᐊᖅᑐᓄᑦ ᓱᓕ.

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[5] ᓯᓅᐳᒥ Chernobyl-ᒥ ᑲᑎᒻᒪᐅᑏᑦ: 2003-2005: ᓯᓅᐳᒥ ᖃᓄᐃᓕᖓᓚᐅᖅᓯᒪᔪᑦ ᑕᐃᔅᓱᒪᓂ: ᐊᓐᓂᐊᖅᑲᕐᓇᖏᑦᑐᓕᕆᓂᖅ, ᐊᕙᑎᓕᕆᓂᖅ, ᐊᒻᒪ ᐃᓅᓯᓕᕆᓂᖅ-ᐃᓅᓯᓕᐅᖅᑕᐅᔪᓐᓇᕐᓂᕐᒥᒍᑦ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᑦ, ᐊᑐᓕᖁᔭᐅᔪᓪᓗ ᒐᕙᒪᖏᓐᓄᑦ ᐱᓚᕉᔅ/Belarus, ᕈᓯᐊᒥ/Russian ᑲᑐᔾᔨᖅᑲᑎᒌᒡᔪᐊᖏᓐᓂ, ᐊᒻᒪ ᔪᑯᕆᓐᒥ\Ukraine; ᑐᒡᓕᕆᔭᐅᓕᖅᑐᑦ ᐅᖃᓕᒫᒐᐃᑦ; 2005 (ᑕᑯᓗᒍ ᐅᐸᒃᑕᕐᕕᒃ ᐅᓇ see www.iaea.org)

ᒪᓕᒃᑕᐅᓪᓗᑎᒃ ᐅᓂᒃᑳᓕᐊᓂᖏᑦ IAEA-ᑯᑦ (International Atomic Energy Agency ᓯᓚᕐᔪᐊᕐᒥ ᓄᖑᔪᐃᑦᑐᕐᑲᖅᑐᓂᒃ ᐆᒪᕐᑯᑎᓕᕆᔩᑦ ᑲᑎᒪᔨᕐᔪᐊᖏᑦ) ᐅᕐᑲᕈᓐᓇᕐᓂᖅᖅᑐᑦ "ᑕᐃᒪᐃᓚᕿᓚᐅᖅᓯᒪᔪᑦ ᓈᒻᒪᖏᑦᑐᒻᒪᕆᖕᖓᓂᒃ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᓂᖅᒧᑦ ᐱᖅᕐᑯᓯᕐᑲᕐᓂᕕᓂᖏᓐᓄᑦ, ᓲᓅᐳᒥᐅᑕᑐᐃᓐᓇᐅᖏᑦᑐᑦ (Chernobyl) ᐅᒻᒪᕐᑯᓯᐅᕐᕕᖕᒥ, ᐊᓯᓕᒦᖏᓐᓂᑦᑕᐅᖅ, ᓇᓂᓕᒦᖅ ᕌᓯᐊᒥᐅᓂ ᑎᑎᕋᐅᔭᖅᑕᐅᓂᕕᓂᖏᓐᓂ, ᐊᐅᓚᑦᑎᓂᕆᕚᑕᖏᓐᓂ ᐊᒻᒪᓗ ᒪᓕᒐᓕᕆᔾᔨᐅᔪᓂᒃ ᑎᒥᐅᔪᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐆᒻᒪᕐᑯᑎᓕᕆᓂᕐᒧᑦ ᐊᑐᖅᑕᐅᕙᓚᐅᖅᑐᑦ ᐱᖅᑯᓯᕆᔭᐅᔪᑦ ᐱᔾᔪᑕᐅᔪᕕᓃᑦ ᑕᐃᔅᓱᒪᓂ ᑕᐃᒪᐃᓕᖓᓂᖏᓐᓄᑦ".[6] ᒫᓐᓇᓵᖅ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᓂ[7].ᐅᕐᑲᖅᓯᒪᔪᕐᑲᖅᐳᖅ ᐃᒫᒃ "ᐅᓗᕆᐊᓇᖅᑐᒌᒋᐊᕐᑲᖕᖏᓐᓂᖏᑦ ᑕᒪᐃᓐᓂ ᕌᓯᐊᒥᐅᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᒻᒫᖅᑎᑦᑎᕕᖕᖏᓐ ᐱᐅᓂᖅᓴᒻᒪᕆᐅᓕᖅᑐᑦ. ᑕᒪᓐᓇ ᐱᔾᔪᑕᐅᔪᖅ ᐃᓕᖅᑯᓯᖅᑖᖅᐸᑦᑕᐊᓕᓚᐅᕐᒪᑕ ᐅᓗᕆᐊᓇᕐᓂᕐᑲᖅᑎᑦᑎᑕᐃᓕᒪᓂᕐᒥᒃ, ᐱᔩᒥᓴᖅᑕᐅᖏᓐᓇᕐᒥᒃ ᐊᒻᒪᓗ ᐱᓕᕆᕐᑎᒌᒃᐸᑦᑕᐊᖏᓐᓇᕐᓂᖏᓐᓄᑦ ᑲᓇᖕᓇᕐᒥᐅᑦ ᐊᒻᒪᓗ ᐱᖓᖄᕐᓯᐅᖠ ᐊᒻᒪᓗ ᐱᓕᕆᑦᑎᐊᖅᓯᒪᓪᓚᕆᓪᓕᕐᓂᖏᓐᓂᒃ ᐱᐅᓯᒋᐊᖅᑕᐅᑎᑦᑎᓂᕐᒥᒃ ᐅᒪᖅᑎᑦᑎᕕᐅᕙᒃᑐᓂᒃ." ᐃᒪᕐᑳ, ᑕᒪᓐᓇ ᐱᐅᔫᓂᖓ ᐱᓂᕐᓗᖁᔪᐊᓚᐅᖅᑐᒥᒃ ᓴᕿᑦᑐᑦ."

ᑕᐃᒪᓕ ᕿᑭᖅᑕᓂ Three Mile Island-ᒥ ᐱᓂᕐᓗᒃᑐᕐᑲᓚᐅᖅᓯᒪᒋᕗᖅ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᒪᖅᑎᑦᑎᕕᖕᓂᒃ, ᖃᓂᒋᔮᓂ Harrisburg, Pennsylvania-ᒥ ᐊᒥᐊᓕᑲᒥᐅᓂ. ᐱᓂᕐᓗᒍᑕᐅᓚᐅᖅᓯᒪᔪᑦ ᐊᒥᓱᖓᓴᐃᑦ ᐱᔾᔪᑕᐅᓪᓗᑎᒃ; ᓴᓇᕿᑎᑦ ᐊᐅᓚᑦᑎᓂᐊᖏᓐᓂᖏᑦ, ᓈᒻᒪᖏᓗᐊᖅᑐᒥᒃ ᓴᓇᔭᐅᓯᒪᓂᖏᑦ, ᐊᒻᒪᓗ ᐆᒻᒪᕐᑯᓯᐅᕐᕕᖕᒥ ᓴᓇᔩᑦ ᑐᑭᓯᐅᒪᖏᓐᖏᓐᓂᒃ ᖃᓄᐃᓕᖓᓕᕐᓂᕐᒪᖔᑕ ᐅᑕᐃᕕᐅᕙᒃᑐᑦ. ᓴᓂᐊᓂᓕ ᓲᓅᐳᒥ ᐱᓂᕐᓗᓚᐅᖅᑐᓂ, ᐊᓐᓂᖅᑐᕐᑲᓚᐅᖏᑦᑐᖅ, ᑐᕐᑯᔪᕐᑲᓚᐅᖏᑦᑐᖅ ᐅᕙᔫᓐᓃᑦ ᐊᒃᑐᖅᑕᐅᔪᕐᑲᓚᐅᖏᑦᑐᖅ ᐊᓐᓂᐊᕐᑲᕐᓇᖏᓂᒃᑯᑦ ᐊᕙᑎᖏᓐᓂᓗᓐᓃᑦ ᑕᐃᑲᓂ ᐱᓂᕐᓗᓚᐅᖅᑐᓂ.

<u>ᑮᓇᐅᔭᓕᐅᕈᑕᐅᔾᔭᓇᕐᓂᖏᑦ/ᐃᓄᓯᓕᐅᕈᑕᐅᙳᓂᖏᑦ</u>

ᐱᔪᑎᒋᓪᓗᒋᑦ ᑮᓇᐅᔭᓕᐅᕈᑕᐅᔾᔭᓇᕐᓂᖏᑦ/ᐃᓅᓯᓕᐅᖅᐸᓪᓕᐊᒍᑕᐅᔾᔭᓇᕐᓂᖏᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᒻᒪᕐᑯᑎᓕᐅᕐᕖᑦ, ᑕᒪᒃᑯᐊ ᓯᕗᓪᓕᖅᐹᕐᒥ ᐊᑭᓕᖅᑐᖅᑕᐅᔭᕆᐊᖅᑲᖅᔭᖅᑐᑦ ᓴᓇᔭᐅᓂᖏᓐᓂ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐆᒪᑎᑦᑎᕖᒃᓴᐃᑦ ᐊᑭᑐᔫᒪᕆᐅᔪᑦ ᓴᓂᖏᓐᓂ ᐊᓯᖏᑦ ᐆᒻᒪᕐᑯᑎᓕᐅᕐᕕᐅᔫᑦ, ᑭᓯᐊᓂ, ᐊᐅᓚᑕᐅᓂᖏᑦ ᐊᑭᑭᓐᓂᖅᓂᓴᒻᒪᕆᐅᕙᒃᑐᑦ, ᐊᓯᖏᓐᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᐅᕈᑕᐅᕙᒃᑐᓂᒃ, ᐱᓗᐊᖅᑐᒥᒃ ᐊᑭᖏᑦ ᐊᕙᑎᒥᒃ ᐊᒃᑐᐃᓂᕐᒧᑦ ᐅᒻᒪᕐᑯᑎᓕᐅᕈᑏᑦ-ᔫᕐᓗ ᐊᑭᕐᑲᓕᖅᑲᑦᑕᕐᓂᖏᑦ ᓄᐃᑎᖅᑕᐅᕙᑦᑕᐊᑐᐃᓐᓇᕐᓂᖏᑦ ᐳᔪᕐᓗᐃᑦ ᔫᕈᕐᓇᖅᑐᑦ ᓯᓚᒧᑦ-ᐃᔨᒪᒋᔭᐅᓕᖅᐃᒻᒪᑕ. ᐊᒻᒪᓗᑕᐅᖅ, ᓄᑖᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᖅᑎᑦᑎᕙᐅᔫᑦ ᓴᓇᔭᐅᓯᒪᓂᖏᑦ ᐊᑐᓇᐊᕐᑲᓕᖅᑐᑦ ᓄᑖᓂᒃ

[6] IAEA's-ᑯᑦ ᓯᓚᕐᔪᐊᕐᒥ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᔩᑦ ᐅᕐᑲᐅᓯᔾᔨᒋᐊᖅᑎᖏᑦ (INSAG-ᑯᑦ), ᔫᕗᐳᒻᒥ ᐱᓂᕐᓗᓚᐅᖅᓯᒪᔪᑦ: ᑐᓴᖅᑎᑦᑎᒋᐊᒃᑲᓐᓂᕐᓂᖏᑦ INSAG-1 (INSAG-7, 1992, ᒪᒃᐱᒐᖅ 24).

[7] ᓄᓇᕐᔪᐊᕐᒥ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᑲᑐᔾᔨᕐᑲᑎᒌᖏᑦ ᐅᐸᒃᑕᕐᕕᖓ ᖃᓇᑕᐅᔭᒃᑯᑦ.

ᐅᑐᓇᐊᓇᓈᒃᑯᑕᐅᔭᓇᐊᓕᖕᓂᒃ, ᑕᐃᒫᒃᑯ ᐱᓂᖅᔪᒃᑐᖅᑲᕆᓐᓇᖅᓂᐊᖕᒋᒻᒪᑦ ᐊᒻᒪᓗ ᐊᑭᑭᓐᓂᖅᓴᒻᒪᓇᐅᓪᓗᑎᒃ ᓴᓇᔭᐅᓯᒪᓂᖕᒋᓐᓄᑦ ᐊᐅᓚᑕᐅᓂᖕᒋᓐᓄᓪᓗ ᐊᑭᓕᖅᑐᓇᐊᓘᑦ ᒫᓇᐅᓕᖅᑐᖅ ᐊᐅᓚᑕᐅᕙᒃᑐᑦ ᐊᓯᖕᒋᓐᓂ ᐃᔾᔪᐊᒐᒃᓴᓂᒃ ᑕᑯᓪᓗᑎᑦ.

ᓄᖕᒍᔪᐃᑦᑐᓂᒃ ᐅᒪᖅᑎᑦᑎᔾᔪᑏᑦ ᐊᑐᐊᓂᒃᑐᑦ ᐊᒃᑕᑯᐃᑦ ᐊᒻᒪᓗ ᓄᖕᒍᔪᐃᑦᑐᓕᖕᓂᒃ ᓴᓇᓯᒪᔪᓂᒃ ᐊᑐᖅᐸᓪᓕᐊᑐᐃᓐᓇᖅᓂᖅ ᐅᓇᑕᐅᑎᒃᓴᓂᒃ

ᐊᒃᑕᖅᑕᐅᖅᑲᑦᑕᖅᓂᖕᒋᑦ ᐊᑐᕈᓐᓃᖅᑐᑦ ᐊᒥᐊᒃᑯᐃᑦ ᓄᖕᒍᔪᐃᑦᑐᒥᒃ ᐅᒪᖅᑎᑦᑎᕕᖕᒥ ᐃᓱᒪᒋᔭᐅᓯᒪᔪᑦ ᐃᓚᖕᒋᓐᓄᑦ ᐃᓄᖕᓄᑦ ᐱᒻᒪᕆᐅᔪᒥᒃ ᐱᐅᖕᒋᓐᓂᖅᑲᕈᑕᐅᓂᖕᒋᓐᓂᒃ ᐊᑐᖅᑕᐅᓂᖕᒋᓐᓂ ᓄᖕᒍᔪᐃᑦᑐᓂᒃ ᐆᒪᖅᑯᑎᓂᒃ. ᑕᒪᓐᓇ ᐅᖅᑲᐅᓯᐅᓯᒪᔪᖅ ᐃᓗᓕᖕᒋᓐᓂ ᐊᕕᒃᑐᖅᓯᒪᓂᐅᔪᓂ 3.4-ᒥ.

ᐊᒥᓱᑦ ᐃᓄᐃᑦ ᐃᓱᒪᓘᑎᖃᕐᒥᔪᑦ ᔪᓅᓂᔭᒻ ᓄᖕᒍᔪᐃᑦᑐᖅ ᐊᑐᖅᑕᐅᔪᒫᖕᓂᖕᒐᓂᒃ ᓄᖕᒍᔪᐃᑦᑐᓂᒃ ᐆᒪᖅᑎᑦᑎᕕᖕᓂᖕᒑᖅᑐᑦ ᓴᖕᒍᑎᑕᐅᔪᒫᖕᓂᖕᒋᑦ ᐃᓱᒪᓘᑕᐅᓗᑎᒃ ᓴᓇᔭᐅᓂᖕᒋᓐᓄᑦ ᓄᖕᒍᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᓇᑕᕈᑎᓂᒃ, ᑐᖅᑯᖅᑕᐃᒍᑎᓂᒃ, ᐅᕙᓗᓐᓃᑦ ᓄᖕᒍᔪᐃᑦᑐᓕᖕᓂᖕᒑᖅᑐᓂᒃ ᐊᑐᕈᓐᓃᖅᑐᑦ ᐊᒥᐊᒃᑯᕕᓃᑦ ᐅᒻᒪᖅᑯᑎᓕᐅᖅᕕᖕᓂᖕᒑᖅᑐᑦ ᐊᑐᖅᑕᐅᑐᐃᓐᓇᓇᐊᖅᑲᖅᓂᖕᒋᓐᓂᒃ ᐃᓱᒪᔫᑕᐅᓗᑎᒃ ᑕᒪᒃᑯᓄᖕᒐ ᑐᖅᑰᖕᒐᔪᓄᑦ. ᐃᓗᓕᖕᒋᓐᓂ 3.5-ᒥ, ᕿᒥᕐᕈᐊᕐᓂᐊᖅᑐᒍᑦ ᖃᓄᐃᓕᐅᖅᓯᒪᖕᒪᖕᒑᑕ ᑲᓇᑕᒥᐅᑦ ᐊᒻᒪᓗ ᓯᓚᕐᔪᐊᕐᓕᒫᒥ ᓄᓇᓖᑦ ᑕᒪᓐᓇ ᐊᑐᖅᑕᐅᑎᑦᑕᐃᓕᒪᓪᓗᒍ.

ᐃᓚᖕᒋᑦ ᐃᓄᐃᑦ ᐃᓱᒪᓘᑎᖃᕐᒪᑕ ᖁᓛᓃᑦᑐᓂᒃ ᐱᒻᒪᕆᐅᔪᓂᒃ ᐅᒃᐱᕈᓱᒻᒪᕆᖕᒪᑕ ᐊᑐᖅᑕᐅᓂᖕᒋᑦ ᓄᖕᒍᔪᐃᑦᑐᐃᑦ ᐊᐅᓚᓕᕈᑏᑦ ᐅᒪᖅᑯᑎᓕᐅᕐᓂᕐᒧᑦ ᑲᔪᓯᑎᑕᐅᔾᔪᓇᐊᖅᑲᖕᒋᑦᑐᑦ, ᐊᒻᒪᓗ ᐃᓚᖕᒋᑦ ᔪᐊᓇᑉᒥᐅᑦ/Europe ᓄᓇᓕᒡᔪᐊᑦ ᖃᓄᐃᓕᐅᓇᐊᖅᓯᒪᓕᖅᑐᑦ ᓄᖅᑲᖅᑎᑦᑎᔪᒪᓪᓗᑎᒃ ᓄᖕᒍᒧᐃᑦᑐᓂᒃ ᐆᒪᖅᑯᑎᓂᒃ ᐊᑐᖅᑕᐅᔪᓂᒃ. ᐊᐃᑉᐸᖕᒎᖕᒎᓂ ᑭᓯᐊᓂ ᑕᑯᓪᓗᒍ, ᐊᒥᓲᖕᒥᔪᑦ ᓄᓇᓕᖅᔪᐊᑦ ᐅᒃᐱᕈᓱᒃᑐᑦ ᐃᑲᔪᕐᓂᖅᑲᑦᑎᐊᕈᓐᓇᕐᓂᖕᒋᓐᓂ ᓄᖕᒍᔪᐃᑦᑐᒥᒃ ᐅᒪᖅᑯᑏᑦ ᐊᒻᒪᓗ ᓴᓇᕙᓪᓕᐊᓪᓗᑎᒃ ᐸᕐᓇᒃᓯᒪᓕᖅᓱᑎᒡᓗᓐᓃᑦ ᓴᓇᔭᐅᔾᔪᒫᖅᓂᖕᒋᓐᓄᑦ ᓄᑖᑦ ᐅᒪᖅᑎᑦᑎᕕᒃᓴᐃᑦ.

3.2 ᓯᕗᓂᒃᓴᒥ ᓄᖕᒍᔪᐃᑦᑐᓂᒃ ᐅᒪᖅᑯᑏᑦ ᐊᒻᒪᓗ ᔪᓅᓂᔭᒻ ᓄᖕᒍᔪᐃᑦᑐᓕᒃ

3.2.1 ᖃᓄᐃᓕᖕᒐᔪᒥᓇᕐᓂᖕᒋᑦ ᓄᖕᒍᔪᐃᑦᑐᒥᒃ ᐆᒪᖅᑯᑎᓕᐊᑦ

ᒪᓕᒃᑕᐅᓪᓗᑎᒃ ᐅᓂᑳᓕᐊᕕᓂᖕᒋᓐᓂ ᓯᓚᕐᔪᐊᕐᒥ ᓄᖕᒍᔪᐃᑦᑐᖅᑲᖅᑐᓂᒃ ᐆᒪᖅᑯᑎᓕᓇᔩᑦ ᑲᑎᒪᔩᖅᔪᐊᖕᒋᑦ[8], 441-ᖕᒍᓚᐅᖅᑐᑦ ᓄᖕᒍᔪᐃᑦᑐᓂᒃ ᐅᒪᖅᑎᑦᑎᕕᐅᔪᑦ ᐊᐅᓚᑕᐅᔪᑦ

[8] ᓄᖕᒍᔪᐃᑦᑐᓕᖕᓂ ᓴᓇᕐᕈᑎᓂᒃ ᕿᒥᕐᕈᐊᖅᑕᐅᓯᒪᔪᑦ 2006; ᐅᓂᒃᑲᓕᐊᖕᒋᑦ ᐊᖕᒍᔪᖄᖅᔪᐊᑦ ᐊᐅᓚᑦᑎᔨᐅᑉ, ᓯᓚᕐᔪᐊᕐᒥ ᓄᖕᒍᔪᐃᑦᑐᖅᑲᖅᑐᓂᒃ ᐆᒪᖅᑯᑎᓕᓇᔩᑦ ᑲᑎᒪᔩᖅᔪᐊᖕᒋᑦ, ᔪᓚᐃ 2006.

ᑎᑭᓪᓗᒍ ᑎᓯᐱᕆ 31, 2005-ᒧᑦ ᐊᒻᒪᓗ 27-ᖑᓪᓗᑎᒃ ᓴᓇᔭᐅᓃᓪᓕᐊᓕᖅᑐᑦ, 16-ᖑᓪᓗᑎᒃ ᐊᐃᓯᐊᒥᑦᑐᑦ (ᓴᐃᓂᔫᒃᑯᑦ ᓄᓇᕐᔪᐊᖏᓐᓂ), ᑕᐃᑲᓂ ᐱᕈᖅᐸᓪᓕᐊᑐᐃᓐᓇᕐᒪᑕ ᐃᓄᐃᑦ ᐊᒥᓲᓂᖏᑦ. ᑕᒪᒃᑯᐊ ᐆᒻᒪᖅᑎᑦᑎᕚᑦ ᐊᑐᖅᑕᐅᔪᑦ 16%-ᓄᑦ ᓯᓚᕐᔪᐊᕐᒥᐅᓕᒦᑦ ᐊᑐᕐᓂᖏᓐᓂ ᐆᒻᒪᕐᑯᑎᓂᒃ. ᐃᓚᖏᑦ ᕐᑲᐅᓵᓴᖅᑕᐅᓭᓚᐅᖅᑐᑦ ᓯᕗᓂᒃᓴᒥ ᐊᑐᖅᑕᐅᔪᓐᓇᕐᓂᖏᓐᓂ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᒻᒪᕐᑯᑏᑦ ᓇᓚᐅᑦᑖᖅᓯᒪᔪᑦ ᐊᒥᕈᒃᑲᓐᓂᕐᓂᐊᖅᑐᑦ ᐊᑐᖅᑕᐅᔪᑦ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐆᒻᒪᕐᑯᑏᑦ, ᐊᒥᓱᒐᓴᐅᔪᓂ ᕐᑯᓕᖏᓅᑦᑐᓂᒃ ᐊᕐᕋᒎᓂᐊᖅᑐᓂ, ᐊᒻᒪᓗ ᐊᒥᐊᒃᑯᖏᓐᓂ ᑕᒡᓚᓂ Hᐊᓇᓚᒋᓕᖅᑕᖏᓐᓂ ᐊᕐᕋᒎᒋᔭᐅᔪᓂ. ᒪᓕᒃᑕᐅᓪᓗᑎᒃ ᓄᖑᔪᐃᑐᓄᑦ ᐅᒻᒪᕐᑯᑎᓄᑦ ᐃᕐᑲᓇᐃᔭᕐᕕᖓᓂ, 77-ᖑᓕᖅᑐᑦ ᓄᑖᑦ ᐅᒻᒪᕐᑯᑎᓕᐅᕐᕚᑦ ᒪᓐᓇᒥ ᐸᕐᓇᒃᑕᐅᓯᒪᓕᖅᑐᑦ, ᐱᕆᐊᖅᑎᑕᐅᔪᒪᔪᓗᓐᓃᑦ.

ᐅᕐᑲᓕᒫᒐᓕᐊᖑᕋᑖᓚᐅᖅᑐᒥ[9] ᕿᒥᕐᕈᐊᖅᑕᐅᓯᒪᒧᑦ ᑕᒪᕐᒥᒃ ᐊᔾᔨᒌᖏᑦᑐᑏᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᖅᑐᑦ ᐅᒻᒪᕐᑯᑎᓕᐅᕐᓂᕐᒧᑦ, ᐅᕐᑲᖅᓯᒪᓪᓗᑎᒃ ᐅᒃᐱᓇᔭᒥᓂᒃ ᐊᑐᖅᑕᐅᕐᑲᑦᑕᕐᓂᖏᑦ ᐅᖅᓱᓗᐊᒃᓴᔭᓂᖔᖅᑐᑦ ᑖᓪᓕᒪᐃᖅᑕᖅᑐᓂᒃ ᐊᑐᓕᕈᒫᕋᓱᕆᔭᐅᔪᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᒻᒪᕐᑯᓯᐊᖑᓯᒪᔪᓂᒃ ᑕᒡᓚᓂ 50-ᖏᓐᓃ ᐊᕐᕋᒎᓂᐊᖅᑐᓂ. ᑌᐸᕐᓇᓯᒪᔪᕐᑲᖅᑐᖅ ᐊᒥᓱᕈᓇᐊᖅᑕᐅᓂᐊᕐᓂᖏᓐᓂ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐆᒻᒪᕐᑯᑎᐅᖅᐸᓪᓕᐊᓂᖅ ᐊᒥᓱᓂ ᓄᓇᕐᔪᐊᓕᖕᓂ, ᓱᕐᓗ ᐃᓐᑎᔭᒥ/India, ᓴᐃᓇᒥᔭChina, ᔭᐹᓐᒥ/Japan, ᒐᓚᒪᕐᑲᕐᕕᖕᒐᓐᓂ ᑯᕆᔭ/Republic of Korea ᐊᒻᒪᓗ ᕋᓯᐊᒥᐅᑦ ᑲᑐᔾᔨᕐᑲᑎᒌᒡᔪᐊᖏᓐᓂ. ᓱᕐᓗ ᐆᒃᑑᑎᒋᓗᒍ, ᐃᓐᑎᔭᒥ 15-ᓂ ᐊᐅᓚᑕᐅᔪᕐᑲᖅᑐᖅ ᐅᒻᒪᕐᑯᓯᐅᕐᕕᖕᓂ, 8-ᖑᓪᓗᑎᒡᓗ ᓴᓇᔭᐅᓕᖅᑐᑦ. ᐸᕐᓇᒃᓯᒪᔪᑦ 31-ᓂᒃ ᐆᒻᒪᕐᑯᑎᕐᑲᕈᒦᕐᓂᖅ ᐊᕐᕋᒍᒧᑦ ᑎᑭᑐᒻᒧᑦ 2020 ᐊᒻᒪᓗ ᐊᒥᓱᒃᑲᓐᓂᕐᓂᒃ 2050-ᒥ ᐊᕐᕋᒎᒥ. ᓴᐃᓇ ᒫᓐᓇ 9-ᓂᒃ ᐆᒻᒪᕐᑯᓯᐅᕐᕕᕐᑲᖅᐳᖅ, ᐱᖓᓱᒃᑲᓐᓂᕐᓂᒃ ᓴᓇᓪᓗᑎᒃ. ᐸᕐᓇᒃᓯᒪᔪᑦ ᓴᓇᔫᒥᕐᓂᖅ 30-ᓂᒃ ᓄᑖᓂ ᐅᒻᒪᕐᑯᓯᐅᕐᕕᖕᓂᒃ ᐊᕐᕋᒍᒧᑦ 2020-ᒧᑦ. ᔭᐹᓐ ᐸᕐᓇᒃᓯᒪᔪᖅ ᐃᓚᓯᓂᐊᕐᓂᖅ ᕐᑯᓕᓂᒃ ᐅᒻᒪᕐᑯᓯᐅᕐᕕᖕᓂ ᐊᕐᕋᒎᒥ 2014-ᒥ, ᒪᕐᕈᐃᓕᖅᑲᖓᓂᐊᖅᑐᓂᒃ ᐊᒥᓲᓂᓕᖕᓂᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᐅᕐᕕᖕᓂᒃ 2050-ᒥ. ᐸᕐᓇᒃᓯᒪᖕᒥᔪᑦ ᓄᑖᓂᒃ ᐅᒻᒪᕐᑯᓯᐅᕐᕕᐅᔫᒥᖅᑐᓂᒃ ᐊᒥᓱᓂᒃ ᐊᓯᖏᓐᓂ ᓄᓇᕐᔪᐊᕐᓂ, ᐃᓚᒋᔭᐅᓪᓗᑎᒃ ᐅᑯᐊ ᑲᓇᑕ, ᕗᕋᓐᓴ/France, ᕕᓐᓚᓐᑦ/Finland, ᐊᒻᒪᓗ ᐊᒥᐊᓕᑲᒥᐅᑦ ᓄᓇᕐᔪᐊᖓᑦ. ᐋᔅᑐᕆᓕᔭ/Australia-ᒥ, ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐆᒻᒪᕐᑯᑎᓯᐅᕐᕕᕐᑲᖏᑦᑐᒥ, ᒫᓐᓇᐅᔪᖅ ᕿᒥᕐᕈᐊᖅᐸᓪᓕᐊᓕᖅᑐᑦ ᐊᔪᕐᓇᕋᔭᖏᒻᒪᖔᑕ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᒻᒪᕐᑯᑎᓕᐅᕐᓂᖅ, ᐊᒻᒪᓗ ᐃᓚᖏᑦ ᔪᐊᓕᕐᒥ/Europe ᓄᓇᕐᔪᐊᓖᑦ ᑲᑐᔾᔨᕐᑲᑎᒌᖏᑦ (ᓱᕐᓗ Hᐊᓪᓚᓐᒥᐅᑦ, Netherlands) ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓕᖅᑐᑦ ᐃᓱᒪᕆᓯᒪᔭᒥᓂᒃ ᐱᑕᕐᑲᖅᑎᑦᑎᑕᐃᓕᒪᓚᐅᕐᓂᖏᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᓂᒃ ᐆᒻᒪᕐᑯᓯᐅᕐᕕᖕᓂᒃ.

ᑕᒪᓐᓇ ᐃᓱᒪᓂᖅ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᔪᖅ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐆᒻᒪᕐᑯᑎᓕᐅᕐᓂᕐᒥᒃ ᐃᓱᒪᓇᖅᑐᖅ ᕐᑲᓄᖅ ᒐᓚᒋᔭᐅᔪᑦ ᓇᓂᑐᐃᓐᓇᖅ ᓯᓚᕐᔪᐊᕐᒥ ᐆᒃᑐᐃᓯᒪᖕᒪᖔᑕ ᐱᐅᓂᖏᓐᓂᒃ

[9] Jaccard, Mark; ᔮᑳᑦ, ᒫᒃ: ᐊᒥᐊᒃᑯᕐᑲᐃᓐᓇᕐᓗᑎᒃ ᓴᐅᓂᕕᓂᕐᓂᖔᖅᑐᑦ ᐅᖅᓱᐊᓗᒃᔭᐃᑦ: ᐸᓴᕆᔭᐅᒐᔪᓐᖏᑦᑐᑦ ᓇᓂᓯᓇᓯᐊᖅᑐᓂᒃ ᓴᓗᒪᔪᓂᒃ ᐊᒻᒪᓗ ᐱᑕᕐᑲᐃᓐᓇᕐᓂᐊᖅᑐᓂᒃ ᐅᒻᒪᕐᑯᑎᓂᒃ; Cambridge University Press; 2005.

ᐱᐅᵅᖏᓂᖏᵅᓂᓗ ᓄᖅᓴᐃᔪᑦϽᓕᕐᖏᓂᖏᖅϽᓂᒃ ᐅᓪᒪᖏᑦᑐᒋᐅᖏᖅᓂᖅ, ᐃᓱᒪᓕᐅᖅᓱᒪᒃᑯᓗ ᐱᓪᒪᓂᖅᓴᐅᓂᖅ ᓴᓇᔨᐅᓂᖏᵅᓂ ᓄᑦᓂᒃ ᐅᓪᒪᖏᑦᑐᒋᐅᖏᖅᓂᖅ, ᐊᓪᒪᓗ ᐱᑎᐊᖅᑎᑕᐅᒃᑲᵅᓂᑕᒪᓂᖏᵅᓂ ᐱᑕᖏᖅϽᐃᓐᓂᐅᔪᑦ. ᑲᓇᑕᒥ ᐃᵅᓇᓴᖅ, ᐋᑐᑎᓂᐅᔪᑦ/Ontario ᐊᓪᒪᓗ ᓂᐅ ᐳᕆᵅᐃᐅᒃᒥᐅᑦ/New Brunswick ϽᓴᒃᓴᓕᓂᐅᓕᐅᖅϽᑦ ᐸᖏᓇᐅᑎᒥᓂᒃ ᓴᓇᑭᐊᖅᑕᐅᑦᑎᐊᒃᑲᵅᓂᖏᐊᖏᓂᖏᖅᓂᵅᓂᒃ ᐃᵅᓇᐅᔪᖅ ᐱᑕᖅᓱᖅϽᑦ ᐅᓪᒪᖏᑦᑐᒋᐅᖏᖅᓂᖅ ᐱᑕᖅᓱᖅϽᑦ ᐊᓪᒪᓗ ᐋᑐᑎᓂᒥᒃ ᐸᖏᓇᐅᑎᒥᓂᒃ ᓴᓇᑕᒥᑎᒪᓐᓂᒃ. ᑕᐃᐹᒃ ᐱᔨᓪᒪᐅᕐᓂᓕᐊϽᐃᓇᓂᓕᐊᖅϽᑦ ᐅᕆᓂᐊᖅϽᑦ ᐊᓪᒪᖏᑦᑐᒋᐅᖏᖅᓂᖅ ᓄᖅᓴᐃᔪᑦϽᐃᓇᑦ, Ͻᓴᑎᓇᖅᓂᒃ ᐊᓪᒪᓗ ᐊᓯᖏᓐᓂᒃ ᓄᖅᓴᐃᔪᑦϽᐃᓇᑦ, (ᖁᑎᒪᖏᑦᑐᒋᐅᖏᖅᓂᒃ), ᐊᓪᒪᓂᖅᓴᐅᑎᒃ ᐊᓪᒪᖏᑦᑐᒋᐅᖏᖅᓂᒃ ᐊᓪᒪᓗ ᐊᓯᖏᓐᓂᒃ ᓄᖅᓴᐃᔪᑦϽᐃᓇᑦ ᓄᖅᓴᐃᔪᑦϽᐃᓇᑦ ᓄᖅᓴᐅᑎᒥᓂᒃ ᓄᖅᓴᐅᑎᒥᓂᒃ.

3.2.2 ᖁᑲᐃᐃᓕᑦϽᑎᒪᖏᓂᖅᓂᑦ ᓯᕐᓂᑦᑕᕆᒥ ᓄᖅᓴᐃᔪᑦϽᑦ ᔪᓴᓂᑦᓱᒪ

ᓂᐅᖏᕐᑕᐅᔪᑦᓇᖏᓂᖅᓂᑦ ᓄᖅᓴᐃᔪᑦϽᑦ ᑕᐃᒪᓐᓄᓕᒫᓕᑦ ᐊϽᖁᓯᒪᓐᒪᑦ ᐊᓯᔨᕆᓐᖅᓂᕐᕕᐊᖁᓂϽᓂᒃ ᐊᓯᔨᔪᖁᑕᖏᓂᖅᓂᑦᓂᒃ ᐊᑭᓐᖅᓂᒃ. ᒪᓪᓇᔪᖅ ᐊᑭᑭᑕϽᒪᒪᓇᐅᑕᐅᓕᐅᖁᓂᒃ ᐅᓐᓄᑕᐊᐱᐊᓂ $7 2001 ᐱᑎᐊᖏᑦᖁᑎᑦᓗᔪᑦ, ᓂᐅᐃᖁᑕᐅᓂᖏᑦ ᐋᖁᑭᑕᐅᓯᒪᔪᑦ[10] ᓄᖅᓴᐃᔪᑦϽᑦ ᔪᓴᓂᔨᒥ, ᐊᑭᑕϽᓇᐊᖁᓯᒪᓕᖏᒥᔪᑦ ᖁᓂᑎᔨᓐᓂᓂ $60 ᐃᓪᓇᐅᑕᖁᑕᖅ. ᐊᒥᓯᑦ ᓇᓕᐅᑦᑕᖁᑲᑦ ᓂᓇᐅᓴϽᑦ ᐊᑭᓐᖅ ᐳᖁᑐᐋᖏᓪᓇᓂᐊᖁᑕᖅ ᐅᓪᔨᓴᓂᓵᑦ ᐊᑭᑕϽᓇᐊϽᐃᓪᓇᓂᐊᖁᑕᖅ ᐊᒥᓯᒪᔨᐱᐅᓂᐊᖁᑕᖅϽᖅ ᐊᖏᖅϽᒍ, ᓯᓕᖏᐊᖏᒥᐅᑦ ᐱᔨᒪᖏᑦᑐᒋᐅᖏᖅᓂᑦᑕᒪᓂᖅ, ᐱᓗᐊᖁᑕϽᒥᑎ ᐊϽᑭᒋᖁᑕϽᓂᖅ ᐅᔪᒪᖏᑦᑐᒋᐅᖏᖅᓂᖅ (ᖁᑎᒪᖏᑦᑐᒋᐅᖏᖅᓂᖅ), ᐊᑭᑕϽᓇᐊᑕᐅᓕᓴᖅϽᑦ ᐊᓪᒪᓗ ᐊᓯᓴᓇᖅᓂᓴᖅϽᑦ ᓄᖅᓴᐃᔪᑦϽᐃᓇᑦ ᓄᖅᓴᐅᑎᒥᓕᓴᖅϽᑦ.

OECD/IAEAᓇᓕᐅᑦᑐᖁᑕᐅᓯᒪᔨᖁᕆᐊᖁᑎᓐᓓᒍ ᓯᕐᓂᑦᓱᒪᒥ ᐱᔨᒪᔪᐅᓂᖏᑦ ᓄᖅᓴᐃᔪᑦϽᐃᓇᑦ ᐅᔪᒪᖏᑦᑎᓕᐅᑕᖏᓂᖅᓂᑦ ᐊᓯᔨᑦᑐᖁᑕᖏᖅᑲᐊᖁᑎᓐᓓᑎᑦ, ᑕᒪᖏᑦᖁ ᓇᓕᐅᑦᑕᖁᑲᑦ ᑕᑯᓂᐊᖏᔪᑦᓂᑦ ᐱᔨᒪᔪᐅᓂᖁᓂᐊᖁᑕᖅϽᓂᒃ. ᑎᑎᖁᐃᑦ ᑎᑎᖏᑦᑕᖁᑲᑦ ECD/IAE-ᑯᓐᓇᑦ[11] ᓇᓕᐅᑦᑐᖁᓯᒪᔪᑦ ᐊᒥᓯᔭᓂᐊᑭᒋᖏᓐᓂᖏᓐᓂᒃ "ᓯᓕᖏᐊᖏᒥ ᔪᓴᓂᔨᒥᓐᓴᖅϽᓂᒃ ᐱᔨᒪᔪᐅᔪᑦ" ᐊᑯᓂᖏᓐᓂᒃᑐᓂᒃ 22% ᐊᓪᒪᓗ 50%, ᐊᖏᖅᔪᒍᒥ 2025-ᒥ. ᐊᓐᖁᔨᒥᒃ ᐱᔭᒋᖏᓐᓂᑦ ᓂᓇᐅᑎᔨᐅᔪᑦ ᑲᓇᓐᓇᓐᓂᓂ ᐃᓯᔨᐊᒥᐅᓂ/Asia-ᒥ ᐊᓪᒪᓗ "ᖁᑎᐊᓂ, ᑲᓇᓐᓇᓐᓂᓂ, ᓂᑎᖅᐸᓯᓐᓂᓗ ᑲᓇᓐᓇᓐᓂᓂ ᔨᐊᓇᐸ/Europe-ᒋᑦᑐᓂ. ᑎᑎᖏᖅᓯᒪᔪᑦ ᐅᔨᔭᑭᓯᒪᔪᑦ "ᑭᖓᑦᓂᐅᓂᖅᓴᖅᐅᓇᖅϽᓂᒃ (ᔪᓇᓂᔨᒥᒃ) ᐱᔨᐅᖅᑲᑦᖅϽᑦ ᓂᓇᐅᓐᖁᑎᔨᐅᔪᑦ ᐱᓚᓇᐅᔪᓐᓂᔭᒋᓴᓐᖁᑦ, ᐱᓗᐊᖅϽᒥᒃ ᑭᖓᑦᓂᐊᓂ ᐊᑭᑕϽᓇᐊᒥ 2015" ᐊᓪᒪᓗ ᓄᖅᓴᐃᔪᑦϽᓂᒃ ᐅᔪᒪᖏᑦᑐᒋᐅᖏᖅᓂᖅ ᐱᑕᖅᓱᖅᑲᐊᖁᑕᒋᐅᖏᖅᓂᑦ

[10] ᑕᒪᖏᑦᑐᒃᑲᐃᑦ ᔪᓴᓂᔨᒥ ᓄᖅᓴᐃᔪᑦϽᑦ ᓂᐅᖏᖅᓯᐅᑦᑐᒋᐅᖏᖅϽᑦ ᐊᑯᓂᐅᔪᒍᑦ, ᐃᓕᓐᓂ ᓂᐅᖏᖅᓯᐅᑦᑐᒋᐅᖏᖅᓂᑦ "ᑕᑯᓂᖅᓴᐃᓐᓇᖅᑐ".

[11] ᓄᖅᓴᐃᔪᑦϽᑦ 23005-ᓄᓇᒥᐅᑕᐃᑦ, ᑲᓇᔨᐅᓂᖏᓂᑦ, ᐱᔨᒪᔪᐅᓂᖏᓂᓗ; 2006; ᑲᑐᔭᖅᑲᑎᑦᓂ ᑭᓇᐅᔪᑦᑐᒋᐅᖏᖅᓂᑦᓂᓗᖅᑐᐅᔪᓂ ᐱᓕᕆᖅᑲᓱᓂᖏᓂᑦ ᐊᒥᓗ ᐱᓂᓕᐊᓂᖏᓐᓂᓗ ᓄᓇᓕᖏᓐᓂᑦ [OECD] ᐊᒥᓗ ᓯᓕᖏᐊᖏᒥ ᓄᖅᓴᐃᔪᑦϽᖅᑲᐊᖁᑕᖅϽᑦ ᐅᔪᒪᖏᑦᑎᓕᐅᑕᓴᑦ ᑲᑎᓕᖅᑲᓱᒪᓐᖁᑦ [IAEA]; ᐊᐅᓕᑎᓴᓇᑦ ᓇᐃᓇᔪᖅᓯᒪᔪᑦ ᐅᓂᒃᑲᓕᐊᑦ

"ᐊᖏᒡᓕᑎᖅᑕᐅᓂᖏᓐᓄᑦ ᒫᓐᓇᐅᔪᒥ ᓴᓇᕙᐅᑮᒃᑐᑦ ᓴᓇᔪᓐᓇᕐᓂᖏᑦ ᐃᓚᔭᐅᓗᑎᒡᓗ ᐊᓯᖏᑦ ᐆᒻᒪᕐᑯᓯᐅᕐᕙᒃᓴᐃᑦ ᐅᕙᓘᓐᓃᑦ ᐊᓯᖕᒑᖏᓐᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᐅᕈᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᐱᒋᐊᖅᑎᑦᑎᓗᑎᒃ"[12].

ᑎᑎᕐᑲᐃᑦ ᐅᕐᑲᖅᓯᒪᔪᑦ ᐃᒫᒃ "ᐱᑕᕐᑲᕐᒪᑕ ᓱᓕ ᓇᓗᓇᖅᑐᒻᒪᕆᐅᔪᓂᒃ ᑕᒪᒃᑯᓇᓂ ᓇᓚᐅᑖᖅᑕᐅᓯᒪᔪᓂ ᐱᔾᔪᑕᐅᓪᓗᑎᒃ ᓱᓕ ᐊᐅᕙᐅᑕᐅᕙᓪᓕᐊᖏᓐᓇᕐᒪᑕ ᕐᑲᓄᖅ ᐊᑐᕐᓂᕐᑲᕐᓂᐊᕐᒪᖕᒑᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᒻᒪᕐᑯᑏᑦ, ᓯᕗᓂᒃᓴᒥ ᐆᒻᒪᕐᑯᑎᑐᖅᐸᓪᓕᐊᖏᓐᓇᕈᒫᖅᑐᓂ." ᐅᓂᒃᑳᖅᑕᐅᓚᐅᖅᑎᓪᓗᒋᑦ ᐃᓚᖏᑦ ᐱᒻᒪᕆᐅᔪᑦ ᐱᔾᔪᑕᐅᔪᑦ ᐃᒃᐱᖕᓂᐊᔮᐅᓂᐊᖅᑐᑦ ᓯᕗᓂᒃᓴᒥ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐆᒻᒪᕐᑯᑎᓕᐅᕈᓐᓇᕐᓂᕐᒥ ᐊᔪᖏᓐᓂᕆᔮᐅᔪᓐ-ᐆᒻᒪᕐᑯᑎᕐᑲᐃᓇᕆᐊᕐᑲᕐᓂᕐᒧᑦ ᐱᔪᒪᔮᐅᔪᓂ, ᐃᓄᐃᓪᓗ ᕐᑲᓄᐃᒋᔫᓃᖅᐸᓪᓕᐊᓗᓂᒋᑦ ᐊᒻᒪᓗ ᓂᐅᕙᐊᒃᓴᕐᑲᕋᓯᐊᕐᓂᖅᓴᐅᓂᖅ-ᑎᑎᕐᑲᐃᑦ ᐃᒫᒃ ᐅᕐᑲᖅᓯᒪᔪᑦ: "ᐃᓱᒪᔫᑕᐅᓂᖏᑦ ᐊᑯᓂᐅᔪᓂ ᐱᑕᕐᑲᓇᐊᕐᑲᕐᓂᐊᖅᑐᑦ ᐊᑐᒐᒃᓴᐃᑦ ᐅᖅᓱᐊᓗᒃᓴᔭᓂᖕᒑᖅᑐᑦ ᐊᒻᒪᓗ ᑕᒪᒃᑯᐊ ᐊᔾᔨᖏᖏᓐᓂᖏᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᖕᒑᖅᑐᑦ ᐆᒻᒪᕐᑯᑏᑦ ᐃᓱᒪᒋᔭᐅᖕᒪᑕ ᐃᑲᔪᕐᓂᕐᑲᕈᓐᓇᕐᓂᖅ ᐳᔪᕐᓗᓕᐅᓗᐊᖅᑕᐃᓕᒪᔭᓇᐊᕐᑲᕐᓂᕐᒥᒃ ᑕᒪᒃᑯᓂᖓ ᐱᐅᖏᑦᑐᓂᒃ ᒥᑭᒡᓕᑎᖅᑕᐅᔭᓇᐊᕐᑲᖅᑐᓂᒃ ᐃᑲᔪᕐᓂᕐᑲᕈᓐᓇᖅᑐᑦ ᐱᔪᒪᔭᐅᓂᖅᓴᐅᓕᕐᓗᑎᒃ ᔪᕇᓂᔭᒥᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐊᑐᖅᑕᐅᔪᑦ, ᐊᑯᓂᐅᓇᔭᖅᑐᒥ ᓯᕗᓂᒃᓴᐅᓂᐊᖅᑐᒥ."

ᐃᓱᓕᓐᓂᐊᕐᓗᒋᑦ ᑖᒃᑯᐊ ᑎᑎᕋᖅᓯᒪᓂᖏᑦ, ᐊᒥᓱᑦ ᒫᓐᓇᓵᖅ ᐅᓂᒃᑲᓕᐊᖑᓯᒪᒧᑦ ᐅᕐᑲᕐᑦᑕᖅᑐᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᐊᖑᔪᑦ ᐱᒻᒪᕆᐅᔪᒥᒃ ᓱᓕ ᐊᑐᕐᓂᕐᑲᕐᓂᐊᖅᑐᑦ ᓯᓚᕐᔪᐊᕐᒥ ᐅᒻᒪᕐᑯᑎᕐᑲᖅᑎᑦᑎᓂᕐᒧᑦ. ᑕᒪᓐᓇ ᐱᔪᒪᔭᐅᓂᖓ ᐱᔾᔪᑕᐅᔪᖅ ᐊᑭᑦᑐᖅᐸᓪᓕᐊᓂᖏᓐᓄᑦ ᔪᕇᓂᔮ ᓄᖑᔪᐃᑦᑐᑦ ᐊᑭᖏᑦ, ᐊᒻᒪᓗ ᐊᒥᓱᕈᖅᐸᓪᓕᐊᕙᒡᔪᐊᖅᓱᑎᒃ ᓇᓂᓯᔪᒪᔪᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐅᔭᕋᖕᓂ ᓄᓇᒥ. ᑕᒪᒃᑯᐊ ᐱᕙᒃᓴᐅᓕᕈᓐᓇᕐᓂᐊᖅᑐᑦ ᑕᐃᒃᑯᓇᓂ ᓄᓇᕐᑲᖅᑐᓂ ᐱᑕᓕᖕᓂ ᓯᓚᕐᔪᐊᕐᒥᐅᓂ - ᓱᕐᓗ ᓄᓇᕗᒻᒥ - ᕐᑲᐅᔨᒪᔭᐅᖕᒪᑕ ᔪᕆᓂᔭᓪᓕᖕᓂ ᓄᓇᒥᐅᑕᓖᑦ ᐊᒻᒪᓗ ᓄᓇᕐᑯᑎᖏᑦ ᕐᑲᐅᔨᒪᔭᐅᓪᓗᑎᒃ ᐃᓗᓕᕐᑲᕈᒥᓇᕐᓂᖏᓐᓂᒃ ᓄᑖᓂᒃ ᕐᑲᐅᔨᔭᐅᓯᒪᖏᑦᑐᓂᒃ ᓄᖑᔪᐃᑦᑐᕐᑲᕐᓂᐅᔪᓂᒃ.

3.3 ᓄᖑᔪᐃᑦᑐᑦ ᐆᒻᒪᕐᑯᑏᑦ ᐊᒻᒪᓗ ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖓ

ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᐊᖑᓯᒪᔪᑦ ᐊᔪᖏᓐᓂᕐᑲᕐᒪᑕ ᓴᓇᔪᓐᓇᕐᓂᖅ ᑕᒪᐃᓐᓂᒃ ᐆᒻᒪᕐᑯᑎᒃᓴᓂᒃ ᐱᑕᕐᑲᓇᐊᕐᑲᕋᔭᖅᑐᓂᒃ ᑲᔪᓯᓐᓇᕈᓐᓇᓇᐊᓕᖕᓂᒃ ᐃᖏᕋᐃᓇᕐᓂᐊᑐᓂᒃ ᐆᒻᒪᕐᑯᑎᕐᑲᖅᑎᑦᑎᓂᕐᒥᒃ (ᕐᑲᐅᒻᒪᕐᑯᑎᕐᑲᖅᑎᑦᑎᓂᕐᒥᒃ) ᐃᑲᔫᑕᐅᓗᑎᒃ ᓄᓇᕐᔪᐊᕐᒥ ᐱᔪᒪᔭᐅᔪᓂᒃ, ᐱᐅᖏᑦᑐᓂᒃ ᓴᕐᑭᑎᕆᓪᓕᐊᖏᓐᓇᖏᓪᓗᑎᒃ ᓲᕐᓗ ᐳᔪᕐᓗᖕᓂᒃ ᐅᖅᓱᐊᓗᒃᑐᖅᑐᓂᒃ.

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[12] ᑖᒃᑯᐊ ᐅᕐᑲᐅᓯᕐᑲᖅᑐᑦ ᐊᑐᖅᑕᐅᓂᖏᓐᓂ ᐆᒻᒪᕐᑯᑎᓕᐅᕈᑎᑦ ᓲᕐᓗ ᓄᖑᔪᐃᑦᑐᑦ ᑐᐊᓇᔭᐅ thorium ᐊᒻᒪᓗ ᐳᓘᑑᓂᔭᐅ plutonium, ᐊᑐᖅᑕᐅᖏᖕᒑᕐᓗᑎᒃ ᔪᕇᓂᔭᐅ.

ᐃᓚᖓᑦ ᐱᒻᒪᕆᐅᓂᖅᐹᖑᕐᑲᑕᐅᔪᖅ ᐱᐅᔫᒪᕆᐅᓂᖓ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒪᕐᑯᓯᐅᕐᓂᖅ ᐱᔾᔪᑎᕐᑲᖅᑐᖅ ᓴᓇᔭᐅᓂᖏᓐᓂ ᐅᒪᖅᑎᑦᑎᔾᑏᑦ, ᓴᓇᕐᑲᑦᑕᖏᑦᑐᑦ ᐳᔪᕐᓗᖓᓂᒃ ᓯᓚᒧᑦ. ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᓯᓚᒧᑦ ᐆᓇᖅᓯᓛᓪᓚᐊᔾᔪᑕᐅᖏᑦᑐᖅ, ᓯᓚᐅᓪᓗ ᐊᓯᔾᔨᖅᐸᓪᓚᐊᓂᖓᓄᑦ. ᓅᕐᑲᐃᒻᒪ, ᐃᓚᖏᑦ ᐳᔪᕐᓗᐃᑦ carbon dioxide-ᕐᑲᖅᑐᑦ ᓴᕿᕐᑲᑦᑕᕐᒪᑕ ᕐᑲᓄᐃᓕᐅᖅᑐᕐᑲᖅᐸᓪᓚᐊᑎᓪᓗᒍ ᓇᓂᔭᐅᓇᓱᐊᕐᓂᖏᓐᓂ, ᐅᔭᕆᖓᓂᐊᖅᑕᐅᓂᖏᓐᓂᓗ, ᓱᕐᑲᓕᖅᑎᑕᐅᓂᖏᓐᓂ ᔪᓃᓂᔾᒻᕐᑲᕐᓂᖏᑦ ᐅᔭᕋᐃᑦ, ᓴᓗᒻᒪᖅᓴᖅᑕᐅᓂᖏᑦ ᐊᒻᒪᓗ ᐊᓯᔾᔩᖅᑕᐅᕙᓪᓚᐊᓂᖏᓐᓂ ᓄᓇᒥᐅᑕᑐᕐᑲᐃᑦ ᓄᑖᓄᑦ ᐊᒻᒪᓗ ᐋᖅᑲᖅᑕᐅᑦᑎᐊᓇᐊᕐᑲᓕᖅᑎᓪᓗᒋᑦ ᐆᒪᕐᑯᑎᒃᓴᓄᑦ ᐊᕕᒃᑐᖅᓯᒪᔪᓄᑦ, ᐊᒻᒪᓗ, ᓅᕐᑲᐃᒻᒪ, ᓴᓇᔭᐅᓂᖏᓐᓂᓗ ᐊᐅᓚᑕᐅᓂᖏᓐᓂᓗ (ᐊᒻᒪᓗ ᐲᔭᖅᑕᐅᕋᑕᐳᒫᖅᑐᓂᒃ) ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒪᕐᑯᑎᓕᐅᕐᕖᑦ ᐊᒻᒪᓗ ᑐᕐᑯᖅᑎᖅᑕᐅᑦᑎᐊᓇᐊᕐᑲᕐᓂᖏᓐᓂ ᐊᒃᑕᑯᐃᑦ ᓄᖑᔪᐃᑦᑐᓕᐅᕐᕕᖕᓂ ᐊᑐᕈᓐᓇᖏᑦᑐᑦ. ᑭᒥᓯᐊᓂ, ᕐᑲᐅᔮᓴᖅᑕᐅᓯᒪᔪᓂ IAEA-ᑯᓐᓄᑦ ᑕᑯᑎᑦᑎᓯᒪᔪᑦ ᑕᒪᕐᒥᒃ ᐳᕐᓗᐃᑦ ᐳᔫᖅᐸᓪᓚᐊᔪᑦ ᓄᖑᔪᐃᑦᑐᓕᖓᓂ ᐆᒪᕐᑯᓯᐅᕐᕕᖕᒥ ᐊᑦᑎᖕᓂᖅᓴᒻᒪᕆᐅᓰᑦ ᒥᑭᓂᖅᓴᒻᒪᕆᐅᓪᓗᑎᒃ ᑕᐃᒃᑯᓇᓐᖓᑦ ᐆᒪᕐᑯᑎᓕᐊᖑᔪᓂᒃ ᐅᖅᓱᐊᓗᒃᓴᔭᓂᖔᖅᑐᓂᒃ ᓴᐅᓂᕕᓂᕐᓂᒃ ᓄᓇᒥᒃ, ᓅᕐᓗ ᐊᐅᒫᓗᖕᓂᒃ ᐊᒻᒪᓗ ᖃᓴᓕᓐᓂᒃ, ᐊᒻᒪᓗ ᑲᒪᓇᖅᑐᒃᓴᐅᒻᓚᕆᒃᑐᖅ ᐊᑦᑎᖕᓂᖅᓴᐅᑐᐃᓐᓇᕆᐊᕐᑲᖅᑐᑦ ᐊᒡᓛᑦ ᒪᑯᓇᖓᑦ ᐊᑐᖅᑕᐅᒃᑲᓐᓂᕈᓐᓇᖅᑐᓂᒃ ᐆᒪᕐᑯᓯᐅᕈᑕᐅᕝᑐᓂᒃ,ᓅᕐᓗ ᐃᒪᕐᒥᒃ, ᓯᕿᓂᕐᒥᒃ ᐊᒻᒪᓗ ᐊᓄᕆᖅᑐᓂᒃ. ᑕᒪᓐᓇ ᓱᓕᔪᖅ ᓴᕿᓯᒪᔪᖅ ᐊᒥᓲᒪᕆᖕᓂ ᐅᒪᖅᑎᑦᑎᔾᔪᑏᑦ ᓴᕿᑕᐅᕐᑲᑦᑕᕐᒪᑕ ᓄᖑᔪᐃᑦᑐᐃᑦ ᐃᓗᓕᖓᑦ ᐊᕕᒃᑐᖅᑕᐅᒋᐊᕌᖓᑕ.

ᐆᑕᖅᑎᑕᐅᕐᑲᑦᑕᕐᓂᖏᑦ ᓴᐅᓂᕕᓂᕐᓂᖓᖅᑐᑦ ᐅᖅᓱᐊᓗᒃᓴᔭᐃᑦ ᐊᑐᖅᑕᐅᓚᖓᒥᒃ ᓴᓗᒻᒪᖏᑦᑐᒻᒪᕆᐅᕐᑲᑦᑕᕐᒪᑕ ᐊᒻᒪᓗ ᐳᔪᕐᓗᐃᑦ ᐳᔫᓕᕐᑲᑦᑕᖅᓱᑎᒃ, ᐱᒻᒪᕆᐅᔪᒥᒃ ᐱᔾᔪᑕᐅᔪᑦ ᓄᓇᕐᔪᐊᐸ ᐆᓇᖅᓯᓛᓪᓚᐊᓂᖓᓄᑦ ᐊᒻᒪᓗ ᓯᓚᐅᐸ ᐊᓯᔾᔨᖅᐸᓪᓚᐊᓂᖓᓄᑦ. ᐳᓪᓚᐃᑦ ᓅᕐᓗ ᐳᔪᕐᓗᐃᑦ (carbon dixoxide-ᕐᑲᖅᑐᑦ) ᐊᒻᒪᓗ ᐊᓂᖅᓵᖅᑐᖓᒃᓴᐃᑦ carbon monoxide ᑕᐃᔭᐅᕐᑲᑦᑕᕐᒪᑕ "ᐆᓇᖅᓯᓛᓪᓚᐊᓗᑕᐅᓪᓗᑎᒃ ᐳᓪᓚᐃᑦ" ᐱᔾᔪᑕᐅᓪᓗᑎᒃ ᐊᕙᓗᐊᓃᓕᕐᑲᑦᑕᕐᒪᑕ ᓄᓇᕐᔪᐊᐸ ᓯᓚᑖᓂ, ᓅᕐᓗ ᐱᕈᖅᓰᕕᖕᒥ ᐊᕙᓗᔭᐅᓯᒪᕐᑲᑦᑕᕐᒪᑕ ᐃᒐᓖᓕᖅᑐᖅᑕᐅᓯᒪᓪᓗᑎᒃ, ᑕᐃᒫᑦᓴᐃᓐᓇᖅ ᐆᓇᕐᓂᖓ ᓯᓚᑎᐊᓄᐊᕋᔭᖅᑐᒥᒃ ᓄᕐᑲᖓᑎᑦᑎᕐᑲᑦᑕᕐᒪᑦ. ᐃᔾᔪᓕᖅᐸᓪᓚᐊᑐᐃᓐᓇᖅᓱᑎᒃ ᐊᕙᓗᐊᓅᑦᑐᑦ ᐳᓪᓚᐃᑦ ᓄᓇᕐᔪᐊᑉ ᐊᕙᓗᐊᓂ, ᐆᓐᓇᖅᓯᓛᓪᓚᐊᔾᔪᑕᐅᖅᒪᑕ, ᕐᑲᐅᔮᒪᔭᐅᓕᖅᑐᒥᒃ ᓴᕿᖓᔪᖅᑎᑦᑐᒪᕆᐅᓯᒪᔪᒥᒃ ᕐᑲᖓᓕᒫᖅ ᓯᓚᐅᑉ ᐆᓐᓇᖅᓯᓛᓪᓚᐊᓂᖓᓂᒃ. ᑕᒪᓐᓇ ᐆᓐᓇᖅᓯᓛᓪᓚᐊᓂᖓ ᓱᓇᑐᐃᓐᓇᓂᒃ ᐊᓯᔾᔨᖅᓯᓂᐊᖅᑐᖅ ᓯᓚᒥᒃ. ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓚᐊᓂᖓ ᐅᓗᕆᓇᖅᓯᓛᓪᓚᐊᓕᖅᑎᓪᓗᒍ ᒪᑭᑕᔪᓐᓇᑦᑎᐊᕐᓂᖏᓐᓄᑦ ᐱᕈᖅᑐᑦ/ᐆᒪᔪᐃᑦ ᐃᓅᔾᔪᑕᐅᕙᖕᓂᖏᑦ, ᐱᓗᐊᖅᑐᒥᒃ ᑲᓇᑕᐅᑉ ᐅᑭᐅᖅᑕᖅᑐᖓᓂ, ᐱᒻᒪᕆᐅᖑᖅᐸᓪᓚᐊᑐᐃᓐᓇᕐᓂᐊᖅᑐᖅ ᒥᑭᓪᓕᑎᖅᑕᐅᔭᕆᐊᕐᑲᕐᓂᖏᑦ ᐃᑯᐊᓚᑎᑦᑎᓂᕐᒥᒃ ᐳᔪᕐᓗᓕᐊᖑᕝᑐᑦ ᓇᓂᑐᐃᓐᓇᖅ ᓄᓇᕐᔪᐊᕐᓕᒫᒥ ᐊᔪᕐᓇᖏᓐᓂᓕᒃᑯᑦ. ᒫᓐᓇᓵᖅ ᓴᕿᑎᑕᐅᓚᐅᕐᒪᑕ Stern ᕿᒥᕐᕈᐊᕐᓂᕕᓂᖏᑦ

ᖃᓄᐃᓕᐅᕐᓂᖏᓐᓂ ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓕᐊᓂᖏᓐᓂ[13], ᐊᔾᔨᖑᐊᖃᖅᑐᑦ ᐊᒥᓯᒐᓴᖕᓂᒃ ᐃᔾᔪᐊᖅᑕᐅᔪᓐᓇᖅᑐᓂᒃ (ᐱᖃᑕᐅᓗᑎᒃ IEA-ᑯᑦ; ᒪᒃᐱᒐᖕᒐᓂ 235) ᐃᓚᖃᖃᑕᐅᔪᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᐅᕐᓂᕐᒥᒃ ᐋᖀᒍᑕᐅᔪᓐᓇᖃᔭᖅᑐᓂᒃ ᐱᒻᒪᕆᐅᔪᓂᒃ ᒥᑭᓪᓕᑎᖅᑕᐅᔭᕆᐊᖃᓕᖅᑐᓂᒃ ᐳᔪᕐᓗᓕᐅᕐᓂᕐᒥᒃ ᐆᓐᓇᖅᓯᓇᖅᑐᓂᒃ ᐳᓪᓚᓂᒃ ᓯᓚᒧᑦ, ᐊᒻᒪᓗ ᓄᖃᖅᑎᑦᑎᕙᓪᓕᐊᔾᔪᑕᐅᔪᓐᓇᖅᓯᑎᒃ ᐅᓗᕆᐊᓇᖅᑐᒻᒪᕆᖕᓂᒃ ᓱᒃᑯᓗᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖕᒐᓂᒃ. ᐊᓯᖏᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᕐᒥᔪᑦ ᐃᓚᖃᖅᑐᑦ ᐆᒻᒪᕐᑯᑎᓂᒃ ᐊᑑᑦᑎᐊᖃᑕᕐᓂᖅ, ᐊᑐᖅᑕᐅᓂᖅᓴᓪᓚᕆᐅᓗᑎᒃ ᐊᑐᖅᑕᐅᒃᑲᓐᓂᕈᓐᓇᓲᑦ ᐆᒻᒪᕐᑯᑎᓕᐅᕈᑏᑦ ᐊᒻᒪᓗ ᓯᒥᒃᑕᐅᓗᑎᒃ ᐳᔪᕐᓗᐃᑦ carbon dioxide-ᓕᐊᖑᕙᒃᑯᑦ ᐆᑕᖅᑎᑕᐅᓂᖏᓐᓄᑦ ᓴᐅᓂᕕᓂᕐᓂᖕᒫᖅᑐᑦ ᐅᖅᓱᐊᓗᒃᓴᕙᐃᑦ, ᑐᖅᖁᖅᑕᐅᖃᑦᑕᕐᓗᑎᒃ ᓄᓇᐅᑉ ᐃᓗᐊᓄᑦ.

ᑕᒪᕐᒥᒃ ᑕᒪᒃᑯᐊ ᖃᓄᖅᑑᕈᑕᐅᔪᓐᓇᖅᑐᑦ ᐊᒃᓱᕈᓐᓇᕈᑎᖃᖅᐳᑦ. ᐊᑐᖅᑕᐅᓂᖏᓐᓂ ᐊᑐᖅᑕᐅᒃᑲᓐᓂᕈᓐᓇᖅᑐᑦ ᐆᒻᒪᕐᑯᑎᓕᐅᕈᑎᑦ, ᓲᕐᓗ ᓯᕿᓂᖅᑐᖅᑐᑦ, ᐊᓂᕆᑐᖅᑐᓪᓗᓐᓃᑦ, ᐱᔪᒥᓇᕋᓗᐊᖅᓯᑎᒃ ᓴᓂᐊᓂ ᓴᐅᓂᕕᓂᕐᓂᖕᒫᖅᑐᓂᒃ ᐅᖅᓱᐊᓗᖕᓂᒃ, ᐃᓱᖃᖅᐸᒃᑐᑦ ᐱᔾᔪᑕᐅᓪᓗᑎᒃ ᐊᐅᓚᑦᑎᔾᔪᑎᐅᔪᓐᓇᖅᑐᑦ ᓴᖏᓕᖃᑦᑕᕐᒪᑕ (ᐅᕝᕙᓘᓐᓃᑦ ᓯᐊᒻᒪᒃᐸᓪᓕᐊᖃᑦᑕᕐᒪᑕ) ᐊᒻᒪᓗ ᑲᔪᓰᓐᓇᕈᓐᓇᖏᓯᑎᒃ. ᑎᒎᖅᑕᐅᔪᓐᓇᖅᐸᑕ carbon dioxide ᐳᔪᕐᓗᐃᑦ ᐊᒻᒪᓗ ᓴᐅᔭᐅᔪᓐᓇᕈᑎᒃ ᓄᓇᐅᑉ ᐃᓗᐊᓄᑦ ᐃᓯᒪᒋᑐᐃᓐᓇᖅᓯᒍ ᐱᐅᔫᔭᖅᑑᒐᓗᐊᖅ; ᑭᓯᐊᓂ ᑕᑯᑎᑎᓚᐅᖏᑦᑐᑦ ᓯᓕ ᑕᐃᒪᐃᑦᑐᖃᕈᓐᓇᕐᒪᖔᑦ ᐊᖏᔫᑎᓂ, ᐊᑭᓕᖅᑐᖅᑕᐅᔪᓐᓇᖅᑐᓂ. ACᐃL ᐅᖃᐅᑕᐅᓯᒫᓂᒃᑐᓂ ᐊᓯᖏᓐᓂ, ᐃᓱᒪᓘᑕᐅᔪᑦ ᐊᑐᖅᑕᐅᕙᓪᓕᐊᑐᐃᓐᓇᕐᓂᖏᓐᓂ ᓄᖑᔪᐃᑦᓂᒃ ᐆᒻᒪᕐᑯᑎᓂᒃ ᑕᐅᑐᒐᖅᐳᑦ ᐱᓗᐊᖅᑐᒥᒃ ᐊᒃᓱᕈᕐᓇᖅᑐᓂᒃ ᖃᓄᐃᓕᐅᕆᐊᖃᕐᓂᖅ ᐊᒃᑕᑯᓐᖑᖅᓯᒪᔪᓂᒃ ᐊᒥᐊᒃᑯᓂᒃ ᐃᒋᑦᑎᑦᑎᐊᕆᐊᖃᕐᓂᖅ/ᐊᒃᑕᖅᑕᐅᑦᑎᐊᕆᐊᖃᕐᓂᖏᓐᓂ ᐊᒻᒪᓗ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᓇᑕᕈᑎᒃᓴᖅᑐᐃᓐᓇᕆᐊᖃᕐᓂᖅ; ᓯᕗᓪᓕᖅᒥ ᓴᓇᔭᐅᖄᕆᐊᖅᑎᑦᓗᒋᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᕐᑯᓯᐅᕐᕖᑦ ᐊᑭᑐᓂᖏᑦ ᐃᓱᒪᓘᑕᐅᖕᒥᔪᑦ. ᐱᐅᓂᖅᓴᓂᒃ ᐆᒻᒪᕐᑯᑎᑐᕈᓐᓇᕐᓂᖅ, ᓲᕐᓗ ᐆᒻᒪᕐᑯᑎᑐᖏᓐᓂᖅᓴᐅᔪᓂᒃ ᓄᓇᒃᑰᕈᑎᓂᒃ ᐊᒻᒪᓗ ᐃᑉᑐᕐᔪᐊᕐᓂᒃ-ᐊᖏᔫᒻᒪᕆᖕᒥᒃ ᐃᓚᒋᔭᐅᓇᔭᖅᑐᖅ ᒥᑭᓪᓕᑎᖅᑕᐅᓂᖏᓐᓂ ᐳᔪᕐᓗᐃᑦ ᓱᕈᕐᓇᖅᑐᑦ, ᑭᓯᐊᓂ ᒪᓕᒃᓱᒋᑦ ᐅᖃᐅᓯᖏᑦ Stern ᐅᓂᒃᑲᓕᐊᖏᓐᓂ, ᑕᒪᕐᒥᒃ ᐊᓯᖏᑦ ᖃᓄᖅᑑᕈᑏᑦ ᐱᑕᖃᕆᐊᖃᕐᓂᐊᕐᒥᔪᑦ ᐃᓚᖕᒐᓂᒃ.

ᓴᓇᔭᐅᓂᖏᑦ ᐆᒻᒪᕐᑯᑏᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᖕᒫᖅᑐᓂᒃ, ᐊᑐᖅᑕᐅᖏᖕᒫᕐᓗᑎᒃ ᓴᐅᓂᕕᓂᕐᓂᒃ ᐅᖅᓱᐊᓗᒃᓴᔭᖑᓐᓯᒪᔪᑦ, ᖃᓗᓈᓂ ᑲᓇᑕᒥ ᐊᓯᖏᓐᓂᓗ ᓄᓇᕐᔪᐊᕐᒥ, ᐃᑲᔫᑕᐅᔪᓐᓇᖅᑐᑦ ᒥᑭᓪᓕᑎᖅᑕᐅᓂᖏᓐᓄ ᐆᓇᖅᓯᓇᖅᑐᑦ ᐳᓪᓚᐃᑦ ᓄᐃᑕᐅᖕᓂᖏᓐᓂ ᐳᔪᕐᓗᐃᑦ, ᐊᒻᒪᓗ ᐊᓯᖏᓐᓂ ᐱᓕᕆᓗᑎᒃ, ᐃᑲᔪᕈᓐᓇᖅᑐᖅ ᓱᑲᐃᓪᓕᒋᐊᖅᑎᑎᓂᕐᒥᒃ ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖕᒐᓂᒃ. ᔪᓈᓂᔭᒻᒥᒃ ᓄᖑᔪᐃᑦᑐᑦ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᔪᑦ ᓄᓇᕗᒻᒥ ᑐᕌᖓᔪᓐᓇᖅᑐᑦ ᑕᒪᒃᑯᓂᖓ ᓴᓇᔭᐅᓂᖏᓐᓄᑦ ᓄᖑᔪᐃᑦᑐᓂᖕᒫᖅᑐᑦ ᐆᒻᒪᕐᑯᑏᑦ.

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[13] ᓯᑑᓐ Stern ᕿᒥᕐᕈᐊᖅᓂᕕᓂᖏᑦ: ᐱᕙᓪᓕᐊᓂᖏᑦ ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖕᒐᓂ; HM-ᑯᑦ ᑎᑎᕋᕐᕕᖓᑦ; 2006; ᑕᑯᓗᒍ http://www.hm-treasury.gov.uk

3.4 ᐊᒃᑕᖅᑕᐅᖃᑦᑕᕐᓂᖏᑦ ᓄᖑᔪᐃᑦᑑᑦ ᐊᒃᑕᑯᐃᑦ ᐃᓄᓐᓄᑦ ᐱᕐᑯᑎᕆᔭᐅᔪᓂ ᓄᓇᓂ

ᐱᑕᖃᖏᓐᓂᖏᑦ ᖃᓄᑦᑎᐊᖅ ᐃᒋᑕᐅᑦᑎᐊᕈᓐᓇᕐᒪᖔᑕ ᐊᒃᑐᑯᐃᑦ ᓄᖑᔪᐃᑦᑐᓕᒃ ᐅᒻᒪᖅᑎᑦᑎᕙᖕᓂ - ᖃᐅᔨᒪᔭᐅᔪᑎᒃ ᐃᒫᒃ "ᓄᖑᔪᐃᑦᑑᑦ ᐊᒃᑕᑯᐃᑦ ᐊᒥᐊᒃᑯᑦ" - ᐊᒥᓱᐊᖅᑎᖅᑕᐅᓪᓗᑎᒃ ᐱᒻᒪᕆᐅᔪᒥᒃ ᐱᐅᒋᔭᐅᖏᔾᔪᑕᐅᔭᒃᑐᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᐅᕐᓂᕐᒧᑦ. ᒫᓐᓇᐅᔪᖅ ᑲᓇᑕᒥ ᐱᑕᖃᖅᑐᖃᖏᑦᑐᖅ ᐊᑯᓂᐅᔪᒧᑦ ᑐᕐᑯᖅᑎᓇᕙᖕᒥᒃ ᐊᒻᒪᓗ ᐃᒋᑦᑎᕙᖕᒥᒃ ᑕᒪᒃᑯᓂᖔ ᐊᒃᑕᑯᓂᒃ. ᑭᓯᐊᓂ, ᑐᕐᑯᖅᑕᐅᓂᖏᑦ ᐊᒻᒪᓗ ᐃᓱᐊᓂ ᐃᒋᑕᐅᔪᒫᕐᓂᖏᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓕᕐᒪᑕ ᐊᒥᓱᓪᒪᓇᖕᓂ ᐊᕐᕌᒍᓂ ᐊᓯᖏᓐᓂᓗ ᓄᓇᓕᒡᔪᐊᕐᓂ ᑕᐃᒪᐃᑦᑐᓂᒃᑕᐅᖅ ᐱᓕᓇᔭᓇᐊᖅᑐᓂᒃ.

ᑕᒪᐃᓐᓂᒃ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᑦ ᐃᒋᑕᐅᑦᑎᐊᓇᐊᖃᕐᓂᖏᓐᓂ ᓄᖑᔪᐃᑦᑐᓐᓂ ᐅᒻᒪᖅᑎᑦᑎᔾᔪᑏᑦ, ᓴᓇᔭᐅᔪᑦ ᐅᓂᒃᑲᑦ ᓄᖑᔪᐃᑦᑐᓇᐄᑦ ᐊᒃᑕᑯᓂᒃ ᐊᐅᓚᑦᑎᐄᑦ ᑲᑐᔾᔨᖃᑎᑏᖏᓐᓂᒃ NWMO-ᑯᑦ, ᓄᕙᐱᓇ 2005-ᒥ, ᐊᑐᓕᖅᑯᔨᓯᒪᔪᑦ ᐱᖅᑯᓯᖃᖅᑐᓂᒃ ᐃᒫᒃ ᑐᖅᑯᖅᑎᓇᕚᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᐅᕐᕕᖕᓂ, ᐊᑕᐅᓯᕐᑏᑎᑦᑎᕙᐳᔪᑦ, ᐊᒻᒪᓗ ᐃᓕᔭᐅᖅᑲᑦᑕᖅᓗᑎᒃ ᐊᑐᖅᑕᐅᓯᒪᔪᑦ ᓄᖑᔪᐃᑦᑐᐃᑦ ᐆᒻᒪᕐᓇᖅᑐᑦ ᐃᒋᑦᑎᕙᖕᓂ ᕿᔪᕐᑯᑎᕐᔪᐊᕐᓂ ᐃᓗᐊᓂ ᓯᑎᔪᓂ ᐅᔭᕋᖕᓂ ᑲᓇᑕᒥ ᐅᔭᕋᐃᓐᓇᐅᕕᒃᑲᕐᓂᖏᓐᓂ - ᑕᐅᔭᐅᔪᓂᒃ ᖃᓗᓃᑎᑐᑦ Deep Geological Disposal - ᐃᓗᐊᓂᒻᒪᓇᒃ ᓄᓇᒥ ᐃᒋᑦᑎᕙᒃᓴᐃᑦ - ᑲᒪᒋᔭᐅᕐᑯᔭᐅᔪᑦ ᐃᓚᖃᕐᓗᑎᒃ ᐊᐅᓚᑦᑕᐅᔾᔪᑎᒃᓴᓂᒃ ᑕᐅᔭᐅᔪᓂᒃ ᐋᕿᒋᐊᖃᑦᑕᕐᓂᐊᖅᑐᓂᒃ ᐊᑐᓕᖅᑎᑕᐅᕙᓪᓕᐊᔪᓂᒃ ᐊᐅᓚᑦᑎᓂᐅᔪ, ᓯᕗᓂᒃᓴᒥ ᐃᒋᑕᐅᑦᑎᐊᖃᑦᑕᕐᓂᐊᕐᒪᑕ ᑐᖅᑯᖅᑕᐅᓯᒪᑦᑎᐊᕐᓗᑎᒃ ᐊᒃᑐᑯᐃᑦ ᐆᒻᒪᕐᓇᖅᑐᓕᕖᑦ. ᒐᕙᒪᒃᑯᑦ ᑲᔪᓯᒋᐊᕈᓐᓇᕐᓂᕋᐃᒃᐸᑕ, NWMO-ᑯᑦ ᕿᓂᕈᒫᖅᑐᑦ ᑐᖓᓇᕋᔭᖅᑐᓂᒃ ᐸᐸᑦᑎᕙᐅᓂᐊᖅᑐᓂᒃ ᓄᓇᒥᒃ ᐆᑕᕐᓇᖅᑐᓕᕆᕕᓂᕐᓂᒃ. ᐃᓱᒪᒋᓪᓗᒋᑦ ᐃᓱᒪᓅᑕᐅᔪᑦ ᓅᑕᐅᖃᑦᑕᕐᓂᖏᓐᓂ ᐊᒃᑕᑯᒃᓴᐃᑦ ᐆᑕᕐᓇᖅᑑᑦ, ᐃᒋᑦᑎᕙᒃᑖᕋᔭᖅᑐᒃᓴᐅᔪᑦ ᐋᓐᑎᐅᓇᔫᒥ, ᐊᖏᓂᖅᐹᓂᒃ ᐊᒃᑕᑯᓕᐅᖅᑲᑦᑕᕐᓂᖏᓐᓄᑦ ᑕᒪᐃᑦᑐᓂᒃ ᐆᑕᕐᓇᖅᑐᓕᖕᓂᒃ.

1997-ᒥ ᑲᑎᒪᔩᑦ ᐱᕐᑯᔨᕗᖔᕈᑎᖏᓐᓂ, ᑐᓐᖓᕕᒃᑯᑦ ᐅᖃᐅᓯᖃᓚᐅᖅᑐᑦ ᐊᑭᕋᖅᑐᕐᓂᕐᒥᓂᒃ ᐃᒋᑦᑎᕕᐅᓇᔭᕐᓂᖏᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓐᓂᒃ ᐆᑕᕐᓇᖅᑐᖃᓚᐅᖅᑐᓂᒃ ᐊᒃᑕᑯᓂᒃ, ᐅᑭᐅᖅᑕᖅᑐᒥ. ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ, ᑐᑭᓯᓇᑦᑎᐊᒃᑲᓐᓂᖅᐳᑦ ᑐᓐᖓᕕᒃᑯᑦ ᖃᓄᐃᓕᖓᓂᖏᓐᓂᒃ ᐅᖃᑦᑎᐊᒃᑲᓐᓂᕈᑕᐅᖕᒪᑕ ᐊᔪᕐᓇᖅᑎᑦᑎᓂᐊᖏᓐᓂᕐᒥᓂᒃ ᖃᓄᐃᑦᑐᐃᓇᓂᒃ ᐆᑕᕐᓇᖅᑐᓕᖕᖏᓐᓂᒃ ᐊᒃᑕᑯᓂᒃ ᓴᕿᓯᒪᔪᓂᒃ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐅᔭᕋᖕᓂᐊᕐᓂᕐᒥᒃ ᐃᓄᐃᑦ ᓄᓇᕐᑯᑎᖏᓐᓂ ᑐᖅᑯᖅᑕᐅᓯᒪᔪᓐᓇᖅᑐᑦ ᐃᒋᑕᐅᓯᒪᔪᓐᓇᖅᓱᑎᒃ ᐃᓄᐃᑦ ᐱᕐᑯᑎᖏᓐᓂ ᓄᓇᓂᒃ. ᑕᐃᒪᓐᓇ, ᒪᒃᑯᐊ ᐊᒥᐊᒃᕕᓃᑦ ᐲᔭᐃᕕᐅᕌᓂᒃᓯᒪᔪᑦ ᐊᒻᒪᓗ ᐊᔾᔨᐅᖏᑦᑐᑦ ᐅᔭᕋᐃᑦ ᐊᒃᑕᑯᒃᓴᕈᖅᑐᑦ

ᐊᒻᒪᓗ ᐱᑕᕆᔨ⅁ᐊᕐᑎᓂᕐᓂᑦ ᐅᑕᕆᓇᖅ⅁ᑕᖅᓂᑦ ᐱᑕᓐᓂ, ᓄᑦᓗ ᓴᓇᕆᑎᑦ ᐊᒻᒪᓗ ᐱᕆᑯᑎᑦ ᐊ⅁ᖅᑕᐅᓂᒪᓪᓂ ᐅᓴᕆᓂᐅᐊᕆᓂᖅᑎᓂᓐᓂ.

3.5 ᐊ⅁ᖅᑕᐅᓂᖅᑎᑦ ᓄᖅᓴᐃᕐ⅁ᑦ ᓴᓱᓂᔪᒻ ᐅᓇᑕᕿᑕᐅᓂᐊᖅᑎᑦ⅁ᓄᑦ ᑭᓄᐊᓂ

ᐊᒥᓄᑦ ᐃᓄᐃᑦ ᐃᓄᒪᓕᑎᑎᖅᑕᒪᑕ ᐊᐅᑦᑕᓇᖅᑎᑕᐅᓪᓕ (ᑕᐃᖅᑎᑦ) ᓄᖅᓴᐃᕐ⅁ᑦ ᐊ⅁ᖅᑕᐅ⅁ᑐᐃᓇᐊᕆᑎᖅᑎᓂᖅᓂᒃ ᓄᖅᓴᐃᕐ⅁ᑎᓄᑦ ᐅᓇᑕᕿᑎᕋᓇᓂᑦ. ᑕᑲᓇᑕᒥ, ᐃᑕᒥᔪᐅᓪᓕᖅ ᓄᖅᓴᐃᕐ⅁ᑦᑕᐅᑐᓇᖅ⅁ᓂ ᐊ⅁ᑦᑯᔨᖅᑎᑕᑦ ᐅᓇᑕᕿᑎᕋᓇᓂᑦ, ᐊᑯᓂᒪᓚᐊᒍᒃ ᐊ⅁ᐊᒃᓴᖅᑎᑕ ᐊ⅁ᖅᑕᐅᑎᑦᑎᑕᐃᑕᒪᓂᕐᒥᒃ ᓄᖅᓴᐃᕐ⅁ᑦᓂᓂᖅᑐᑎᓂᒃ ᐅᓇᑕᕿᑎᓂᒃ ᐊᒻᒪᓗ ᐊᔪᐅᖅᑎᐅᑦᒍᑎᒃ ᐱᑦᑎᕆᑦᓂᐊᕐᓕᕆᓂ ᐊ⅁ᖅᑕᐅᑦᖅᑕᓚᐊᖅᑎᓂᖅᑐᑦᓂ ᓄᖅᓴᐃᕐ⅁ᑦᓂᒃ ᐅᓪᓚᕆᑦᑯᑦ. ᓂᓚᕐᔨᐊᓕᒻᒥ ᐊᖅᑐᕿᑎᓕᕐᓂᖅᑐᑦ - ᓄᑦᓗ ᐊᖅᑐᕿᑎᕐᔨᐊᕆᓂᒃ ᐊ⅁ᖅᑕᐅᑎᑦᑎᑕᐃᑕᒪᓂᖅ ᓄᖅᓴᐃᕐ⅁ᑦᐃᑦ ᐅᓇᑕᕿᑎᓄᑦ - (NPT) - ᐊᒻᒪᓗ ᒪᑭᒋᖅᓄᑦ ᐊᖅᑐᕿᑕᐅᓂᒪᔨᓂᒃ ᐊᐅᑕᓚᐅᔨᓂᒃ ᓂᓚᕐᔨᐊᕆᑎᒥ ᓂᓚᕐᔨᐊᕆᑎᒥ ᓄᖅᓴᐃᕐ⅁ᑦᓂᕆᖅᑕᖅ⅁ᓂᒃ ᐅᓱᒪᑦᑯᑎᓚᓗᒍᑦ ᑲᑎᒪᔨᖅᑐᐊᕐᖅᑐᑦ (IAEA-ᑯᑦ), ᑲᓇᑕᒥ ᓄᖅᓴᐃᕐ⅁ᑦᓚᓂᓪᓕᑦ ᐅᓗᓚᐊᓇᖅᑕᐅᑦᓚᓗᒍᑦ ᑲᒪᒋᔭᖅᑯᑦ, ᐊᒻᒪᓗ ᐃᖅᑲᓇᐃᔪᖅᕐᓗᓂᔭᓂᒃ ᑲᑎᒪᔨᖅᑐᐊᕐᖅᑐᑦ ᓂᓚᕐᔨᐊᕆᑎᒥ ᓄᖅᓴᐃᕐ⅁ᑦᑕᖅᑕᐅᓂᒃ ᐱᓱᒪᑦᑯᑎᒥᓚᓗᒍᑦ ᑲᑎᒪᔨᖅᑐᐊᕐᖅᑐᑦ (DFAIT) ᐊ⅁ᖅᑕᐅᓚᖅᑕᐃᓚᒪᑦᑯᓗᑎᑦ ᓄᖅᓴᐃᕐ⅁ᑦ ᐊᐅᑦᑕᓇᖅᑎᑕᐅᓕᕐᓂᑦ ᐊᓂᔪᖅᑐᓄᑦ ᓄᓇᕐᔨᐊᓚᖅᓄᑦ ᐊᑐᑕᐅᓂᐊᖅ⅁ᓄᑦ ᐅᓇᑕᕿᓂᕐᒪᑦ.

ᑕᐃᒃᑯᐊ NPT-ᑯᑦ, ᐊᑎᓚᐅᖅᑕᐅᓂᒪᔨᓂᒃ 1968-ᒥ, ᐊᔨᖅᓇᖅᑎᑎᕐᔨᓂᒃ ᓴᓇᓴᐅᓂᖅᑐᓂ ᓄᖅᓴᐃᕐ⅁ᒥᒃ ᐅᓇᑕᕿᑐᑦ ᐊᒻᒪᓗ/ᐅᖅᓯᓗᓂᑉᓂᑦ ᐊ⅁ᖅᑕᐅᔨᓇᓂᖅᑐᓂᓂᓂ ᓄᖅᓴᐃᕐ⅁ᑦᓂᕆᖅ⅁ᓄᑦ ᐅᓇᑕᕿᑎᓄᑦ ᐊᓂᔪᖅᑐᓄᑦ ᓄᓇᕐᔨᐊᓚᖅᓄᑦ. ᑲᓇᑕᒥ ᓂᓯᓚᐅᐊᓂᔨᖅ ᐊᑎᓚᐅᖅᑕᐅᓂᒪᓂᕆᖅᓗᓂᑦ NPT-ᒥᒃ ᐊᖅᑐᕿᑎᓂᖅᑐᑦ, ᐊᒻᒪᓗ ᓇᖏᓂᖅᑐ ᓄᖅᓴᐃᕐ⅁ᑦᓂᖅᑐᑦ ᐅᓇᑕᕿᑎᖅᑎᖅᑎᑦᑎᑕᐃᑕᒪᓂᕐᒪᑦ ᐊ⅁ᐊᒃᓚᐅᖅᑕᐅᓂᒪᔨᖅᑕᖅ ᐊᖅᑐᕿᑎᓄᑦ ᐃᑕᒪᓚᐅᑎᓂᓚᓂᑦ. ᐃᓇᓪᓇᐅᔨᖅᑐᑦ, 187-ᖃᓄᖅᒪᑕ ᓄᓇᕐᔨᐊᓐᓂᑦ ᐃᑕᒥᔪᐅᔨᓂᒃ ᐊᖅᑐᕿᑎᕐᔨᐊᓄᑦ NPT-ᒧᑦ, ᐃᑕᐅᓐᓂᑎᖅᑐᑦ ᑕᒪᓐᓂᒪᐃᑦ ᐃᑕᑕᒪᔪᐅᖅᓂᒪᔨᖅᑕᖅ ᓄᖅᓴᐃᕐ⅁ᑦᓂᖅᑐᑦ ᐅᓇᑕᕿᑎᖅᑎᖅᑎᑦᑎᑕᐃᑕᒪᓂᕐᒪᑦ ᐊ⅁ᐊᒃᓚᐅᖅᑕᐅᓂᒪᔨᖅᑕᖅ ᐊᖅᑐᕿᑎᓄᑦ ᐃᑕᒪᓚᐅᑎᓂᓚᓂᑦ. 550 ᐅᖅᓯᒋᓂᖅ%⅁ᑦ ᓴᓇᐃᓂᑦ ᐊᒥᓄᑦ ᐄᐊᓇᓪᓕᓯᓂ⅁ᑦ ᐊᓂᔪᖅᑐᓄᑦ ᓄᓇᕐᔨᐊᓐᓂᑦ. ᑕᐃᒪᐃᑦ⅁ᓴᐃᓇᐅᓴᖅᑎᓂᖅᑐᑦ ᖃᐅᔨᓴᖅᑕᐅᖅᑐᓇᓂᕆᖅᑎᖅᑎᓂᖅᑐᑦ. ᐊᖅᑐᕿᑎᕐᒪᑦ⅁ᑦ NPT-ᑯᑦ ᐋᖅᑭᓯᓯᒪᓴᐊᑕᐅᔨᓂᑦ ᐱᓂᐊᖅᑎᑎᓂᖅᑐᖅ ᐊ⅁ᖅᑕᐅᓂᐊᖅ⅁ᓂᒃ ᓄᖅᓴᐃᕐ⅁ᑦᓂᖅᓂᒧᑦ ᐅᓇᑕᕿᑎᓄᑦ, ᐊ⅁ᖅᑕᐅᓂᐅᔨᓪᓚᓂᑦ ᐱᓇᑎᖅᑐᓇᓪᓕᒪᑦ ᐊ⅁ᖅᓂᖅᑐᓇᓄᑦ ᓄᖅᓴᐃᕐ⅁ᑦ ᐅᓇᑕᕿᑎᓂᒃ ᐊᓯᖅᑕᐅᓂᐅᔨᓪᓚᓂᑦ ᓄᖅᓴᐃᕐ⅁ᑦᓂᖅᑐᑦ ᐅᓇᑕᕿᑎᕐᔨᐊᓇᖅ⅁ᓂᒃ ᐊ⅁ᖅᑕᐅᓂᐅᔨᖅᑕᐅᓂᒃ.

ᓴᓇᓴᐅᓂᖅ ᓂᐅᔨᑎᖅᓂᒪᓕᑦ ᐊᖅᑐᕿᑎᓄᑦ ᓴᖅᑭᔪᓚᓇᖅᓂᖅ ᓴᓪᓕᓴᖅᑕᖅ⅁ᓂ ᐊ⅁ᖅᑕᐅᓂᐅᔨᖅᑕᐅᓂᖅᑐᑦ ᓄᖅᓴᐃᕐ⅁ᑦᓂᖅ ᑎᑭᓴᖅᑕᐅᓂᖅᑐᑦᓂᖅᑐᑦ ᐅᓇᑕᕿᑎᓄᑦ. For example, ᓄᑦᓗ

ᐅᖅᑐᑎᑭᑐᔪᒍ, ᓄᖅᓴᐃᕐᑐᓂᖅ ᐱᑕᓂᖅᓂᒃ ᐱᓯᒪᕐᑎᓂᔪᑦ ᓪᐃᓴᕐᓯᑦ ᐱᔭᵒᓇᐅᑦᑐᑦ ᐱᕆᐅᔪᑦ ᑲᓇᑕᒥᒃ, ᐅᖃᖅᓯᒪᔪᑦ ᒪᓂᑭᐊᓂᖅᒥᒃ ᐊᔪᖏᓇᖅᑎᐅᔪᓂᖅ ᓪᐃᓴᕐᓯᑦ ᑎᒍᒥᐊᖅᑐᑦ ᐊᐅᖅᑕᕐᑎᑦᑎᔪᵒᓇᖅᑎᑦᑎᓂᖅ ᑎᐹᕼᐃᐱᵒᓇᖅᑎᑦᑎᓂᖅᓗ ᓄᖅᓴᐃᕐᑐᖅᑎᓂᖅ, ᐊᖅᑭᖅᑕᐅᓯᒪᔪᓂᖅ ᐱᓯᒪᕆᔪᵒᓇᖅᑕᖅᓴᑦᑐᖅ ᓪᓚᕐᓯᑦ ᐊᐅᑕᕐᑎᑦᑎᓂᖅ, ᐊᖅᑭᖅᑕᐅᓯᒪᔪᓂᖅ ᐱᓯᒪᕆᔪᵒᓇᖅᑕᖅᓴᑦᑐᖅ ᓪᓚᕐᓯᑦ ᐊᐅᑕᕐᑎᑦᑎᓂᖅ (NSCA-ᑯᑦ).

ᐅᓇᑕᒥ ᓄᖅᓴᐃᕐᑐᓂᓗᓂᔪᑦ ᐅᑐᓗᐊᓇᖅᑐᑕᓗᓵᓂ ᑲᒪᕆᵒᖅᑯᑦ CNSC-ᑯᑦ ᑲᒪᔨᐅᖅᒪᑕ ᒪᑕᑎᖃᖅᑎᑦᑎᓂᖅᑎᒃ ᒪᑕᖅᑕᐅᖃᐃᓂᖅᑎᒃ ᐅᓇᑕᒥ ᓄᖅᓴᐃᕐᑐᐅᕐᐸᓂᓂ, ᐊᖏᓗ ᑲᒪᔨᐅᖅᑕᐅᑎᓂᖅᑎᒃ ᐅᓇᑕᐅᓂ ᐊᐅᑕᕐᑎᓂᖅᑎᒃ ᐅᑐᓗᐊᓇᖅᑐᑕᒧᑦᑐᒃᑲᓗᐊᖅᑎᖃᖅᑎᓂᖅᓂᖅᓂᓂ ᐊᖅᑭᕈᑎᒃ. ᐃᓕᖅᑕᐅᐅᑕᐅᖅᓯᒪᔪᑦ 2000-ᒥ ᐊᒋᔪᑦ ᓄᒋᑦ NSCA-ᑯᑦ ᒪᑕᑐᓪᓚᕐᓂᖅᓄᑦᓗ; ᐊ⅁ᖅᑕᐅᖅᑎᓪᓕᑕᐅᕐᓕᑕ ᓴᓂᐊ ᓄᖅᓴᐃᕐᑐᓂᖅ ᐅᓪᓕᕐᑎᓂᖅᑎᓵᓂ ᓄᖅᓴᐃᕐᑐᓂᖅ ᐅᓪᓕᕐᑎᑦᑎᓂᑦ ᐊᐅᑕᕐᑎᑦᑎᓵᓂ ᑲᑎᒪᔨᖅᑎᑦ (AECB-ᑯᑦ) ᑲᑎᒪᔨᐅᑕᐅᖅᓯᒪᔪᓂᖅ ᑕᐃᒪᖅᑎᑦ 1946-ᒥᓂᖅ. ᐅᑯᐊ ᑕᑯᓀ ᐊᒋᐅᓕᑦᑐᑦ ᐅᓂᖅᑲᑦ ᐱᓕᕆᐊᖅᐳᓀᑐᑦ CNSC-ᑯᵒᓄᑦ, ᐊᖏᓗ ᑕᑯᔭᖅᓴᐅᑦᑐᓗᑎᒃ ᖃᑲᓇᑕᐅᔭᖅᑯᑦ ᐅᐸᖅᑕᕐᓇᖅᓯᒪᓂᖅᓂ CNSC-ᑯᑦ:

> ᑲᓇᑕᒥ ᓄᖅᓴᐃᕐᑐᓂᓗᓂᔪᑦ ᐅᑐᓗᐊᓇᖅᑐᑕᓗᓵᓂ ᑲᒪᔨᐅᖅᑯᑦ (CNSC-ᑯᑦ) ᑲᒪᔨᐅᔪᑦ ᐊ⅁ᑕᖅᑎᑦᑎᓂᖅᑎᒃ ᑲᓇᑕᐅᑦ ᐅᓇᑕᕐᓂᓂᔪᑦ ᐊ⅁ᖅᑕᐅᑕᐅᓕᑕᒪᑎᑕᖅᓯᒪᓂᖅᓂᖅ ᐊ⅁ᐊᖅᓱᓂᖅᓂᒃ, ᕿᓕᖅᓂᖅ ᓂᕐ⅁ᔪᖅᓂᖅ ᐊძᓂᐅᔪᓚᑦ ⅁ᑲᖅᓱᐊᓂᖅᓂᒃ ⅁ᑲᓱᓂᖃᖅᓗᑕ:
>
> 1. ᖃᐅᔨᓴᕐᑯᓚᑎᑦ ᑲᓇᑕᒥᐅᑦ ᐊᒋᓚᓗ ᓱᓕᔪᐊᖏᑎᐅᓕᒫᑦ ᑲᓇᑕᐅᔪᑦ ᓄᖅᓴᐃᕐᑐᓂᖅᓂᒃ ᐊᐅᑕᕐᑎᑦᑎᓂᖅᑎᒃ ᐊᑐᑕᐅᐸᖅᑲᓇᐊᖅᑎᖃᖅᓯᒪᓂᖅᓂᖅ ᓄᖅᓴᐃᕐᑐᓂᖅᓂᒃ ᐅᓇᑕᑭᑎᐅᓴᓂᑦ, ᐅᓕᓄᑯᑦ ᐊᓱᓂᖅᓂᒃ ᓄᖅᓴᐃᕐᑐᓂᖅᓂᒃ ᖃᑲᖅᑎᑎᑭᑎᑎᑦᑎᓂᖅᓂᒃ; ᐊᒋᓚᓗ
> 2. ᐊ⅁ᑕᖅᑎᑦᑎᓂᖅᑎᓴᕐᔪᒪᓂᖅᓂᖅ ᐃᓕᖅᑭᐅᒪᑦᑎᐊᖅᑎᓴᕐᑎᓴᕐᑎᓂᖅᓴᕐᑎᓂᖅ ᐊᒋᓚ ᑕᐃᒪᵒᓄᑦ ⅁ᑲᓱᓂᖃᖅᓗᑕ ᓄᖅᓴᐃᕐᑐᓂᖅᓂᒃ ᓱᓕᔪᐊᖏᑎᐅᓕᒫᑦ ᓄᖅᓴᐃᕐᑐᓂᖅᓂᒃ ᐅᓇᑕᑭᑎᐅᓴᓂᑦ ᐅᓇᑕᐅᑎᑦᑎᓂᖅᑎᒃ ᐊᐅᑕᕐᑎᑦᑎᓂᖅᓂᖅᓂᒃ.

ᐊᒋᓚ ᓱᓕ, ᑲᓇᑕᒥ ᓄᖅᓴᐃᕐᑐᓂᓗᓂᔪᑦ ᐅᑐᓗᐊᓇᖅᑐᑕᓗᓵᓂ ᑲᒪᔨᐅᖅᑯᑦ (CNSC-ᑯᑦ) "ᐊᖅᑯᑎᑎᖅᑎᓗᑎᒃ ᓄᖅᓴᐃᕐᑐᓂᖅ ᐅᑐᓗᐊᓇᖅᑐᑕᓗᓵᓂ ᐊᒋᓚᓗ ᐊᐅᑕᕐᑎᑦᑎᓂᖅᓂᖅᓂᒃ ᒪᑕᑐᓪᓚᕐᓂᖅᓄᑦ (NSCA)-ᒥᒃ ᐊᒋᓚᓗ ᐊ⅁ᑎᓂᖅᓂᒃ ᒪᑕᑐᓪᓚᕐᓂᓄᑦ, ᐊ⅁ᑕᖅᑎᑦᑎᓗᑎᒃ ᐊᖅᑭᕈᑎᓴᒪᓂᒃ ᐊ⅁ᖅᑕᐅᑕᐅᓕᑕᒪᑎᑕᖅᓯᒪᓂᖅᓂᖅᓂᒃ ᐅᓇᑕᕈᑎᓂᒃ ᓄᖅᓴᐃᕐᑐᓂᖅᓄᑦ. NPT-

ᑯᑦ ᒪᓕᒐᖏᓃᑦᑐᑦ ᐱᓂᐊᕐᓂᖅᑕᐅᓯᒪᔪᑦ: ᑎᒍᓯᕐᑲᑦᑕᕐᓂᐊᖏᓐᓂᖅ, ᓴᓇᓂᖅ, ᐅᕙᓘᓐᓃᑦ ᐱᑖᕐᑲᑦᑕᕐᓂᖅ ᓄᕐᔪᐊᑦᑐᓕᖕᓂᒃ ᐅᓇᑕᕈᑎᓂᒃ, ᐅᕙᓗᓐᓃᑦ ᐊᓯᖏᓐᓂᒃ ᓄᕐᔪᐊᑦᑐᒥᒃ ᕐᑳᖅᑎᑦᑎᕈᑎᓂᒃ;

ᐊᖏᖅᑕᐅᓯᒪᔪᑎᒃ ᓯᓚᕐᔪᐊᕐᒥ ᓄᕐᔪᐊᑦᑐᕐᑲᖅᑐᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᕆᔩᑦ ᑲᑎᒪᔨᕐᔪᐊᖏᑦ (IAEA-ᑯᑦ) ᐅᑐᕆᐊᓇᓈᒃᑯᑎᓕᐊᖏᑦ ᑕᒪᐃᓐᓂ ᓄᕐᔪᐊᑦᑐᓂᒃ ᐱᕐᑯᑎᓂᒃ ᐅᓇᑕᕈᑕᐅᖏᑦᑐᓄᑦ ᐱᐅᔪᓄᑦ ᑭᓯᐊᓂ ᐊᑐᖅᑕᐅᓂᖏᓐᓄᑦ ᑲᓇᑕᒥ; ᐊᒻᒪᓗ ᐅᔾᔨᖅᑐᖅᑕᐅᓗᑎᒃ ᑲᓇᑕᐅᑉ ᓄᕐᔪᐊᑦᑐᐃᑦ ᐊᐅᓪᓚᖅᑎᕐᑲᑦᑕᖅᑕᖏᑦ ᓂᐅᕖᖅᑕᐅᔪᑦ ᓄᕐᔪᐊᑦᑐᕐᑲᖏᑦᑐᓄᑦ ᓄᓇᕐᔪᐊᕐᓄᑦ ᒪᓕᒋᐊᕐᑲᕐᓂᐊᖅᑐᑦ ᐅᑐᕆᐊᓇᕈᑕᐅᔭᕆᐊᕐᑲᓐᖏᓐᓂᖏᓐᓂᒃ IAEA-ᑯᑦ ᒪᓕᒐᖏᓐᓃᑦᑐ.ᑦ "

ᓯᓚᕐᔪᐊᕐᒥᐅᓕᒫᓂ ᑕᐅᑐᒃᑐᒋᑦ, IAEA-ᑯᑦ ᓴᕿᑕᐅᓚᐅᖅᓯᒪᔪᑦ ᑕᒪᐃᓐᓄᑦ ᐊᖏᖅᑕᐅᓪᓗᑎᒃ ᐱᕐᑯᔾᔨᕗᖕᖑᕈᑎᒃᑯᑦ ᓴᕿᑕᐅᔪᒥ ᓄᓇᕐᔪᐊᕐᓕᒫᒥ ᑕᐱᓅᒃᑐᑦᖅ ᑲᑐᔾᔨᕐᑲᑎᒋᒡᔪᐊᖏᓐᓂ United Nation-ᑯᓐᓄᑦ, 1957-ᒥ, ᐃᑲᔫᑕᐅᓪᓗᑎᒃ ᓄᓇᕐᔪᐊᓕᖕᓂ ᓴᓇᓯᒪᓂᕐᒥᒃ ᓄᕐᔪᐊᑦᑐᓕᖕᓂᒃ ᐆᒻᒪᖅᑎᑕᐅᓯᒪᔪᓂᒃ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᓂᒃ ᐅᓇᑕᕈᑕᐅᖏᑦᑐᓄᑦ. IAEA-ᑯᑦ ᐱᔭᕆᐊᑐᔪᒻᒪᕆᖕᓂᒃ ᐱᕐᑯᖅᓯᕐᑲᒪᑕ ᕐᑲᓄᐃᓕᐅᕆᐊᕐᑲᕐᓂᕐᒧᑦ ᓯᕗᓪᓕᕐᒥ ᐊᒻᒪᓗ ᕐᑲᐅᔨᓴᕈᑎᓂᒃ - ᕐᑲᐅᔨᒪᐅᔭᔪᑦ "ᐅᑐᕆᐊᓇᓈᒃᑯᑕᐅᔪᓂᒃ"-ᐊᑐᕐᓂᐊᖅᑐᓂᒃ ᑕᐃᒫᒃ ᕐᑲᐅᔨᒪᓂᐊᕐᒪᑕ ᓄᓇᕐᔪᐊᓖᑦ ᐊᑐᕐᓂᐊᖏᑦᑐᑦ ᓄᕐᔪᐊᑦᑐᒥᒃ ᔪᓅᓂᔭᒻᒥᒃ ᓴᓇᔭᐅᓂᖏᓐᓄᑦ ᓄᕐᔪᐊᑦᑐᓕᖕᓂᒃ ᐅᓇᑕᕈᑎᒃᓴᓄᑦ. ᑕᒪᒃᑯᐊ ᐃᓚᕐᑲᖅᐳᑦ ᒪᑯᓂᖓ:

- ᐱᕐᑯᑎᓂᒃ ᓇᒎᖓᐅᓂᖏᓐᓂᒃ ᕐᑲᐅᔨᒪᓂᖅ: ᕐᑲᐅᔨᒪᔭᐅᖏᓐᓇᕐᓂᖏᑦ ᑕᒪᕐᒥᒃ ᐃᑐᐊᓄᖓᐅᔪᑦ ᓯᓚᑖᓄᖓᐅᔪᓪᓗ ᓅᑕᐅᔪᑦ, ᐊᒻᒪᓗ ᓅᑕᐅᓂᖏᑦ ᐱᕐᑯᑏᑦ ᓄᕐᔪᐊᑦᑐᕐᑲᕐᕕᖑᑦ. ᓲᕐᓗ ᐃᓚᕐᑲᖅᑐᖅ ᒪᑯᓂᖓ, ᐆᒃᑐᖅᑕᐅᔪᓂᒃ, ᕐᑲᐅᔨᓴᖅᑕᐅᓂᖏᓐᓂᓗ ᓄᕐᔪᐊᑦᑐᓖᑦ, ᐃᓂᖏᓐᓂ ᑖᕙᐅᓂᖏᓐᓂ ᕐᑲᐅᔨᓴᖅᑕᐅᓂᖏᑦ, ᕐᑭᒥᕐᕈᐊᖅᑕᐅᓂᖏᑦ ᐊᒻᒪᓗ ᓇᑐᓇᐃᒃᑯᑎᖅᑕᐅᓂᖏᑦ ᐊᐅᓚᑦᑎᔪᓐᓇᕐᓂᕐᒧᑦ ᑎᑎᕐᑲᕐᑯᑎᒋᔭᐅᔪᑦ.
- ᐱᕐᑯᑏᑦ ᐅᑐᕆᐊᓴᖅᑑᒥᑎᑕᐅᑦᑕᐃᓕᒪᓂᖏᑦ: ᐊᔪᕐᓇᖅᑎᑦᑎᓂᖅ ᐅᐸᒃᑕᐅᔪᓐᓇᕐᓂᖏᑦ ᓄᕐᔪᐊᑦᑐᓖᑦ ᐱᕐᑯᑏᑦ ᐃᓂᒋᔭᖏᓐᓂ, ᐊᑐᖅᑕᐅᕕᖓᓂ.
- ᐴᖅᑐᖅᑕᐅᓯᒪᓂᖏᑦ ᐊᒻᒪᓗ ᕐᑲᐅᔨᓴᖅᑕᐅᕙᓪᓕᐊᖏᓇᕐᓂᖏᑦ - ᐊᑐᖅᑕᐅᓂᖏᑦ ᒪᑐᐃᑦ, ᐊᔾᔨᓕᐅᑲᐅᑎᕇᓯᑦ ᐊᔾᔨᓕᐅᕈᑦᑎᑦ ᐊᓯᖏᓪᓗ ᓴᓇᕐᕈᑏᑦ ᕐᑲᐅᔾᔪᑏᑦ ᐅᕐᑲᐅᓯᐅᓯᒪᖏᑦᑐᓂᒃ ᓅᑕᐅᓂᖏᓐᓂᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᓂᖏᓂᓗᓐᓃᑦ ᓄᕐᔪᐊᑦᑐᓖᑦ ᐱᕐᑯᑏᑦ, ᐊᒻᒪᓗ ᕐᑲᐅᔨᓴᖅᑕᐅᕐᑲᑦᑕᕐᓗᑎᒃ ᑖᕙᐅᔪᑦ ᓇᓪᓕᐊᑐᐃᓐᓇᐃᑦ ᕐᑲᖑᑐᐃᓐᓇᖅ[14]

[14]"ᐅᑐᕆᐊᓇᓈᒃᑯᑏᑦ ᐊᔪᕐᓇᕈᑕᐅᔪᑦ ᓄᕐᔪᐊᑦᑐᓂᒃ ᐅᓇᑕᕈᑎᓕᐅᕐᓂᕐᒧᑦ", ᓯᓚᕐᔪᐊᕐᒥ ᓄᕐᔪᐊᑦᑐᓕᕆᓂᕐᒧᑦ ᑲᑐᔾᔨᕐᑲᑎᒋᑦ ᓄᕕᐱᕆ 2003.

ᓇᐃᓈᕐᓗᒋᑦ, ᓯᓚᕐᔪᐊᕐᒥᐅᓂ ᐊᖏᕐᑲᑎᒌᒌᑎᕐᔪᐊᑦ ᐊᒻᒪᓗ ᒪᕐᕉᖕᓄᑦ ᐊᖏᕐᑲᑎᒌᒌᑕᐅᓯᒪᔪᑦ ᐊᑐᖅᑕᐅᕙᒃᑐᑦ ᖃᐅᔨᓴᐃᓂᖅᖏᓐᓂ IAEA-ᑯᑦ, CNSC-ᑯᑦ ᐊᒻᒪᓗ DFAIT-ᑯᑦ, ᐅᔾᔨᖅᑐᖅᑕᐅᓗᑎᒃ ᔪᕕᓂᔾᒪ ᓄᖑᔪᐃᑦᑐᑦ ᐊᐅᓪᓚᖅᑎᑕᐅᔪᑦ ᐊᓯᖏᓐᓄᑦ ᓄᓇᕐᔪᐊᓕᖕᓄᑦ ᐊᑐᖅᑕᐅᓂᐊᖏᑦᑐᑦ ᐃᓚᒃᓴᐅᓂᐊᖏᑦᑐᑦ ᐱᐅᓯᒋᐊᕈᑕᐅᓂᐊᖏᑦᑐᓪᓗ ᓄᖑᔪᐃᑦᑐᓕᖕᓄᑦ ᐅᓇᑕᕈᑎᓕᐅᕐᓂᕐᒧᑦ.

3.6 ᓇᐃᓈᖅᓯᒪᔪᑦ ᐅᖃᐅᓯᒃᓴᐃᑦ

ᑖᒃᑯᓇᓂ ᒪᒃᐱᒐᕐᓂ ᓯᕗᓂᐊᓃᑦᑐᓂ, ᑕᑯᓇᖃᐅᒐᑦᑕ ᐃᓚᖏᓐᓂᒃ ᖃᓄᐃᑦᑑᓂᖏᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐱᓕᕆᐊᖃᖃᑦᑕᕐᓂᖅ. ᐱᒻᒪᕆᐅᔪᖅ ᐃᖅᑲᐅᒪᓂᖅ ᐅᖃᐅᓯᐅᓂᖏᑦ ᐊᒥᓱᑦ ᑕᒪᒃᑯᐊ ᐅᖃᐅᓯᐅᖃᐅᔪᑦ - ᓱᕐᓗ ᐊᐅᓚᑕᐅᓂᖏᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒪᖅᑯᓯᐅᕚᑦ ᐊᒻᒪᓗ ᐃᒋᐅᖃᖅᑕᐅᑎᐊᖃᑦᑕᓇᐊᖃᕐᓂᖏᑦ ᐊᒃᑕᑯᐃᑦ ᐊᑐᕈᓃᖅᑐᑦ ᑕᒪᒃᑯᓇᖓ ᐆᒪᕐᑯᓯᐅᕙᖕᓂ - ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ ᐅᖃᓕᒫᖅᑐᖅ ᖃᐅᔨᒪᕐᑯᓪᓗᒍ ᖃᓄᖅ ᔪᕕᓂᔾᒥ ᓄᔪᐃᑦᑐᓕᒃ ᐅᔾᔨᖕᓂᐊᖅᑕᐅᓯᒪᔪᖅ ᓄᓇᕗᒻᒥ ᐊᑐᖅᑕᐅᓇᔾᒪᖕᖎᑕ ᐅᒪᕐᑯᓯᐅᕈᑕᐅᓗᓂ. ᐃᓂᖏᑦ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐆᒪᕐᑯᓯᐅᕚᑦ ᐊᒻᒪᓗ ᐃᒋᐅᖃᖅᑕᐅᕕᒃᓴᐃᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐊᒃᑕᑯᐃᑦ ᐊᑐᕈᓐᓃᖅᑐᑦ ᐱᒋᐊᖅᑎᑕᐅᔪᒪᖏᑦᑐᑦ ᓄᓇᕗᒻᒥ. ᓄᖑᔪᐃᑦᑐᒧᑦ ᐊᑐᐊᒐᐃᑦ ᐱᔾᔪᑎᖃᓗᐊᖅᑐᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᓇᓂᓯᓇᓱᐊᕐᓂᕐᒥᒃ ᐊᒻᒪᓗ ᐅᔾᔪᖅᓂᐊᕐᓂᕐᒥᒃ. ᒫᓐᓇ ᑕᐃᒪ ᑕᑯᓇᖕᓂᖅᓴᐅᓂᐊᓕᖅᐳᒧᑦ ᖃᓄᖅ ᕿᓂᖃᑦᑕᕐᓂᖅ ᔪᕕᓂᔾᒥᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᕿᓂᓲᖑᖓᑕ ᐊᒻᒪᓗ ᖃᓄᖅ ᓄᓇᒦᑦᑐᑦ ᐱᑕᖃᕐᓂᖏᑦ ᐅᔾᔨᖕᓂᐊᖅᑕᐅᓲᖑᖓᑕ, ᐊᒻᒪᓗ ᐊᓄᖅ ᐊᕕᒃᑐᖅᑕᐅᓲᖑᖓᑕ ᐅᔾᔨᖕᓂᐊᕐᕕᖕᒥ.

4 ᐋᓚᓂᓴᓪᒥᒃ ᓄᖅᓯᐊᕐᑐᑐᓂᓄ ᐅᓂᓯᓇᓯᐊᖏᓂᖅᓄᖅ ᐊᓪᓚᓗ ᐅᓴᖏᓐᓂᐊᖅᑕᐅᓂᖅᑎᑦᑕ

4.1 ᖃᐅᓄᖅ ᐱᑎᐊᖑᓚᐅᖅᓯᒪᔪᖑᒻᒥ ᐋᓚᓂᓴᓪᒥᒃ ᓄᖅᓯᐊᕐᑐᓂᓄᒃ ᐅᓴᖏᓐᓂᐊᖅᑕᖏᓂᖅᓯᒪᓕᒃ ᑲᓇᑕᒥ

4.1.1 ᐱᑎᐊᓕᓴᓚᐅᖅᓯᒪᔪᓂᒃ ᐊᖏᖅᔪᓐᓇᑦ

ᓯᐅᑦᓕᖅᑰᖏᑦ ᓄᖅᓯᐊᕐᑐᓂᒃ ᐋᓚᓂᓴᓪᒥᒃ ᐅᓴᖏᓐᓂᐊᖅᓱᒃ ᐱᑎᐊᓕᐅᖅᓯᒪᔪᖅ 1933-ᒥ, Port Radium-ᒥ ᓄᓇᒥᐅᑕᖏᓂᖅᓯᑎᓂᒃ, ᑲᓇᖅᓇᖅᓴᓂ ᓯᓴᐅᐳ ᖃᑲᓂᕐᓴᓴᓂ, Great Bear Lake-ᒥ, ᓄᓇᕗᐊᖏᒥ. ᑕᐃᔨᓯᒪᓂ, ᓄᖅᓯᐊᕐᑐᖅ ᐋᓚᓂᓴᓪᒥ ᓂᐅᖏᕿᑎᒃᓴᐅᓂᖏᑦ ᐱᔪᒪᖅᐅᓕᕐᓂᕐᒥᒪᑦ ᑭᓇᐅᓴᕐᕈᑕᐅᔨᓇᓕᐅᖅᓯᑐᑐᖅ ᐃᖅᒥᔭᐃᓇᖅ, ᓄᖅᓯᐊᕐᑐᓂᓪᓕᑦ ᐅᓴᖏᓐᓂᐊᖅᑕᐅᓕᐅᖅᑐᑦ ᖃᐅᖅᑕᐅᓴᖅᑐᓂᖅᓯᒪᓂᖅ, ᐊᑐᖅᑕᐅᖅᓴᖅᑐᑦ ᐊᓂᓂᐅᓂᖅᑐᑦ ᐊᓚᓗᑐ ᖃᐅᐅᒪᔨᓂᑦ ᐃᓇᖅᑎᑦᓂᑦ ᐃᑭᑦᑕᖅᑐᓄᖅᑐᑦ. Port Radium-ᒥ ᐅᑎᖅᓂᐊᖅᓴᒃ ᐱᓇᓴᐅᓕᒪᓕᐅᖅᑐᑦ ᓄᖅᓯᐊᕐᑐᓂᒃ 1942-ᒥ, ᑕᒪᐃᓇ ᑲᔪᓯᓪᑐᓂᑐᓗ ᑭᓯᐊᓂ ᐅᓴᖏᓐᓂᐊᖅᓴᒃ ᒪᑐᐃᖅᓯᒪᑦ 1960-ᒥ.

ᓯᐅᑦᓕᖅᑰᖏᑦ ᖃᑭᓂᐊᑦᑕᓇᓕᓕᐅᖅᓯᒪᔪᓕᑦ ᓄᖅᓯᐊᕐᑐᓂᒃ ᐋᓚᓂᓴᓪᒥᒃ 1947-ᖅᑎᑦᑐᒍ, ᐊᑐᖅᑕᐅᕈᐃᓕᓕᒪᓂᖅᓄᑦ ᐄᖅᑕᐅᖅᓯᒪᑕ ᓇᖅᒥᓂᖅᑲᖅᑐᑦ ᓇᓂᓇᓯᐊᕐᓇᖅᓯᒪᔪᓚᑦᑐᑎᒃ ᐅᑕᖏᓇᖅᑐᑕᖅᓂᖅᓂ. 1949-ᖅᑎᑦᑐᒍ, ᓯᐅᑦᓕᓇᓴᐅᓕᐅᖅᑐᑐᓂ ᐱᑎᐊᓕᐅᖅᓯᐅᑦᓂᖅᓯᐅᑦᓂ ᓯᓕ ᖃᓂᒃᑕᓯᐋᓐᒥ ᓄᖅᓯᐊᕐᑐᑎᒥᒃ ᐋᓚᓂᓴᓪᒥᒃ ᐃᖏᒃᓇᐃᖏᕐᓇᖅᒥ, ᖃᓇᓴᐅᔨᖏᒃᑕᓕᐅᖅᓯᒪᔪᖅ ᓄᖅᓯᐊᕐᑐᓂᒃ ᐅᓴᖏᓐᓂᐊᖅᓴᖅᑐᒥᒃ Beaverlodge-ᒥ ᓄᓇᖏᑎᑎᕐᑐᓂ. ᑭᖅᓂᐊᖅᔨᐊᓂ, 1953-ᒥ, ᓄᖅᓯᐊᕐᑐᑐᐃᓂ ᐋᓚᓂᓴᓪᒥ ᓇᓂᓴᐅᓕᐅᖅᓯᒪᔪᓂ Elliot Lake ᖃᑲᓂᕐᑲᑎᑐᓂ ᓄᓇᓂ ᐋᓐᑎᐅᓚᐋᒥ. ᐃᖏᒃᓇᐃᐳᖏᒃᖏᔨᐊᖃᓇᓂᖅᑎᑦᑕ ᐃᓯᓕᓕᐅᖅᑐᑦ 1959-ᒥ, ᐊᑐᓚᓗ ᓄᖅᓯᐊᕐᑐᓂᒃ ᐋᓚᓂᓴᓪᒥᒃ ᐋᓐᓇᐸᖏᖅᑐᑦ ᓄᖏᖅᓯᓕᓕᐅᖅᑐᑦ ᓄᖏᖅᑰᖅᑕᓪᓕᐊᖅᑐᓕᕐᓂᐅᖅᑐᓕᐅᖅᓯᒪᓂᒃ ᐊᑯᓂᒃ.

ᐅᓗᓚᐊᓇᖅᑐᒥᒃ ᐊᒃᑐᖅᑕᐅᔨᓇᓂᖅᓄᖅ ᓄᖅᓯᐊᕐᑐᒍᑦ, ᖃᑭᖅᑎᐅᖅᓯᒪᔪᖅᑎᑎᓂᓄᑦ ᖃᖅᐳᒪᖅᑐᑦ ᑐᑭᓯᒪᔨᖅᑐᑦ ᐊᑎᓕᐅᖅᑕᐅᓂᖅᑎᑦᑕ ᐱᑎᐊᖑᓚᐅᖅᓯᒪᔪᖅᑐᑦ ᐊᓪᓚᓗ ᐃᓕᓴᕐᓗᒍᑦ ᐱᔪᓐᓇᖅᑐᓂᖅᓄᑦ ᐊᒃᑐᖅᑕᐅᓯᐊᕐᓇᖅᑐᑦ, ᐃᓇᖅᑐᓕᖅᑐᖅ ᓴᓇᐅᓚ. ᑕᐃᓕᐃᖅᓄᖅᓯᒪᓂ, ᐱᑕᓚᐋᑦ ᐊᒃᑐᖅᑕᐅᖅᑎᑦᑕᓕᐅᖅᑐᑦ ᐅᓗᓚᐊᓇᖅᑐᒥᒃ ᓄᖅᓯᐊᕐᑐᓂᒃ ᐆᑦᑕᐅᓂᖅ, ᐊᓪᓚᓗ ᓴᓇᐅᓚᓂᓗᒍᑦ ᐱᔪᓐᓇᖅᑐᓂᖅᓄᑦ ᑕᓕᒃᑯᓄᖅ.

ᐱᓕᓚᐅᔨᓂᖅᓯᒪᔪᖅ ᐊᓪᓚᓗ ᐊᒃᑐᖅᑕᐅᓴᖅᑐᓂᖅᓄᖅ ᐃᓇᖅᑐᓕᖅᑐᖅ ᐊᑎᓕᐅᖅᑕᐅᓂᖅᑎᑦᑕ ᐱᑎᐊᖑᓚᐅᖅᓯᒪᔪᖅᑐᑦ ᐊᓪᓚᓗ ᐃᓕᓴᕐᓗᒍᑦ ᐱᔪᓐᓇᖅᑐᓂᖅᓄᑦ ᐊᒃᑐᖅᑕᐅᓯᐊᕐᓇᖅᑐᑦ, ᐃᓇᖅᑐᓕᖅᑐᖅ ᓴᓇᐅᓚ. ᑕᐃᓕᐃᖅᓄᖅᓯᒪᓂ, ᐱᑕᓚᐋᑦ ᐊᒃᑐᖅᑕᐅᖅᑎᑦᑕᓕᐅᖅᑐᑦ ᐅᓗᓚᐊᓇᖅᑐᒥᒃ ᓄᖅᓯᐊᕐᑐᓂᒃ ᐄᑕᓕᐅᖅᑐᓂᒃ, ᐊᓪᓚᓗ ᑲᓇᐅᔪᓐᓇᖅᑐᓂᖅᓄᑦ ᑕᐃᓕᐃᖅᓄᖅᓯᒪᓂ ᑕᒪᐃᓇᖅᑐᓕᕐᓂᐅᖅᑐᓕᐅᖅᓯᒪᓂᒃ, ᐊᒃᑐᖅᑕᐅᖅᑎᑦᑕᓕᐅᖅᑐᑦ ᐅᓗᓚᐊᓇᖅᑐᒥᒃ ᓄᖅᓯᐊᕐᑐᓂᒃ ᐄᑕᓕᐅᖅᑐᓂᒃ, ᐊᓪᓚᓗ ᑲᓇᐅᔪᓐᓇᖅᑐᓂᖅᓄᑦ ᐅᓴᖏᓐᓂᐊᖅᓴᖅᑐᒥᒃ ᐊᓐᓇᐸᖏᖅᑐᑦ (ᐱᓗᐊᖅᑐᒥ Elliot Lake-ᒥ), ᑲᓇᖅᓀᓕᓐᓂᐊᖅᒥ

(ᐱᓗᐊᖏᑐᒥᖅ Beaverlodge-Γ) ᐊᓚᒪᓗ ᓄᓇᕋᓴᐊᖏᒥ (Port Radium-Γ). ᑕᒪᕆᑯᐊ ᐊᐅᓪᑕᐅᓪᓕᐅᖏᓴᓪᓚᕐᓂ ᐊᐅᓪᑕᐅᐅᓪᓕᐅᖏᑐᑦ ᒪᓪᑐᕐᖏᖅᑭᓴᖅᓯᒪᔪᓪᓕᐅᓪᓗᓂᕆ ᐊᐅᓪᕿᑎᕐᕕᒃᓴᓕ ᐊᐅᖅᓕ ᐃᓴᒪᕐᕕᐅᑎᐊᖏᖏᖅᑕᕐᑭᓴᓴᓪᓚᕐᓂ ᐊᓚᒪᓗ ᓴᐱᖅᕕᓴᓕᓵᔨᖏᖏᓪᓚᕐᓂ ᐊᐅᖅᑎᑦ, ᐊᓚᒪᓗ ᑕᐃᖅᓴᒪᓂ ᐅᑐᓗᐊᓇᖏᓪᓕᕐᑕ ᓄᖓᓴᐃᔪᑕᑐᓂᖅ ᐊᐅᓪᓚᓴᑦ ᖃᐅᔨᓴᖏᓪᓕᕐᑕ ᑐᐅᓴᐊᓇᖏᓪᓕᕐᑕ ᑐᐅᖅᓯᒪᔨᕕᓪᓕᕐᑕᑐᓂᓪᓚᕐᑕᑐᓂᓪᓗᓂᕐᑕ.

4.1.2 ᐅᑦᓗᒥᐅᓪᓕᖏᑐᖃᖏ ᐱᖏᑯᓴᓇᕆᐅᓪᓕᖏᑐᑦ

ᐃᓴᐊᑎᕆᔨᖏᓵᓂ 1960-ᑎᑦ, ᓴᓪᑕᔪᐊᖏᒥ ᓄᖓᓴᐃᔪᑕᑐᓂᓵ ᔪᓰᓂᕆᓚᒥᒃ ᓂᐅᐃᕈᒪᔨᖏᑦ ᐅᓚᒪᒃᑲᓵᓪᓕᐅᖏᓴᓪᓚᕐᓂ ᐱᓇᕆᐅᓂᖏᓵᓄᓂ, ᐊᖏᑎᓪᑎᑎᐊᖏᑕᐅᓂᖏᖏᓵᓄᑦᓗ ᓄᖓᓴᐃᔪᑕᑐᓂᖃᖏᔨᑲᑕ ᐅᓚᒪᕐᑯᑎᑦ. ᓴᐅᑦᓪᓕᖏᑦ, ᐊᖏᑎᔪᒪᓇᐅᔪᒥᒃ ᑲᓇᑕᒥ ᓂᐅᐅᑎᐊᖏᓪᓕᖏᑐᑦᑲᒃᑲᓪᓕᐅᖏᑐᓂᓪᓗᓂᕆ ᓄᖓᓴᐃᔪᑕᑐᓂᖃᖏᒃ ᐅᓚᒪᕐᑯᑎᔪᒪᓇᐅᔪᒥᒃ ᓄᖓᓴᐃᔪᑕᑐᓂᖃᖏᑦ, Pickering, Ontario-Γ, ᐃᖏᑎᕐᓴᓂᐊᓪᓕᐅᖏᓴᓪᓚᕐᖏᑦ ᐊᐅᓪᑕᐅᓂᖏᑎᑦ 1971-ᖅᑎᑎᓪᓗᒍ. 1970-ᖏᑐᓂ, ᐊᑭᖏᑎᑦ ᔪᓰᓂᕆᓚᒪᓕ ᓄᖓᓴᐃᔪᑕᑐᐃᓕ ᑯᐋᕈᓪᓕᐅᖏᓴᓪᓚᕐᓂ ᐅᖏᓚᒋᓄᓂ $43-ᓂᒃ ᐊᒥᐊᓪᑲᒃᐃᓕ ᑭᓇᐅᓴᐅᑦᓂᒃ, ᐊᑕᐅᓴᕐᓗᑦ <ᐅᑎᒧᑦ ᐅᑯᓕᐃᓇᐅᓂᓪᓗᑦ.

ᓴᓵᒃᑎᓴᔪᐟᒥ, ᐊᑭᑕᑯᒃᓯᓪᓪᑲᐊᓂᖏᑎᑦ ᔪᓰᓂᕆᓚᒥ ᓄᖓᓴᐃᔪᑕᑐᐃᓕ ᐊᑭᖏᑎᑦ ᐱᑎᐊᒃᑲᓂᓂᑭᑎᑲᓪᓕᐅᖏᑐᑦ ᐃᓴᐊᓂ 1960-ᖏᑐᓂ ᐊᒪᓚᓗ 1970-ᖏᑐᓂ, ᖃᑭᓂᖅᑐᓄᓂ, ᑕᐃᒧᒃ ᐊᒥᓴᒃᑕᓪᓂᒃ ᐱᐅᔪᓂᒃ ᐊᒪᓚᓗ ᐱᐅᔪᒪᓇᖏᓂᒃ ᓄᖓᓴᐃᔪᑕᑐᖏᖅᑐᓂᒃ ᓄᑦᓂᒃ - ᐅᓴᕐᑐᖅᑲᓂᓯᓵᓕᑐᓂ ᓴᓀᑭᓴᔪᔪᓂᒃ ᓴᓄᖓᓴᓚᐅᒧᑦ, ᐊᔪᔨᑎᑕᑐᑎᓪᓗ ᐅᓴᕐᑕᐃᓕ ᖃᔪᑕᖏᓴᓪᓚᕐᓂ ᖃᐅᔨᓵᐊᓕᐅᖏᑐᓂᒃᑐᓂᒃᓂ. Key Lake-Γ ᐅᓴᕐᖏᓂᐊᖏᖃᓕ ᐊᐅᑦᓚᐊᓕᓕᐅᖏᑐᑦ 1975-Γᒃ 1983-ᒧᑦ. ᓇᓂᔪᓇᔪᐊᖏᓂᒧᑦ ᐊᑭᓕᖅᑐᖏᑕᐅᓪᓕᐅᖏᑐᑦ ᖃᔪᑎᖏᓂᖅᐸᒋᓕᐅᖏᑐᑦ ᑕᐃᔨᔪᒪᓂ, ᐊᒪᓚᓗ ᓴᓕᔭᐅᓪᓗᓂᒃ ᐊᔪᖏᑦ ᓄᓇᒋᑐᑐᖏᖅᑐᓂᒃ, ᐃᓕᑕᒪᔭᓗᓂᒃ Midwest (1978), McClean Lake (1979), ᐊᒪᓚᓗ Cigar Lake (1983)-Γ. ᓴᓇᔭᐅᓪᓕᓪᓚᓕᓕᐅᖏᑐᑦ ᐊᒥᔪᓂᖏᖅᐸᓂᒃ 1980-ᖏᑦ ᐱᑎᐊᓕᓵᖏᑎᓪᓗᓂᕆ, ᐊᒪᓚᓗ ᑭᔪᐊᓂ, ᐊᑭᖏᑦ ᑲᑕᒃᐊᓪᓕᐊᓕᓚᐅᖏᑐᑦ ᐊᒥᔪᑦᑎᓴᐅᔨᓂ ᒪᓪᑐᑐᓂ ᐊᖏᕐᕋᔪᓂ, ᐊᔪᐃᓭᒃ ᑲᑕᑯᔪᑎᒃ ᖏᑐᓂᑭᖅᑐᓂ $7, ᓴᓇᐊᓚ 2001_Γ, ᐊᑐᐃᓴᓇᐅᓂᖏᑦ ᐱᓵᔨᑕᐅᓪᓗᓂᒃ ᔪᓰᓂᕆᓚᒥ ᓄᖓᓴᐃᔪᐱᑦᑐᓂ, ᐋᓴᖏᑕᐅᓕᐅᖏᓂᖏᑐᓄᓂ ᖏᓪᔪᐊᒥᐅᓂ ᐅᓇᑕᑭᑎᖏᑕᐃᓕ.

ᑭᓯᓂᕐᑎᐊᖏᓂᓂ ᑲᒪᓵᓂᓯᒪᓕᐅᖏᑐᑎᑎᒃ 1988-Γ[15], ᑲᒥᑯᑲᑯᑦ Cameco ᓇᓂᔪᓕᐅᖏᑐᑦ ᐱᐅᔨᒪᓇᖏᓂᒃ McArthur River-Γ ᓄᓇᒥᐅᑕᓂᒃ, ᓴᓇᑭᐊᓕᓕᐅᖏᑐᓕᕆᓂ 1999-Γ

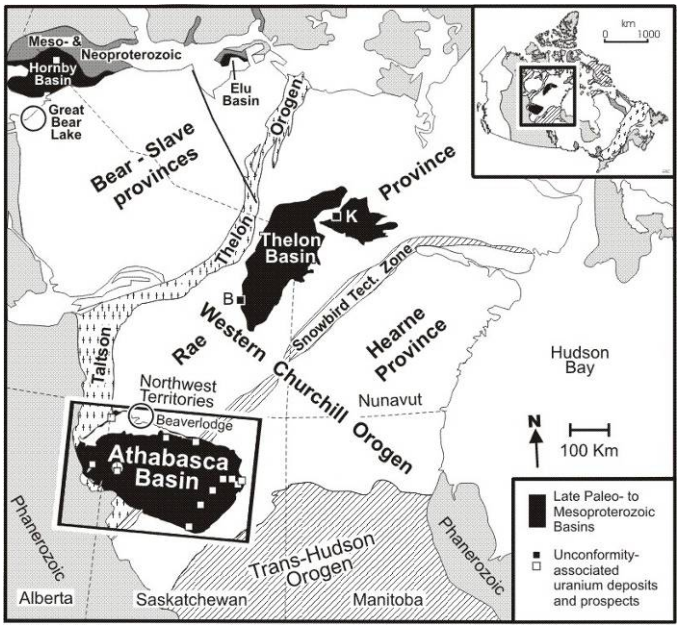
[15]ᐃᐅᓪᑕᖏᑐᑐ ᓄᓯᔪᐃᓕᑐᓂ ᓕᒥᑎᓂ Eldorado Nuclear Limited ᐃᓕᖏᑦᓗ (ᑕᐃᔨᐅᓪᓕᐅᖏᑐᑦ ᐃᐊᓪᑕᖏᑐᑐᒥ ᑎᔪᒥᐊᖏᑲᑕᐅᔨᖏᑦ ᐅᔨᓴᖏᓂᐊᖏᓴᓕᒃ ᐊᒪᓚᓗ ᔪᖏᑲᓕᑎᓇᓕᒃ (Eldorado Mining and Refining-ძᑦ) ᐊᒪᓚᓗ ᐃᓕᑎᔨᖏᑦ ᐃᐊᓪᑕᖏᑐᑐ ᓱᓕᔪᔪᓵ , ᑲᑎᓕᐅᖏᑐᑦ ᓴᓵᒃᑎᓴᔪᐟᒥ ᐅᔨᓴᖏᓂᐊᖏᓴᓪᓚᕐᓂ ᐱᓪᓕᓕᐊᓂᓪᓚᓕᓕ ძᐊᐅᓱᓴᔨᑯᓂᒃ (SMDC), ძᐊᐋᓇᓴᐅᔨᑦ ᐱᓴᑎᑎᑲᐅᔨᑦ ᓴᓵᒃᑎᓴᔪᐟᒥ ᑲᓪᒪᓴᑯᓂᖅᓄᓂ,

ᐊძᓂᒪᓚᒃ ዖሥᐊᓂ ᖃᑲᔨᓴᖅᑕᐅᓕᐅᖅᓭᑎᒃ. ᓴᓇᔪᑐᓕᖅᑐᑦ ᔪᐠᓂᓂᒪᒥᒃ ᓄᖓᔪᐃᐃᑦጋᓂᒃ ᐅᓴᖏᓂᐅᖏᕕᖏᓂ ᑲᓇᑕᒥ. ᐊዖᖏᑦ ᔪᐠᓂᓂᒪ ᒥᓐᓇᒥ ᒪᔪᖅᓭᒪᓕᓕᖅᑐᖅ ᖃᓂᑎᒃᖏᕕᓄᑦ $60 ᐊᑕᓭᖏᑦ <ᐅᑎᒧᑦ ᐅᖏძᒪᐃᓂᓂᒧᑦ, ᑕᐃᒪᐃᓂᖏᕕᓄᑦᓗ ᓄᖓᔪᐃᐃᑐᒃ ᓇᓂᓭᔪᒪᓗᐊᑕᓭᑕᐅᑦᓗᓂ ᒥᓐᓇᐅᔪᖅᖅ.

4.2 ᓄᖓᔪᐃᐃᑦᑐᑦ ᔪᠰᓂᓂᒪᒥ ᓄᓇᕗᒪᒥ

4.2.1 ᑕᒪᖏᒃ ᑕძᓪᓗᑎᑦ

ᓄᓇᕗᒪᒥ, ᐊᖏᑎᔪᒪᓚᖏᒥ ᖃᓂᖏᕕᓭᓭᒪᓕᖏᒪᑕ 1970-ᖏᑎᓂ ᐊᒻᒪᓗ 1980 ᐱᑎᐊᓕᓴᖏᖏᑎᓂ. ᐊᖏᑎᒋᑎᒻᒪᓰᑦ ᓄᓇᐃᑦ ძᖃᖏᓂᖏᒥᑦᑐᑦ Thelon Basin (ᐊᐢᓴᓕᐅᖅᑕᐅᓭᒪᔪᖅ 1)



ᓭᓕᒋᓐᖏᑦ ᐃᓕᓴᕐᓂᖅ[16] Hornby Bay Basin-ᒥ ᐃᒪᐃᓐᓂ ᐊᒻᒪᓗ ᐃᓕᓐᓂ ᓄᓇᐃᑦ ᖃᓂᖏᕕᐅᓂᐊᖅᑐᒃᖏᕕᒃ ᓇᓗᓇᐃᒃძᑦᑎᖅᑕᐅᓕᐅᖅᓭᑦ, ᖃᓂᖏᕕᐅᓪᓗᑎᓗ ᐊᒥᓱᓄᑦ ᐊᖏᑎᔨᓄᑦ ᖃᓂᖅᑎᐅᕐᓯᓗᓄᑦ ᑲᒪᐸᓂᐅᔨᓄᑦ. 1970-ᖏᑦ ᐱᑎᐊᓕᓴᖅᑎᓪᓗᑎᑦ, Urangesellschaft Canada Limited (UG-ძᑦ) ᓇᓂᔪᓕᐅᖅᑐᑦ ᐱᑐᖅᒪᒪᓚᖏᓂᒃ ᓄᖓᔪᐃᐃᑦᑐᖅᑲᖅᓭᐅᔨᓂᒃ ᓄᓇᒥᒃ, ᑕᐃᖁᐅᓕᓕᐅᖅᑐᒥᒃ "ᑭᒃᓚᐃᒃ"-ᒥᒃ Andrew Lake-ᒥ ᐊᒻᒪᓗ End Grid-ᒥ. ᐅᖅᑲᐅᔪᖏᒥᔨᑦ ᑭᒃᓚᐃᖏᒥ-ᔪᓴᓵᒥᓗ Sissons-ᒥᓗ ᓴᓇᖁᐅᔨᑦ ᑕᒃძᐊ ᑎᑎᖅᑲᐃᑦ ᑭᖓᔪᐊᓂ.

ᐊᐢᖓᔪᐊᖅ 1. ᓄᓇᐃᑦ ᐃᒪᐃᓕᓗ ᖃᒃᓄᐃᓕᖏᓂᖏᑦ (ᑕᐃᔨᔪᒪᓂᒃ ᐊᖅᑦᔪᖏᑦᑐᓂ Proterozoic-ᒥ) ᑲᓇᑕᐅᔨ ᐅᐊᓕᓂᖏᓂ ᐱᑕᖅᑐᐃᓐᓇᒪᐊᖅᖅᑐᓂ ᐅᖅᕿᓂᐅᑐᖅᑲᒪᒪᓚᖏᓂᒃ ᓄᖓᔪᐃᐃᑦᑐᖅᑲᖅᖅᑐᓂᒃ. "K"-ᓕᔪᒪᔨᑦ ᑐᑭᖅᖅᑐᑦ "ᑭᒃᓚᐃᒃ"-ᒥᒃ: ᓇᒃᑭᖏᓐᓄᖅᓂᓕᖅᑐᑦ ᑕᒪᒃძᐊ: ᐱ ᓴᐅᓴᓵძᑦ Jefferson-ძᑦ ᐊᔪᖏᑦᓗ.

ᓴᖅᑭᑕᐅᔪᒪᔨᖅ ᓇᖏᓂᖅᖅᑐᑐᒃ ᐱᖓᖅᑎᑦᑎᐊᔨᑕᐅᑦᓗᑐᑐᒃ ᑲᓇᑕᒥ ᐅᖅᕿᖏᐊᖅᓂᖅᓭᑦ ᐅᓪᓗᒡᓂᔪᑎᑦᑎᓗᓗᑦ ძᐊᐳᓴᓵᒃძᓂᒃ, ᑲᒥᒃძᒃძᓂᒃ Cameco.

[16]ᐱᓕᓚᐊᖓᓗᐊᓚᐅᖅᑐᑦ ᓄᓇᐃᑦ ᓄᐃᑕᔪᖅᑲᖅᑐᑦ ᐅᖅᕿᖏᒃ ᐱᑐᖅᒪᒪᓚᖏᓂᒃ ᐃᒪᐃᓕᓂᒃ ᑲᓇᑕᒥ ᐅᖅᕿᖏᓂᒃ.

1990-ᖏᓐᓂ, ᐊᑦᑎᒃᑐᒻᒪᕆᖕᓂ ᐱᑕᕐᑲᓚᐅᕐᓂᖏᑦ Thelon Basin ᐃᒪᕙᖕᒐᓂ, ᐃᓱᒪᒋᔭᐅᖏᓐᓂᖅᓴᐅᓚᐅᖅᑐᖅ ᓄᑖᓂᒃ ᓇᓂᔭᐅᔪᓂᒃ Athabasca-ᒥ ᐊᖓᓗᖅᑐᑦ ᓇᓂᔭᐅᓂᖏᓐᓂ ᓴᖐᑦᓱᐋᓐᒦᑦᑐᑦ. ᑕᒪᓐᓇ ᓇᓂᔭᐅᔪᖅ ᐊᒻᒪᓗ ᐊᑭᑭᒡᓕᒋᐊᖅᓯᒪᓂᖏᑦ ᓄᖑᔪᐃᑦᑐᐃᑦ 1990 ᐃᓱᐊᓂ, ᐊᒻᒪᓗ ᓇᓗᓇᕐᓂᖏᓐᓄᑦ ᒪᓕᒐᐃᑦ ᖃᓄᐃᓕᖓᓂᐊᕐᒪᖔᑕ ᐱᔾᔪᑕᐅᓕᓚᐅᖅᑐᑦ ᓇᓂᓯᓇᓱᐊᖅᑏᑦ ᑲᒪᑉᐸᓂᖏᑦ ᓄᕐᑲᖅᑎᑦᑎᑲᐃᓐᓇᕐᓂᖅ ᕿᓂᕐᕙᕐᑲᕐᓂᕐᒥᓂᒃ ᑕᐅᕙᓂ ᓄᓇᐅᔪᓂ. ᕿᓂᖅᑐᑦ Hornby Bay Basin-ᒥ ᓄᕐᑲᑐᐃᓐᓇᓕᓚᐅᖅᑐᑦ ᑕᐃᔅᓱᒪᓂ.

ᐊᖏᔪᒻᒪᕆᐅᕗᖏ ᐊᓯᔾᔨᖅᓯᒪᓂᖏᑦ, ᐊᑭᑦᑐᕆᐊᖅᓱᑎᒃ ᐊᑭᖏᑦ ᔪᕉᓂᔭᒻ ᓄᖑᔪᐃᑦᑐᐃᑦ ᐊᑭᑭᑦᑐᒪᕆᐅᓚᐅᖅᑐᓂᒃ, ᐱᒋᐊᓕᓵᖅᑐᓂ 2001-ᒥ ᓴᕿᑦᑎᔾᔪᑕᐅᓚᐅᖅᑐᑦ ᐊᒥᓘᒻᒪᕆᖕᓂᖏᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᕿᓂᖅᑐᓂ, ᓯᑕᒪᐅᓕᖅᑐᓂ ᐊᕿᒍᓂ, ᐊᒥᓱᑦ ᕿᓂᕐᕙᕐᑲᕐᓂᐊᕐᓂᕐᒥᓂᒃ ᐃᓕᐅᕐᑲᐅᓯᒪᓕᖅᓱᑎᒃ ᓇᓗᓇᐃᒃᑯᑖᕐᓂᒃ ᐊᒻᒪᓗ ᑎᒎᖅᑲᐃᓂᖏᓐᓂ ᕿᓂᕐᕙᕐᑲᕈᓐᓇᐅᑎᓂᒃ ᒥᑭᓐᓂᖅᓴᓂᒃ. ᐊᒻᒪᓗ, ᓇᓗᓇᕈᓃᖅᐸᓪᓕᐊᓕᓚᐅᖅᑐᑦ ᑭᒡᒐᕙᖕᒥ ᓴᓇᔭᐅᔪᒪᔪᑦ, ᐆᒻᒪᖅᐸᓪᓕᐊᓕᓚᐅᕐᒥᔪᑦ.

4.2.2 ᑭᒡᒐᕙᖕᒥ/ᓯᓴᓐᓴᓂᓗ Sissons ᓴᓇᔭᐅᔪᒪᔪᑦ ᖃᓂᒋᔭᖕᒐᓂ ᖃᒪᓂᑦᑐᐊᖅ

ᐅᓪᓗᒥᒧᑦ, ᓄᖑᔪᐃᑦᑐᒥᒃ ᔪᕉᓂᔭᒻᒥᒃ ᐅᔭᕋᖕᓂᐊᖅᑐᖅᑲᖅᓯᒪᖏᑦᑐᖅ, ᐊᑕᐅᓲᓐᓇᐅᓪᓗᓂᓗ ᐱᒋᐊᖅᑎᑕᐅᔪᒪᓚᐅᖅᑐᖅ ᐅᔭᕋᖕᓂᐊᕐᕕᒃ, ᓛᓐᓇᐅᓕᖅᑐᖅ ᓄᓇᒥ ᖃᐅᕝᕙᒪᔭᐅᔪᒥ ᓄᓇᕗᒻᒥᒃ. ᑭᒡᒐᕙᐅᓂᕋᖅᑕᐅᔪᖅ ᓴᓇᔭᒃᓴᖅ, ᐊᒥᓱᕋᖕᒪᕆᖕᓂ ᔪᕉᓂᔭᒻᖃᖅᑐᖅ ᓄᖑᔪᐃᑦᑐᓂᒃ ᓄᓇᒥ, 75 ᑭᓈᒥᑐᓂᒃ ᐅᖓᓯᖕᓂᓕᒃ ᖃᒪᓂ'ᑐᐊᕐᒥᒃ, ᒪᕿᖕᓂᒃ ᓴᓇᕙᐅᔪᒪᔪᖅ: ᑭᒡᒐᕙᐅᓂᕋᖅᑕᐅᔪᒥ, ᓚᓐᓇᐅᔪᖅ 99%-ᒥᒃ ᓇᖕᒥᓂᕆᔭᐅᓕᖅᑐᖅ AREVA Resources Canada Inc.-ᑯᓐᓄᑦ[17], ᐱᕐᑯᑎᑦᑕᖅᑐᓂᒃ ᑭᒡᒐᕙᖕᒦᑦᑐᓂᒃ ᓄᓇᒥᐅᑕᓂᒃ, ᐊᒻᒪᓗ Sissons-ᒦᑦᑐᓂ ᓴᓇᔭᒃᓴᓂᒃ (ᓇᖕᒥᓂᕆᔭᐅᔪᑦ 50% Areva-ᑯᓐᓄᑦ, ᑎᒍᒥᐊᓕᕆᑦᑐᑎᒃ Andrew Lake-ᒥ ᐊᒻᒪᓗ End Grid-ᒥᑦᑐᓂ ᓄᓇᒥᐅᑕᓂᒃ. ᓄᓇᐃᑦ ᐅᔭᕋᖕᓂᐊᕈᓐᓇᕐᓂᕐᒧᑦ ᐊᑐᖅᑐᐊᕈᑏᑦ ᐱᖃᑕᐅᑎᑦᑎᔪᑦ ᑖᒃᑯᓂᖓ ᒪᕿᖕᓂᒃ ᓄᓇᒥᐅᑕᖅᑐᓂᒃ, ᑭᖑᓂᐊᓂ ᓂᕈᐊᖅᑕᐅᓚᐅᖅᑐᑦ ᐃᓄᖕᓄᑦ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᑦ ᐱᖁᑎᒋᔭᐅᑉᓗᑎᒃ ᐃᓄᖕᓄᑦ, ᓂᕈᐊᖅᑲᐅᑉᐸᓪᓕᐊᓕᑎᑉᐳᒋᑦ ᓄᓇᓂᒃ ᐱᒋᓂᐊᖅᑖᖏᓐᓂᒃ. (ᐊᑐᖅᑐᐊᕈᑏᑦ ᑲᔪᓯᑎᑕᐅᒐᓗᐊᖅᓱᑎᒃ ᐊᑖᒍᑦ ᑲᓇᑕᒥ ᐅᔭᕋᖕᓂᐊᕐᓂᕐᒧᑦ ᒪᓕᒐᐅᑉᐳᑐᐃᑦ, ᐃᓄᓕᕆᔾᔪᖅᑳᑦ ᐅᑎᖅᑎᑦᑎᓂᐊᖅᑐᑦ ᑕᒪᐃᓐᓂᒃ ᐃᓄᐃᑦ ᓄᓇᖏᓐᓂ ᐲᔭᐃᕙᐅᓂᖏᓐᓄᑦ

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[17] ᔫᓐ 2005-ᒥ, "AREVA Resources Canada Inc." ᑲᒪᑉᐸᓂᖓ, ᐃᓇᖏᖅᓯᓚᐅᖅᑐᖅ "COGEMA Resources Inc."-ᑯᑦ ᑲᒪᑉᐸᖓᓂᒃ, ᒪᓕᒐᖅᑎᒍᑦ ᐊᑎᖅᑖᕆᑦᑐᒍ ᑲᓇᑕᒥ ᐅᔭᕋᖕᓂᐊᕐᕕᐅᓂᖓ ᑎᒥᕐᑯᑎᒋᔭᐅᔪᓂ AREVA-ᑯᓐᓄᑦ ᑲᒪᑉᐸᓂᐅᔪᓄᑦ ᐱᕐᑯᑎᒋᔭᐅᔪᑦ.

ᐊᑭᓕᐅᓯᐊᓂᒃ ᑲᑎᖅᓱᖅᑕᐅᓯᒪᔪᓂᒃ ᓴᓇᔭᐅᓂᖕᒋᓐᓄᑦ ᓄᖑᔪᐃᑦᑐᑕᐃᑦ ᑕᒫᓐᖓᑦ ᓄᓇᒥᒃ, ᑐᓐᖓᕕᒃᑯᓐᓄᑦ.

ᑕᒪᐃᓐᓂ ᓄᓇᒥᐅᑕᐃᑦ ᐱᖓᓱᑦ ᐃᓗᓕᕐᑲᖅᑐᑦ, ᐊᑕᔪᑦ ᑭᒡᒐᕕᒃ-ᓯᕗᓐᕝᑯᓐᓄᑦ ᓴᓇᔭᒃᓴᓂ, ᕐᑲᓂᒋᔭᖕᒋᓃᑦᑐᑦ ᐅᕐᑯᒪᐃᓐᓂᕐᑲᖅᑐᒥᒃ 50,000 tonnes ᑖᕝᓂᒃ, (ᕐᑲᓂᒋᔭᖕᒋᑦ 120 ᒥᓕᔭᓐ ᐸᐅᑏᑦ pounds ᐅᑯᓂᖕᒐ ᐱᑕᓖᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ) ᐊᖕᒋᓂᕐᑲᖅᑐᓂᒃ ᕐᑲᓂᒋᔭᖕᒋᓐᓂ 0.4% ᔪᕗᓂᔮᒥᒃ ᓄᖑᔪᐃᑦᑐᒥᒃ. 1986-ᒥ ᐊᔪᕐᓇᕋᔭᖕᒋᒻᒪᖕᖏᑦ ᕐᑲᐅᔨᕙᖅᑕᐅᔪᕐᑲᕐᒪᑦ ᓴᓇᔭᐅᔪᓂᒃ, ᐃᓱᒪᒋᔭᐅᓚᐅᖅᑐᑦ ᓄᓇᒥᐅᑕᐃᑦ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᓇᔭᖅᑐᑦ ᑕᒪᒃᑭᖅᑕᐅᓗᑎᒃ ᐱᕐᑯᓯᐅᕚᒃᑐᑦ ᐅᔭᕋᖕᓂᐊᖅᑐᓂᒃ, ᓄᓇᒥ ᒪᑐᐃᖕᒐᔪᒥ ᐊᒻᒪᓗ ᓄᓇᐅᕽ ᐃᓗᐊᓃ ᑕᐃᒫᒃ ᓱᕐᑲᓕᑎᖅᑕᐅᓯᒪᑦᑎᐊᖅᑐᑦ ᐊᒥᐊᒃᑯᐃᑦ ᓅᑕᐅᔪᓐᓇᕐᓂᐊᕐᒪᑕ ᐅᓯᔭᐅᓗᑎᒃ ᓄᓇᒃᑰᕈᑎᑎᒎᑦ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒥᒃ, ᕐᑲᒪᓂ'ᑐᐊᕐᒨᑦ, ᐅᒥᐊᕐᔪᐊᒃᑰᕐᓂᐊᕐᒪᑕ ᑕᐃᑲᓐᖓᑦ.

1988-ᒥ, UG-ᑯᑦ ᐱᔭᕇᖅᓯᓚᐅᖅᑐᑦ ᐊᔪᕐᓇᕋᔭᖕᒋᒻᒪᖕᖏᑦ ᕐᑲᐅᔨᓴᐃᓂᕐᒥᒃ ᐊᒻᒪᓗ ᐱᓕᕆᐊᓕᓚᐅᖅᓯᒪᔪᑦ ᐊᕙᑎᒥᒃ ᕐᑲᐅᔨᓴᖅᑕᐅᑎᑦᑎᓂᕐᒥᒃ. ᓄᓇᓕᖕᒥᐅᑦ ᐊᒻᒪᓗ ᐃᓄᑐᐃᓐᓇᐃᑦ ᐊᒻᒪᓗ ᑎᒥᐅᔪᑦ ᑕᐅᕙᓂ ᐊᕕᒃᑐᖅᓯᒪᔪᒥ, ᐊᓯᖕᒋᓐᓂᖕᖐᖅᑐᓪᓗ ᑲᓇᑕᒥ ᐅᕐᑲᐅᓯᕐᑲᓚᐅᖅᑐᑦ ᐃᓱᒪᓘᑎᒋᔭᒥᓂᒃ ᑕᒪᐃᓐᓂ ᐊᕙᑎᓕᓇᓂᕐᒥᒃ ᕐᑲᐅᔨᓴᖅᑕᐅᔪᓂ ᐊᒻᒪᓗ ᕐᑲᓄᐃᓕᖓᓇᔭᕐᓂᖕᒋᓐᓂᒃ ᓴᓇᔭᐅᓇᔭᖅᐸᑕ ᐱᓕᕆᐊᒃᓴᐃᑦ. ᒦᔾᔨ 1990-ᒥ, ᓂᕈᐊᓚᐅᖅᓱᑎᒃ ᐃᓄᐃᑦ ᐊᒥᓲᓂᖅᓭᒪᕇᑦ ᕐᑲᒪᓂ'ᑐᐊᕐᒥ ᐊᑭᕋᖅᑐᓚᐅᖅᑐᑦ ᓴᓇᔭᐅᓂᖕᒐᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᕈᑏᑦ, ᑕᐃᓇ ᐊᐅᓚᑦᑎᔨᐅᔪᖅ UG-ᒥᒃ ᐃᓱᒪᓕᐅᓕᓚᐅᖅᑐᖅ ᓄᕐᑲᖕᒐᑎᑲᐃᓇᓕᖅᓱᓂᐅᒃ ᓴᓇᔭᐅᓇᔭᖅᑐᖅ, ᓇᓗᓇᐃᖅᑕᐅᓯᒪᖕᒋᑦᑐᖅ ᕐᑲᓄᑎᒋ ᓄᕐᑲᖕᒐᓂᐊᕐᓂᖕᒐ.

ᐃᓚᑖᕆᔭᐅᒐᒥᒃ ᐊᐅᓚᑦᑎᔨᐅᕐᑲᑕᐅᓂᖅ ᓴᓇᔭᒃᓴᓄᑦ 1993-ᒥ, AREVA-ᑯᑦ (ᕐᑲᐅᔨᒪᔭᐅᓚᐅᕐᒥᔪᑦ COGEMA Resources-ᓂᒃ, ᑕᐃᔅᓱᒪᓂ) ᐃᑰᑕᖅᑎᑦᑎᒋᐊᓕᓚᐅᖅᑐᑦ ᐊᓯᖕᒋᓐᓂᓗ ᕿᓂᕐᕈᑎᓂᒃ ᐱᓕᕆᓪᓗᑎᒃ Sissons-ᒥ ᓴᓇᔭᒃᓴᓂᒃ, ᑎᑭᓪᓗᒍ 1997-ᒧᑦ, ᑭᖑᓪᓕᖅᐹᕐᒥ ᐊᕐᕆᒎᓚᐅᖅᑐᖅ ᐱᓕᕆᕕᐅᓚᐅᖅᑐᖅ ᓄᓇᒥ ᑲᒪᓂᖕᒐᓄ ᓄᓇᕗᒻᒥ. ᑕᐃᔅᓱᒪᓂ ᐊᕐᕆᒍᒥ, ᑲᒪᓂᒃᑯᑦ ᐱᔭᕇᖅᓯᓚᐅᖅᑐᑦ ᐊᔪᕐᓇᕋᔭᖕᒋᒻᒪᖕᖏᑕ ᕐᑲᐅᔨᓴᐃᓂᕐᒥᒃ, ᑐᑭᑖᓚᐅᖅᑐᑦ ᐃᓱᒪᒋᔭᐅᓚᐅᖅᑐᑦ ᓈᒻᒪᖕᒐᔭᖕᒋᓂᖕᒋᓐᓂᒃ, ᕐᑲᓄᐃᓕᖕᒐᓂᖕᒋᑦ ᐃᓱᒪᒋᓪᓗᒋᑦ ᑕᐃᔅᓱᒪᓂ. 2000-ᒥ, ᑲᒪᓂᒃᑯᑦ ᓅᑎᒋᐊᓕᓚᐅᖅᑐᑦ ᑕᒪᐃᓐᓂᒃ ᐱᕐᑯᑎᓂᒃ ᑕᐅᕙᖕᒐᑦ, ᑕᒪᕐᒥᒡᓗ ᐱᕐᑯᑎᖕᒋᑦ ᓴᓇᕈᑎᖕᒋᓪᓗ ᓱᓇᓕᒫᖕᒋᓪᓗ ᐱᑕᖅᑲᕈᓐᖏᑦᑐᑦ ᑕᐅᕙᓂ.

ᐊᒃᑑᐸᒥ 2006-ᒥ, AREVA-ᑯᑦ ᒪᑐᐃᖅᓯᓚᐅᖅᑐᑦ ᐱᓕᕆᕕᒃᓴᒥᒃ ᕐᑲᒪᓂ'ᑐᐊᕐᒥ. ᐊᑭᖕᒋᑦ ᔪᕗᓂᔮᓪ ᓄᖑᔪᐃᑦᑐᓄᑦ, ᐱᔾᔪᑕᐅᔫᔮᖅᑐᑦ ᐱᔪᒪᔭᐅᓂᖕᒋᓐᓂ ᑭᒡᒐᕕᖕᒌᑦᑐᑦ ᓯᕗᓐᕝᒥᓗ ᓄᓇᒥᐅᑕᐃᑦ, AREVA-ᑯᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᖃᒃᑲᓐᓂᖅᑐᒃᓴᐅᓕᖅᑐᑦ ᐱᒋᐊᖅᑎᑦᑎᔪᒪᓂᖅ ᓄᓇᕗᒻᒥ ᓯᕗᓪᓕᖅᐹᕐᒥᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᐅᓂᐊᖅᑐᒥᒃ ᔪᕗᓂᔮᒥᒃ.

4.3 ᓄᖑᔪᐃᑦᑐᓂᒃ ᔪᓇᓂᔭᒻᒥᒃ ᕿᓂᕐᓂᖅ, ᐅᔭᖄᓂᐊᕐᓂᖅ, ᐊᒻᒪᓗ ᓯᖅᑲᑎᓇᓂᖅ

<u>ᐊᐅᓚᓐᓂᖓ ᐅᔭᖄᓂᐊᕐᕕᐅᑉ ᐃᖏᕋᕙᓪᓚᐊᓂᖓᓂ</u>

ᐊᐅᓪᓚᓐᓂᖓ ᐅᔭᖄᓂᐊᕐᕕᐅᑉ ᐃᓱᒪᒋᔭᐅᔪᓐᓇᖅᑐᖅ ᐊᒥᓱᓂᒃ ᐃᓚᖅᑲᕐᓂᖓᓂᒃ: ᕿᓂᕐᓂᖅ, ᓄᓇᒥᒃ ᕿᒥᕈᐊᓚᐅᖅᑐᑎᒃ, ᓇᓂᓯᓇᓱᐊᖅᐸᓪᓚᐊᓕᕝᕐᓂᖅ, ᑲᔪᓯᑐᑎᒃ ᑕᑉᐸᖓᑦ, ᖃᐅᔨᓴᕐᓂᕐᒥᒃ ᖃᓄᖅ ᐱᑕᖅᑲᖅᑎᒋᖕᒪᖔᑦ, ᓴᓇᕙᓪᓚᐊᓂᖅᓄ, ᐃᓚᖅᑲᖄᔭᖅᑐᖅ ᓴᓇᔭᐅᓂᖓᓂᒃ ᐅᖄᓂᐊᕐᕕᒃᓴᖅ; ᐅᔭᖄᓂᒃ ᐲᔭᐃᓚᓇᓕᕐᓂᖅ, ᐊᒻᒪᓗ ᓯᖅᑲᑎᓇᓂᖅ; ᐊᒻᒪᓗ ᓴᓗᒻᒪᖅᓴᐃᓂᖅ, ᐅᑎᖅᑎᑎᐅᖃᐃᓂᕐᓗ ᐊᑐᕈᓃᖅᑐᓂᒃ, ᑭᖑᓂᐊᓂᓗ ᖃᐅᔨᓴᖅᑕᐅᕙᓪᓚᐊᖅᑭᓐᓇᕐᓂᖅᑭᓐᓂᒃ.

ᓇᓪᓚᑐᐃᓐᓇᖅᑎᑦ ᑖᒃᑯᓇᓂ ᐊᐅᓚᑕᐅᔪᓂ, ᐊᒃᑐᖅᑕᐅᓐᓇᖅᑎᑦᑐᑦ ᐊᖏᓗᐊᖅᑐᒥᒃ ᐆᑕᕐᓇᖅᑐᖅᑲᕐᓂᖅᑭᓐᓂᒃ, ᐅᓗᓇᐊᓇᖄᔭᖅᑐᓂᒃ ᑎᒥᒧᑦ ᐱᓕᓇᐃᑦ ᐃᓄᐃᓪᓗᓐᓃᑦ. ᐃᓱᒪᓘᑕᐅᓗᐊᖄᔭᖅᐳᖅ ᑕᒪᒃᑯᓇᓂ ᑕᒪᐃᓐᓂ ᐊᑯᓂᓗᐊᖅ ᐱᓕᓇᒍᑎᒃ ᑕᕝᕙᓂᑦᓴᐃᓐᓇᖅ. ᐅᖅᑲᐅᓯᓇᓂᐊᖅᑕᕗᑦ ᑕᒪᒃᑯᐊ ᐱᓕᓇᐊᖑᕙᓪᓚᐊᖅᑲᑦᑕᕐᓂᕐᒋᑦ ᐅᓂᒃᑳᑦᑎᐊᒃᑲᓐᓂᕐᓗᒋᑦ.

<u>ᕿᓂᕐᓂᖅ/ᓇᓂᓯᓇᓱᐊᕐᓂᖅ</u>

ᕿᓂᕐᓂᖅ ᒪᕐᕈᐃᓕᖅᑲᖓᖅᑲᑦᑕᕐᒪᑦ - ᐱᒋᐊᓕᕌᑦᑎᐊᖅᑐᓂᒃ ᓇᓂᓯᓇᓱᐊᖅᑐᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᖅᑕᐅᓂᖏᑦ ᐱᑕᖃᑐᐃᓐᓇᓇᐊᓖᑦ ᐅᔭᖄᐃᑦ, ᑕᐃᔭᐅᖅᑲᑦᑕᕐᒥᔪᑦ ᓄᓇᒥᐅᑕᓂᒃ ᖃᐅᔨᓴᐃᓂᖅ. (ᑖᒃᑯᓇᓂ ᑕᐃᔭᓂᐊᖅᑕᕗᑦ ᑑᓪᓕᓇᔭᐅᔪᖅ ᕿᓂᕐᓂᖅ ᖃᐅᔨᓴᐃᓂᐅᓂᖄᕐᓗᒍ). ᔪᓇᓂᔭᒻᒥᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᕿᓂᖅᑐᑦ ᐊᔾᔨᑐᐃᓐᓇᑲᓴᐅᕗᑦ ᐊᓯᖏᓐᓂᒃ ᕿᓂᕐᓂᐅᔪᓂᒃ ᓴᕙᖄᔭᒃᓴᓕᖕᓂᒃ, ᐱᖏᑐᑐᓪᓗᑎᒃ ᓴᓇᕿᑎᑦ ᐊᑐᖅᑕᐅᔭᓇᐊᖅᑲᖅᑐᑦ - ᓱᕐᓗ ᓈᓚᐅᑦᑎᒃᑯᑦ ᕿᓂᕈᑎᖅᑲᕐᓂᖅ, ᐊᒻᒪᓗ ᖃᐅᔨᓴᖅᑕᐅᖅᑲᑦᑕᕐᓂᕐᒋᑦ ᐅᔭᖃᐃᑦ ᐊᑐᖅᑕᐅᓪᓗᑎᒃ ᓄᐃᑕᔪᓂᒃ ᐆᑕᕐᓇᖅᑐᖅᑲᕐᒪᖔᑕ ᖃᐅᔨᓴᕈᑏᑦ - ᐊᐅᓚᔪᒥᒃ ᐊᐅᒪᒃᓴᖅᑲᖅᑐᑐᖅᑲᐅᓂᕐᒋᓐᓂᒃ ᓄᓇᐃᑦ ᐅᕙᓃᓐᓂᑦ ᐅᔭᖄᐃᑦ ᐲᑕᐅᓯᒪᔪᑦ ᐆᒃᑐᖃᑕᖅᐅᓂᐊᕐᒪᑕ.

ᑕᒪᕐᒥᑲᓴᒃ ᕿᓂᕐᓂᐅᔪᑦ ᒥᑭᔫᒪᓇᕐᒥᒃ ᐱᑕᖅᑲᕐᒋᑦᑐᒥᒡᓗᓐᓃᑦ ᓱᕈᕐᓇᖅᑐᖅᑲᖅᐳᑦ ᑎᒥᒧᑦ ᐱᓕᓇᕐᓂ, ᐊᕙᑎᒥᓗᓐᓃᑦ. ᑭᓯᐊᓂ, ᐱᓕᓇᕐᐅᔪᖅ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᖅᑐᖅ ᓄᖑᔪᐃᑦᑐᒧᑦ, ᕿᑐᕐᖁᐅᖅᓯᒪᔭᕐᒋᓐᓄᑦᓗ ᐆᑕᕐᓇᖅᑐᓕᕐᓄᑦ ᐊᒃᑐᖅᓯᒍᑎᒃ ᐅᔭᖄᓂᒃ ᐲᖅᑕᐅᓯᒪᔪᓂᒃ ᐆᒃᑐᒐᒃᓴᓂᒃ, ᐊᒻᒪᓗ ᐃᑰᑦᑕᐅᔪᒥᒃ ᐊᒎᖅᑲᖅᑕᐅᓯᒪᔪᓂᒃ ᓄᓇᒥᒃ. ᐃᓱᒪᓘᑕᐅᖅᑲᑦᑕᕐᒥᔪᑦ ᐊᐅᓚᔪᑦ ᐊᐅᒪᒃᓴᐃᑦ ᐃᓕᔭᐅᔪᓐᓇᕐᓂᕐᒋᑦ ᓄᓇᐅᑉ ᖄᖓᓄᑦ ᐅᕙᓗᓐᓃᑦ ᐃᒪᖅᑲᖅᕕᐅᔪᓄᑦ ᐲᔭᖅᑕᐅᓂᕐᒋᓐᓂ ᐃᓂᖅᑯᑐᖅᑲᕐᒥᓂᒃ ᐅᕙᓗᓐᓃᑦ ᐃᑰᑦᑕᐅᔪᓂᒃ ᐊᒎᖅᑲᖅᑕᐅᔪᓂᒃ. ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᐅᔾᔮᖅᑐᖅᑕᐅᑦᑎᐊᓇᐊᖅᑲᖅᑐᑦ ᓴᐳᔾᔭᐅᓯᒪᑦᑎᐊᕐᓗᑎᒃ ᐱᓕᓇᓃᑦ/ᓴᓇᓃᑦ ᐊᒻᒪᓗ ᐊᕙᑏᑦ.

<u>ᐅᔭᕆᓐᓂᐊᕐᓂᖅ</u>

ᑕᐃᒫᒃᓴᐃᓐᓇᖅ ᕿᓂᕐᓂᕐᒥᒃ, ᓄᒍᔪᐃᑦᑐᓂᒃ ᔪᙱᓂᔭᒻᒥᒃ ᐅᔭᕆᓐᓂᐊᕐᓂᖅ-ᐱᕋᑕᐅᔫᓐᓇᖅᑐᑦ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᑦ, ᐊᒻᒪᓗ ᓄᓇᐅᑉ ᖃᖓᓃᑦᑐᑦ-ᐊᔾᔨᒋᔭᐅᑐᐃᓐᓇᖅᑐᑦ ᐊᓯᙳᓐᓂᒃ ᐅᔭᕆᓐᓂᐊᕐᓂᐅᕝᕙᑐᓂᒃ, ᑭᓯᐊᓂ ᐱᔭᕇᐊᑐᓂᖅᓴᐅᒐᓲᑐᐃᓐᓇᖅᑐᖅ ᐱᑕᕐᑲᕐᓂᖏᓐᓄᑦ ᐊᐅᓚᔪᑦ ᐊᐅᒪᒃᓴᐃᑦ ᓴᓃᑦ, ᐆᑦᕐᓇᖅᑐᑦ ᐳᓪᓚᐃᑦ ᐊᒻᒪᓗ ᑕᑯᒃᓴᐅᖏᑦᑐᓂᒃ ᐊᐅᒪᕐᑲᖅᑐᓂᒃ ᐆᑦᕐᓇᖅᑐᓖᑦ (radioactive dust, radon gas ᐊᒻᒪᓗ gamma radiation). ᑕᒪᓐᓇ ᐅᓗᕆᐊᓇᕈᓐᓇᖅᑐᖅ ᒥᑭᓪᓕᑎᖅᑕᐅᓯᒪᓪᓚᕆᒃᐸᒃᑐᖅ ᓴᖏᔾᒪᕆᖕᓂᒃ ᐊᓄᕆᓕᐅᕈᑎᕐᑲᕐᒪᑕ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᓂᒃ ᐅᔭᕋᐃᔭᐃᕙᖕᓂᒃ ᐊᒻᒪᓗ - ᐱᓗᐊᖅᑐᒥᒃ ᓄᖑᔪᐃᑦᑐᕐᑲᓪᓚᕆᒃᑐᓂ ᐅᔭᕆᓐᓂᒃ-ᐅᖓᓯᒃᑐᒥᒃ ᐊᐅᓚᑕᐅᔾᔪᑎᓘᑦ ᐊᒻᒪᓗ ᑕᓗᕐᑲᖅᓱᑎᒃ ᐆᑕᕇᒃᑯᑎᓄᑦ.

ᐃᓚᒋᔭᐅᓪᓗᑎᒃ ᐅᔭᕆᓐᓂᐊᖅᑕᐅᔪᓂ ᐱᓕᕆᐊᓂ, ᐱᓗᐊᖅᑐᒥᒃ ᒪᑐᐃᖓᔪᓂ ᓄᓇᒦᑦᑐᓂ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᓂ, ᐅᔭᕋᕕᓃᑦ ᐊᑐᕈᓂᖅᑐᑦ ᕐᑯᓚᓃᑦᑐᑦ ᐊᕙᓗᐊᓂᓗ ᓄᖑᔪᐃᑦᑐᕐᑲᖅᑐᑦ ᓄᓇᒥᐅᑕᐃᑦ, ᐋᔭᖅᑕᐅᕐᑳᕐᑲᑦᑕᓕᐊᕐᑲᕐᒪᑕ ᑎᑭᑕᐅᔪᓐᓇᕐᓂᐊᕐᒪᑕ ᐃᓗᓕᓖᑦ ᐱᔪᒪᔭᐅᔪᓂᒃ. ᑕᒪᓐᓇ ᐅᔭᕋᐅᓂᖓ ᐃᓖᒃᑯᑦ ᒥᑭᑦᑑᑎᓂᒃ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᕐᑲᑦᑕᕐᒪᑕ, ᐅᕐᑯᒪᐃᑦᑐᓂᒃ ᓴᕙᕆᔭᒃᓴᓂᒃ, ᐅᕙᓗᓐᓃᑦ ᐊᓯᖏᓐᓂᒃ ᓯᕐᑲᓕᐅᔪᓂᒃ, ᓲᕐᓗ ᒎᓗᒃᓴᐅᔾᔭᖅᑐᓂᒃ. ᒪᕿᕐᑲᑦᑕᕐᒪᑕ ᐃᒪᐃᔭᖅᑕᐅᓪᓗᑎᒃ ᓯᕐᑲᓕᐅᔪᓂᒃ, ᐃᒪᓕᐅᕈᑕᐅᔫᓐᓇᖅᑐᑦ ᐆᑦᕐᓇᖅᑐᓕᖅᓂ ᒪᕿᓂᒃ. ᑕᒪᒃᑯᐊ "ᐊᔾᔨᐅᖏᑦᑐᑦ" ᐊᒃᑕᑯᐃᑦ ᐅᔭᕋᐃᑦ ᐊᕙᒃᑐᖅᑕᐅᕐᑲᑦᑕᖅᑐᑦ ᐋᔭᖅᑕᐅᓪᓗᑎᒃ ᓯᓚᒥᒃ ᑕᐃᒫᒃ ᐱᔪᒪᔭᐅᖏᑦᑐᑦ ᑯᕕᓂᐊᖏᓪᓕᑕ ᓱᕈᕆᑕᐅᓗᑎᒃ ᖃᓂᑦᑐᒦᑦᑐᓄᑦ ᐃᒪᕙᖕᓄᑦ. ᐅᑎᖅᑎᑕᐅᒐᔪᔾᔪᑦ ᐅᔭᕆᓐᓂᐊᖅᑕᐅᓯᒫᓂᒃᑐᓄᑦ ᓄᓇᓄᑦ.

<u>ᓯᕐᑲᓕᑎᓇᓂᖅ</u>

ᓯᕐᑲᓕᖅᑎᑕᐅᓂᖏᓐᓂ, (ᑲᒪᒋᔭᐅᕝᓪᓕᐊᓕᖅᑎᓪᓗᒋᑦ), ᐅᔭᕋᐃᑦ ᓯᕐᑲᓕᖅᑎᖅᑕᐅᕝᒃᑐᑦ, ᐸᐅᓘᒃᓴᐅᓕᖅᑐᑎᑐᑦ. ᓄᖑᔪᐃᑦᑐᕐᑲᕐᓂᖏᑦ ᐋᔭᖅᑕᐅᓪᓗᑎᒃ ᐅᔭᕆᖕᒥᒃ ᐃᓕᐅᕐᑲᖅᑕᐅᕝᒃᑐᑦ ᓄᖑᔪᐃᑦᑐᐃᓇᐅᔪᓄᑦ, ᐃᓛᓂᒃᑯᑦ ᕐᑯᖅᓱᖅᑑᓂᕋᖅᑕᐅᔪᑦ ᐸᓚᐅᓘᒃᓴᐅᔻᖅᑐᑦ. ᐊᒥᐊᒃᑯᖕᒋᑦ ᓯᕐᑲᓕᖅᑎᑕᐅᔪᓂᒃ ᐃᒋᐅᕐᑲᖅᑕᐅᕝᓪᓕᐊᓲᑦ ᐊᒃᑕᑯᓂᒃ ᐊᐅᓚᑦᑎᕙᖕᒥ. ᑕᐃᒃᑯᐊ ᐊᒥᐊᒃᑯᐃᑦ ᐊᑐᕐᓂᐊᖏᑦᑐᑦ ᐃᓗᓕᕐᑲᕐᓂᖅᐹᖑᕝᒃᑐᑦ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᓂᒃ ᓯᓐᓕᐅᔪᓂ ᐅᔭᕆᓐᓂᒃ, radium-ᕐᑲᕆᔫᒃᑐᑦ ᐊᒻᒪᓗ radon-ᕐᑲᕆᔫᒃᑐᑦ ᐱᑕᕐᑲᕐᓂᖅᐹᖑᓂᖏᓐᓄᑦ- ᐊᐅᓚᑦᑎᓷᐅᔪᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᓂ ᐅᔾᔨᖅᑐᐃᓐᓇᓕᐊᕐᑲᖅᑐᑦ ᐊᒥᐊᒃᑯᕕᓃᑦ ᐋᔭᐃᕕᐅᓯᒪᓕᖅᑐᓂ ᐅᔭᕋᕕᓂᕐᓂᖓᕐᓘᖅᑐᒃ ᐅᓗᕆᐊᓇᕆᐊᖃᕐᖏᑦᑐᑦ ᐃᓄᖕᓄᑦ, ᐱᕈᖅᑐᓄᑦ, ᐆᒪᔪᓄᓪᓗ.

<u>ᓴᓗᒻᒪᖅᓴᐃᓂᖅ ᐊᒻᒪᓗ ᖃᐃᕓᓴᐃᕝᓪᓕᐊᓂᖅ</u>

ᑕᒪᐃᵒᓂᑲᵏᓴᵇ, ᐅᓴᕐᓂᐅᐊᕐᓵᑦ ᒪᑐᓴᐅᕙᓚᓕᑦ, ᐃᓂᕐᓂᓯᑎᓵᓂᵒᓗ ᐅᑎᖅᑎᑕᐅᓕᖅᑕᑎᑦᓗ ᐱᖅᑯᓯᑐᖅᑕᐅᓚᓇᖅᑐᓂᵒᓗᓄᑦ, ᐊᵏᑕᑯᓂᵇ ᓯᑭᘐᓂᓂᵇ ᐃᑕᐅᑦᑲᘐᓂᐃᔪᓂᵇ ᓴᐅᓴᐅᓯᒪᓂᖓᓕ. ᑭᓯᐊᓂ, ᐃᑕᖓᵒᓂ, ᐃᓕᓂᵇᑯᑦ, ᐊᵏᑕᑯᐃᑦ ᐊᒥᐊᵏᑯᕐᓇᓵᓂ ᓯᓴᑲᓕᑦ ᖃᐅᔨᓴᖅᑕᐅᖓᓂᒃᑲᓚᐊᖃᖅᓂᐊᖅᑐᑦ ᐊᒥᓯᓄᑦ ᐊᖅᑌᒍᓄᑦ ᑭᖑᓂᓄᑦ ᐅᖓᕐᓂᐅᐊᕐᓇᖅ ᐅᓴᕐᓂᐅᐊᖅᓇᖅ ᒪᑐᐃᓴᕐᓂᐅᓚᕐᓂᑲᓇᑕᒫᑦ. ᐊᐅᑕᑕᐅᓂᖓᑎᑦ ᐊᒥᐊᵏᑯᐃᑦ ᐅᖅᑲᐅᓯᐅᑎᖅᑐᑦ ᐃᓗᓕᓂᐊᖅᑐᑦ ᐊᒥᓯᓄᑦ ᐅᓴᕐᓂᐅᐊᖅᑐᑦ ᐃᓗᓕᓂᐊᖅᑐᑦ 4.7.4-ᒥ ᑎᑎᖅᑲᐃᑦ ᐃᑕᵇᑲᵒᓂᖅᑎᑦ ᐅᓂᵇᑦᑎᐊᵏᑲᵒᓂᖅᑐᑦ ᖃᑲᓇᖅ ᑕᒪᵇᑯᐊ ᐱᑕᓚᐊᖓᔪᖓᓚᓂᑕ ᑕᑯᓂᒃ ᑕᒪᐃᓕᓴᕐᒥᒃ.

4.4 ᓴᓂᒃᓯᓚᑲᒥ ᐊᑐᖅᑕᐅᔨᓂ ᐃᔨᔪᐊᒐᔭᓴᐃᓂ ᔨᓵᓂᓂᓴᓗᒥᒃ ᓄᖓᔪᐃᓕᓂᑐᓂᒃ ᐅᓴᕐᓇᓂᐊᖅᓂᕐᒧᑦ

ᐅᖅᑲᐅᓯᐅᖅᑲᐅᔨᓂ ᐃᓗᐊᓂ 4.1-ᒥ ᑕᐃᒪ, ᓴᓂᒃᑕᓯᓚᑲᒥ ᐊᑯᓂᒪᒪᓕᐊᓗᒃ ᔨᓵᓂᓂᓴᓗᒥᒃ ᓄᖓᔪᐃᓕᓂᑐᓂᒃ ᐅᓴᕐᓂᓂᐊᖅᑎᑦᑕᖅᓯᒪᔭᒪᑕ, ᐱᑎᐊᖅᑲᓕᐅᖅᓯᒪᔨᓂᒃ 1940-ᖃᑎᒌᓂ, ᐊᒪᓚᓗ 1950-ᖃᑎᒌᓂ ᐱᑎᐊᓕᓴᖅᑐᓂ, ᓴᓇᔨᐅᑎᒥᒃ Beaverlodge, Gunnar ᐊᒪᓚᓗ Lorado ᐅᓴᕐᓂᓂᐊᖅᓵᑦ. ᓄᖓᔪᐃᓕᑐᓂᒃ ᐅᓴᕐᓂᓂᐊᖅᓂᖅ ᓴᓂᒃᑕᓯᓚᑲᒥ ᓯᓕ ᐃᓕᑎᕆᐅᑦᓕᓇᵇᑐᖅ ᐊᖃᑎᔪᒥᒃ ᓯᓕᖅᔪᐊᖅᑎᒥ ᐅᓪᓚᕆᔨᐊᖅᑎᓂᑎᑎᔪᓂ, ᐊᒪᓚᓗ ᓭᵒᓇᐅᓕᖅᑐᖅ 30%-ᖏᓕᖅᑐᑦ ᓯᓕᖅᔪᐊᓕᒥᓭᒥ ᐅᓴᕐᓂᓂᐊᖅᑕᐅᖅᑕᐅᓇᖅᑐᓂᒃ ᐊᖃᑎᓂᓂᓵᓕ. ᑕᒪᵇᑯᐊ ᐅᓴᕐᖃᓂᐊᖅᓵᓂᑦ ᓴᓂᒃᑕᓯᓚᑲᒥ bᓇᖃᓇᑦᑐᓂᑦ, ᓄᓇᓂ ᖃᐅᔨᓴᓪᓚᕆᐅᔪᓂ Athabasca Basin-ᒥ ᐊᖃᓪᓚᖅᓂᐅᔪᒥ.

ᐊᒥᓯᑎᓴᐅᖃᓕᑦ ᐱᔪᔪᑕᐅᔪᑦ, ᓯᑎᒥ ᖃᑎᖅᑐᐊᖅᑕᑕᐅᔪᓚᐊᖅᑲᓕᖃᖅᓯᒪᔭᓂ ᓕᖃᓴᓴᖅ ᖃᐅᔨᓴᓪᓚᕆᐅᔪᖅᑕᐅᖅᓯᒪᔭᒪᑕ ᔨᓵᓂᓂᓴᓗᒥᒃ ᓄᖓᔪᐃᓕᓂᑐᓂᒃ ᐅᓴᕐᓂᓂᐊᖅᑎᑦᑕᓂᖅᑎᒃ ᓴᓂᒃᑕᓯᓚᑲᒪᒥ, ᑐᓄᑎᒥ ᖃᑎᖅᑐᐊᖅᑕᑕᐅᔪᓚᐊᖅᑲᓕᖃᖅᓯᒪᔭᒪᑕ ᓕᖃᓴᓴᖅ ᓄᖓᔪᐃᓕᓂᑐᓂᒃ ᐅᓴᕐᓂᓂᐊᖅᑎᑦᑕᓂᖅᑎᒃ:

- ᓴᓂᒃᑕᓯᓚᑲᒥ ᓕᖃᓴᓴᖅᓯᖅ ᐊᐅᓚᑦᑎᐊᔨᖅᑐᓂ ᓄᖓᔪᐃᓕᓂᑐᒃ ᐅᓴᕐᓂᓂᐊᖅᑎᖓᓂ bᓇᑕᒥ.
- McArthur River-ᒥ ᓕᖃᓴᓵᖓᓂᓯᓴᖅ ᐅᓴᕐᓂᓂᐊᖅᑎᐅᔨᓴᖅ ᒪᑐᐃᖅᑕᐅᔭᕆᓚᐅᖅᑐᖅᓴᖅ bᓇᑕᒥ, ᐊᖓᑎᓂᖅᓯᒥᒃ ᐊᒪᓚᓗ ᐱᐅᓂᖅᓯᓂᒃ >ᖅᑐᓂᖅᑲᖅᑐᒥᒃ ᓄᖓᔪᐃᓕᓂᑐᖅᑕᓵᓂ ᑕᒪᐃᓂᒃ ᓯᓕᖅᔪᐊᖅᓯᒪᓕᓴᕐᒥ ᓄᖓᔪᐃᓕᓂᑐᓂᒃ ᐅᓴᕐᓂᓂᐊᖅᑲᐃᐅᔨᓂ.
- Cigar Lake -ᒥᐅᓴᕐᓂᓂᐊᖅᑲᖓᑕ ᑐᓴᓪᓕᖅᑕᓚᓴᐅᔨᓴᖅ ᐱᐅᓂᖅᓂᓯᓵᔪᐃᓂᒃ ᐅᓴᕐᓂᓂᑐᖅᑕᑕᓪᓕᒃ ᓄᖓᔪᐃᓕᓂᑐᓂᖓᓂ, ᐱᔨᓂᓇᐅᑎᑕᒋᑦᑎᓯᐊᓕᐅᖅᓴᑦ, ᓴᓇᔨᐅᓚᐅᓕᖅᓯᐊᓕᖅᑐᑎᒃ.
- ᐅᓴᕐᓂᓂᒃ ᓯᖅᑲᑕᑎᓚᐅᒃ, ᓯᐅᑦᑕᑕᖅᓯᖓᔪᓴᖅ ᓄᑦᓴᖅ ᓯᖅᑲᑕᑎᓚᐅᒃ bᓇᑕᒥ/ᐊᒥᐊᑕᑲᒥᐅᓂᓗ 20-ᓂ ᐊᖅᑌᒍᓂ ᐅᔨᓂ, ᐊᒪᓚᓗ ᓯᖅᑲᑕᑎᓚᐅᒃ, ᐊᒪᓚᓗ ᓯᖅᑲᑕᖓᑦ ᐊᒪᓚᓗ ᐊᵏᑕᑯᓂᒃ ᓯᓚᐃᓂᓂᒃ/ᓯᖅᑲᑕᐅᓂᓂᒃ ᐃᑕᐅᓂᖅᑲᐃᐅᖓᑦ

ᑕᐃᑲᓂ ᐊᑐᖅᑕᐅᔪᑦ ᐱᐅᓂᖅᐹᖑᔪᒥᒃ ᓴᓇᔭᐅᓯᒪᔪᑦ ᐲᔭᐅᓂᕐᒧᑦ ᓄᖑᔪᐃᑦᑐᕐᑲᕐᓂᖅᑭᓐᓂᒃ ᔪᓂᓂᔮᒻᖏᓇᐅᓕᖅᑐᓄᑦ ᓴᓇᔭᐅᕙᖅᑭᓐᓂ. McClean Lake-ᑕᐅᖅ ᓵᖕᑳᑦᓯᐋᓐᒥ ᐊᐅᓚᑕᐅᔫᑰᖅ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᖅ ᒪᑐᐃᖓᔪᖅ. (ᑕᑯᓗᒋᑦ ᐃᓗᓕᖅᑭᑦ 1.10ᖓ-ᓅᑦᑐᑦ, ᑎᑎᖃᐃᑦ ᐃᓚᒃᑲᓐᓂᖅᑭᓐᓂ 1-ᒥ.)

- Cluff Lake ᑕᐃᒫᒃ ᐆᒃᑐᕋᑕᐅᑎᑦᑎᐊᕙᐅᔪᖅ ᖃᐅᔨᓂᖅ ᖃᓄᖅ ᐅᔭᕋᖕᓂᐊᕐᕖᑦ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐊᑐᕈᓐᓃᖅᑎᑕᐅᔪᓐᓇᕐᒪᖔᑕ ᒪᑐᔭᐅᓗᑎᒃ.
- ᓵᖕᑳᑦᓯᐋᓐᒥ ᐅᔭᕋᖕᓂᐊᕐᕕᒃ ᐃᓕᕝᕕᐅᔪᓐᓇᖅᑐᖅ ᐱᐅᓂᖅᐸᓂᒃ ᐊᑐᕐᓂᖕᒋᓐᓂᒃ ᓴᓇᕐᕈᑏᑦ ᐊᒻᒪᓗ ᐱᐅᔪᓂᒃ ᐊᐅᓪᓚᑎᑦᑎᔾᔪᑎᒃᓴᓂᒃ ᐊᑐᖅᑕᐅᓂᖅᑭᓐᓂ ᑕᒪᐃᓐᓂᑎᐊᖅ ᐃᖅᑭᕋᑎᑕᐅᔪᓂ.
- ᓵᖕᑳᑦᓯᐋᓐᒥᑕᐅᖅ ᑕᒪᐃᓐᓄᑦ ᑐᕌᖓᔪᓂᒃ ᒪᓕᒡᓗᑐᖃᖅᑐᑦ ᒪᓕᒃᑕᐅᑦᑎᐊᕆᐊᖃᖅᑐᓂᒃ, ᐃᓚᖃᖅᓯᑎᒃ ᖃᓄᐃᓕᐅᓪᓚᑦᑖᕆᐊᖃᕐᒪᖔᑕ ᐊᕙᑎᒥᒃ ᖃᐅᔨᓴᐃᕆᐊᕌᖓᒥᒃ.
- ᓵᖕᑳᑦᓯᐋᓐᒥ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ ᐃᖃᓇᐃᔮᖑᔪᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᖃᓗᐊᕆᐊᖃᖅᐳᑦ ᐱᔭᕆᐊᖃᕐᓂᖅᑭᓐᓂᒃ ᐅᑭᐅᖅᑕᖅᑐᒥᐅᑦ ᐊᒻᒪᓗ ᑐᑭᓯᓂᐊᕐᕕᐅᖅᑭᓐᓇᓕᒫᖅᑐᑦ ᐃᓄᖁᑎᖅᑭᑦ, ᑕᐃᒪᖓᑦ, ᐊᒻᒪᓗ ᐱᔾᔪᑎᖃᓪᓗᑐᖅᑐᓂᒃ ᓯᓇᑐᐃᓐᓇᕐᓂᒃ ᐃᓱᒪᓘᑕᐅᔪᒥᓇᖅᑐᓂᒃ.
- ᐱᑕᖃᖅᑐᖅ ᐅᓂᒃᑲᖅᓯᒪᑦᑎᐊᖅᑐᓂᒃ ᐃᓄᓕᒫᖅᓄᑦ ᐅᓂᒃᑳᑦ ᕿᒥᕐᕈᐊᖅᑕᐅᖄᓇᐊᖃᓚᐅᕐᓂᖅᑭᓐᓂᒃ 1990-ᖏᓐᓂ ᖃᐅᔨᓴᖅᑕᐅᓪᓗᑎᒃ ᐅᓪᓗᒥᒧᑦ ᑎᑭᓪᓗᒋᑦ ᓴᕿᑕᐅᔪᖃᕈᓐᓇᕐᒪᖔᑕ ᓄᑖᑦ ᐅᔭᕋᖕᓂᐊᕐᕖᑦ ᑕᐅᕙᓂ ᐊᕕᒃᑐᖅᓯᒪᓂᕐᒥ. ᐊᒥᓱᒪᓇᑦ ᖃᐅᔨᐅᒪᑎᑦᑎᔾᔪᑎᒃᓴᐃᑦ ᐊᑐᐃᓐᓴᐅᔪᑦ ᑕᒪᐃᓐᓂ ᓇᖕᒥᓂᖃᖅᑐᓂᒃ, ᐊᒻᒪᓗ ᐃᓄᓕᒫᕐᓄᐊᖓᔪᓂᒃ, ᓱᕐᓗ ᑲᓇᑕᒥ-ᐊᕕᒃᑐᖅᓯᒪᓂᖏᓐᓂ ᖃᐅᔨᓴᖅᑏᑦ ᑲᑎᒪᔨᖏᓐᓂᒃ ᐊᒻᒪᓗ ᑲᓇᑕᐅᑉ ᒐᕙᒪᒃᑯᖏᓐᓂᒃ ᑭᐅᔾᔪᑎᖏᓐᓂᒃ ᑲᑎᒪᔨᓄᑦ ᐅᓂᒃᑲᓕᐊᕕᓃᑦ, ᐅᖃᖅᓯᒪᔪᑦ ᖃᓄᖅ ᒐᕙᒪᒃᑯᑦ ᖃᓄᐃᓕᐅᕋᔭᕐᒪᖔᑕ ᐅᕙᔫᓐᓃᑦ ᑭᐅᓇᔭᕐᒪᖔᑕ ᑕᐃᒃᑯᓄᖓ ᐃᓱᒪᔫᑕᐅᔪᓄᑦ, ᐊᔾᔨᒋᔭᐅᔪᑦ ᓄᓇᕗᒻᒥᐅᓄᑦ ᐃᓱᒪᔫᑕᐅᔪᓂᑦ. ᐃᒻᓇᓂᓴᖅ ᐊᕙᑎᖓᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᕐᓂᖏᓐᓄᑦ ᑎᑎᖃᐃᑦ ᑎᑎᕋᖅᓯᒪᔪᖃᕐᒥᔪᑦ ᐊᒥᓱᒪᓇᖕᓂᒃ ᖃᐅᔨᒪᔭᐅᔪᒃᓴᓂᒃ ᑕᒪᐃᓐᓂᒃ ᖃᓄᐃᓕᖕᖓᓂᓕᒫᖏᓐᓂᒃ ᐱᒋᐊᖅᑎᑕᐅᔪᒪᓯᒪᔪᓂᒃ ᓴᓇᔭᒃᓴᓂ.
- ᐊᔾᔨᒌᖓᓚᒻᒪᑕ ᓄᓇᕗᒻᒥ ᐊᒻᒪᓗ ᓵᖕᑳᑦᓯᐋᓐ ᑲᓇᖕᓇᖖᓂ ᐃᓄᐃᑦ ᐊᒥᓱᓂᖕᒋᑦ, ᐃᓕᓐᓂᐊᖅᓯᒪᑎᒋᓂᖕᒋᑦ, ᐃᓅᓯᓕᐅᕈᑎᖕᒋᑦ/ᑰᓇᐅᔭᓕᐅᕈᑎᒋᔭᒃᑕᖕᒋᑦ, ᐊᓯᖕᒋᓪᓗ.
- ᐃᓄᐃᑦ ᐳᓚᕋᓯᒪᔪᑦ ᓵᖕᑳᑦᓯᐋᓐᒥ ᐊᐅᓚᑕᐅᔪᓂᒃ ᑕᑯᓂᐊᖅᓱᑎᒃ, ᐊᒻᒪᓗ ᑐᑭᓯᐅᒪᓪᓗᑎᒃ ᐃᑲᔫᓯᐊᖅᑖᕈᑕᐅᕝᓚᐊᕈᓐᓇᕐᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᖃᓄᖅ ᐊᒃᑐᖅᑕᐅᓯᒪᑐᐃᓐᓇᓇᐊᖅᑲᕐᓂᖅ ᐊᐅᓚᑕᐅᕙᖕᒪᖔᑦ.

ᕿᒥᕐᕈᐊᖅᑕᐅᓪᓗᑎᒃ ᔪᓇᓂᔭᒻᒥᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᖕᓂᐊᖅᑦᑕᖅᑐᑦ ᓵᖕᑳᑦᓯᐋᓐᒥ, ᐃᓕᓐᓂᐊᕈᓐᓇᓪᓚᓇᒃᑐᒍᑦ ᐊᖏᔪᒥᒃ ᖃᓄᐃᓕᐅᖅᐸᓪᓕᐊᓲᖑᖕᒪᖔᑕ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ ᓴᕿᑦᑎᕙᓪᓕᐊᓕᖅᑎᓪᓗᒋᑦ, ᐊᐅᓚᑕᐅᕙᖕᓂᖕᒋᓐᓂᒃ ᐊᒻᒪᓗ ᐊᑐᕈᓐᓃᖅᑎᑕᐅᕙᖕᓂᖕᒋᓐᓂᒃ. ᑕᐅᑐᖑᐊᕈᓐᓇᕐᒥᔭᕗᑦ ᒪᓕᒐᖃᓐᓂᐊᖅᑲᖅᓯᔭᕐᓂᖕᒋᑦ ᓯᕗᓪᓕᕐᒥ, ᐊᑐᓇᐊᖅᑲᖅᓯᔭᖅᑐᑦ

ᐅᔭᕋᓐᓂᐊᕐᕕᓐᓂ ᐊᐅᓚᑦᑎᕕᐅᔪᓐᓇᖅᑐᑦ. ᐱᔾᔪᑕᐅᓪᓗᑎᒃ ᓴᓂᑦᓯᐋᓐᒥ ᐅᔭᕋᓐᓂᐊᕐᕖᑦ ᐊᑯᓂᒻᒪᕆᐊᓗᒃ ᐱᐅᔪᓂᒃ ᐅᓪᓗᒥᐅᓕᖅᑐᖅ ᓴᓇᕐᕈᑕᐅᕙᒃᑐᓂᒃ ᐊᑐᖅᑕᑦᑕᕐᓂᕐᒋᑦ ᐊᒻᒪᓗ ᐊᕙᑎᒥᓂᒃ ᓴᐳᓐᓂᐊᑦᑎᐊᕐᒋᓐᓇᕐᓂᕐᒋᑦ, ᐱᐅᕝᕝᒪᕆᐅᒍᑦ ᐃᔾᔪᐊᒐᒃᓴᐅᓪᓗᑎᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᓐᓂᐊᕋᔭᕐᓂᕐᒧᑦ ᓄᓇᒋᒻᒥ.

ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᒪᓕᒡᓗᑐᐃᑦ, ᐱᓕᕆᔩᓪᓗ ᐅᑐᕆᐊᓇᖅᑐᒦᑦᑕᕆᐊᖃᓐᖏᓐᓂᕐᒋᑦ, ᐃᓅᓯᕆᔭᐅᔪᑦ ᐃᓅᓯᓕᐅᕈᑕᐅᕙᒃᑐᓪᓗ (ᑮᓇᐅᔭᓕᐅᖅᑕᐅᕐᒥᒃ) ᐊᔾᔨᔭᐅᔭᕆᐊᓖᑦ ᐊᑐᕋᔭᖅᑐᑦ ᓄᖑᔪᐃᑦᑐᕐᒥᒃ ᐅᔭᕋᓐᓂᐊᕐᕕᕐᒥ ᓄᓇᒋᒻᒥ ᐊᔾᔨᑐᐃᓐᓇᑲᓴᒋᓇᔭᖅᑕᕐᒋᑦ ᑕᐃᒃᑯᓇᓂ ᐊᑐᖅᑕᐅᔪᓂ ᓴᓂᑦᓯᐋᓐᒥ, ᐊᒻᒪᓗ ᓱᕐᑲᐃᒻᒪ, ᐊᔾᔨᒌᖕᒋᓐᓂᖅᑲᕙᑦ ᒪᕿᙱ ᑲᙳᒪᕐᑲᕐᕕᐅᔪᓂᒃ ᐊᔾᔨᒌᒋᑦᑐᓂ.

ᖁᓛᓐᓃᑦᑐᑦ ᐱᔾᔪᑕᐅᓪᓗᑎᒃ, ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔭᕆᐊᖅᑲᒪᕆᒃᐳᑦ ᓴᓂᑦᓯᐋᓐᒥ ᐊᐅᓚᑕᐅᔪᑦ, ᖃᐅᔨᒪᓂᕈᑕᐅᓂᐊᕐᒪᑕ ᖃᓄᖅ ᐅᓪᓗᒥᐅᓕᖅᑐᖅ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᓐᓂᐊᖅᑕᑦᑕᕐᓂᖅ ᐊᐅᓚᑕᐅᓱᖑᒪᖔᑦ, ᐊᒻᒪᓗ ᖃᓄᐃᑦᑐᓂᒃ ᐱᖅᑯᓯᖅᑲᐊᖅᑲᓱᖑᒪᖔᑕ ᓴᐳᓐᓂᐊᖅᑕᐅᔭᐊᖅᑲᕐᓂᖅᒋᓐᓄᑦ ᓴᓇᐦᐋᑦ, ᖃᓂᒋᔭᖅᒋᓃᑦᑐᑦ ᓄᓇᓖᑦ, ᐊᒻᒪᓗ ᐊᕙᑎᖅᒋᑦ. 1999-ᒥ ᐊᒻᒪᓗ ᓱᓕᒃᑲᓐᓂᖅ 2005-ᒥ, Cameco-ᑯᑦ ᐊᒻᒪᓗ AREVA-ᑯᑦ, ᒪᕿᒃ ᑖᒃᑯᐊ ᑲᒻᐸᓂᐅᕝᒃ ᐊᐅᓚᑦᑎᔨᐅᕝᒃ ᓴᓂᑦᓯᐋᓐᒥ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᓐᓂᐊᕐᕕᓐᓂ, ᑕᑯᓇᒃᑎᑦᑎᓚᐅᖅᑐᑦ ᐊᐅᓚᑕᒥᓂᒃ ᐱᖁᑎᓂᒃ ᑐᓐᓇᕕᒃᑯᓐᓄᑦ, ᐊᒻᒪᓗ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖅᑲᑎᒌᖕᒋᓐᓄᑦ ᓄᓇᓂᒃ ᐊᐅᓚᑦᑎᔨᓂᒃ, ᐊᒻᒪᓗ ᐊᐅᓚᑦᑎᔨᓂᒃ ᑲᑎᒪᔨᓂᒃ. ᐃᖅᑲᓇᐃᔭᖅᑏᑦ ᐊᒻᒪᓗ ᑲᑎᒪᔩᑦ ᓄᓇᒋᒻᒥ ᓄᓇᑖᕈᑎᑎᒍᑦ ᑲᑎᒪᔩᖅᑯᑎᒋᔭᐅᔪᓂ, ᑲᕙᒪᒃᑯᑦ ᐃᖅᑲᓇᐃᔭᕐᕕᖕᒋᓐᓂᒃ, ᐊᒻᒪᓗ ᐃᓚᖕᒋᑦ ᖃᒪᓂ'ᑐᐊᕐᒥᐅᑕᐃᑦ ᐃᓄᐃᑦ ᐳᓖᓇᐊᓚᐅᕐᒥᔪᑦ 2005-ᖑᑎᓪᓗᒍ. ᓄᓇᒋᒻᐅᑕᐃᑦ ᑕᑯᓚᐅᖅᑐᑦ ᐅᓪᓗᒥᐅᓕᖅᑐᖅ ᐱᖅᑯᓯᕆᔭᐅᔪᓂᒃ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐅᔭᕋᓐᓂᐊᕐᓂᐅᔪᑦ, ᒪᓕᒐᖅᑎᑕᐅᓪᓚᕆᖕᒪᑕ ᒪᓪᓕᒡᓗᑐᖅᑲᖅᓯᑎᒃ ᐊᐅᓚᑕᐅᓪᓗᑎᒃ, (ᐱᓗᐊᖅᑐᒥᒃ ᐊᐅᓚᑕᐅᔪᑦ ᑲᓇᑕᒥ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᑐᕆᐊᓇᖅᑐᓕᕆᔩᑦ ᑲᒪᔨᒃᑯᑦ [CNSC-ᑯᑦ], ᐊᑖᒍᑦ ᑲᓇᑕᐅᑉ ᒐᕙᒪᒃᑯᖕᒋᑦᑕ ᓴᖕᒋᓂᖅᑲᕝᕕᒋᔭᖕᒋᓐᓂ ᐊᐅᓚᑦᑎᕕᐅᓂᖅ). ᑕᑯᓚᐅᕐᒥᔪᑦ ᖃᓄᖅ ᐅᑐᕆᐊᓇᕐᓂᖅᑲᖕᒋᓪᓗᑎᒃ ᑲᔪᓯᓐᓇᕐᒪᖔᑕ, ᓱᓐᓂᕈᑕᐅᓇᑎᒃ ᖃᓄᐃᓂᖕᒋᓐᓄᑦ ᓴᓇᐦᐋᑦ ᐊᒻᒪᓗ ᓄᓇᓖᑦ ᐅᕙᓗᓐᓃᑦ ᐊᕙᑎᖕᒐᓄᑦ.

ᐊᔾᔨᖑᐊᖅ 2. ᑐᓐᖓᕖᒃᑯᑦ ᐊᒻᒪᓗ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖅᑲᑎᒌᑦ ᑕᑯᓂᐊᖅᑐᑦ McClean Lake-ᒥ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᒥ (ᓴᐅᒥᖕᒥ) ᐊᒻᒪᓗ McArthur River-ᒥ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᒥ, ᓯᑎᐱᕆ 2005-ᖑᑎᓪᓗᒍ.

ᐃᓱᒪᒋᔭᐅᓪᓗᑎᒃ ᓯᕗᓂᒃᓴᒥ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕆᓐᓂᐊᕈᒪᔪᕐᑲᕐᓂᖅ ᓄᓇᕗᒻᒥ, ᓴᓵᑦᓯᐋᓐᒥ ᐊᑐᖅᑕᐅᕋᓂᒃᓯᒪᔪᑦ ᕐᑲᐅᔨᓴᖅᑕᐅᑦᑎᐊᕆᐊᕐᑲᖅᑐᑦ, ᐊᒻᒪᓗ ᐊᑐᕐᓂᓕᒫᖅᑭᓐᓂ, ᐊᑐᓕᖅᑕᐅᓇᔭᖅᓯᑎᒃ ᓄᓇᕗᒻᒥ.

4.5 ᐃᑲᔫᓯᒃᓴᐃᑦ ᓄᖑᔪᐃᑦᑐᖅᓯᐅᕐᓂᖏᓐᓂ ᐊᒻᒪᓗ ᐅᔭᕆᓐᓂᐊᕐᓂᖏᓐᓂ

ᐊᒥᓱᒪᕆᐅᖅᒪᑕ ᐊᔾᔨᒌᒋᑦᑑᑏᑦ ᐃᑲᔫᓯᐊᖅᑖᖑᔪᓐᓇᖅᑐᑦ ᑕᒪᐃᓐᓂᒃ ᕿᓂᕐᓂᕐᒥᒃ ᐊᒻᒪᓗ ᐅᔭᕆᓐᓂᐊᕐᓂᕐᒥᒃ ᐱᓕᕆᔪᓂᒃ. ᕐᑲᓄᐃᑦᑑᒐᓗᐊᖅᐸᑦ ᓄᖑᔪᐃᑦᑐᖅ ᐅᔭᕆᓐᓂᐊᕐᕕᒃ ᐱᒋᐊᕋᔭᖅᑐᖅ ᓄᓇᕗᒻᒥ, ᕿᓂᖅᑐᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᓄᓇᒥ ᑲᔫᔮᓇᕐᓂᐊᖅᑐᒃᓴᐅᔪᑦ ᐊᓱᒪᕆᖕᓄᑦ ᐊᕐᕋᒍᓄᑦ. ᑕᒪᓇ ᐱᓕᕆᐊᖑᔪᖅ ᐃᕐᑲᓇᐃᔮᖅᑖᕈᑕᐅᙱᒃᑐᖅ ᐊᕐᕋᒎᑉ ᐃᓚᖓᓂ ᐊᒥᓱᓄᑦ ᐃᓄᖕᓄᑦ ᓄᓇᓕᖕᒥᐅᑕᐅᔪᓄᑦ, ᐊᒻᒪᓗ ᓇᖕᒥᓂᕐᑲᕐᑲᑕᐅᔪᑦ ᐱᕖᒃᓴᕐᑲᓕᖅᐸᒃᑐᑦ ᓂᐅᕕᕐᕕᐅᓇᕐᓂᖅ ᑎᑭᓴᐅᕕᐅᔪᓇᕐᓂᕐᓗ. ᐊᒻᒪᓗ ᑐᓐᖓᕖᒃᑯᑦ ᐃᓄᐃᓪᓗ ᑲᑐᔾᔨᖅᑲᑎᒌᖕᒋᑦ ᐊᑭᓕᖅᑐᖅᑕᐅᙱᒃᑐᑦ ᕿᓂᕈᓇᕐᓂᕐᒧᑦ ᐊᖏᕈᑎᓄᑦ ᐊᒻᒪᓗ ᐊᑐᖅᑕᐅᓂᖏᓐᓄᑦ ᓄᓇᐃᑦ ᓚᐃᓴᓐᓯᒥᓄᑦ ᐊᑐᖅᑐᐊᕈᑎᖏᓄᓪᓗ ᐊᑮᙱᒃᓯᑎᒃ.

ᐃᑲᔫᓯᐊᖅᑖᕆᔭᐅᔪᓐᓇᖅᑐᑦ ᐊᒥᓱᕈᖅᐸᓪᓕᐊᑐᐃᓐᓇᖅᐳᑦ ᒪᓕᒃᑐᒋᑦ ᐊᖏᓂᖏᑦ ᐊᐅᓚᑕᐅᔪᑦ, ᐊᒻᒪᓗ ᐊᖏᔫᒪᓇᐅᓪᓗᑎᒃ ᑖᒃᓯᔭᖅᑕᐅᓇᔭᖅᑐᑦ ᐊᑭᓕᖅᑐᖅᑕᐅᓇᔭᖅᑐᓪᓗ ᓇᖕᒥᓂᖅ ᑖᒡᒐᖕᖓᑦ ᐊᓯᐊᒍᓪᓗᓐᓈᑦ ᓄᖑᔪᐃᑦᑐᐃᑦ ᐊᐅᓚᑕᐅᓂᖏᓐᓂ ᓄᓇᕗᒻᒥ. ᑐᑭᓯᔪᓐᓇᖅᑐᒍᑦ ᕐᑲᓄᖅ ᐊᒃᑐᖅᑕᐅᔪᓐᓴᕐᒪᖕᒫᑦᑕ ᑮᓇᐅᔭᓕᐅᕐᑲᑕᐅᔪᓂ ᐃᔾᔪᒐᒃᓴᓕᐊᖑᓯᒪᔪᓂᒃ ᒫᓐᓇᐅᔪᖅ ᑲᒪᒋᔭᐅᔪᓂᒃ ᑐᓐᖓᕖᒃᑯᓐᓄᑦ ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊ ᒐᕙᒪᒃᑯᖕᒋᓐᓄᑦ (GNWT) ᒎᑐᓕᖕᓄᑦ ᐊᒻᒪᓗ ᓴᕙᕋᔭᒃᓴᕐᑲᖅᑐᓂᒃ ᐅᔭᕆᓐᓂᐊᕐᓂᕐᒥᒃ[18]. ᒪᓕᒃᑕᐅᑎᓪᓗᒍ ᑐᑭᓯᓇᖅᓯᒪᔪᑦ ᑐᓐᖓᕖᒃᑯᑦ ᐃᔾᔪᐊᒐᒃᓴᓕᐊᕆᓯᒪᔭᖕᒋᓐᓂᒃ, ᑮᓇᐅᔭᓕᐅᓗᐊᖕᒋᑦᑐᑦ ᐅᔭᕆᓐᓂᐊᕐᕕᕋᓖᑦ ᐊᑭᓖᔪᓐᓇᖅᑐᑦ $35-ᓂᒃ $40 ᒥᓕᔭᓐᓄᑦ , ᐊᒻᒪᓗ ᐊᖏᓂᖅᓴᐃᑦ ᑮᓇᐅᔭᓕᐅᕐᔪᐊᖅᑐᑦ ᐅᔭᕆᓐᓂᐊᕐᕖᑦ ᓂᕆᐅᖕᓇᕈᓐᓇᖅᑐᖅ ᐊᑭᓕᖅᑐᐃᔫᒫᕐᓂᖅ $80 - $90 ᒥᓕᔭᓐᓂᒃ, ᐃᕐᕋᓂᓕᒫᖑᓂ ᐅᔭᕆᓐᓂᐊᕐᕖᐅᑉ. ᓄᖑᔪᐃᑦᑐᕐᑲᒻᒪᓇᒃᑐᓂ ᐅᔭᕆᓐᓂ, ᐊᑭᓕᖅᑐᓇᐊᕐᑲᖅᑕᖅᑎᑦ ᓄᓇᒥᒃ ᐊᑐᕐᓂᕐᓄᑦ, ᐊᑭᑐᓂᖅᓴᒻᒪᓇᐊᓚᔪᓐᓇᖅᑐᑦ[19]. ᐅᔭᕆᓐᓂᐊᕐᕚᒃ ᓄᓇᐅᑉ ᕐᑳᖓᓃᐸᑦ ᐃᓄᖕᓄᑦ

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[18]ᐱᔪᓐᓇᖅᓯᒪᖕᒋᑦᑐᒍᑦ ᑮᓇᐅᔭᓕᐅᕈᑕᐅᓇᔭᖅᑐᓂᒃ ᐊᔾᔨᖑᐊᖕᒋᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᓂ ᐅᑭᐅᖅᑕᖅᑐᒥ.

[19] McArthur River-ᒥ ᐅᔭᕆᓐᓂᐊᕐᕕᒃ ᓴᓵᑦᓯᐋᓐᒥ ᑐᑭᓯᓂᐊᕐᕕᒃᓴᑦᑎᐊᕙᒻᒪᕆᒃ ᕐᑲᓄᐃᑦᑑᓯᓂᖏᓐᓂᒃ ᓄᓇᒥᒃ ᐊᑐᕐᓂᕐᒧᑦ ᐊᑭᓕᐅᑏᑦ ᑖᒃᓲᔭᐃᔭᖅᑕᐅᔭᓇᐊᕐᑲᖅᑐᓪᓗ ᐱᔭᐅᔪᓐᓇᖅᑐᑦ, ᑮᓇᐅᔭᓕᐅᖅᑐᒻᒪᓇᐅᔪᒥᒃ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᒥ. ᑖᒃᑯᓂ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᒥ, ᑲᑎᓪᓗᒋᑦ ᒐᕙᒪᒃᑯᑦ ᑮᓇᐅᔭᓕᐊᕆᓯᒪᔭᖕᒋᑦ ᐃᖕᒋᕐᕆᔪᒥ 20-ᓂᒃ ᐊᕐᕋᒎᓂᒃ ᐅᔭᕆᓐᓂᐊᕐᕕᒃ, ᓂᕆᐅᖕᓇᖅᑐᑦ ᕐᑲᓂᒋᔭᖕᒋᓐᓂᒃ $1.4 ᐱᓕᔭᓐᓂᒃ $3.7 ᐱᓕᔭᓐᓄᑦ (ᒪᓕᒃᑕᐅᓂᖏᓐᓂ 1997-ᒥ ᑲᑎᒪᔾᔮᑦ ᐅᓂᒃᑳᓕᐊᕕᓂᖏᑦ), ᐅᖓᑖᓃᑦᑐᑦ ᑮᓇᐅᔭᖅᑖᕈᔭᐅᓯᒪᔪᓂᒃ ᐃᓄᐃᑦ

ᐱᕀძᑎᑭᔭᐅᔨᓂ ⅇᓇᓂ, ᐊᑭᑕᖅᑐᖅᑕᐅᔭᕆᐊᕀᑲᕀᖅᑐᖅᑐᑦ, ᑐᵃᵒᖃᕐᓇᵇძᑦ, ᐊᓪᒪᓗ ⅇᓇᐟᵇძᑎᵇ ძΔᵃ ᐱᕀძᑎᑭᖃᵒᑎᓂᵒᓂᓂ ⅇᓇᒥᐅᑕΔᑦ, ᐊᑭᑕᖅᑐᖅᑕᐅᓇᕀᖅᑐᑦ ᑲᓇᑕᐅᐸ ᒐᖏᒪᑲძᵒᑎᑦ, ᐊᓪᒪᓗ Δᓕᵒᖃᔪᑦ >ᓴᵃᑎᑎᔪᑦ ᐊᑭᑕᖅᑐᖅᑕᐅᔭᕆᐊᕀᑲᕀᖅᑐᖅᑐᑦ ⅇᓇᑉᑦ <<ᕀᑎᕐᓴᵇძᵃⅇᑦ.

ⅇᓇᕀᓯᐊᕀᒥ ᑭⅇᐅᔭᑦᐅᑕᐅᑉᑉᓕᓪᓕᐊᔨᓂᵇ ᑕძᵇᓴΔᑦ (ᑎᑎᕀᑲᖅᑐᓕᑎᑦ Bullen, 2003[20]ᐊᕐᕕᓴΔᵃⅇᑲᓴᑎᓂᵒᓂᵇ ᑕძᵇᓴᐅᐊᑦ. ᓱᕀᓯᑲძᑦ ᐊᓱᑎᑦᓗ (Sherlock)[21] ⅇΔⅆᖅᓱᒪᔨᓂᵇ ᐅᓂᵇᑲᖅᓱᒪᔨᑦ Δᕐᔨᐊᒐᑲᓴᵇ ᐊᓪᒪᓗ ᕀᑲᐅᕐᓗᑎᵇ "ᐊᓕᒍᒐᖅᑕᖅᓱᐅᖅᑕᓂ ᐅᓴᕀᖅᓂᐊᕀᙰᖅᓂ, ⅇᓇᒥᵇ ᐊᑕᕀᓂᔪᑦ ᐊᑭᓕᐅᑎᑦ ᐅᖅᒪᑕⅆᓕᑦ $600 ᒥᓕᕐᵒᓂ, ᐱᕐᐅᔨᵒⅇᖏᑕᖅᑕᑦ." ᕀᑲᐅᔪᒪᕐᓴᐅᐊᕀᑲᖅᑕᖅᑕᖅ ᑕᵇძᐊ "ᒪᓕᑎᒪᖅᓂᓂᑦ ᓱᒪᔨᐊᕀᒥ ᐱᐅᓂᖅᕿᖕᔪᓂᵇ Δⅆᑎᒥᵇ ᑕΔᙰᒥᓗ ᐊᐅᒪᑕᐅᔨᓂᵇ ⅇᓇᕀᓯᐊᕀᒥ", ᑕΔᒪΔᵃᓂᖅᓴᓄᑦ ᑕᒪᕀᒥᐊᓗᵇ ᐊᑭᓕᖅᑐΔⅇᕐᓂᑦᑐᑦ ⅇᓇᒥᵇ ᐊᑐᕀᓂᔪᑦ, ᑕΔᐃᒪᵇ ᐊᖅᑎᑎᒥᔨᓂᵇ. ᐅᓂᵇⅆᓕᐊᑦ ΔᒪΔᓕᖅᓴᕐᒥᔨᑦ, ..."ᑲᓗᓂᵇ ᐊᐅᒪᑕᐅᔨᑦ Δᓕᖅᓴᓂ ᒥᑭᓂᵇᕀᐅᓴᐊᵇ, ᑭᓱᐊᓂ ᓱᓕ ᑭⅇᐅᔭᖅᑕᑕᐅᔨᵃⅇᖅᑐᑦ ᐅᖅᓴᑕᓂ $60 ᒥᓕᕐᵒ ᐊⅆᓂᐅᔨᒥ 15 ᐊᕀᖏᑲΔᑦ Δᖅᑎᕀᓂᖅᑎᵒᓂ. ᑕΔᐃᒪᵇᕀᐊΔᵃⅇᖅ, ᕀⅎᕀᔭᵇᕀᖅᓱᐅᖅᑐᓂᵇ ᐅᔭᕀᖅᓂᐊᕀⅎᐃᑦ ᐱⅎᐅᔨᵃⅇᕆᔨᑦ $20-25 ᒥᓕᕐᵒᓂᵇ ⅇᓇΔᑦ ᐊᑐᖅᑕᐅᓂᖅᑎᵃⅇᓂ ᐊᑭᑕᐅᑎᓂᵇ, 20-ᓂ ᐊᕀᖏᑲᓂᵇ ᐊᐅᒪᑕᐅᔨᒥᵇ ᐅᔭᕀᖅᓂᐊᕀⅎᖅᒥᵇ". ᑕᒪᕀᒥᵇ ᑐᵃᖅᑕᕀⅎᵇძᑦ ᐊᓪᒪᓗ ⅇᓇᕀᓯᐊᐟ ᑲᖏᒪᵇძᖅᑎᑎᑕ Δᕐᔨᐊᒐᑲᓕᐊᖅᑎᑦ ᑐᑭᓯᓇᖅᑐᑦ ᐊᒥᓯᑦ ⅇΔᵃⅇᔭᖅᑐᑦ ᐊᑭᑕᖅᑕᐅᔨᑦ ᐅᔭᕀᖅᓂᐊᕀⅎᖅᖅᓂ ᐊᐅᒪᑕᐅᔨᓯᓂᵇ ᐅᑭᐅᖅᑕᖅᑐᒥ. ⅇᓯᒪᔨᐃᑎᑐᖅᓂ ᐅᔭᕀᖅᓂᐊᕀⅎᖅᵇ ᓂᓚᐅᑭᔭᐅᔨᵃⅇᕆᔨᖅᑲ ᑕΔᐃᵇ ᐅᑎᖅᑎᑎᑕⅇᔭᕀᓂᖅᑎᵒᓂᵒᓂᵇ ᑭⅇᐅᔭᑦᐅᑕᐅᔭᑦᑐᑦ. (Δᖅᑲᐅᒪᔭᐅᔭᕆᐊᕀᑲᖅᑲᓴᖅ, ᑕᒪᵇძᐊ ᐅᵇᑐᕀᐅᑎᑐΔᵃⅇᐅᐅᓴᑦ ᐊᓪᒪᓗ ᐊᐅᒪᑕᐅᑦᑕᓕᓚᵇᑐᑦ ᐊᐱᑭᖏᑕᖏᑭᓂᵒᓂᵇ ᓴᕀᑭᑎᔨᵃⅇᕆᔨᖅᑲ).

ᐅᔭᕀᖅᓂᐊᕀⅎᐃᑦ ᐊᐅᒪᑕᐅᔨᑦ ᐊᖅᑭᔨᒪᓕᕆᐊᑐᖅᒥᵇ ᒪᙰᒪᵇძᵃⅇᓂ ᑕᵇᓯᔭΔᔭᕀⅆᐅᓂᖅᑎᵒᓂᵃᓂᓂ ᑭⅇᐅᔭᑦᐅᑕᐅᑉᑉᑕᐅᓂᑦ. ᑕΔᒪᑕ ᒪᑕᑲᑐᑦ ᓴⅇᖏᐊᕀᖅᓯᒪᔭᖅᑭᑦ ᑐᵃᖅᑕᕀⅎᵇძᑦ, ⅇᓇᑉᑦ ᒪᙰᒪᵇძᖅᑎᑦ ᐱⅇᔭᖅᑐᑦ ᑕᵇᓯᔭᑭᖅᑕᐅᓯᒪᔨᓂᵇ ᕀᑲᓂᖅᑐᵒᓂᵇ ⅇᓇᒥᵇ ᐊᑐᑎⅇᑦ ᐊᑭᑕᐅᖅᑐᖅᑕᐅᔨᓂᵇ, ᕀძᓯᓂ ᐅᕀᖅᐅᓯᐅᓯᒪᔨᓂᵇ ᐊᓪᒪᓗ ᖅᑕᑎᔨᖅᑎᑦ ᒪᙰᒪᵇძᖅᑎᑦ ᒪᕀᑭᐃᖅᑕᖅᑕᐅᑐᑦ ᐱⅇᔭᑦᐅᑕᐅᑦ ᐊᑭᑕᖅᑐᖅᑕᐅᓯᒪᔨᓂᵇ, ᑭᑕᓯᑲᖅᑕᐅᓯᒪᔨᓂᵇ ⅇᓇᒥᵇ ᐊᑐᑎᓂᑦ ᐊᑭᑕᐅᖅᑐᖅᑕᐅᔨᓂᵇ, ᑭᑕᓯᓂ ᐅᕀᖅᐅᓯᐅᓯᒪᔨᓂᵇ ᐊᓪᒪᓗ ᖅᑕᑎᔨᖅᑎᑦ ᒪᙰᒪᵇძᖅᑎᑦ ᒪᕀᑭᐃᖅᑕᖅᑕᐅᑐᑦ ᐱⅇᔭᑦᐅᑕᐅᔨᓂᵇ ᐱⅇᔭᕀᖅᑐᵒᓂᓂᐊᑭᖅᑕᖅᑐᑦ ᐱⅇᔭᑦᐅᑕᐅᔨᓂᵇ, ᑐᵇᓯᔭΔᓂᑦᑐᑦ. ᑐᵇᓯᔭᑭᖅᑕᐅᔨᑦ ⅇᓇᒥᵇ ᒪᙰᒪᵇძᖅᑎᵒᓂᓂᐊᑭᖅᑕᖅᑐᑦ Δᖅᔨᕆᵒᓂᕆᔨᑦ ⅇᓇᒥᵇᒪᒥᐅᓂᵇ, ᓱᕀᓂ

ⅇᓇᒥᒪᒥ ⅇᓇᑐᕆᑎᑎᓪᓕᐅᑭᖅᑕᖅᑎᖅᑎᵒᓂᵒᓂᓂ. ᑕᒪᕀᒥᵇ ᑲᓇᑕᐅᑕᑭᖅᑎᑎᓂᓂᐅᑭᖅᑎᑎᑕᖅᑕᓯᑐᓂᓄᑦᑐᑦ ᑕΔᐃᒪᑎᑎᑦ ᑲᓇᑕᐅᑕᑲᓇᖅᑎᑎᑦᑕᒪᒥᵇ McArther River-ᒥ ᐅᔭᕀᖅᓂᐊᕀⅎᖅᖅᒥ, ᐊᔪᕆᒪᖅᑎᑎᓂᓂᐊᑭᖅᑕᖅᑐᑦ ᓱᓕᕀᔪᐊᕀᓕᓪᒥ ᐅᔭᕀᖅᓂᐊᕀⅎᖅᵇ ᑐᵃᓇ.

[20] Bullen, W. and Zhang, J.; >ᓕᵒ, ᐊᓪᒪᓗ ᓴᵃᖅ ᐅᓂᵇᑕᓕᐊᖅᑎᑦ; 2003; ᑲᓇᑕᐅᑕᑲᓇᑕᐅᓂᖅᑎᑦ ᐅᔭᕀᖅᓂᐊᕀⅎᐃᑦ ᑲᓇᑕᐅᔨᑦ ᐅᑲᐅᖅᑕᖅᑐᖅᓴᓂ. ᑲᑎᒪᓂᖅᑎᵒᓂ, 7-ᑎᔭᐅᔨᒥ ᓱᓕᕀᔪᐊᕀᒥᐅᑦ ᑲᑎᒪᕀᔪᐊᕀᓂᖅᑎᑦ ᐅᔭᕀᖅᓂᐊᕀⅎᓂᓕᓚᓂᕀᒪᑦ ᐅᑲᐅᖅᑕᖅᑐᖅᑕᒥ; CIMM, ᒪᵇᐱᑌᐃᑦ 3-18. ᑲᓇᑕᐅᑕᑲᓇᑕᐅᓂᖅᑎᑦ ᐅᔭᕀᖅᓂᐊᕀⅎᐃᑦ ᑲᑎᒪᑲᓇᖅᑐᑦ ᐅᑲᐅᖅᑕᖅᑐᖅᓴᓂ.

[21] Sherlock ᓱᓯᵇ ᐊᓱᖅᑎᓕᑐ, ᐊᕐᔨᑐΔᵃⅇᖅᑎᑦ ᕀძᓯᓂᑦᑐᑦ.

ᐱᐅᓯᒌᐊᕈᑕᐅᓗᑎᒃ ᐃᒡᓗᓕᕆᓂᕐᒧᑦ, ᐃᓕᓐᓂᐊᕐᓂᓕᕆᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐊᓐᓂᐊᖅᑐᓕᕆᓂᕐᒧᑦ.

ᐃᒻᒪᖄ ᐱᒻᒪᕆᐅᓂᖅᐹᖑᔪᖅ ᐃᓄᖕᓄᑦ ᑕᐅᕙᓂ ᖃᓂᒋᔭᖅᑲᖅᑐᑦ ᐅᔭᕐᓂᐊᕐᕕᖕᒥ ᐱᑖᖅᑕᐅᔪᓐᓇᕐᓂᖏᑦ ᐃᑲᔫᑎᒃᓴᓂᒃ ᐃᓅᓯᕐᒥᓄᑦ, ᓄᓇᓕᖕᒥᐅᓄᑦ ᓇᖕᒥᓂᖅᑲᖅᑐᓄᓪᓗ. ᐅᔭᕐᓂᐊᕐᕕᖕᒥ ᐊᐅᓚᑕᐅᔪᒥᒃ ᐊᒥᓱᓂᒃ ᐊᕐᕌᒍᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑖᕈᑕᐅᓂᐊᕐᒪᑕ, ᑲᔪᓯᓐᓇᖅᑐᒥᒃ ᐊᑭᓕᖅᑐᖅᑕᐅᑦᑎᐊᖅᑐᓂᒃ ᐊᒥᓲᓄᑦ ᕼᐊᓇᓚᖕᒋᓐᓃᑦᑐᓄᑦ ᓴᓇᔨᓄᑦ. ᐊᐅᓚᑕᐅᔪᓂ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔪᒥ ᓄᓇᓂ, (ᓄᓇᐅᑉ ᖄᖏᓐᓂ, ᓄᓇᐃᑦ ᐃᓗᐊᓂᓗ), ᐃᓄᐃᑦ ᑲᑐᔾᔨᖅᑲᑎᒌᒋᑦ ᐊᒻᒪᓗ ᑲᒻᐸᓂᐅᔪᑦ ᐃᖏᕐᑎᑦᑎᔪᑦ ᐊᖏᕈᑎᓕᐅᕋᔭᖅᑐᑦ ᐃᓄᐃᑦ ᐊᒃᑐᖅᑕᐅᓂᖏᓐᓄᑦ ᐃᑲᔫᑎᒃᓴᓂᒃ ᐊᖏᕈᑎᓂᒃ, ᑕᒪᒃᑯᓇᓗ ᐊᑑᑕᐅᓂᐊᖅᑐᖅ ᐃᓄᐃᑦ ᐃᖅᑲᓇᐃᔮᖅᑎᑕᐅᖅᑲᑦᑕᓇᐊᖅᑲᖅᓂᖏᓐᓄᑦ ᐊᒻᒪᓗ ᓇᖕᒥᓂᖅᑲᖅᑐᑦ ᐊᑐᖅᑕᐅᔭᓇᐊᖅᑲᖅᓂᖏᓐᓄᑦ ᓄᓇᓕᖕᓂ[22] ᐊᒻᒪᓗ ᐊᕕᒃᑐᖅᓯᒪᓂᐅᔪᓂ. ᓄᓇᓖᑦ ᐃᑲᔪᖅᑕᐅᕚᓪᓕᕈᓐᓇᖅᒥᔪᑦ ᐱᐅᓯᒋᐊᖅᑕᐅᓂᖏᓐᓄᑦ ᓄᓇᓕᖕᓂ ᓄᓇᓕᖅᑲᑎᒌᕈᑏᑦ, ᓲᖅᓗ ᐊᖅᑯᑏᑦ ᐅᕙᓘᓐᓃᑦ ᑐᓚᒃᑕᖅᕖᑦ.

ᑐᓐᖓᕕᒃᑯᑦ ᐅᔭᕐᓂᐊᕐᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ ᒪᓕᒐᖅᑐᑦ ᐊᔪᖅᓇᖏᓐᓂᓕᒫᖓᓂ ᐅᔭᕐᓂᐊᕐᕕᖕᓃᖕᒐᖅᑐᑦ ᐃᑲᔫᑏᑦ ᓄᓇᕗᒦᖅᑯᔭᐅᓪᓗᑎᒃ. ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐊᑐᐊᒐᐃᑦ ᐋᖅᑮᓗᑕᐅᔪᑦ ᐃᓚᖏᓐᓂᒃ ᓱᓕᒃᑲᓐᓂᖅ ᖃᓄᐃᓕᐅᓇᐊᖅᑲᕈᑕᐅᓂᐊᖅᑐᓂᒃ ᐃᑲᔪᖅᑕᐅᓂᖏᓐᓂ ᐃᓄᐃᑦ ᐊᑐᕐᓂᖅᐹᖑᔪᓐᓇᕐᓂᖅ ᐃᑲᔫᑎᓂᒃ. ᑕᒪᒃᑯᐊ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᖓᑐᐃᓐᓇᖏᑦᑐᑦ, ᐊᑐᓇᐊᖅᑲᒥᔪᑦ ᐊᓯᖏᓐᓂᒃ ᐅᔭᕐᓂᐊᕐᕕᖕᓂ.

4.6 ᓄᖑᔪᐃᑦᑐᖅᑲᖅᓂᖏᑦ ᐃᓄᐃᑦ ᐱᖅᑯᑎᖏᓐᓂ ᓄᓇᓂ

ᑖᒃᑯᓇᓂ ᑎᑎᕋᖅᓯᒪᔪᑦ ᐊᕕᒃᑐᖅᓯᒪᓂᖏᓐᓂ, ᐅᖃᐅᓯᖅᑲᖅᑐᒍᑦ ᐊᔾᔨᖏᑦᑑᑎᓂ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᓄᓇᒦᑦᑐᓂᒃ, ᐅᖃᐅᓯᐅᑉᓗᑎᒡᓗ ᓇᓃᓚᔪᖕᒪᖕᒌᑕ ᓄᖑᔪᐃᑦᑐᓖᑦ ᓄᓇᐅᑉ ᐃᓗᐊᓂ. (ᐃᓚᖏᑦ ᐱᔭᓇᐊᑐᔪᑦ ᐅᖃᐅᓰᑦ ᐊᑐᖅᑕᐅᔪᑦ ᑕᒡᕙᓂ). ᑲᓇᑕᒥ ᐅᔭᕐᓂᖅᔪᐊᖅ-ᑐᖓᕕᐅᔪᖅ ᐅᔭᕐᑐᖅᑲᒻᒪᓅᓇᖅ, ᓇᐸᐸᑦᑐᐊᖓᓂᒃ ᑲᓇᑕᒦᑦᑐᖅ-ᐊᖏᓂᖅᐹᖑᔪᖅᑲᑕᐅᔪᖅ ᐲᔭᐃᕕᐅᔪᐊᓐᓇᖅᑐᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᔭᕐᖓᑕ, ᓯᓚᕐᔪᐊᓕᒫᒥ. ᐊᒥᓲᖕᒪᑕ ᐊᔾᔨᒌᒋᑦᑑᑏᑦ ᓄᖑᔪᐃᑦᑐᖅᑲᖅᑐᑦ, ᑭᓯᐊᓂ ᑲᓇᑕᒥ ᒪᕐᕈᐃᓕᖅᑲᖅᖑᕙᑦ - paleoplacer-ᒥᒃ ᑕᐃᔭᐅᔪᖅ ᑕᐃᔅᓯᒪᓂᑕᖅ ᐊᒻᒪᓗ ᐅᔭᕋᕕᓂᑐᖅᑲᒻᒪᓇᖕᓃᑦᑐᑦ ᓄᓇᒥᐅᑕᐃᑦ. ᓯᕗᓪᓕᐅᓂᖅᓴᐅᑦ ᐱᑕᖅᑲᖅᐳᑦ Elliot Lake-ᒥ ᐋᓐᑎᐅᕆᔫᒥ, ᐊᒻᒪᓗ ᑭᖑᓪᓗᖏᑦ ᐱᑕᖅᑲᖅᑐᑦ Athabasca-ᒥ ᓄᓇᒥ ᐊᖕᒪᓗᖅᑐᒥ, ᐊᖏᔪᐊᓘᓪᓗᓂ ᐅᔭᖅ ᓯᐊᕐᔮᖅ ᐊᓯᖏᓪᓗ ᓵᑐᔮᑦ ᐅᔭᕋᐃᑦ ᓄᓇᒦᑦᑐᑦ ᓴᔅᑳᑦᓯᐋᓐ ᑲᓇᖕᓇᖓᓂ. ᑕᒪᓐᓇ ᑐᖓᕕᐅᔪᖅ ᓄᓇᓂ ᐱᐅᓂᖅᐹᖅᒥᒃ ᐱᑕᖅᑲᖅᑐᖅ

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[22] ǁᒪᓕᒃᑕᐅᔭᓇᐊᓖᑦ ᓇᖕᒥᓂᖅᑲᖅᑐᑦ ᑐᑭᓯᓂᐊᖅᑲᑦᑕᓇᐊᖅᑲᖅᓂᖅ ᐃᓄᐃᑦ ᑎᒥᖅᑯᑎᖏᓐᓂᒃ-ᑐᓐᖓᕕᒃᑯᓐᓂᒃ-ᐱᔾᔪᑕᐅᔪᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᑦᑎᓂᖅ, ᑲᓐᑐᓛᒃᑖᖅᑎᑦᑎᓂᖅ, ᐊᒥᓱᓂᓪᓗ ᐊᓯᖏᓐᓂᒃ ᐱᔾᔪᑕᐅᔪᓂᒃ.

ᓄᖑᔪᐃᑦᑐᕐᑲᖅᑐᓂᒃ ᐱᔾᔪᑕᐅᓂᖏᓐᓄᑦ ᐊᖏᔫᑎᐅᓂᖏᑦ ᐱᐅᓯᒪᓇᑦ ᐱᑐᕐᑲᒻᒪᕆᐅᔪᓂᒃ ᐅᔭᕆᕕᓂᑐᕐᑲᐃᑦ ᑕᐅᕙᓃᑦᑐᑦ.

ᐱᔾᔪᑕᐅᓪᓗᑎᒃ ᓄᓇᐃᑦ ᐊᔾᔨᒌᖕᓂᖏᑦ Athabasca Basin-ᒥ ᐊᒻᒪᓗ ᐃᓚᖏᓐᓂ ᓄᓇᕗᒻᒥ ᓄᓇᓂ, ᓄᖑᔪᐃᑦᑐᓂᒃ ᕿᓂᕐᕕᐅᔪᑦ ᓄᓇᕗᒻᒥ ᐱᓗᐊᖅᓯᒪᔪᑦ ᐅᔭᕆᕕᓂᑐᕐᑲᒻᒪᕆᖕᓂ. ᑕᒪᒃᑯᐊ ᓄᓇᒦᑦᑐᑦ ᑕᐃᒪᐃᓕᖓᓕᖅᑦᑕᖅᑐᑦ ᐱᔾᔪᑕᐅᓪᓗᑎᒃ ᓄᓇᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖓ, ᐊᓯᔾᔨᕐᑲᑦᑕᖅᑎᓪᓗᒍ ᐱᒻᒪᕆᐅᔪᓂ ᐅᔭᕆᕕᓂᑐᕐᑲᕐᓂ, ᐊᑯᓂᖏᓐᓂ ᐱᑐᕐᑲᐃᑦ ᐊᑖᓃᑦᑐᑦ ᐊᓪᓕᖅᐹᑦ ᐅᔭᕆᐃᑦ ᐊᒻᒪᓗ ᖁᓛᓃᑦᑐᑦ ᖁᓪᓕᓃᓕᖅᓯᒪᔪᑦ ᒪᒃᑯᖕᓂᖅᓴᐃᑦ ᓯᐅᕆᓪᓚᖑᓂᓛᑦ ᐅᔭᕆᐃᑦ Proterozoic-ᒥ ᑕᐃᔅᓯᒪᓂᒻᒪᕆᒃ ᐊᕐᕿᒎᓚᐅᖅᓯᒪᔪᓂᒃ ᑕᐃᒪᐃᓕᓂᑯᐃᑦ. ᑕᒪᒃᑯᐊ ᓄᓇᒦᑦᑐᑦ ᐊᖏᓂᕐᑲᖅᑐᑦ 33%-ᒥᒃ ᓯᓚᕐᔪᐊᕐᒥ (ᐃᓚᐅᑎᖏᓪᓗᒋᑦ ᕌᓯᐊ ᐊᒻᒪᓗ ᓴᐃᓇ) ᓄᖑᔪᐃᑦᑐᕐᑲᕐᓂᐅᔪᑦ, ᐊᒻᒪᓗ ᐊᖏᓂᖅᐹᖑᕐᑲᑕᐅᓪᓗᑎᒃ, ᐱᐅᓂᖅᓂᐹᖑᕐᑲᑕᐅᓪᓗᑎᓪᓗ.

ᓄᖑᔪᐃᑦᑐᕐᑲᕐᓂᖅ ᓄᓇᒻᒥ ᓱᓕ ᖃᐅᔨᒪᓇᖏᑲᓗᐊᖅᑎᓪᓗᒋᑦ, ᐃᓱᒪᒋᔭᐅᓯᒪᔪᖅ ᐱᑕᕐᑲᑐᐃᓐᓇᓇᐊᕐᑲᕐᓂᖏᑦ ᓇᓂᔭᐅᔪᓐᓇᖅᑐᑦ ᐅᔭᕆᕕᓂᑐᕐᑲᒻᒪᕆᖕᓃᑦᑐᑦ ᒪᕿᖕᓃᑦᑐᑦ ᓄᓇᕗᒻᒥ-Thelon ᑰᖓᓂ ᐊᖕᒪᓗᕐᓂᕐᒥ ᖃᓂᒋᔭᖓᓂ ᖃᒪᓂ'ᑐᐊᖅ ᐊᒻᒪᓗ Hornby Bay-ᒥ ᐊᖕᒪᓗᕐᓂᖅ ᓂᒋᖅᐸᓯᐊᓃᑦᑐᖅ ᐃᖃᓗᒃᑑᑦᑎᐊᑉ (ᑕᑯᓗᒍ ᐊᔾᔨᖑᐊᖅ 1). ᑭᓪᓕᕝᕕᒃ-ᓯᓴᓐᓯᒦᑦᑐᑦ ᓄᓇᒥᐅᑕᐃᑦ ᐅᐊᓕᓂᖅᐸᓯᖕᒦᑦᑐᑦ ᖃᒪᓂᑐᐊᕐᒥᒃ, ᐊᒻᒪᓗ ᐃᓚᖏᑦ Hornby Bay-ᒦᑦᑐᑦ ᐅᔭᕆᕕᓂᑐᕐᑲᒻᒪᕆᖕᓂᑉᐳᑦ. ᓄᖑᔪᐃᑦᑐᐃᑦ ᕿᓂᕐᑕᐅᔪᑦ ᓄᓇᕗᒻᒥ ᑕᑯᓇᓗᐊᖅᐳᑦ ᓇᓂᓯᓇᓱᐊᕐᓂᖅ ᑕᐃᒪᐃᑦᑐᓃᑦᑐᓂᒃ.

ᑕᐃᒪ ᐅᕐᑲᐅᓯᐅᓯᒪᔪᓂ ᐃᓗᖏᓐᓂᒃ 1.1-ᒥ, ᐃᒪᖏᑦ ᓄᓇᐃᑦ ᐃᓗᐊᓃᑦᑐᑦ ᐃᓄᖕᓄᑦ ᐱᕐᑯᑎᒋᔭᐅᔪᑦ ᐃᓱᒪᒋᔭᐅᖕᒪᑕ ᐱᑕᕐᑲᑦᑎᐊᕈᓐᓇᕐᓂᖅ ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᓇᓪᓖᖅᑕᕐᕕᐅᔪᓐᓇᕐᓂᖅ. [23] ᓄᖑᔪᐃᑦᑐᓄᑦ ᐊᑐᐊᒐᐃᑦ ᐊᑐᓕᕐᑯᔾᔪᑦ ᑐᓐᖓᕕᒃᑯᑦ ᐱᓕᓇᕐᑯᔭᐅᓪᓗᑎᒃ ᑕᒪᐃᓐᓂᑦᑎᐊᖅ ᖃᐅᔾᔅᑎᐊᕐᑯᔭᐅᓂᖅ ᓄᖑᔪᐃᑦᑐᕐᑲᑐᐃᓐᓇᓇᐊᕐᑲᕐᒪᖓᑕ ᐃᓗᓕᖏᑦ ᑕᒪᒃᑯᓇᓂ ᓄᓇᓂ (ᐊᒻᒪᓗ ᖄᖏᓐᓂ ᐃᓄᖕᓄᑦ ᐱᕐᑯᑎᒋᔭᐅᔪᓂ ᓄᓇᓂ) ᑕᐃᒫᒃ ᑐᖓᓐᕕᒃᑯᑦ ᐊᒻᒪᓗ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖕᒋᑦ ᐸᕐᓇᒍᓐᓴᕐᑲᑦᑕᕐᓂᐊᕐᒪᑕ ᐅᑐᖅᑕᐅᓂᖏᓐᓄᑦ ᑕᐃᒃᑯᐊ ᓄᓇᐃᑦ. ᐊᒻᒪᓗ, ᑕᐃᒫᒃ ᖃᐅᔾᔭᖅᑕᐅᓂᖏᑦ ᐃᑲᔪᕐᓂᕐᑲᕐᓂᐊᖅᑐᑦ ᑐᓐᖓᕕᒃᑯᓐᓂᒃ ᐱᐅᓯᒋᐊᖅᑎᑦᑎᓂᕐᒥᒃ ᐊᖏᕈᑎᓂᒃ, ᐊᖏᕈᑎᓕᐊᕆᔭᒥᓂᒃ ᐃᓚᒋᓗᒋᑦ ᐅᔭᖓᓂᐊᕐᕕᑦ ᑲᒪᓂᐅᔪᑦ, ᐊᒻᒪᓗ ᐱᐅᓂᖅᓴᓂᒃ ᐱᕐᑯᔭᖅᑖᕐᓗᑎᒃ ᐃᓚᒋᔭᐅᔭᕆᐊᕐᑲᕐᓂᖏᓐᓄᑦ ᓯᕗᓂᒃᓴᒥ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᔭᖓᓂᐊᕐᕈᒪᔪᕐᑲᖅᐸᑦ ᑖᒃᑯᓇᓂ ᓄᓇᓂ.

4.7 ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖅ ᓄᖑᔪᐃᑦᑐᓂᒃ ᕿᓂᕕᐅᔪᓂ ᐊᒻᒪᓗ

[23] ᓄᓇᐃᑦ BL-22-ᒦᑦᑐᑦ ᐱᑕᕐᑲᖅᑐᑦ Andrew Lake-ᒥ ᐊᒻᒪᓗ End Grid-ᒥ ᓄᓇᒥᐅᑕᕐᑲᖅᑐᓂᒃ ᐃᓚᒋᔭᐅᔪᑦ ᑭᓪᓕᕝᕕᒃ-ᓯᓴᓐᓂᕐᒥᓗ ᓴᓇᔭᐅᓯᒪᔪᓂ.

ᐅᓴᖃᖅᓂᐊᖅᓂᕐᒧᑦ

ᐊᐅᑐᖅᑕᐅᓯᒪᔪᓐᓇᖅᓂᖅ ᖃᓄᐃᓕᑐᑐᐃᓇᓄᑦ ᓴᓇᕆᔨᐊᕈᖅᑐᓂ, ᐱᖅᑲᑕᐅᓐᓂᑐᒃ ᐅᓴᖃᖅᓂᐊᖅᐲᑦ, ᐃᓯᒪᒋᐅᔪᓐᓇᖅᐳᖅ ᑕᐅᑐᐅᑕᐅᓂᑐᒃ ᒪᖅᑭᐃᓕᔪᓂᒃ ᐊᕕᐅᑐᖅᓯᒪᔪᓂᒃ - ᐃᓄᐃᕕᐅᔪᓂᑐᑦ ᑕᒪᖅᑭᒥᒃ, ᒪᓄᐊ ᐃᓄᐃᑦ, ᐱᑭᖅᑐᑦ, ᐅᒪᔪᐃᑦ, ᑲᑎᖃᖅᑎᑦ ᑕᐃᒪᐃᑦᑐᑐᖅᐅᓐᓂᑐᒃ ᐅᖏᓪᓗᓂ ᐃᓄᐃᑎᑎᖅᑐᑦ. ᒪᓕᒃᓯᑎᑦ ᓇᓗᓇᐃᒃᓄᑕᐊᖓᓯᒪᔪᑦ[24] ᑎᑎᕆᖅᑕᐅᓯᒪᔪᑦ ᓄᓇᕗᒻᒥ ᐊᖏᑎᓕᓐᓄᒃᓄᑦ ᑲᑎᒪᓂᖅᐳᓂᓄᑦ, "ᐃᓄᐃᕕᐅᔪᓂ ᐊᐅᑐᖅᑕᐅᓯᒪᓂᖅ ᑐᑭᖅᑲᖅᓵᖅ ᐃᒧᒃ, ᐃᓄᐃᑦ, ᐱᑭᖅᑐᑦ, ᐅᒪᔪᐃᑦ, ᑲᑎᖃᖅᑎᑦ ᐊᖏᑎᓐᓂᓗ, ᑕᒪᒥᒃ ᐅᓪᓚᑦᓗᑎᒃ, ᐃᓕᑦᑐᖅᐃᓐᓇᐃᑦ ᑕᐃᒪᐃᑦᑐᑐᖅᐅᓐᓂᑐᒃ. ᐃᓄᐃᑦᑕᐅᔾᔨᒧᑦ ᐊᐅᑐᖅᑕᐅᓯᒪᓂᖅ ᑐᑭᖅᑲᖅᑐᖅ ᐃᓄᐃᖅᑎᑦᑐᑐᓂ, ᐊᒪᓚᓗ ᐃᓄᐃᑦᑕᐅᑎᓐᓄᑐᓂᓄᑦ (ᑭᓇᐅᔪᓂᕐᓂᖅᓯᒪᔪᓂᖅᓯᒪᓂᖅᓄᑦ) ᐊᐅᑐᖅᑕᐅᓯᒪᓂᖅᑐᑦ, ᓱᓕᓗ ᓄᓇᕗᖓ ᑭᓇᐅᔪᓂᕐᖅᕿᓂᕗᒪᔪᓇᖅᓂᖅᓯᒪᓂᖅᓄᑦ, ᐋᓐᓂᐊᖅᓄᑦᓂᖅᓯᒪᓂᖅᓄᑦ, ᐃᓄᐃᑦ ᐊᒥᓱᓂᖅᓄᑦᓂᖅᓄᑦ, ᐃᓕᖅᑎᓯᑐᖅᑐᑦ ᐃᓄᓱᖏᑦ, ᐃᓕᖅᑎᓯᑐᖅᖏᒍᑦ ᖃᓄᐃᓕᑐᑐᖅᐅᓂᖅᑐᑦ, ᐃᓄᐃᖅᑎᑦᑐᒍᓐᓇᖅᓂᖅᑐᑦ, ᓄᓇᒥᐅᑕᐅᖅᑐᐃᑦ ᐱᖅᓯᒪᖅᑐᖓᓂᑦ, ᐃᓐᓇᐅᑦᓗᓂᑦ ᐱᖅᓯᒪᔪᓂᒃ ᐊᑐᐃᓇᐅᔪᓂᑦ ᐊᖏᑎᓗ ᓄᓇᕗᖅᑭᑎᑕᐅᓂᖅᓂᑦ ᐱᖅᓯᒪᓂᖅ, ᐊᖏᑎᓗ ᓄᓇᕗᓓᓂ ᑲᕈᒪᐅᑦᓗᑎᒃ ᐱᑦᓯᒪᓕᕆᓂᖅᓂᑦ."

ᓄᓇᕗᒻᒥ ᐊᐅᑐᖅᑕᐅᓯᒪᔪᓂᑦ ᐊᐅᑐᖅᑕᐅᓯᒪᓂᖅ, ᐃᓕᓴᖅᑕ ᐱᑕᖅᑲᐃᓇᐅᓚᐊᖅᑲᖅᑐᑦ ᐃᓕᓴᕆᔨᕈᑕᐅᔪᓂᑦ ᐊᐅᑐᖅᑕᐅᓯᒪᔪᓇᖅᓂᖅᑕᖅ ᓄᓇᕗᒻᒥᑦᑐᒃ ᖃᓄᖅᑐᖅᑲᖅᑎᑦᓗᑎᒃ ᐊᖏᑎᓗ ᐅᓴᖃᖅᑐᐊᖅᑐᐃᓇᐅᔪᓂᑦᓗᒍ ᐃᓕᓴᕐᓴᖅᓯᐅᑕᐅᓯᒪᔪᓂᑦ ᐃᓗᓕᖅᑐᖓ ᑐᑭᒐᓂᒃ 3-ᖅᓯᓂ, ᐱᒋᐊᑎᖅᑲᖅᑐᓂᒃ ᓴᓗᖅᓂᐊᖅᑕᐅᓯᒪᔪᓚᐊᖅᑲᖅᓂᖅᓯᒪᓂᖅᓄᑦ ᐃᓄᐃᑦ ᖃᓄᖅᓯᒪᓂᖅᑕᖅᑕᐃᑕᒪᓂᖅᓂᖅ, ᐊᖏᑎᓗ ᐃᓕᓴᕐᓯᒪᔭᑦ ᑐᑭᒐᓚᐅᐅᑦᓗᑎᒃ 5-ᒥ, ᐃᓕᓴᕆᔨᕈᑕᐅᓯᒪᓂᒃ ᓄᓇᕗᑦᒥᐅᑦ ᐃᒪᐅᑎᑕᐅᓯᒪᓂᖅᓂᖅ. ᐊᑦᑕᖅ ᑐᑭᒐᓚᐅᐅᑦᓗᑎᒃ 4-ᒥ, ᐊᐅᑐᒪᐃᑦ ᐃᓕᓴᕆᔨᕈᑕᐅᔪᓂᖅᓯᒪᔪᓂᑦ ᐃᓕᓴᖅᑐᖅᓂᖅᑐᑦ ᐃᓄᐃᕕᐅᔪᓂᑦ ᐊᐅᑐᖅᑕᐅᓯᒪᔪᓇᖅᓂᖅᓯᒪᓂᖅᓄᑦ, ᓱᓕᓗ ᐊᐅᑐᖅᑕᐅᓯᒪᓂᖅᓯᒪᓂᖅᑐᑦ ᐅᒪᔪᐃᑦ ᐊᒪᓚᓗ ᐊᐅᑉᓯᑕᐅᑦᓂᖅᓯᒪᓂᖅ ᐊᐅᑯᑯᐃᑦ ᐊᒥᐊᐅᑯᐃᕕᓂᑦ ᐅᖏᓪᓗᑦ ᓱᖅᑲᓂᑦ/ᓱᐅᕋᐃᑦᓗ. ᐃᓕᓴᕆᔨᕈᑕᐅᓯᒪᓕᒥᔪᑦ ᒪᓕᑉᓗᑐᑐᖅᑎᑐᓂ ᖃᓄᐃᓕᐅᑎᐊᖅᑲᓴᖅᓯᒪᓂᖅᓄᑦ, ᐃᓐᓇᐅᑦᓗᑎᒃ ᐱᑕᖅᑲᖅᑐᖅᓄᑦ ᐊᔪᓇᕈᑕᐅᓴᓂ ᐊᓚᖅᑐᖅᓄᑦ ᐊᐅᑐᖅᑕᐅᓯᒪᓂᖅᓄᑦ.

4.7.1 ᓴᓇᕆᔨᕈᑕᐅᓯᒪᓕᒪᓚᐊᖅᑲᖅᓂᖅᓯᒪᓂᑦ ᐃᓄᐃᑦ ᖃᖅᓄᓕᒫᑕᐅᓕᒪᓂᒥᒃ

ᓄᐃᑕᓚᐅᐅᓂᖅ ᓄᓇᕗᒻᒥᑦᑐᑐᓂᖅ ᐊᔪᖅᑭᓄᓐᓂᓗ ᑎᑎᒍᑦ ᐅᓗᓕᐊᓇᖅᑐᑐᓂᖅ ᓱᓕᓗ radon-ᒥᒃ, ᐅᓗᓕᐊᓇᕈᓄᓇᒪᑦ ᐃᓄᐃᑦ ᖃᖅᓄᐃᓄᖅᑭᓄᓐᓄᑦ (ᑕᑯᓗᑎᑦ ᐃᓗᓕᖅᑭᑦ ᐊᐅᑐᖅᑕᐅᔪᓂᑦ 2-ᒧᑦᑐᑦ). ᐱᓵᑕᐅᓕᓗᑎᒃ ᑕᒪᑯᐊ ᐅᑕᖅᑲᓄᓇᕗᑦ ᐊᔪᓕᓇᖅᓂᖅ ᐊᐅᑉᓯᒪᓂᖅᓄᑦ ᐊᐅᒪᖅᓴᖅᑲᖅᑐᑐᖅᑐᓂᑲᓚᐊᖅᓄᑦ ᐊᐅᑕᓵᖅᓄᑦ, ᓄᓇᕗᒻᒥᑦᑐᑐᓂᖅ ᐅᖏᓪᓗᓄᑦᓂᐊᖅᑐᓂ

[24]ᓇᓗᓇᐃᒃᓄᑕᐅᑦ ᐱᖅᐅᔪᓂᑦ ᓄᓇᕗᒻᒥ ᐊᖏᑎᓕᓐᓄᑐᓂᖅᓂᑦ ᑲᑎᒪᓂᖅᓄᑦ.

ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᑦᑎᐊᕆᐊᓕᒪᕆᐊᓘᕗᖅ ᐅᖓᑖᓂ, ᐊᓯᖏᓂᒃ ᐅᔭᕆᓐᓂᐊᖅᑲᑦᑕᕐᓂᕐᒥᒃ. ᐃᓱᒪᓘᑕᐅᓂᖅᐹᖑᔪᒃᑐᖅ ᐊᒃᑐᖅᑕᐅᓪᓚᕆᐊᖃᖕᒋᓐᓂᖕᒋᑦ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᓂ ᓴᓇᔫᑦ ᐊᓯᖕᒋᓐᓄ ᖃᓂᒋᔭᖕᖓᓃᑦᑐᑦ ᐊᕙᑎᓂᐊ ᐅᔭᕆᓐᓂᐊᕐᕕᐅᑉ, ᐊᐅᓚᔪᓄᑦ (ᑕᑯᒃᓴᐅᖕᒋᑦᑐᓄᑦ) ᐊᐅᒪᒃᓴᖅᑲᖅᑐᓄᑦ. (ᑐᑭᓯᓇᑦᑎᐊᒃᑲᓐᓂᖅᑐᑦ ᖃᐅᔨᒪᔭᐅᔭᕆᐊᓖᑦ ᐅᓂᒃᑲᖅᑕᐅᔪᓃᑦᑐᑦ ᑎᑎᖅᑲᐃᑦ ᐃᓚᒃᑲᓐᓂᖕᒋᓐᓂ 1-ᒥ).

ᓴᕿᑕᐅᓯᒪᕚᑦ ᑕᐃᒪᑦ ᑕᒪᒃᑯᐊ ᖃᐅᔨᓴᖅᑕᐅᔭᕆᐊᖃᓪᓚᕆᒃᑐᑦ ᐱᔾᔪᑕᐅᓪᓗᑎᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᔪᕼᓂᔭᒻᒥᒃ ᐅᔭᕆᓐᓂᐊᕐᓂᖅ ᐊᒥᓲᓂᖅᐹᓂᒃ ᓱᑲᖓᓂᖅᐹᓂᒃ ᒪᓕᒐᓪᓗᑐᖃᖅᑎᑕᐅᔪᑦ ᐅᔭᕆᓐᓂᐊᕐᕕᓕᒫᓂᒃ, ᑲᓇᑕᒥ, ᐊᒻᒪᓗ ᐅᔾᔨᖅᑐᖅᑕᐅᑎᐊᕆᐊᖃᖅᓯᑎᒃ ᐱᔾᔪᑕᐅᓂᖕᒋᓐᓄᑦ ᐅᔾᔨᖅᑐᐃᓐᓇᕆᐊᖃᖅᓂᖅ ᕿᓇᑐᐃᓐᓇᖅ ᐱᓕᕆᔨᐅᔪᖅ ᓴᓇᔨᐅᔪᖅ ᓄᐃᓯᕕᐅᓯᒪᔭᕆᐊᖃᖅᑲᕆᖅᒥᓪᓚᑕ ᐆᑕᕐᓇᖅᑐᓕᕐᓂᒃ, ᐅᖓᑖᓂ ᓈᒻᒪᕐᓂᕋᖅᑕᐅᓯᒪᔪᓂᒃ. ᓲᖃᐃᒻᒪᓘᓐᓃᑦ, ᐱᒻᒪᕆᐅᔪᓂᒃ ᖃᓄᐃᓕᐅᖅᓯᒪᔪᑦ ᓴᓂᖅᖅᑎᑦᑎᑕᐃᓕᒪᓂᕐᒥᒃ ᐊᕙᑎᒥᓂ ᐊᒻᒪᓗ ᖃᐅᔨᓴᖅᑕᐅᖕᒋᓇᕐᓂᖕᒋᓐᓂ ᐱᓕᕆᓂᑦ ᐊᒻᒪᓗ ᐱᓕᕆᕕᐅᔪᒥ ᐊᕙᑎᒥ, ᓴᓇᔨᑦ ᓴᑉᑳᑦᓯᐋᓐᒥ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᓂᒃ ᐊᒃᑐᖅᑕᐅᖅᑲᑦᑕᖅᑐᑦ ᐊᖕᒋᖅᑲᓂᖅᑐᓂᒃ ᐊᑖᓂ 5 mSv ᐊᕐᕿᒍᑕᒦᖅ - ᐊᖕᒋᓂᖅᓴᐅᖕᒋᑦᑐᖅ ᓄᐃᑕᔪᑐᖅᑲᐅᖕᒋᓐᓇᖅᑐᓂᒃ ᖃᓂᖕᒋᔭᖕᒋᓐᑦᓲᓂᒃ 2.4 mSv ᐊᕐᕿᒍᑕᒦᖅ - ᐊᒻᒪᓗ ᐊᑖᓂᑦᓚᑎᒃᑐᖅ ᐊᖕᒋᓂᖕᒋᓐᓂᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᓂᐅᔪᓐᓇᖅᑐᑦ ᖃᓄᐃᓕᑕᐃᓕᒧᑎᒃ ᐊᖕᒋᓂᓕᖕᒥᒃ 50 mSv ᐊᕐᕋᒍᓕᒫᖅ, ᐅᕙᓘᓐᓃᑦ 100 mSv ᑖᓕᒪᓂᒃ ᐊᕐᕿᒍᓂᒃ, ᒪᓕᒐᑎᔭᐅᔪᓂᒃ ᐊᑖᒍᑦ ᑲᓇᑕᒥ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᑯᑎᐊᓇᖅᑐᓕᑎᓐᑦ ᑲᒪᓴᓐᒃᑯᑦ (CNSC-ᑯᑦ) ᒪᓕᒃᑕᐅᓪᓗᑎᒃ ᓯᓚᕐᔪᐊᕐᒥ ᐊᔾᔨᒌᒃᑐᐃᓐᓇᐅᔭᑎᐊᖅᑲᕐᓂᖕᒋᓐᓂ ᒪᓕᒃᑕᐅᕙᒃᑐᑦ. ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕆᓐᓂᐊᕐᕖᑦ ᓂᑎᐅᒋᔭᐅᓇᔭᖅᑐᑦ ᐊᒃᑐᖅᓯᓯᒪᓂᐊᖕᒋᓐᓂᖕᒋᓐᓂᒃ ᖃᓄᐃᓐᓂᖕᒋᓐᓂᒃ ᓴᓇᔩᑦ, ᐊᔾᔨᒋᔭᐅᑐᐃᓐᓇᕋᔭᕐᒪᑕ ᐊᓯᖕᒋᓐᓂᒃ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᓂᒃ, ᑕᐃᒪᐃᑦᑐᓂᒡᓗᓐᓃᑦ ᐊᔾᑲᓴᖕᒋᓐᓂᒃ ᐊᖕᒋᔪᓂᒃ ᓴᓇᕕᐅᔪᓂᒃ.

ᐊᒻᒪᓗ ᓴᓂᐊᓂ ᐃᓱᒪᓘᑕᐅᔪᑦ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖅ ᐊᐅᓚᔪᓄᑦ ᐊᐅᒪᒃᓴᖅᑲᖅᑐᓄᑦ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᓂ, ᐃᓱᒪᓘᑕᐅᖕᒥᔪᑦ ᖃᓂᒻᒪᒍᑕᐅᔪᓐᓇᕐᓂᖕᒋᑦ ᑕᐃᒃᑯᐊ ᓄᓇᓕᖕᒥᐅᑕᐃᑦ, ᐊᒻᒪᓗ ᐅᖓᓯᖕᓂᖅᓴᓃᑦᑐᑦ ᑖᕙᖕᒑᓪᓚᓐᖏᒃᑰᒐᓗᐊᓂᒃ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᖅᑭᓐᓇᕐᓂᖕᒋᓐᓂᒃ ᐊᕙᑎᒥᒃ (ᓲᕐᓗ ᐃᒪᒃᑯᑦ ᐊᓂᕐᓂᒃᑯᓗᓐᓃᑦ), ᐅᕙᓘᓐᓃᑦ ᓂᕆᔭᐅᓂᖕᒋᓐᓂᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᑦ ᐱᕈᖅᑐᑦ ᐆᒪᔪᐃᑦ. ᑕᐃᒫᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᓂᖅ ᐅᖃᐅᓯᐅᔪᖅ ᐊᐅᓚᑕᐅᓂᖕᒋᓐᓂ ᐳᔪᐃᑦ ᓄᐃᕙᓪᓚᐊᔪᑦ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᓂ. ᐃᓗᓕᖕᒋᓐᓂ 4.7.4-ᒥ, ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᖅᑲᖅᐳᒍᑦ ᐊᐅᓚᑕᐅᓂᖕᒋᓐᓂᒃ ᐃᓚᒋᔭᐅᓲᑦ ᐊᒃᑯᑕᑯᐃᑦ ᐊᒥᐊᒃᑯᕕᓃᑦ ᐅᔭᕋᐃᑦ ᓯᖅᑳᓖᑦ ᓯᐅᕋᐃᑦᑐ.

ᓂᕆᐅᓐᓇᑐᐃᓐᓇᕋᔭᕐᒪᑦ ᑕᐃᒪ, ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖕᒋᑦ ᓴᓇᔩᑦ, ᕿᓂᕐᓂᖕᒋᓐᓂ ᓄᖑᔪᐃᑦᑐᓂᒃ, ᒥᑭᓐᓂᖅᓴᒻᒪᑎᐅᓇᔭᖅᑐᖅ ᓴᓂᐊᓂ ᑕᐃᒃᑯᐊ ᐅᔭᕆᓐᓂᐊᕐᕕᖕᓃᑦᑐᓂᒃ ᐊᐅᓚᑕᐅᔫᑦᑐᑦ. ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖕᒋᑦ ᓇᓂᓯᓇᓱᐊᓕᖅᑐᓂ ᐃᓚᖅᑲᔭᖅᑐᑦ ᓴᖅᑭᐅᒪᕕᐅᓂᖕᒋᓐᓂᒃ ᐱᓕᕆᔩᑦ ᐆᑕᕐᓇᖅᑐᓕᕐᓂᒃ, ᐃᑯᑕᕐᓂᖕᒋᓐᓂ ᐅᔭᕋᓐᓂᒃ,

ᐅᕙᓗᓐᓃᑦ ᐃᑎᓂᓕᐅᖅᑎᓪᓗᒋᑦ ᐲᖅᓯᕕᒋᓂᐊᖅᑕᕆᓐᓂᒃ ᐅᔭᕋᓐᓂᒃ ᖃᖅᑎᖅᑕᐅᓂᕆᓐᓂᓗᓐᓃᑦ, ᐊᓯᕆᓐᓂᓗᓐᓃᑦ ᐊᐅᓚᑦᑎᓗᑎᒃ ᐅᔭᕋᓐᓂᒃ ᐲᖅᓯᕕᐅᓯᒪᔪᓂᒃ ᓄᖑᔪᐃᑦᑐᖃᕐᓂᐅᔪᓂᒃ ᐃᓗᐊᓂ. ᐃᓄᐃᑦᑕᐅᖅ ᐊᓯᕆᑦ ᖃᓂᒡᓕᓯᒪᔪᓐᓇᕐᒥᔪᑦ ᑐᖅᑯᖅᑕᐅᓯᒪᔪᓄᑦ ᐃᑰᑕᖅᑕᐅᓯᒪᔪᓂᒃ ᐊᒻᒨᖃᖅᑕᐅᓯᒪᔪᕕᓂᕐᓂᒃ ᐅᔭᕋᓐᓂᒃ ᐃᓚᖃᑐᐃᓐᓇᕆᐊᖃᖅᑐᓂᒃ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᓕᕐᓂᒃ.

ᖃᐅᔨᓴᖅᑕᐅᕙᓪᓕᐊᓂᕆᓐᓃᑦᑐᓂ, ᐱᓕᕆᐊᖑᕙᒃᑐᑦ ᒪᓕᒐᖅᑎᑕᐅᓪᓚᕆᒃᑐᑦ ᒪᓕᒡᓗᖅᑐᑎᒍᑦ ᑲᓇᑕᒥ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᔩᑦ ᑲᒪᓴᓐᒃᑯᑦ (CNSC-ᑯᑦ) ᒪᓕᒃᑕᐅᓂᕆᓐᓄᑦ ᓄᖑᔪᐃᑦᑐᒥᒃ ᓄᖑᔪᐃᑦᑐᒥᒃ ᔪᕈᓂᔭᒻᒥᒃ ᐅᔭᕋᓐᓂᐊᕐᕕᖕᓄᑦ ᐊᒻᒪᓗ ᓯᖃᓕᑎᕆᕕᖕᓄᑦ ᒪᓕᒐᓪᓗᑐᕐᓄᑦ (UMMR-ᖑᔪᑦ) . ᐱᒋᐊᓕᕝᕙᖅᑐᓂ ᓇᓂᓯᓇᓱᐊᖅᑐᓂ, ᑖᒃᑯᐊ ᒪᓕᒐᓪᓗᑐᐃᑦ UMMR-ᖑᔪᑦ ᐊᑐᕋᔭᖕᒋᑦᑐᑦ. ᑕᐃᒪᐃᒃᑲᓗᐊᖅᑎᓪᓗᒍ ᐅᓐᓃᑦ, ᐊᒥᓱᑦ ᑲᒻᐸᓂᐅᔪᑦ ᐱᖅᑯᓯᖃᖅᑎᑦᑎᕙᒃᑐᑦ ᒪᓕᒃᑕᐅᓪᓗᑎᒃ ᕿᓂᕐᓂᕐᒥᒃ ᓇᓗᓇᐃᒃᑯᑕᓕᐊᖑᓯᒪᔪᑦ ᐊᑐᖅᑕᐅᓲᑦ ᓴᕝᕕᑦᓯᐋᓐᒥ. ᖃᓄᐃᓕᐅᓪᓚᕆᐊᖃᕐᓂᖕᒋᑦ ᐊᑐᖅᑕᐅᔪᑦ ᑲᒻᐸᓂᐅᔪᓄᑦ ᓄᖑᔪᐃᑦᑐᒃ ᐅᔭᕋᓐᓂᐊᖅᑐᓂᒃ ᓴᕝᕕᑦᓯᐋᓐᒥ ᐳᓴᓐᓂᐊᖅᑕᐅᔭᕆᐊᖃᕐᓂᕆᓐᓄᑦ ᓴᓇᕐᑦ, ᓈᒻᒪᖕᓂᐊᕈᑎᒃ ᑕᐃᒪᐃᓕᖕᖓᓂᖕᒋᑦ, ᐊᑐᓕᖅᑎᑕᐅᓇᔭᖅᑐᑦ ᓄᓇᕗᒻᒧᑦ. ᓄᖑᔪᐃᑦᑐᓄᑦ ᐊᑐᐊᒐᐃᑦ ᐊᑐᓕᖁᕌᓯᒪᔪᑦ ᓴᕿᑕᐅᓯᒪᓂᖅᑲᓐᓂᒃ ᑎᒍᐊᖅᑕᐅᓂᖅᑲᓐᓂᓗᓐᓃᑦ ᑕᒪᐃᓐᓂᒃ ᐊᔾᔨᒌᒃᑐᓂᒃ ᐱᖅᑯᓯᖃᕈᑕᐅᓂᐊᖅᑐᑦ.

ᐅᓗᕆᓇᖅᑐᓕᕆᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᖃᓄᐃᓯᒪᓂᖕᒋᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦᒧ ᐅᔭᕋᓐᓂᐊᕐᓂᕐᒥᒃ ᐳᖅᑐᔫᒪᕆᖕᓂᒃ ᓄᖑᔪᐃᑦᑐᖅᑕᖃᖅᑐᓂᒃ ᓄᓇᒥ ᓴᕝᕕᑦᓯᐋᓐᒥ ᖃᐅᔨᒪᓇᕈᑕᐅᔪᑦ ᐊᔪᕐᓇᖕᒋᓐᖓᓂᒃ ᐅᔭᕋᓐᓂᐊᕐᓂᕐᒥᒃ ᐱᖅᑯᓯᖃᖅᑎᑦᑎᔪᓐᓇᕐᓂᖅ, ᐅᓗᕆᐊᓇᕐᓂᖃᔾᔭᖕᒋᑦᑐᒥᒃ ᓴᓇᔨᓄᑦ, ᓄᓇᓕᖕᒥᐅᓄᑦ, ᐊᒻᒪᓗ ᓴᐳᔾᔮᐅᓯᒪᓗᑎᒃ ᐆᒪᔪᐃᑦ ᐊᕙᑏᓪᓗ.

4.7.2 ᒪᓕᒐᓪᓗᑐᐃᑦ ᒪᓕᒃᑕᐅᔭᕆᐊᓖᓪᓗ ᐊᓯᖕᒋᑦ

ᖃᓄᐃᑦᑐᑐᓇᐃᑦ ᐱᒋᐊᖅᑎᑕᐅᔪᒪᔪᑦ ᓄᖑᔪᐃᑦᑐᓕᕆᔪᓂᒃ ᐱᓕᕆᐊᒃᓴᐃᑦ, ᒪᓕᒐᖅᑎᑕᐅᖅᔪᐊᕋᔭᖅᑐᑦ ᒪᓕᒐᓪᓗᑐᖅᓂᒃ (Regulations-ᓂᒃ) ᐊᑐᕋᔭᖅᑐᓂᒃ ᑕᒪᐃᓐᓂ ᕿᓂᕐᓂᕐᒥᒃ ᐊᒻᒪᓗ ᐅᔭᕋᓐᓂᐊᕐᓂᕐᒥᒃ ᐊᓯᖕᒋᓐᓂᒃ ᐱᔪᒪᔭᐅᔪᓂᒃ, ᐃᓚᖃᕐᓗᑎᒃ ᒪᓕᒋᐊᖃᖅᑐᓂᒃ ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᓂᖕᒋᓐᓄᑦ ᐸᕐᓇᐅᑎᓂᒃ, ᐋᕿᒃᑕᐅᓯᒪᔪᓂᒃ ᓄᓇᕗᒻᒥ ᐸᕐᓇᐃᔾᔪᑦ ᑲᑎᒪᔾᔪᖕᒋᓐᓄᑦ

<u>ᓄᓇᐃᑦ ᐊᑑᑎᒃᓴᖕᒋᓐᓄᑦ ᐸᕐᓇᐅᑏᑦ</u>

ᑕᒪᕐᒥᒃ ᕿᓂᖅᑐᑦ ᐅᔭᕋᓐᓂᐊᖅᑐᓪᓗ ᓄᓇᕗᒻᒥ ᒪᓕᒋᐊᖃᖅᑐᑦ ᓄᓇᐃᑦ ᐊᑑᑎᒃᓴᖕᒋᓐᓄᑦ ᐸᕐᓇᐅᑎᓄᑦ, ᑕᐃᑲᓂ ᐊᕕᒃᑐᖅᑐᓯᒪᓂᖕᒋᓐᓂ, ᐱᑕᖃᖅᐸᑕ. ᑭᕙᓪᓕᕐᒥ

ᐊᕕᒃᑐᖅᓯᒪᓂᐅᔪᒥ ᓄᓇᐃᑦ ᐊᑑᑎᒃᓴᖏᓐᓄᑦ ᐸᕐᓇᐅᑏᑦ ᐅᖃᖅᓯᒪᔪᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᔭᕋᓂᐊᕈᓐᓇᔾᔫᖕᒋᑦᑐᑦ ᑭᓯᐊᓂ ᑕᒪᓐᓇ ᖃᐅᔨᓴᖅᑕᐅᑦᑎᐊᓚᐅᕐᓗᓂ ᐊᐅᓚᑦᑎᔨᐅᖃᑕᐅᔪᓄᑦ ᑎᒥᐅᔪᓄᑦ ᐊᒻᒪ ᑕᐃᒪᐃᑦᑐᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᓂᖅ ᐃᑲᔪᖅᓱᖅᑕᐅᒃᐸᑦ ᑭᓯᐊᓂ, ᐃᓄᖕᓄᑦ ᐊᕕᒃᑐᖅᓯᒪᓂᐅᔪᒥ. ᑑᓐᖓᕕᒃᑯᑦ ᐃᑲᔪᖅᓱᐃᔪᑦ ᐱᓇᓱᐊᖅᑕᐅᔪᓂ ᑐᑭᓕᐅᑦᑎᐊᕐᑯᔨᓂᖅ ᖃᓄᓪᓚᓇᒃ ᑕᒪᒃᑯᐊ ᐅᖃᐅᓯᐅᓯᒪᔪᑦ ᑐᑭᖃᖅᑎᑕᐅᖕᒪᖔᑕ ᐊᒻᒪ ᖃᓄᖅ ᒪᓕᕐᑯᔭᐅᔪᑦ ᐊᑐᓕᖅᑎᑕᐅᓂᐊᕐᒪᖔᑕ.

ᐊᕙᑎᒥᒃ ᖃᐅᔨᓴᖅᑕᐅᓂᖏᑦ ᓴᓇᔭᐅᔪᒪᔪᑦ

ᐱᔾᔪᑎᖓᓄᑦ ᐊᕙᑎᒥᒃ ᖃᐅᔨᓴᐃᔭᕆᐊᖃᕐᓂᖅ ᓴᓇᔭᐅᓂᐊᖅᑐᓂᒃ, ᓄᓇᕗᒻᒥ ᓄᓇᑖᕈᑏᑦ ᐊᖏᕈᑎᖏᑦ ᑎᑎᕋᖅᓯᒪᕋᖅᑐᑦ ᑕᒪᐃᓐᓂᒃ ᕿᒥᕐᕈᐊᖅᑕᐅᑦᑎᐊᖄᑦᑕᕆᐊᖃᕐᓂᖏᑦ ᐊᒻᒪ ᖃᐅᔨᓴᖅᑕᐅᑦᑎᐊᖃᑦᑕᕆᐊᖃᕐᓂᖏᑦ ᑕᒪᕐᒥᒃ ᓴᓇᔭᐅᔪᒪᔪᓄᑦ ᑐᒃᓯᕋᖅᑕᐅᓯᒪᔪᑦ. ᓄᓇᕗᒻᒥ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ NIRB-ᑯᑦ ᓯᕗᓪᓕᖅᐹᖅᓯᐅᑎᓂᒃ ᖃᐅᔨᓴᐃᖃᑦᑕᖅᑐᑦ ᑕᒪᐃᓐᓂᒃ ᑐᒃᓯᕋᐅᑎᓂᒃ ᑐᑭᑖᕈᑕᐅᓪᓗᑎᒃ ᕿᒥᕈᐊᖅᑕᐅᑦᑎᐊᕆᐊᖃᕐᓂᐊᕐᒪᖔᑕ, ᐊᒻᒪ ᑕᐃᒪᐃᓐᓂᕈᑎᒃ, ᑐᓴᐅᒪᔭᐅᓗᑎᒃ ᐃᓅᕕᐅᔪᓐᓇᖅᑐᑦ ᐃᓅᓯᓕᐅᕐᓂᕐᒧᑦ ᐊᒃᑐᖅᑕᐅᔪᓐᓇᕐᓂᖏᑦ ᓴᓇᔭᐅᔪᒪᔪᓂ ᐊᐱᕐᑯᑕᐅᔪᓂ. ᕿᒥᕐᕈᐊᖅᑕᐅᓂᖏᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᒃᑖᕈᒪᔪᑦ ᐊᐅᓚᑕᐅᓇᔭᖅᑐᑦ ᓄᓇᕗᒻᒥ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ, ᒪᓕᒃᑕᐅᓗᑎᒃ ᐊᕕᒃᑐᖅᓯᒪᓂᕐᒦᑦᑐᑦ 5-ᒥ, ᐃᓗᓕᖏᓐᓂ 12-ᖓᓂ ᓄᓇᕗᒻᒥ ᓄᓇᑖᕈᑎᓂ ᐊᖏᕈᑎᓂ, ᐅᕙᑑᓐᓃᑦ ᐃᓚᖓᓂ 6-ᒥ, ᑲᓇᑕᐅᑉ ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᖃᐅᔨᓴᖅᑎᖏᓐᓄᑦ ᑲᑎᒪᔨᕐᔪᐊᓄᑦ. ᐊᕙᑎᒥᒃ ᖃᐅᔨᓴᐃᓂᖅ ᐱᔭᕆᐊᑐᔪᒻᒪᕆᐅᕗᖅ ᐊᒻᒪ ᐱᕕᒃᓴᖅᑲᖅᑎᑎᓂᐅᓪᓗᓂ ᐃᓄᐃᑦ ᐊᒥᓱᓂᒃ ᐃᓚᐅᕕᖃᕈᓐᓇᕐᓂᖏᓐᓂᒃ. ᐊᕙᑎᒥᒃ ᖃᐅᔨᓴᐃᓂᖅ ᐊᑖᒍᑦ ᑲᓇᑕᒥ ᐊᕙᑎᒥᒃ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᒪᓕᒐᖅᑎᒍᑦ ᐊᑐᕆᐊᖃᕋᕐᔭᒥᔪᖅ ᐊᑖᒍᑦ ᑲᓇᑕᒥ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᓗᕆᐊᓇᖅᑐᓕᕇᑦ ᑲᒪᓴᓐᒃᑯᑦ (CNSC-ᑯᑦ), ᐊᔪᕐᓇᕋᔭᖕᒋᒃᑲᓗᐊᓇᓪᓗᓂ ᑕᐃᒪᐃᓕᐅᕈᓐᓇᕐᓂᖏᑦ ᐃᓚᒋᓗᒋᑦ ᓄᓇᕗᒻᒥ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ.

ᒪᓕᒐᓪᓗᑐᖃᖅᑎᑕᐅᓂᖏᑦ ᐊᐅᓚᑕᐅᔪᑦ

ᐊᐅᓚᑕᐅᓂᖏᑦ ᓄᖑᔪᐃᑦᑐᓂ ᐅᔭᕋᖕᓂᐊᕐᕖᑦ ᐅᕙᑑᓐᓃᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᖏᑦ ᓄᖑᔪᐃᑦᑐᖃᑐᐃᓐᓇᕆᐊᖃᕿᓂᖏᑦ ᐅᔭᕋᐃᑦ ᒪᓕᒐᑦᑐᖃᖅᑎᑕᐅᔪᑦ ᑲᓇᑕᒥ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᓗᕆᐊᓇᖅᑐᓕᕇᑦ ᑲᒪᓴᓐᒃᑯᑦ (CNSC-ᑯᑦ) ᒪᓕᒃᓂᖏᓐᓂ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᓂᕐᒧᑦ ᐊᒻᒪ ᐊᐅᓚᑕᐅᓂᖏᓐᓄᑦ ᒪᓕᒐᐃᑦ (NSCA) ᐊᒻᒪ ᒪᓕᒐᓪᓗᑐᖏᓐᓂᒃ. ᑲᓇᑕᐅᑉ ᒐᕙᒪᒃᑯᓐᓂ ᒪᓕᒐᓪᓕᑐᖅᑲᖅᑎᑦᑎᔩᓪᓗᑎᒃ, CNSC-ᑯᑦ ᑐᑭᓯᓇᑦᑎᐊᖅᑐᒥᒃ ᓴᖏᓂᖃᖅᑐᑦ ᐱᔾᔪᑎᖃᖅᑐᓕᒫᓂᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐱᕐᑯᑎᓂᒃ, ᐊᒻᒪ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒥᒃ ᑲᓇᑕᒥ. ᒪᓕᒐᓪᓗᑐᐃᑦ ᐊᑖᓂᑦᑐᑦ NSCA-ᑯᑦ ᐊᑐᖅᑕᐅᕙᒃᑐᑦ ᑕᒪᐃᓐᓄᑦ ᐱᓕᕆᐊᖑᔪᓕᒫᓄᑦ ᐊᐅᓚᑦᑎᔪᓂᒃ ᓄᖑᔪᐃᑦᑐᖃᖅᑐᒥᒃ, ᐃᓚᒋᔭᐅᓪᓗᑎᒃ ᓅᑕᐅᑲᑦᑕᕐᓂᖏᑦ ᓄᖑᔪᐃᑦᑐᖅᑕᑖᑦ ᐲᖅᑕᐅᓯᒪᔪᑦ

ᐆᒃᑐᕋᖅᑕᐅᓂᐊᖅᑐᑦ. ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᑦ ᓯᖅᑲᓕᑎᕆᓂᕐᒧᑦᑐ ᒪᓕᒐᐃᑦ UMMR-ᑯᑦ ᐊᑐᓕᕋᔭᖅᑐᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᖏᓐᓂ, ᑭᖑᓂᐊᓂ ᓄᓇᒥᐅᑕᖃᖅᑐᒥᒃ ᓇᓂᓯᔪᖅᑲᖅᑎᓪᓗᒍ ᓄᖑᔪᐃᑦᖃᖅᑐᓂᒃ, ᐊᒻᒪᓗ ᖃᐅᔨᓴᖅᑕᓕᖅᑎᓪᓗᒍ ᑐᑭᑖᕈᑕᐅᓇᓱᐊᖅᓱᓂ ᑮᓇᐅᔭᐃᔭᕈᑕᐅᓂᖓ ᓈᒻᒪᖕᓂᐊᕐᒪᖔᑕ ᐊᓯᓕᒫᖏᓐᓄᓪᓗ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ ᐱᓕᕆᐊᖑᔪᓂ, ᑎᑭᓪᓗᒋᑦ ᒪᑐᔭᐅᓂᖓᓄᑦ ᐅᔭᕋᖕᓂᐊᕐᕕᐅᑉ.

<u>ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᓂᖏᓐᓄᑦ, ᐃᒪᐃᑦ, ᐊᓯᖏᓄᓪᓗ ᐱᔪᓐᓇᐅᑏᑦ</u>

ᐊᒥᓱᒻᒪᕆᐅᖕᒪᑦ ᒪᓕᒐᓪᓗᑐᐃᑦ ᐊᑐᖅᑕᐅᔭᕆᐊᓖᑦ ᕿᓂᕐᓂᕐᒧᑦ (ᓇᓂᓯᓇᓱᐊᕐᓂᕐᒧᑦ) ᐅᕙᓘᓐᓃᑦ ᐅᔭᕋᖕᓂᐊᕐᓂᕐᒧᑦ ᓴᓇᔭᐅᔪᓄᑦ. ᕿᒥᕐᕈᐊᖅᑕᐅᔪᓐᓇᖅᑐᑦ ᒪᓕᒐᓪᓗᑐᐃᑦ ᑐᕌᖓᔪᑦ ᑯᐃᓐ ᓄᓇᕐᑯᑎᖏᓐᓄᑦ ᐱᑕᖃᖅᑐᑦ. ᐃᓗᐊᓂ *ᕿᓂᕐᓂᖅ ᐊᒻᒪᓗ ᐅᔭᕋᖕᓂᐊᕐᓂᖅ ᑯᐃᓐ ᓄᓇᕐᑯᑎᖏᓐᓂ, ᓄᓇᕚᒻᒦᑦᑐᓂ ᓇᓗᓇᐃᒃᑯᑕᐃᑦ*, ᓴᓇᔭᐅᓯᒪᔪᑦ ᐃᓄᓕᕆᔩᑐᖅᑲᒃᑯᓐᓄᑦ. ᐱᖏᑐᑑᓪᓗᑎᒃ ᒪᓕᒐᓪᓗᑐᐃᑦ ᐊᒻᒪᓗ ᐊᑐᐊᒐᐃᑦ, ᑐᕌᒐᔪᐃᓐᓇᐃᑦ ᑯᐃᓐ ᓄᓇᕐᑯᑎᖏᓐᓄᑦ, (ᓘᕐᓗ ᐅᑭᐅᖅᑕᖅᑐᒥᐅᓂ ᓄᓇᓕᖕᓂ Territorial-ᓂ ᓄᓇᓂ ᒪᓕᒐᐃᑦ), ᑕᒪᕐᒥᒃ ᒪᓕᒃᑕᐅᔪᒃᓵᒪᑦ ᒪᓕᒃᑕᐅᖃᑦᑕᕆᐊᖃᖅᐳᑦ ᑕᒪᐃᓐᓄᑦ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔪᓄᑦ ᓄᓇᓄᑦ.[25]

ᑕᒪᑐᒪᓂ ᒫᓐᓇᐅᔪᖅ ᓄᖑᔪᐃᑦᑐᓪᓗᑐᕐᓄᑦ ᑐᕌᖓᔪᓂᒃ ᒪᓕᒐᖅᑕᖃᖕᒋᑦᑐᖅ ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᓂᖏᓐᓄᑦ ᓚᐃᓴᓐᓯᓄᑦ ᐅᕙᓘᓐᓃᑦ ᐊᑐᖅᑐᐊᕈᑎᓄᑦ ᖃᐃᑕᐅᖃᑦᑕᖅᑐᑦ ᐃᓄᐃᑦ ᐊᕕᒃᑐᖅᓯᒪᓂᐅᔪᓂ ᑲᑐᔾᔨᖅᑲᑎᒌᖏᓐᓂ, ᕿᓂᕐᓂᕐᒧᑦ/ᓇᓂᓯᓇᓱᐊᕐᓂᕐᒧᑦ ᐅᕙᓘᓐᓃᑦ ᐅᔭᕋᖕᓂᐊᕐᓂᕐᒧᑦ. *ᓄᖑᔪᐃᑦᑐᓄᑦ ᐊᑐᐊᒐᐃᑦ* ᐊᑐᓕᖁᔨᓯᒪᔪᑦ ᓄᓇᐃᑦ ᐊᑑᑎᖏᓐᓄᑦ ᒪᓕᒋᐊᓖᑦ ᖃᓄᐃᓕᖓᔭᕆᐊᖃᖅᑐᓪᓗ ᓴᓇᔭᐅᖁᔭᐅᓪᓗᑎᒃ, ᐅᕙᓗᓐᓃᑦ ᑎᒍᐊᖅᑕᐅᖁᔭᐅᓪᓗᑎᒃ. ᓯᕗᓪᓕᖅᐹᕐᒥ ᑲᔪᓯᒋᐊᕋᔭᖅᐳᑦ ᐃᒫᒃ, ᖃᓄᐃᓕᐅᕈᑎᖏᑦ ᐊᑐᖅᑕᐅᔪᑦ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᑲᒻᐸᓂᐅᔪᓂ ᓴᖅᑳᑦᓯᐋᓐᒥ ᐃᓄᐃᑦ ᓴᐳᓐᓂᐊᖅᑕᐅᓂᖏᓐᓄᑦ ᐊᕙᑎᖓᓪᓗ, ᕿᓂᕆᐊᖅᐸᓪᓕᐊᓕᓵᖅᑎᓪᓗᒋᑦ ᑕᑯᓇᒃᑕᐅᑦᑎᐊᕆᐊᖃᖅᐳᑦ ᐊᒻᒪᓗ ᐊᑐᕈᓐᓇᑐᐊᕈᑎᒃ, ᑎᒍᖅᑕᐅᓗᑎᒃ ᐊᑐᖅᑕᐅᓂᖏᑦ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔪᓂ ᓄᓇᓂ.

<u>ᑮᓇᐅᔭᒃᑯᑦ ᒪᑭᑕᑦᑎᐊᕈᓐᓇᕐᓂᖅ</u>

ᐅᔾᔨᖅᑐᕆᐊᖃᕐᓂᖅ ᓴᓗᒻᒪᖅᓴᖅᑕᐅᓯᒪᑦᑎᐊᕆᐊᖃᕐᓂᐊᕐᒪᑕ ᐅᔭᕋᖕᓂᐊᕐᕕᕕᓃᑦ, ᒪᑐᔭᐅᓯᒪᓕᖅᑎᓪᓗᒋᑦ, ᐊᐅᓚᑦᑎᔨᐅᔪᑦ ᑮᓇᐅᔭᓂᒃ ᐱᑕᖃᑦᑎᐊᕐᓂᐊᖅᑐᓂᒃ ᑐᓂᓯᓯᒪᔭᕆᐊᖃᖅᑐᑦ ᐅᔭᕋᖕᓂᐊᕐᕕᒃ ᒪᑐᐃᖅᑕᐅᓚᐅᖏᓐᓂᖓᓂ. ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᖃᕐᔭᖅᐸᑦ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔪᓂ ᓄᓇᒥ, ᑮᓇᐅᔭᒃᑯᑦ ᐱᑕᖃᕈᑎᒃᓴᑦᓚᓅᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᔭᕆᐊᖃᕐᓂᐊᖅᑐᑦ ᐅᑯᓇᖓᑦ: ᑲᓇᑕᒥ

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[25] ᑐᓐᖓᕕᒃᑯᑦ ᒫᓐᓇᒃᑯᑦ ᑎᑎᕋᖅᐸᓪᓕᐊᓕᖅᑐᑦ ᐊᔾᔨᓴᐃᓐᓇᑲᓴᖏᓐᓂᒃ ᓇᓗᓇᐃᒃᑯᑕᕐᓂᒃ ᐃᓄᖕᓄᑦ ᐱᖁᑎᒋᔭᐅᔪᓄᑦ ᓄᓇᓄᑦ.

ᓄᕗᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᔩᑦ ᑲᒪᔨᓐᒃᑯᑦ (CNSC-ᑯᑦ) ᐊᑖᒍᑦ ᒪᓕᒃᑕᐅᓂᖏᓐᓂ ᓄᕗᔪᐃᑦᑐᓂᒃ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐊᐅᓚᑕᐅᓂᖏᓐᓄᑦ ᒪᓕᒐᐃᑦ (NSCA); ᓄᓇᕗᒻᒥ ᐃᒪᕐᓄᑦ ᑲᑎᒪᔩᑦ ᐃᒪᐃᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᕐᓂᖏᓐᓄᑦ ᐱᔪᓇᐅᑎᓄᑦ (ᑎᒍᒥᐊᖅᑕᐅᓇᔭᖅᑐᑦ ᐃᓄᓕᕆᔨᑐᕐᑲᒃᑯᓐᓄᑦ); ᐊᒻᒪᓗ ᐃᓄᐃᑦ ᑲᑐᔾᔨᕐᑲᑎᒌᖏᓐᓄᑦ, ᐱᔾᔪᑎᖃᖅᑐᓂᒃ ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᓂᖏᓐᓄᑦ ᑮᓇᐅᔭᓕᐅᕈᑕᐅᔪᓄᑦ ᐊᑐᖅᑐᐊᖅᑕᐅᓂᖏᓐᓄᑦ. ᐊᕕᒃᑐᖅᓯᒪᓂᐅᔪᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᕐᑲᑎᒌᖏᑦ ᑎᒍᒥᐊᖅᑎᐅᓪᓗᑎᒃ ᐸᓯᔭᒃᓴᐅᔪᓐᓇᕐᓂᕐᒥᒃ ᐊᒻᒪᓗ ᑎᒍᒥᐊᖅᑎᐅᓪᓗᑎᒃ ᐊᑭᓕᐅᑎᒃᓴᖅᑎᑦᑎᓂᕐᒥᒃ ᐱᔾᔪᑕᐅᓂᖏᓐᓂ ᓄᕗᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᓐᓂᐊᕐᓂᕐᒧᑦ ᐊᐅᓚᑕᐅᔪᓂᒃ, ᕿᒥᕐᕈᐊᖅᑕᐅᓯᒪᑦᑎᐊᕆᐊᕐᑲᕋᔭᖅᑐᑦ ᐊᒻᒪᓗ ᐋᕿᒃᑕᐅᓯᒪᑦᑎᐊᕐᓗᑎᒃ ᑐᑭᑖᑦᑎᐊᕐᑳᓚᐅᕐᓗᑎᒃ ᓴᓇᔭᒃᓴᐃᑦ ᕿᒥᕐᕈᖅᐊᑕᐅᕙᓪᓕᐊᓂᖏᓐᓂ ᑲᒪᒋᔭᐅᓗᑎᒃ.

ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᑐᓐᖓᕕᒃᑯᑦ ᐃᑲᔪᖅᓱᐃᕗᑦ ᒫᓇᐅᔪᖅ ᒪᓪᓕᒐᓪᓗᑐᕐᑲᕐᓂᕐᒥᒃ ᐱᕐᑯᖅᑲᔭᐅᔪᓂᒃ, ᑭᓱᐊᓂᑦᑕᐅᖅ ᓇᓗᓇᐃᔭᐃᓯᒪᔪᑦ ᒪᑯᓂᖓ ᐃᓱᒪᓘᑕᐅᔪᓂᒃ (ᐊᓯᖏᓐᓂᒃ ᒪᓕᒐᓪᓗᑐᐃᑦ ᒪᓕᒃᑕᐅᔭᕆᐊᕐᑲᕈᑎᒋᔭᖏᓐᓂᒃ) ᐃᓱᒪᒋᔭᐅᑦᑎᐊᕆᐊᕐᑲᕐᓂᐊᕐᒥᔪᓂᒃ. ᐊᑐᐊᒐᐃᑦ ᓇᓗᓇᐃᖅᓯᓯᒪᔪᑦ ᖃᓄᐃᓕᐅᕈᑎᕐᑲᕐᓂᐊᕐᒪᖔᑕ ᑐᓐᖓᕕᒃᑯᑦ ᐊᒻᒪᓗ ᐃᓄᐃᑦ ᑲᑐᔾᔨᕐᑲᑎᒌᖏᑦ, ᐱᔾᔪᑕᐅᔪᓂᒃ ᐊᐅᓚᑕᐅᓂᖏᓐᓂ ᐃᓄᖕᓄᑦ ᐱᕐᑯᑎᒋᔭᐅᔪᑦ ᓄᓇᐃᑦ.

4.7.3 ᐆᒪᔪᐃᑦ

ᐱᒻᒪᕆᐅᔪᒥᒃ ᐃᓱᒪᕘᑕᐅᕙᒃᑐᑦ ᐊᒥᓱᓄᑦ ᐃᓄᖕᓄᑦ ᐊᒃᑐᖅᑕᐅᑐᐃᓐᓇᕆᐊᖅᑲᕐᓂᖏᓐᓂ ᓄᕗᔪᐃᑦᑐᒥᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒥ, ᑐᒃᓯᑐᐃᑦ ᐊᓯᖏᑦᑐ ᐆᒪᔪᐃᑦ ᐊᒻᒪᓗ ᐱᕈᖅᑐᑦ ᓄᓇᒦᖃᑕᐅᔪᑦ. ᐊᒥᓱᑦ ᐃᓱᒪᕘᑕᐅᔪᑦ ᐅᖃᐅᓯᐅᔭᕆᐊᖃᖅᑐᑦ ᐊᔾᔨᑐᐃᓐᓇᖃᓴᒋᖕᒪᒋᑦ ᑕᐃᒃᑯᓂᖕᒐ ᐊᓯᖏᓐᓂᒃ ᐅᔭᕋᖕᓂᐅᕐᕕᐅᕙᒃᑐᓂᒃ ᓲᕐᓗ ᒎᓗᓯᐅᖅᑐᓂᒃ ᐅᕙᓅᓐᓃᑦ ᐊᓕᒎᔭᖅᓯᐅᖅᑐᓂᒃ. ᑕᒪᒃᑯᐊ ᐃᓚᕐᑲᖅᑐᑦ ᐊᒃᑐᖅᑕᐅᑐᐃᓐᓇᕆᐊᖅᑲᕐᓂᖏᓐᓂ ᓇᖕᒥᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒧᑦ ᐱᕐᑯᑎᓄᓪᓗ ᐃᓚᖏᓐᓄᑦ, ᓲᕐᓗ ᐊᕐᑯᑎᓄᑦ, ᐆᒪᔪᐃᑦ ᐱᕐᑯᓯᓇᕙᒃᑕᖏᑦ.

ᖃᐅᓯᑎᓪᓗᒋᑦ ᓯᕗᓂᒃᓴᖏᑦ ᑐᒃᑐᐃᑦ, ᐅᓂᒃᐹᓕᐊᑦ[26] ᐱᕗᓕᒥ ᐊᒻᒪᓗ ᖃᒪᓂᒡᑐᐊᕐᒥ ᑐᒃᑐᐃᓂᒃ ᐊᐅᓚᑦᑎᓛᑦ ᑲᑎᒪᔨᖏᑦ ᓇᓗᓇᐃᖅᓯᓯᒪᔪᑦ ᐅᖅᑯᑎᓂᒃ, ᕿᓂᖅᑐᓂᒃ, ᐊᒻᒪᓗ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ ᐊᒻᒪᓗ ᓴᕿᐸᐸᓕᐊᑐᐃᓐᓇᕈᓐᓇᖅᑐᑦ ᐊᒃᑐᐃᔪᓐᓇᖅᑐᓂᒃ, ᓄᓇᒥ ᐱᓕᕆᐊᖑᕙᒃᑐᓂ ᐅᓗᕆᐊᓇᕐᓂᖅᐹᖑᔪᓐᓇᖅᑐᑦ ᑐᒃᑐᖏᓐᓄᑦ Beverly ᑕᐅᕙᓂ. ᖃᒪᓂ'ᑦᑐᐊᕐᒥ ᑐᒃᑐᐃᑦ ᐅᓗᕆᐊᓇᖅᑐᒦᒻᒥᔪᑦ ᐃᒪᖅᑐᖅᑐᒥᒃ ᐆᒻᒪᕐᑯᓯᐅᕐᕕᖕᓂᒃ.

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[26] 20-ᒋᔭᐅᔪᒥᒃ ᓇᑦᑕᐅᑎᓂᖓᓂᒃ ᐅᓂᒃᑲᓚᐊᑦ Beverly-ᒥ ᖃᒪᓂᒡᑐᐊᕐᒧ ᑐᒃᑐᐃᑦ ᐊᐅᓚᑕᐅᓂᖏᓐᓄᑦ ᑲᑎᒪᔨᓂᒃ.

ᐅᖃᐅᓯᐅᓯᒪᔪᒥ ᐅᓂᑳᓚᐊᒥᓂ, ᐱᓕᕆᐊᖑᓲᑦ ᐅᔭᕋᓐᓂᐊᕐᕕᖕᓂ ᐱᐅᖏᑦᑐᒥᒃ ᐊᒃᑐᐃᓂᕐᓗᒍᓐᓇᕐᒥᔪᑦ ᑐᒃᑐᓂ ᐊᓯᖏᑦ ᒪᑯᐊ ᓲᕐᓗ ᐊᑦᑎᓅᓗᐊᖃᑦᑕᖅᑐᒥᒃ ᖃᖓᑕᓲᑦ ᖃᖓᖃᑦᑕᕐᓂᖏᑦ, ᓴᓇᔭᐅᓂᖏᑦ ᐊᖅᑯᑏᑦ ᐊᒻᒪᓗ ᒥᑦᑕᕐᕖᑦ, ᐊᐅᓖᕋᔪᓗᐊᕐᓂᖏᑦ ᓄᓇᓯᐅᑎᐸᐅᔭᐃᑦ ᐅᓯᔪᑦ, ᐅᔭᕋᓐᓂᐊᕐᕖᑦ ᓴᓇᐅᔭᓂᖏᑦ ᐊᐅᓚᑕᐅᓂᖏᓪᓗ, ᓱᑭᖅᑕᐅᕙᓪᓕᐊᓂᖏᑦ ᓴᓗᒻᒪᐃᓕᖅᑎᖅᑕᐅᓂᖏᑦ ᓄᓇᐃᑦ ᐃᒪᐃᓪᓗ, ᑐᕐᑯᓇᖅᑐᓕᖕᓄᑦ. ᐅᓂᒃᑳᓚᐊᑦ ᐅᖃᖅᓯᒪᒧᑦ ᑕᒪᒃᑯᐊ ᐱᓕᕆᐊᖑᓂᖏᓐᓄᑦ ᐱᔾᔪᑕᐅᔪᓐᓇᖅᑐᑦ ᐱᑕᖃᕿᓃᕿᑕᐅᓪᓗᑎᒃ, ᐃᓄᐃᑦ ᐊᒥᓱᕿᖅᐸᓪᓕᐊᓂᖏᓐᓄᑦ, ᐊᒻᒪᓗ ᐸᒡᕕᓴᖅᑕᐅᓂᖏᓐᓄᑦ ᑐᒃᑐᐃᑦ; ᐊᖅᑰᑎ ᐱᔾᔪᑕᐅᔪᓐᓇᕐᒥᔪᑦ ᐊᒡᕕᐊᕐᑯᑕᐅᓗᑎᒃ ᐊᒥᓲᓗᐊᓕᖅᐸᑕ ᐅᕙᓘᓐᓃᑦ ᐊᐳᑕᐃᔭᖅᑕᐅᔪᓂᒃ ᓴᓂᕋᓕᐅᖅᓯᒪᒍᑎᒃ ᐳᖅᑐᔪᓂᒃ ᐊᒃᑕᖅᑕᐅᓯᒪᔪᓂᒃ. ᐃᓱᒪᓘᑕᐅᔪᓂᒃ ᐅᖃᐅᓯᖃᕐᒥᔪᑦ ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖓ ᐊᖏᔪᓪᒪᓇᖕᒥᒃ ᐊᒃᑐᐃᓯᒪᔪᓐᓇᖅᑐᖅ ᑐᒃᑐᓂᒃ.

ᐃᓱᒪᓘᑕᐅᔪᑦ ᐊᒃᑐᖅᑕᐅᑐᐃᓐᓇᓇᐊᖃᕐᓂᖅ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᓐᓂᐊᕐᕕᓐᓂᒃ ᐱᔾᔪᑎᖃᑐᐃᓐᓇᖏᑦᑐᖅ ᑎᒥᒃᑯᑦ ᐊᒃᑐᖅᑕᐅᔪᓐᓇᕐᓂᖏᓐᓂᒃ ᐊᐅᓚᑕᐅᔪᓂᒃ, ᑐᒃᑐᐃᑦ ᐊᓯᖏᓪᓗ ᐆᒪᔪᐃᑦ. ᐃᓱᒪᓘᑕᐅᓪᓚᓇᖕᒥᔪᑦ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᖃᕐᓂᖏᓐᓂᒃ ᐊᓯᖏᓐᓂᓗ ᑐᕐᑯᓐᓇᖅᑐᖃᕐᓂᖏᓐᓂᒃ ᓂᕆᔭᐅᕙᒃᑐᓄᐊᑭᓐᓇᕐᓂᖏᑦ, ᓂᕆᔭᐅᔪᓐᓇᖅᓯᑎᒃ ᑐᒃᑐᓄᑦ ᐊᓯᖏᓄᓪᓗ ᐅᒪᔪᕐᓄᑦ, ᐃᖃᓗᖕᓄᑦ, ᑎᖕᒥᐊᓄᓪᓗ, ᒥᑭᓐᓂᖅᓴᓄᓪᓗ ᐆᒪᔪᓄᑦ ᓂᕆᕙᒃᑕᖏᓐᓄᑦ, ᐊᒻᒪᓗ ᓂᕆᔭᐅᕋᑕᑭᒫᕐᒥᔪᓄᑦ ᐃᓄᖕᓄᑦ. ᑕᐃᒫᒃᓴᐃᓐᓇᖅ ᐃᓱᒪᓘᑕᐅᒋᕗᑦ ᐱᖅᑯᖅᑐᑦ, ᐱᓗᐊᖅᑐᒥᒃ ᑕᐃᒃᑯᓇᓂ ᓂᕆᔭᐅᕙᒃᑐᓂ ᐸᐅᖓᕐᓂ. ᐅᔭᕋᓐᓂᐊᕐᕖᑦ ᐊᐅᓚᑕᐅᓂᖏᑦ ᐃᓱᒪᓘᑕᐅᔫᖏᓚᑦ ᐃᓄᖕᓄᑦ. ᑎᑎᕋᕐᕕᐅᓯᒪᓪᓗᑎᒃ ᑐᓐᖓᕕᒃᑯᑦ, [27],BQCMB-ᑯᑦ ᑲᑎᒪᔨᖏᑦ ᑐᒃᑐᓕᕆᔩᑦ ᓇᓗᓇᐃᖅᓯᓯᒪᔪᑦ "ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖏᑦ ᓴᓂᕐᒧᑦ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᖅᑐᓂᒃ" ᐊᒻᒪᓗ "ᓵᓐᓇᑭᑭᓐᓇᕐᓂᖏᑦ ᐱᑭᖅᑐᑦ ᐃᒪᐃᓪᓗ ᓱᑭᖅᑕᐅᓯᒪᔪᓂᒃ ᐅᕙᓘᓐᓃᑦ ᐋᕿᐅᒪᔪᑐᖃᐃᑦ ᐊᓯᔾᔨᖅᑕᐅᓯᒪᓂᖏᓐᓄᑦ" ᐊᒃᑐᖅᑕᐅᓂᐅᔪᓐᓇᕐᒥᔪᑦ ᕿᓂᖅᑐᓂᒃ ᐱᓕᕆᔪᓂᒃ.

ᐃᓱᒪᒋᓪᓗᒋᑦ ᐆᒪᔪᐃᑦ ᐊᓐᓂᐊᓕᑐᐃᓐᓇᓇᐊᖃᕐᓂᖏᑦ ᑕᐃᒪᐃᑦᑎᐊᑭᓐᓃᕐᓗᑎᒃ ᓂᕆᔪᕕᓂᐅᓂᕐᒧᑦ ᓱᑭᕐᓇᖅᑐᖃᖅᑐᓂᒃ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒫᒃᓴᖃᖅᑐᓂᒃ (ᑕᑯᒃᓴᐅᖏᑦᑐᓂᒃ) ᓄᐃᔪᕕᓂᕐᓂᒃ ᓄᖑᔪᐃᑐᓂᒃ ᐅᔭᕋᓐᓂᐊᕐᕕᖕᒥ, ᖃᐅᔨᕚᓪᓕᑭᑕᐅᓂᐊᖅᑐᑦ ᑕᑯᔭᐅᓇᔭᖅᐸᑕ ᖃᐅᔨᔭᐅᓯᒪᔪᑦ ᐊᕙᑎᒥᒃ ᖃᐅᔨᓴᐃᓯᒪᓂᖏᓐᓂᒃ ᓄᓇᓕᐅᔪᓂᒃ ᑎᒥᐅᔪᓂᒃ ᖃᓂᒋᔭᖏᓐᓂ ᓴᔅᑳᑦᓯᐋᓐ ᑲᓇᖕᓇᖓᓃᑦᑐᓂ ᓄᓇᓚᖕᓂ. ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓂᖏᑦ ᑐᑭᓇᖅᓯᓚᐅᖅᑐᑦ ᐱᒻᒪᕆᐅᔪᒥᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᓚᐅᖏᑦᑐᑦ ᐅᔭᕋᓐᓂᐊᕐᕕᖕᒥ ᐊᐅᓚᑕᐅᔪᓂᒃ ᐲᖅᑕᐅᓯᒪᔪᓂᓗᓐᓃᑦ ᓄᓇᓂᒃ ᐊᕙᑎᐊᓂ Wollaston Lake ᖃᓂᒋᔭᖓᓂ Rabbit Lake-ᒥ ᐅᔭᕋᓐᓂᐊᕐᕕᖕᒥ. ᐅᓂᒃᑲᓚᐊᖏᓐᓂ ᐆᒃᑐᕋᖅᕕᐅᓚᐅᖅᑐᓂ Wollasten Lake-ᒥ ᖃᐅᔨᔭᐅᓚᐅᖅᑐᑦ "ᑕᒪᕐᒥᒃ ᐱᑕᖃᕐᓂᖏᑦ

[27]ᑎᑎᖅᑲᖅ ᐅᓪᓗᖃᖅᑐᖅ ᒪᐃ 1, 2006-ᒥ ᐅᖃᖅᓯᒪᔪᖃᖅᑐᖅ ᑎᑎᕋᖅᑕᐅᓵᖅᓯᒪᔪᓂᒃ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐊᑐᐊᒐᕐᓂᒃ ᐊᒻᒪᓗ ᑎᑎᕋᖅᑕᐅᓵᖅᓯᒪᔪᓂᒃ ᑐᑭᓯᓂᐊᕐᕕᐅᓯᒪᔪᓄᑦ ᑎᑎᖃᕐᑯᑎᖏᓐᓂᒃ.

ᐃᖅᑲᓗᖕᓂ, ᐱᕐᑯᖅᑐᓂ, ᐆᒪᔪᓂᓗ, ᐊᑦᑎᒃᑐᒻᒪᕆᐅᓚᐅᖅᑐᑦ, ᖃᐅᔨᓐᓇᓚᐅᖕᒋᑦᑐᑦ ᐅᓗᕆᐊᓇᕐᔾᖅᓂᖕᒋᓐᓂᒃ ᓂᕆᔾᐅᘁᓗᐊᖅᐸᑕ ᑕᐃᒫᑎᒋ ᐱᑕᕐᑲᕐᓂᖕᒋᓐᓂ. "

ᑐᓴᕈᒥᓇᕐᒥᔪᖅ ᐅᑭᐅᖅᑕᖅᑐᒥᐅᑦ ᖃᐅᔨᓵᖅᑕᐅᓯᒪᓂᖕᒋᓐᓂ, ᑐᒃᑐᐃᑦ ᑲᓇᑕᐅᑉ ᐅᑭᐅᖅᑕᖅᑐᐊᓃᑦᑐᑦ ᐳᖅᑐᓂᖅᓴᓂᒃ ᓂᕆᐅᒋᔾᐅᓚᐅᖅᑐᓂᒃ ᐱᑕᕐᑲᖅᑐᑦ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᕐᑲᖅᑐᓂᒃ (ᑕᑯᒃᓴᐅᖕᒋᑦᑐᓂᒃ). ᖃᐅᔮᓴᖅᑕᐅᔪᑦ ᐅᕐᑲᖅᓯᒪᔪᑦ ᑕᐃᒪᐃᑦᑐᑦ ᓯᓚᕐᔪᐊᕐᒥ ᓄᖑᔪᐃᑦᑐᕐᓂᒃ ᐅᔾᕋᖕᓂᐊᕐᕕᖕᓅᓐᖕᒋᑦᑐᖅ, ᑭᓯᐊᓂ ᑲᑕᒐᐃᕕᐅᓯᒪᓂᕕᓂᕐᒧᑦ ᓄᖑᔪᐃᑦᑐᑦ ᖃᐅᔮᓴᖅᑕᐅᓯᒪᓂᖕᒋᓐᓄᑦ ᐊᒻᒪᓗ Chernobyl-ᒥ ᐱᓂᕐᓗᒃᓯᒪᔪᕕᓂᕐᓂᒃ, ᑕᐃᔅᓱᒪᓂᓂᑕᕐᓂᒃ 1970-ᖏᓐᓂᒃ ᐊᒻᒪᓗ 1980-ᖏᓐᓂ ᐊᑐᓚᐅᖅᓯᒪᔪᓂᒃ. ᑐᒃᓯᑐᐃᑦ ᐱᐅᖏᑦᑐᒥᒃ ᐃᒃᐱᖕᓂᖅᑑᔾᕐᑲᑦᑕᖏᑦᑐᑦ ᐳᖅᑐᔪᒃᑲᓪᓚᓐᖕᓂᒃ ᑎᑭᑕᐅᓯᒪᒐᓗᐊᕐᒥᒃ ᑎᒥᒥᓂ, ᐊᒻᒪᓘᓐᓃᑦ ᐃᓄᐃᑦ ᑕᒪᒃᑯᓂᖓ ᐱᑕᕐᑲᖅᑐᓂᒃ ᓂᕆᓯᒪᔫᒐᓗᐊᑦ ᖃᓄᐃᕐᑲᑦᑕᖕᒋᑦᑐᑦ.

ᐃᓱᒪᓘᑕᐅᔪᑦ ᐊᒃᑐᖅᑕᐅᔪᓐᓇᕐᓂᖕᒋᓐᓂ ᐅᔾᕋᖕᓂᐊᕐᕕᖕᓄᑦ ᑐᒃᑐᐃᑦ, ᐊᓯᖕᒋᓪᓗ ᐆᒪᔪᐃᑦ ᐅᖃᐅᓯᐅᑦᑎᐊᕈᓐᓇᖀᖅᑐᑦ ᓯᕗᓂᒃᓴᒥ ᐊᕙᑎᒥᒃ ᖃᐅᔾᓴᐃᔪᖅᑲᓕᖅᑎᓪᓗᒍ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᐅᔾᕋᖕᓂᐊᕐᕕᒃᑖᖅᑐᖅᑲᕈᒪᓕᕐᓂᖅᐸᑦ, ᑕᐃᒫᒃ ᑕᒪᕐᒥᑦᑎᐊᖅ ᐊᒃᑐᖅᑕᐅᓯᒪᑐᐃᓐᓇᓇᐊᖅᑲᖅᑐᑦ ᐃᓱᒪᒋᔾᐅᔾᓇᐊᖅᑲᕉᒻᒪᑕ, ᐊᒻᒪᓗ ᑐᑭᑖᕈᑕᐅᑦᑎᐊᕐᓗᑎᒃ. ᖃᐅᔮᓴᖅᑕᐅᓂᖕᒋᓐᓂ ᐱᖅᑯᓯᓇᔾᐅᕙᒃᑐᑦ ᐃᒪᖅᑲᓇᐊᖅᑲᖅᑐᑦ ᑕᒪᐃᓐᓂᑦᑎᐊᖅ ᖃᐅᔨᓴᐃᕙᓪᓕᐊᖕᒋᓐᓇᕐᓂᕐᒥᒃ ᐊᒻᒪᓗ ᐆᒃᑐᕋᐃᖅᑲᑦᑕᕐᓂᕐᒥᒃ ᐆᒪᔪᕐᓂᒃ ᐱᕐᑯᖅᑐᓂᒡᓗ ᖃᓂᒋᔾᖕᒋᓃᑦᑐᓂᒃ ᐅᔾᕋᖕᓂᐊᕐᕕᐅᑉ, ᑕᐃᒫᒃ ᐊᒃᑐᖅᑕᐅᕐᑯᓇᒋᑦ ᐆᑦᑐᕐᓇᖅᑐᖕᓄᑦ ᐅᕙᓘᓐᓂᑦ ᐊᓯᐊᒍᑦ ᖃᓄᑐᐃᓇᖅ ᐅᔾᕋᖕᓂᐊᕐᕕᖕᒧᑦ. ᑐᒃᑐᐃᑦ ᓴᐳᓐᓂᐊᖅᑕᐅᓯᒪᔾᔪᑎᖕᒋᑦ, ᒫᓇᐅᔪᖅ ᐊᑐᖅᑕᐅᔪᑦ ᓴᐳᓐᓂᐊᖅᑕᐅᓯᒪᑦᑎᐊᓇᐊᖅᑲᕐᓂᖕᒋᓐᓄᑦ ᑐᒃᑐᐃᑦ ᓄᕐᓇᓂᖕᒋᓐᓂ ᓄᕐᓇᔾᓈᖅᑎᓪᓗᒋᓪᓗ ᐃᒃᐱᒋᔾᐅᑦᑎᐊᓇᐊᖅᑲᕐᓂᐊᖅᑐᑦ.

4.7.4 ᐊᐅᓚᑕᐅᓂᖕᒋᑦ ᐊᒃᑯᑕᑯᐃᑦ ᐊᒥᐊᒃᑯᕕᓃᑦ ᐅᔾᕋᐃᑦ ᓯᖅᑳᓪᓗ ᓯᐅᕋᐃᑦ

ᐅᔾᕋᖕᓂᐊᕐᕕᖕᓂ ᐊᒃᑕᑯᐃᑦ ᐊᒥᐊᒃᑯᕕᓂᓪᓗ ᐅᓗᕋᖅᑲᕐᒪᑕ ᓄᓇᐅᑉ ᐃᓗᐊᓃᓚᐅᖅᑐᓂᒃ ᓄᓇᐅᑉ ᖄᖓᓄᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ. ᐅᔾᕋᕕᓃᑦ ᓯᕐᑯᒥᓯᒪᕐᑲᑦᑕᕐᒪᑕ ᖃᓄᐃᓐᓇᖅ ᐊᖕᒋᓂᖅᑲᖅᓱᑎᒃ; ᐅᔾᕋᕕᓃᑦ ᓯᖅᑲᓕᖅᑎᑕᐅᖅᑲᑦᑕᕐᒪᑕ, ᓯᐅᕋᖑᖅᑎᑕᐅᓪᓗᑎᒃ ᐅᕙᓗᓐᓃᑦ ᐸᓚᐅᓛᒃᓴᔾᐅᔫᔾᓕᖅᓱᑎᒃ. ᑕᐃᒫᒃ ᐱᓕᕆᐊᖑᓛᖓᒥᒃ, ᓱᕈᕐᓇᖅᑐᖅᑲᓕᖅᑲᑦᑕᕐᒪᑕ ᐃᓚᕕᓂᖕᒋᓐᓂᒃ ᓲᕐᓗ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒫᒃᓴᖅᑲᖅᑐᓂᒃ, ᐅᕐᑯᒪᐃᑦᑐᓂᒃ ᓴᕕᕋᔾᖕᓂᒃ, ᐊᓯᖕᒋᓐᓄᓐᓃᑦ ᐱᔪᒪᔾᐅᖕᒋᑦᑐᓂᒃ ᓴᕕᖕᓂᒃ, ᐊᒻᒪᓗ ᐆᑦᑐᕐᓇᖅᑐᖅᑲᖅᑐᓂᒃ ᑕᓇᐅᕐᓂᒃ ᐊᒃᑐᐃᔾᓇᖅᑐᓂᒃ ᓯᓚᒥᒃ ᐊᒻᒪᓗ ᐃᓄᖕᓂᒃ. ᑕᒪᒃᑯᐊ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒫᒃᓴᖅᑲᖅᑐᑦ Radioactive-ᖑᔪᑦ ᐱᕐᑯᑎᓖᑦ, ᐊᐅᒪᐃᕈᑎᒋᕙᓪᓕᐊᓂᐊᖅᑑᒐᓗᐊᑦ ᓱᒃᑲᐃᑦᑐᒻᒪᕆᖕᒥᒃ ᐊᒻᒪᓗ ᐊᓯᖕᒋᑦ ᖃᓄᐃᑦᑑᖅᐸᓪᓕᐊᓂᐊᖅᑑᒐᓗᐊᑦ ᓯᕗᓂᒧᑦ, ᑭᓯᐊᓂ ᑕᒪᕐᒥᒃᑲᓴᐃᑦ

ᑕᒪᒃᑯᐊ ᐊᒥᐊᒃᑯᕙᓂᑦ ᐊᓗᕆᓇᕈᓐᓇᕐᒪᑕ ᐊᒥᓲᒪᕆᖕᓄᑦ ᐊᕐᕞᔫᓄᑦ - ᐃᓚᖏᓗᓐᓃᑦ ᖃᖓᓕᒫᒧᑦ. ᑕᐃᒪᓕ ᐱᔭᕆᐊᕐᑲᕐᓂᖅ ᓴᐳᓐᓂᐊᕐᓂᖅ ᐃᓄᐃᑦ ᖃᓄᐃᑦᑕᐃᓕᒪᔭᕆᕐᑲᕐᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐊᕙᑎᒥᒃ ᑐᕞᖓᖕᒪᑦ ᑕᒪᐃᓐᓄᑦ ᐃᓅᕙᓪᓕᐊᔨᒫᖅᑐᓄᑦ ᓯᕗᓂᒃᓴᒥ, ᐊᒻᒪᓗ ᐃᓅᔨᓂ ᐅᓪᓗᒥ, ᖃᓄᐃᓕᐅᕆᐊᕈᑎᕐᑲᕆᐊᕐᑲᒻᒪᕆᒃᑐᑦ ᐊᑐᓕᖅᑎᑕᐅᔨᓂᒃ, ᒥᑭᒡᓕᑎᖅᑕᐅᓯᒪᔭᕆᐊᕐᑲᕐᓂᖏᓐᓄᑦ ᑕᒪᒃᑯᐊ ᐅᓗᕆᐊᓇᖅᑐᓖᑦ.

ᐃᕐᑲᓇᐃᕐᔭᕐᑲᖅᑐᑦ ᑕᒪᒃᑯᐊ ᐊᑯᓂᐅᔪᒧᑦ ᑐᕚᖅᑐᑦ ᐅᑎᖅᑎᑦᑎᔪᒪᓂᖅ ᓄᓇᒥᒃ ᑕᐃᒪᐃᑐᑐᕐᑲᐅᓚᐅᖅᓯᒪᓂᖏᖓᓄᑦ, ᓯᕗᓂᐊᓂ ᐅᔭᕋᖕᓂᐊᕐᕙᒃᑕᕐᑲᓚᐅᖅᑎᓐᓇᒧᑦ ᐅᑎᖅᑎᓐᓇᓱᓪᓗᒍ, ᓯᕗᓂᒃᓴᒥ ᐊᑐᖅᑕᐅᔪᓐᓇᕐᓂᐊᕐᒪᑦ. ᒪᕐᒥᒃ ᐊᐅᓚᑕᐅᔪᑦ ᐅᔭᕋᖕᓂᕐᑯᕐᕚᑦ ᖄᓇᐅᔭᓂᒃ ᕐᑲᐃᑦᑎᓯᒪᕚᑏᓇᐊᕐᑲᖅᐳᑦ ᓇᓗᓇᖏᑦᑐᓂᒃ ᐱᑕᕐᑲᕐᓂᖏᓐᓂᒃ, ᑕᐃᒫᒃ ᖄᓇᐅᔭᐃᑦ ᓈᒪᖕᓂᐊᕐᒪᑕ ᐲᔭᖅᑕᐅᑦᑎᐊᕈᑎᒃᓴᖏᓐᓄᑦ ᐅᔭᕋᖕᓂᐊᕐᕖᑦ, ᐅᔭᕋᖕᓂᐊᖅᑕᐅᔪᒪᔪᑦ ᓄᖑᑕᐅᓯᒪᓕᖅᑎᓪᓗᒋᑦ. ᐊᑯᓂᐅᔪᒥ ᐊᐅᓚᑕᐅᓂᖏᑦ ᐊᔾᔨᐅᖏᑦᑐᑦ ᐊᒃᑕᑯᒃᓴᐃᑦ ᐅᔭᕋᕙᓃᑦ (ᐅᔭᕋᐃᑦ ᐃᓚᕐᑲᕈᓐᓇᖅᑐᑦ ᐊᕙᑎᒧᑦ ᓱᕈᐃᔪᓐᓇᖅᑐᓂᒃ[28]) ᐊᒻᒪᓗ ᓯᐅᕋᓐᖑᖅᓯᒪᔪᓂᒃ, ᐱᓗᐊᖅᑐᒥᒃ ᐃᓱᒪᒋᔭᐅᑦᑎᐊᓇᐊᓖᑦ. ᐅᔭᕐᑲᖕᓂᐊᕐᕙᖕᓂ ᐊᔾᔨᐅᖏᑦᑐᑦ ᐊᒃᑕᑯᓐᖑᖅᓯᒪᔪᑦ ᐅᑎᖅᑎᑕᐅᖁᒃᑐᑦ ᐅᔭᕋᖕᓂᐊᕐᕙᖕᒧᑦ ᒪᑐᔭᐅᓂᐊᓕᖅᑎᓪᓗᒍ, ᐊᒻᒪᓗ ᓯᐊᕋᓐᖑᖅᑎᑕᐅᓯᒪᔪᑦ ᓯᕐᑲᓖᑦ ᐃᓕᐅᕐᑲᖅᑕᐅᕙᒃᑐᑦ ᒪᑐᐃᖓᔪᓂᑦ ᓄᓇᐅᑉ ᐃᓗᑐᓂᐊᓄᑦ ᐅᔭᕋᐃᔭᕐᕙᐅᓯᒪᔪᓂ, ᐊᒻᒪᓗ ᓴᓇᔭᐅᓯᒪᓪᓗᑐᖅᓱᑎᒃ ᑕᒪᒃᑯᓂᖓ ᐃᓗᓕᖅᑎᖅᑕᐅᓂᐊᖅᑐᓂᒃ. ᑎᑎᕐᑲᐃᑦ ᐃᓚᒃᑲᓂᖏᑦ 1-ᒦᑦᑐᑦ ᐅᓂᒃᑳᖅᓯᒪᔪᖅ ᕐᑲᓄᖅ ᑕᒪᒃᑯᐊ ᐱᓕᕆᓂᐅᔪᑦ ᒫᓇᐅᔪᖅ ᐊᑐᖅᑕᐅᕐᑲᑦᑕᕐᒪᖗᑕ ᓴᑳᑦᓯᐊᓐᒥ ᐅᔭᕋᖕᓂᐊᕐᕙᖕᓂ. ᐊᑯᓂᐅᔪᖅ ᕐᑲᐅᔮᓴᖅᑕᐅᕙᓪᓕᖕᒋᓐᓇᕐᓂᐊᖅᑐᑦ ᐅᔭᕋᕙᓃᑦ ᓯᕐᑲᓕᖕᒋᓪᓗ ᐊᒥᐊᒃᑰᔪᑦ ᐅᔭᕋᖕᓂᐊᕐᕙᒃ ᒪᑐᔭᐅᓯᒪᓕᖅᑎᓪᓗᒍ, ᓴᐳᔾᔭᐅᓯᒪᑦᑎᐊᓇᐊᕐᑲᕐᒪᑕ ᓯᕗᓂᒃᓴᒥ ᐃᓅᔨᒫᖅᑐᑦ ᓈᒻᒪᖏᑦᑐᓂᒃ ᐊᒃᑐᖅᑕᐅᔪᓐᓇᕐᓂᕐᒥᒃ, ᑕᒪᒃᑯᓇᖓᑦ ᐅᓗᕆᐊᓇᖅᑐᕐᑲᖅᑐᓂᒃ ᐊᒃᑕᑯᑎᒃ. ᕐᑲᐅᔮᓴᖅᑕᐅᖏᓐᓇᕆᐊᕐᑲᕐᓂᐊᕐᓂᖏᑦ ᑕᒪᒃᑯᐊ ᐱᕐᑯᑏᑦ, ᐱᓗᐊᖅᑐᒥᒃ ᓯᐅᕋᓐᖑᖅᓯᒪᔪᑦ ᓯᕐᑲᓕᓗᓐᓃᑦ, ᐃᓱᒪᒋᔭᐅᑦᑎᐊᕆᐊᕐᑲᕐᓂᐊᖅᑐᑦ ᕐᑲᐅᔮᓴᖅᑕᐅᔪᕐᑲᖅᑎᓪᓗᒋ ᕐᑲᓄᐃᑦᑐᐃᓇᐃᒥᒃ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐅᔭᕋᖕᓂᐊᕐᕙᒃᑖᕈᒪᔪᒥᒃ. ᐊᒻᒪ ᓱᓕ, CNSC-ᑯᑦ ᒪᓕᒐᕐᑲᖅᑐᑦ ᖄᓇᐅᔭᐃᑦ ᐱᑕᕐᑲᓇᐊᕐᑲᕐᓂᖏᓐᓂ ᐊᑐᕐᓂᐊᖅᑐᓂᒃ ᐊᑯᓂᐅᔪᒥ ᕐᑲᐅᔮᓴᖅᑕᐅᔾᔪᑎᒃᓴᖏᓄᑦ ᐊᒻᒪᓗ ᐋᕐᑭᒋᐊᕈᑕᐅᒃᑲᓐᓂᓇᐊᕐᑲᕐᑲᔭᖅᑐᓄᑦ ᓯᐅᕐᑲᕐᕙᐅᔪᓂᒃ, ᐊᒻᒪᓗ ᐊᐅᓚᑦᑎᔾᔭᐃᑦ ᓴᕐᑭᑕᐅᔭᓇᐊᕐᑲᕈᒫᖅᑐᑦ ᑕᒪᒃᑯᐊ ᒪᓕᒃᑕᐅᕙᖅᑕᐅᓂᐊᕐᒪᑕ.

CNSC-ᑯᑦ ᒪᓕᒐᓪᓗᑐᕐᓄᑦ ᐊᑐᐊᒐᖏᑦ ᓈᓴᐅᑎᓕᒃ P-290 (2004)-ᒥᒃ ᐅᓂᒃᑲᖅᓯᒪᔪᖅ ᐅᒃᐱᓇᔭᐅᔪᓂᒃ ᐃᓱᒪᒋᔭᐅᓯᒪᔪᓂᒃ CNSC-ᑯᑦ ᑲᑎᒪᔩᖏᓐᓄᑦ "ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᕐᑲᓕᖅᐳᒥᒃ ᒪᓕᒐᓪᓗᑐᒃᓴᓂᒃ ᐱᔾᔪᑎᕐᑲᖅᑐᓂᒃ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᕐᑲᖅᑐᓂᒃ ᐊᒃᑕᑯᑎᓂᒃ". ᐊᒻᒪᓗ ᓱᓕ, ᑎᑎᕋᖅᑕᐅᓵᖅᓯᒪᔪᑦ ᓴᓗᒻᒪᖅᓴᐃᓂᕐᒧᑦ *ᐊᑐᐊᒐᐃᑦ* ᓴᓇᔭᐅᕙᓪᓕᐊᔪᑦ ᑐᓐᖓᕙᒃᑯᓐᓄᑦ ᐊᒻᒪᓗ ᐃᓄᐃᑦ ᑲᑐᔾᔨᕐᑲᑎᒌᖏᓐᓄᑦ ᐊᑐᕈᒫᖅᑐᖅ ᐃᓄᖕᓄᑦ ᐱᕐᑯᑎᒋᔭᐅᔪᓄᑦ ᓄᓇᓄᑦ, ᐃᓚᕐᑲᕐᒥᔪᖅ ᐅᒃᐱᓇᔭᐅᔪᓂᒃ

28 ᑕᑯᓗᒋᑦ ᑎᑎᕐᑲᐃᑦ ᐃᓚᒃᑲᓐᓂᖏᑦ 1, ᐊᕙᒃᑐᖅᓯᒪᓂᖓᓃᑦᑐᖅ 16-ᒥ ᕐᑲᐅᔮᒋᐊᑦᑎᐊᒃᑲᓐᓂᕈᒪᒍᕙᑦ.

ᓴᓗᒻᒪᖅᓴᖅᑕᐅᓂᖏᓐᓄᑦ ᐊᒻᒪᓗ ᐊᑐᕈᓐᓂᖅᑎᑕᐅᕙᓪᓕᐊᓂᖏᓐᓄᑦ ᐱᔾᔪᖅᑕᐅᓗᑎᒃ ᐅᔾᔨᕆᓂᐊᕐᕖᑦ ᐊᐅᓚᑕᐅᔪᕕᓐᓂᑦ ᐃᓄᖕᓄᑦ ᐱᕐᑯᑎᒋᔭᐅᔪᓂ ᓄᓇᓂ. ᑕᐃᒃᑯᐊ ᐃᓄᓕᕆᔩᑐᖅᑲᒃᑯᑦ ᐅᔾᔨᕆᓂᐊᕐᕖᑦ ᐃᓂᕕᓂᖏᑦ ᓴᓗᒻᒪᖅᓴᖅᑕᐅᓂᖏᓐᓄᑦ ᐊᑐᐊᒐᐃᑦ ᓄᓇᕗᒻᒧᑦ ᐊᑐᕋᓗᐊᖅᑎᓪᓗᒋᑦ ᑕᒪᐃᓐᓄᑦ ᓴᓇᔭᐅᓂᖏᓐᓄᑦ ᑯᐃᓐ ᓄᓇᖅᑯᑎᖏ, ᐃᓚᖏᑦ ᓱᓕ ᐃᓗᓕᖏᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᕋᔭᕐᒥᔪᑦ ᐅᔾᔨᕆᓂᐊᕐᕕᖕᒥ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᓄᓇᐅᑉ ᖄᖓᓃᑐᓄᑦ, ᐃᓄᖕᓄᑦ ᐱᕐᑯᑎᒋᔭᐅᔪᓂ ᓄᓇᓂ.

ᓄᖑᔪᐃᑦᑐᓄᑦ ᐊᑐᐊᒐᐃᑦ ᐊᑐᓕᖅᑯᔭᖅᑲᖅᑐᑦ ᓱᓇᑐᐃᓐᓇᐃᑦ ᐱᔾᔪᑎᖅᑲᖅᑐᓂᒃ ᓴᓂᕐᓂᒃ ᓯᖅᑲᓕᓂᒃ ᓯᐅᕋᖑᖅᓯᒪᔪᓂᒡᓗᓕᓐᓅᑦ ᐅᔾᔨᕆᓂᓗ, ᐃᓚᖅᑲᖅᑐᓂᒃ ᐊᑯᓂᐅᔪᒧᑦ ᖃᐅᔨᓴᖅᑕᐅᑐᐃᓇᓇᐊᖅᑲᖅᓂᐊᖅᑐᓂᒃ, ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑦᑎᐊᖅᑯᔭᐅᔪᑦ ᖃᓄᐃᑦᑐᑐᐃᓇᓂ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔾᔨᕆᓂᐊᕐᕕᒃᑖᕈᒪᔪᓂᒃ. ᐊᑐᓕᐅᔭᖅᑲᕐᒥᔪᖅ ᐃᓚᐅᖅᑲᑦᑕᖅᑯᔭᐅᓪᓗᑎᒃ ᐃᓄᐃᑦ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓂ ᓄᓇᓃ ᐊᕙᑎᒥᒃ ᖃᐅᔨᓴᐃᓂᕐᒥᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔾᔨᕆᓂᐊᕐᕕᖕᓂ ᓄᓇᕗᒻᒥ, ᑕᒪᐃᓐᓂ ᐊᐅᓚᑕᐅᔪᓂ ᐅᔾᔨᕆᓂᐊᕐᕕᖕᓂ ᐊᒻᒪᓗ ᑭᖑᓂᐊᓂ ᓄᖅᑲᖅᑎᓪᓗᒋᑦ ᐅᔾᔨᕆᓂᐊᕐᕕᐅᓚᐅᖅᑐᑦ, ᐱᔾᔪᖅᑕᐅᓯᒪᓕᖅᑎᓪᓗᒋᑦ.

4.8 ᓄᓇᓕᖕᒥᐅᑦ ᐃᓚᒋᔭᐅᓂᖏᑦ

<u>ᐃᓅᓯᕐᒧᑦ ᐃᓅᓯᓕᐅᕈᑎᒃᓴᓄᓪᓗ ᐃᓱᒪᒋᔭᐅᔪᑦ</u>

ᐊᒻᒪᓗ ᓴᓂᐊᓂ ᐃᓱᒪᕗᑦᑕᐅᔪᑦ ᐃᓄᐃᑦ ᖃᒪᓂᖅᑖᖅᑕᐃᓕᒪᔭᓇᐊᖅᑲᖅᓂᖏᓐᓂ, ᐊᕙᑎᐅᔪᖅ ᐆᒪᔪᐃᓪᓗ (ᐆᒪᕕᐅᔪᑦ/ᐃᓅᕕᐊᔪᓪᓗ) ᓴᓂᐊᓂ ᐃᓱᒪᒋᔭᒃᓴᐅᒋᕗᑦ ᐃᓅᓯᓇᔭᐅᔪᑦ ᐊᒻᒪᓗ ᐃᓅᓯᓕᐅᕈᑕᐅᔪᓐᓇᖅᑐᑦ. ᑕᐃᒪ ᐅᖅᑲᐅᓯᐅᓯᒪᔪᑦ 4.5-ᒥ, ᐊᒥᓱᓂᒃ ᐃᓅᓯᓕᕈᑎᖅᑲᕈᓐᓇᖅᐳᖅ ᑮᓇᐅᔭᓕᐅᕐᓂᒃᑯᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔾᔨᕆᓂᐊᕐᕕᖕᓂᒃ. ᓄᓇᕗᒻᒥ ᓄᓇᑖᕈᑏᑦ ᐊᖏᕈᑎᖏᖅᑲᖅᓯᒪᖕᒪᑕ ᐱᓂᐊᕐᓂᓪᓚᓇᖏᑦ ᐃᓄᐃᑦ ᐃᑲᔪᖅᑕᐅᕚᓪᓕᕈᑎᒃᓴᓂᒃ ᐱᖅᑕᐅᖅᑲᑦᑲᕐᓂᐊᕐᓂᖅ. ᑕᐃᒪᐃᒃᑲᓗᐊᖅᑎᓪᓗᒋᑦ, ᐃᓱᒫᓗᑕᐅᕙᑦ ᓱᓕ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓇᕐᓂᖏᑦ ᑮᓇᐅᔭᓕᐅᕐᕕᐅᔪᓇᖅᑐᓂᒃ ᐱᕙᓪᓕᐊᔪᓂᒃ, ᐃᓄᐃᑦ ᐃᓕᖅᑯᓯᖏᑦ, ᐃᓅᓯᖅᑲᕐᓂᖏᑦ, ᓄᓇᓕᖕᓂᓗ ᖃᓄᐃᖏᑦᑎᐊᕐᓂᖏᑦ. ᑕᒪᒃᑯᐊ ᐃᓱᒪᕗᑦᑕᐅᔪᑦ ᐅᖅᑲᐅᓯᐅᔭᕆᐊᖅᑲᕐᓂᐊᖅᑐᑦ ᐃᓄᐃᑦ ᐱᔪᓇᖅᑕᓕᒫᒥᓂᒃ ᑎᒎᖅᑲᐃᓂᐊᕈᑎᒃ ᑮᓇᐅᔭᓕᐅᖅᑕᐅᔪᓇᕐᓂᐊᕐᓂᕐᒥᓂᒃ.

<u>ᑐᓴᐅᒪᖅᑲᑦᑕᐅᑎᕙᖕᓂᖅ ᑐᑭᓯᓂᐊᖅᑲᑦᑕᕐᓂᕐᓗ</u>

ᐋᖅᑮᓇᓯᐊᖅᓂᖅ ᐊᒃᑐᖅᑕᐅᑐᐃᓇᓇᐊᖅᑲᖅᑐᓂᒃ - ᐊᒻᒪᓗ ᐃᑲᔫᓯᐊᒃᓴᓂᒃ ᓴᖅᑭᑦᑐᓐᓇᖅᑐᓂᒃ - ᐱᓕᕆᐊᒃᓴᓂᒃ, ᐱᒻᒪᕆᐅᖅ ᓴᓇᔪᒪᔪᑦ ᑲᒻᐸᓂᐅᔪᑦ ᐅᕙᑰᓐᓃᑦ ᐊᐅᓚᑦᑎᔩᐅᔪᑦ ᑐᓴᐅᒪᑎᑦᑎᑎᐊᖅᑲᑦᑕᓇᐊᖅᑲᖅᓂᖏᑦ ᓄᓇᓕᖕᒥᐅᓂᒃ. ᑕᐃᒪᐃᓕᐅᑎᐊᖅᑲᑦᑕᖕᒋᑎᓪᓗᒋᑦ, ᓈᒻᒪᒋᑦᑐᓂᒃ ᐊᕙᑎᓕᓇᓂᒥᒃ ᖃᐅᔨᓴᖅᑭᓂᖅ ᑲᔪᓯᔪᓐᓇᕐᒪᑦ ᐊᒻᒪᓗ ᐃᓱᒪᕗᑦᑕᐅᔪᑦ ᓴᖅᑭᓪᓗᑎᒃ ᐊᒻᒪᓗ ᑐᑭᓯᓂᕐᓗᒃᓯᒪᓕᕐᓗᑎᒃ

ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᙱᓐᓂᒃ ᐊᒻᒪᓗ ᐃᑲᔫᓯᐊᒃᓴᓂᒃ ᓴᕿᑦᑐᓐᓇᖅᑐᓂᒃ ᐊᐅᓚᑕᐅᓂᙱᓐᓂᒃ ᐅᔭᕋᙵᐊᕐᕚᑦ. ᐃᓚᖓᒍᑦ ᑕᐃᒪᐃᑦᑐᓐᓇᕐᒥᔪᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᑦᑎᐊᙱᓗᐊᕐᓂᙱᓐᓄᑦ ᓇᙵᓂᖅᑐᑦ ᓄᓇᓕᙵᓂᒃ ᑐᑭᓯᓂᐊᕐᕖᖅᑲᖅᑕᓇᐊᖅᑲᕐᓂᕐᒥᓂᒃ, ᐊᒻᒪᓗ ᐱᔾᔪᑕᐅᔪᓐᓇᕐᒥᔪᑦ ᐊᒃᓱᕈᕐᓇᖅᑲᑦᑕᕐᓂᙱᓐᓂᒃ ᐊᔪᕐᓇᖅᑲᑦᑕᕐᓂᙱᓐᓂᓗ ᐅᖃᐅᓯᑦ ᖃᐅᔾᔨᓴᐃᓂᓕᕆᔪᑦ ᐊᒻᒪᓗ ᓴᓇᕐᕈᑏᑦ ᐃᓄᒃᑎᑑᓕᖅᑎᖅᑕᐅᑎᐊᕈᓐᓇᙱᓐᓂᙱᓐᓄᑦ ᐃᓚᙳᑦ ᐊᐅᓚᑕᐅᔪᑦ ᐅᖃᐅᓯᐅᓂᙱᓐᓂ.

5 ᑎᑎᖅᑲᐃᑦ ᓇᐃᓵᖅᑕᐅᓂᒪᓴᑦ ᑕᑭᓴᓂᒃ ⅁ᑭᓪᓕ

CMR	ᑲᓇᑕᒥ ᐅᔪᕐᖃᓂᐊᖅᓂᖏᑦ ᒪᓕᑉᓗ⅁⅁ᐃᑦ
CNSC	ᑲᓇᑕᒥ ᓄᖓᓴᐃᑎ⅁ᓕᕆᓂᖏᑦ ᐅ⅁ᓚᐊᓇᖅ⅁ᓕᕆᓚᐅᔭᑦ ᑲᒪᔪᵃᵇᔨᑦ (CNSC-ᔨᑦ)
DFAIT	ᐃᖅᑲᓇᐃᔪᖅᓂᕐᓂᑦ ᑲᓇᑕᐅᐸ ᔨᓪᒥᓕᕆᓂᖃᕐᓂᑦ ᐊᒻᒪᓗ ᔨᓪᓕᐊᖏᐅᑦ ᓂᐅᕗᑭᑎᒃᖁᖅᑐᑦ
DIO	ᐃᓕᑕᕆᔪᐅᓪᒪᓴᑦ ᐃᓄᐃᑦ ᑲ⅁ᔨᖅᑲᑎᑦᑎᑦ
EIS	ᐊᐢᑎᑎᒥᒃ ᐊᵇ⅁ᖅᔨᔨᒪᓴᓇᓐᓂᖏᑦ ᓇ⅁ᓇᐃᵇᔨᑕᓕᐊᖓᓴᑦ
IAEA	ᔨᓪᓕᓴᐊᖏᑦ ᓄᖓᓴᐃᑎ⅁ᖅᑲᖅ⅁ᓂᒃ ᐅᓕᓴᔨᑎᑎᓕᕆᓚᐅᔭᑦ ᑲᑎᒪᔨᓴᓴᐊᖓᑦ (IAEA-ᔨᑦ)
ICC	ᐃᓄᐃᑦ ᔨᓪᓕᓴᐊᖏᑦ ᑲᑎᒪᔨᖓᑦ
INAC	ᐃᓄᓕᕆᔨ⅁ᖅᑲᵇᔨᑦ
IOL	ᐃᓄᖓᓄᑦ ᐱᓴᔨᑎᑎᑦᐅᔨᓴᑦ ᓄᓇᐃᑦ
KRLUP	ᑭᓲᓕᓴᖏᑦ ᐊᕐᓇᖅ⅁ᖅᓯᒪᓂᖏᑦ ᓄᓇᐅᑦ ᐊ⅁ᖅᑕᐅᓂᖓᓚᐅᓄᑦ ᐸᖅᓇᐅᑎᑦ
NIRB	ᓄᓇᕐᒪᖏᑦ ᐊᐢᑎᑎᓕᕆᔨᵇᔨᑦ ᑲᑎᒪᔨᖓᑦ
NLCA	ᓄᓇᕐᒪᖏᑦ ᓄᓇᑦᑕᑎᓂᵇ ᐊᖓᑭᑕᑎᑦ
NORM	ᐱᑕᖅᑲᐃᵃᓇᖅ⅁ᑦ ᐊᐅᓕᔨᓂᵇ (ᑕᔨᵇᔭᐅᖓᑭᑕ⅁ᓂᵇ) ᐊᐅᒪᵇᔭᖅᑲᖅ⅁ᑦ
NPC	ᓇᕐᒪᖏᑦ ᐸᖅᓇᐃᔪᵇᔨᑦ
NPT	ᐊᖓᑭᑕᑎᓕᒍᑦ ᐊ⅁ᖅᑕᐅᑦᑕᐃᓕᒪᓂᖓᓚᐅᓄᑦ ᓄᖓᓴᐃᐃᑦ⅁ᑦ ᐅᓇᑕᑕᑎᓄᑦ
NSCA	ᓄᖓᓴᐃᐃᑦ⅁ᓂᵇ ᐅ⅁ᓚᐊᓇᖅ⅁ᑕᐅᓂᖏᑦ ᐊᒻᒪᓗ ᐊᐅᓕᑕᐅᓂᖓᓚᐅᓄᑦ ᒪᓕᑉᓗᐃᑦ (NSCA)
NTI	ᓄᓇᕐᑦ ⅁ᵃᖃᓚᕆᔨᵇᔨᑦ ᑎᒥᖏᔨᑎᓂᖓ
RIA	ᐊᕐᖃᐅ⅁ᖅᓯᒪᓂᐅᔨᓂ ᐃᓄᐃᑦ ᑲ⅁ᔨᖅᑲᑎᒪᔨᓂᖓᑦ
UMMR	ᓄᖓᓴᐃᐃᑦ⅁ᒥᒃ ᔨᓴᓂᓕᒻᒥᒃ ᐅᔪᕐᖃᓂᐊᖅᖃᕐᓂᓄᑦ ᒪᓕᒐᓴᓂᓄᑦ ᒪᓕᑉᓗ⅁⅁ᐃᑦ

ᑎᑎᕐᑲᐃᑦ 1 ᐃᓚᒃᑲᓐᓂᖏᑦ 1 ᓇᓂᓯᓇᓱᐊᕐᓂᖅ, ᐅᔾᔨᖅᓂᐊᕐᓂᖅ ᐊᒻᒪᓗ ᓯᕐᑲᓕᑎᕆᓂᖅ ᓄᖑᔪᐃᑦᑐᓂᒃ

1.1 I ᓯᕗᓪᓕᖅᐹᑦ ᐅᕐᑲᐅᓯᒃᓴᐃᑦ

ᐅᔾᔨᖅᓂᐊᕐᕕᐅᑉ ᐃᖏᕐᕋᓂᓕᒫᖓ ᐃᓱᒪᒋᔭᐅᔪᓐᓇᖅᐳᖅ ᐊᒥᓱᓂᒃ ᐊᕕᒃᑐᖅᓯᒪᓂᕐᑲᖅᑐᒥᒃ: ᕿᓂᕐᓂᖅ, ᓇᓂᓯᓇᓱᐊᕐᓂᕐᒥᒃ ᕐᑲᐅᔨᓴᖅᑎᐅᓂᖏᓐᓄᑦ ᐱᑦᕐᑲᑐᐃᓐᓇᕆᐊᕐᑲᖅᑐᑦ ᐅᔾᔨᐃᑦ ᐲᖅᑕᐅᓯᒪᔪᑦ; ᓴᓇᔾᔪᓂᖏᑦ, ᑖᒃᑯᓂ ᐱᕐᑲᑕᐅᓇᔾᔭᖅᑐᑦ ᐸᕐᓇᐃᓂᖅ, ᐱᔪᓐᓇᐅᑎᑖᖅᓯᒪᓂᖅ, ᐃᓂᒃᓴᓂᒃᓯᒪᓂᖅ, ᐊᒻᒪᓗ ᐃᒡᓗᕐᔪᓕᐅᖅᓂᖅ; ᐅᔾᔨᖅᓂᐊᕐᓂᖅ ᐊᒻᒪᓗ ᓯᕐᑲᓕᑎᕆᓂᖅ ᐅᔾᔨᖅᒥᒃ; ᐊᒻᒪᓗ ᓴᓗᒻᒪᖅᓴᐃᓄᖅ ᐊᒻᒪᓗ ᐲᔭᐃᓂᖅ ᐅᔾᔨᖅᓂᐊᕐᕕᕕᓂᕐᒥᒃ; ᐊᒻᒪᓗ ᑭᖑᓂᐊᓂ ᕐᑲᐅᔨᓴᖅᑕᐅᖏᓐᓇᕐᓂᖓᓂᒃ. ᑕᒪᕐᒥᒃ ᑖᒃᑯᐊ ᐱᓪᓕᐊᓂᖏᑦ ᐊᒥᓱᓂᒃ ᐊᑐᕐᒪᑕ ᐱᖅᑯᓯᕐᓂᒃ. ᑖᒃᑯᓇᓂ ᑎᑎᕐᑲᐃᑦ ᐃᓚᒃᑲᓐᓂᖏᓐᓂ;[29] ᐅᓂᒃᑳᕐᓂᐊᖅᑐᒍᑦ ᐊᓯᒃᑲᓐᓂᖏᓐᓂᒃ ᕐᑲᐅᔨᒪᔭᐅᔪᒃᓴᓂᒃ ᐃᓕᒋᐊᕈᑎᓂᒃ ᐃᓗᓕᖏᓐᓄᑦ 4.3-ᒥ ᐅᕐᑲᐅᓯᐅᓯᒪᔪᓂᒃ. ᑖᒃᑯᐊ ᓇᐃᓈᖅᓯᒪᔪᑦ ᑕᒪᐃᓐᓂᒃ ᐅᓂᒃᑳᖅᑐᑦ ᐃᓚᕐᑲᖅᑐᑦ ᐱᖅᑯᓯᓇᔭᐅᕙᒃᑐᓂᒃ ᐊᐅᓚᑕᐅᔪᓂᒃ ᑕᒪᐃᓐᓂᒃ ᐱᕙᓪᓕᐊᕐᑲᑦᑕᕐᓂᖏᓐᓂᒃ, ᐅᓗᕆᐊᓇᕐᓂᖏᓐᓂᓗ ᑎᒥᒧᑦ ᐅᓗᕆᓇᖅᑐᒦᒋᐊᕐᑲᖏᓐᓂᖏᓐᓂᓗ ᓴᓇᔩᑦ, ᓄᓇᓕᖕᒥᐅᓪᓗ, ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖏᑦ ᐊᕙᑏᑦ, ᐊᒻᒪᓗ ᕐᑲᓄᖅ ᐱᓕᕆᔾᔪᖕᒪᖔᑕ ᐅᓗᕆᐊᓇᕈᓃᖅᑎᑦᑎᓂᕐᒧᑦ.

1.2 ᓇᓂᓯᓇᓱᐊᕐᓂᖅ

1.2.1 ᕐᑲᓄᖅ ᓇᓂᓯᓇᓱᐊᓲᖑᖕᒪᖔᑕ

ᓇᓂᓯᓇᓱᐊᖅᐸᖕᒪᑕ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᓄᓇᒥᐅᑕᓂᒃ ᑕᐃᒫᒃᓴᐃᓐᓇᑲᒃᓴᒃ ᓇᓂᓯᓇᓱᐊᖅᑎᓪᓗᒋᑦ ᐊᓯᖏᓐᓂᒃ ᓴᕕᕋᔭᒃᓴᓂᒃ. ᐊᔾᔨᐅᖏᑦᑑᕗᖅ ᐅᕘᓇ ᓄᖑᔪᑦᑐᓂᒃ ᕿᓂᖅᑐᕐᑲᖅᑎᓪᓗᒍ ᐊᓯᖕᖔᖏᓐᓂᒃ ᐊᑐᕐᑲᑦᑕᕐᒪᑕ ᓴᓇᕐᕈᑎᓂᒃ, ᕐᑲᐅᔨᔾᔪᑎᓂᒃ ᐊᐅᓚᔪᒥᒃ ᐊᐅᒪᒃᓴᕐᑲᕐᓂᐅᔪᓂᒃ (ᑕᑯᒃᓴᐅᖏᑦᑐᓂᒃ) ᑕᐃᒪᐃᓕᕐᑲᑦᑕᕐᓂᖏᓐᓄᑦ ᓱᕈᖅᐸᓪᓕᐊᓂᖏᓐᓂ ᓄᖑᔪᐃᑦᑐᐃᑦ ᓄᓇᒦᑦᑐᑦ.

ᓇᓂᓯᓇᓱᐊᖅᑐᓂᒃ ᐱᕐᑯᓯᕐᑲᓲᖑᕙᑦ ᓄᓇᒥᒃ ᕿᓂᕐᕕᕐᑲᖅᓱᑎᒃ ᓇᓗᓇᐃᖅᓯᓚᐅᖅᓱᑎᒃ, ᐅᔾᔨᖅᓂᒃ ᒪᓕᒃᓱᑎᒃ, ᐅᔾᔩᖅᓂᒃ ᐆᒃᑐᕋᐃᓪᓗᑎᒃ ᐊᒻᒪᓗ ᓄᓇᖑᓕᐊᖅᐸᓪᓕᐊᓗᑎᒃ, ᑕᒪᕐᒥᒃ ᐊᑐᖅᓱᑎᒃ ᓯᓚᐅᑉ ᐊᐅᓪᓚᓂᖓᓂᒃ ᕐᑲᐅᔨᓴᕈᑏᑦᑎᓂᒃ, ᓇᓂᑐᐃᓐᓇᖅ

[29] ᑕᒪᒃᑯᐊ ᕐᑲᐅᔨᒪᑎᑦᑎᔾᔪᑏᑦ ᐱᔭᐅᓚᐅᖅᑐᑦ ᐃᓗᐊᓂ ᑐᓐᖓᕕᒃᑯᑦ ᐅᓂᒃᑳᓕᐊᖏᓐᓂᒃ ᑕᐃᔭᐅᔪᒥᒃ "ᐅᕐᑲᐅᓯᒃᓴᐃᑦ ᑎᑎᕐᑲᐃᑦ - ᐊᑐᐊᒐᐃᑦ ᐱᔾᔪᑎᕐᑲᖅᑐᓂᒃ ᓄᖑᔪᐃᑦᑐᒥᒃ ᔪᕌᓂᔭᒻᒥᒃ ᐅᔾᔨᖅᓂᐊᕐᓂᕐᒥᒃ ᓄᓇᕗᒻᒥ", 2005.

ᐊᔾᔨᒋᔭᐅᔪᓂᒃ ᐱᖁᓯᕆᔭᐅᔪᓂᒃ ᐊᑐᖅᐸᒃᑐᑦher ᓱᕐᓗ ᓄᓇᐅᑉ ᐆᓇᕐᓂᖓᓂᒃ ᖃᐅᔾᔪᑎᓂᒃ ᓄᖑᔪᐃᑦᑐᖃᕐᒪᖔᑕ ᐊᒻᒪᓗ ᐃᓕᒋᔭᖕᒋᓐᓂᒃ ᑕᒪᒃᑯᐊ ᓄᓇᒦᑦᑐᖃᕐᒪᖔᑕ, ᓱᕋᖅᑎᖅᓯᒪᔪᓂ ᓄᓇᐃᑦ ᖄᖓᓃᑦᑐᓂᒃ ᐱᑕᖃᕐᓂᖏᓐᓂᒃ, ᐱᖁᖅᑐᓂᒃ, ᐊᒻᒪᓗ ᐃᒪᕐᓃᑦᑐᓂᒃ. ᑕᒪᓐᓇ ᐱᖅᑯᓯᕆᔭᐅᔪᖅ ᐃᒫᓂᒃᑯᑦ ᐋᑕᐅᕙᒥᔪᖅ ᐃᑲᔪᖅᑕᐅᓪᓗᑎᒃ ᓴᓇᕐᕈᑎᒧᑦ "ᑭᖑᒧᑦ ᑲᐃᕙᑦᑐᒥᒃ ᐃᑯᑕᕐᒧᑦ" ᑲᑎᖅᓱᐃᓲᖅ ᐲᔭᖅᑕᐅᓯᒪᔪᓂᒃ ᓄᓇᐅᑉ ᖄᖓᓃᑦᑐᓂᒃ ᐃᓗᑐᓂᕐᒧᑦ. ᑕᒪᕐᒥᒃ ᑖᒃᑯᐊ ᐊᑐᖅᑕᐅᓪᓗᑎᒃ, ᐱᖅᓯᒪᕐᑲᑦᑕᖅᑐᑦ ᒥᑭᓂᖅᓴᓂᒃ, ᐊᐅᓪᓚᖅᑎᑕᐅᓂᐊᖅᑐᓂᒃ ᖃᐅᔨᓴᖅᑕᐅᔪᓴᒃᓂᒃ.

ᓄᓇᐃᑦ ᖃᓄᐃᑦᑐᓐᓂᖕᒋᓐᓂᒃ ᖃᐅᔨᓴᐃᔪᓐᓇᖅᑐᑦ ᑕᒪᐃᓐᓂ ᓄᓇᒥ ᐊᒻᒪᓗ ᖃᖓᑕᓱᒃᑯᑦ, ᐊᑐᕐᓗᒋᑦ ᑕᒪᕐᒥᒃ ᖃᐅᔾᔪᑏᑦ ᓯᓚᒥ ᐊᐅᓚᓐᓂᕐᑲᖅᑐᓂᒃ ᐊᒻᒪᓗ ᐊᓯᖏᓐᓂᒃ, ᓱᕐᓗ ᒪᓕᖕᓂᐅᔪᓂᒃ ᐊᐅᓚᔪᓂᒃ ᓴᕕᖕᓂᒃ ᓂᐱᑦᑕᖅᑐᓂᒃ (electromagnetic), ᓄᓇᒦᑦᑐᓂᒃ ᓴᕕᕋᔾᔪᖕᓂᒃ ᐊᒻᒪᓗ ᐅᖅᑯᒪᐃᓂᕐᑲᕈᑎᒥᒃ (gravity) ᖃᐅᔨᓴᖅᑕᐅᔪᓂᒃ ᓇᓗᓇᕈᓐᓃᕈᑕᐅᔪᓂᒃ ᐱᐅᓂᖏᓐᓂᒃ ᓄᓇᒥᐅᑕᐃᑦ ᖃᓄᐃᓐᓂᖕᒋᑦ.

ᑕᒪᒃᑯᓇᓂ ᖃᐅᔨᓴᖅᑕᐅᔪᓂ ᑐᑭᓯᓇᖅᓯᒃᐸᑦ ᐊᔾᔨᐅᖕᒋᑦᑐᓂᒃ ᐱᑕᖃᕐᓂᖕᒋᓐᓂᒃ ᓄᓇᒥᒃ ᓄᖑᔪᐃᑦᑐᖃᑐᐃᓐᓇᓇᐊᖃᖅᑐᓂᒃ, ᐊᔾᔨᐅᖕᒋᓐᓂᓖᑦ ᓄᓇᑐᐃᓇᕐᓂᒃ ᐱᑕᖃᖕᒋᓐᓂᐅᔪᓂᒃ ᖃᐅᔨᓴᖅᑕᐅᓕᖅᑲᑦᑕᖅᐳᑦ ᐃᑯᑕᖅᑕᐅᑦᓪᓗᑎᒃ ᐊᒍᔭᐅᕝᓯᑎᒃ. ᑕᐃᒫᑦᓴᐃᓐᓇᖅ ᐊᓯᒥᑎᑐᑦ ᕿᓂᖅᑕᐅᕝᑐᓂᒃ, ᓱᕐᓗ ᒃᑯᓗᒥᒃ ᔨᖕᒥᓗᓐᓃᑦ (zinc), ᐃᑯᑦᑕᖅᑕᐅᔪᑦ ᐃᑯᑦᕙᖃᖃᑦᑕᖅᑐᑦ ᓯᑎᔪᓂᒃ ᐅᔭᕋᐅᓂᖕᒋᓐᓂᒃ ᓄᓇᒥ. ᐊᒍᔭᐅᔪᑦ ᓱᓗᑯᑖᖑᔫᖅᑐᑦ ᖃᐅᔨᓴᖅᑕᐅᖃᑦᑕᖅᐳᑦ, ᐊᒻᒪᓗ ᐱᑦᑲᕈᒥᓇᖅᑑᔭᕈᓂ, ᑕᓐᓇ ᐱᑦᑲᕈᒥᓇᕐᓂᖓ ᓱᓗᓪᓚᖑᐊᖅ ᐊᕙᒃᑕᐅᖃᑦᑕᖅᑐᖅ ᒪᕐᕉᖕᓄᑦ ᓇᐸᒌᖕᓄᑦ, ᐱᖃᑎᖓ ᓇᐸᖅ ᐊᐅᓪᓚᖅᑎᑕᐅᓂᐊᕐᒪᑦ ᖃᐅᔨᓴᖅᑕᐅᔭᖅᑐᕐᕕᖕᓄᑦ. ᐊᕙᒃᑕᐅᓯᒪᖕᒋᑦᑐᖅ ᐊᒍᔭᐅᓯᒪᔪᖅ ᐅᔭᕐᒃ ᐊᒻᒪᓗ ᐊᒥᐊᒃᑯᖓ ᐊᕙᑕᐅᓯᒪᔫᑉ ᓇᐸᖓ ᑐᖃᖅᑕᐅᓂᐊᖅᑐᖅ ᐊᒍᔭᐅᓯᒪᔪᓂᒃ ᐸᐸᑦᑎᕙᖕᒧᑦ ᕿᔪᕐᑯᑎᒧᑦ, ᐃᓚᐅᖃᖅᑕᐅᕙᓪᓚᐊᓗᑎᒃ ᖁᓚᓂᓚᖅᓯᒪᔪᓄᑦ ᐃᓚᓯᕙᖕᓄᑦ.

ᐃᓚᖕᒋᓇᓂ ᓴᓇᕙᐅᔪᓂ, ᓄᓇᐃᑦ ᒪᑐᐃᖕᒐᑎᑕᐅᖃᑦᑕᖅᑐᑦ ᐊᒻᒪᓗ ᐃᓗᑐᓂᐅᔪᑦ ᐲᔭᖅᑕᐅᖃᑦᑕᖅᑐᑦ ᑕᐃᒪᒃ ᐊᒍᓯᕙᐅᔪᓇᕐᓂᐊᕐᒪᑕ ᐆᒃᑐᕋᖅᑕᐅᓂᐊᖅᑐᓂᒃ. ᖃᐅᔨᓴᖅᑕᐅᕙᓪᓕᐊᓂᖕᒋᓐᓂ ᕿᓂᕐᓂᖕᒋᓐᓂ ᓴᓇᔪᓂ, ᓄᓇᒥᐅᑕᐃᑦ ᕿᓂᕐᕙᐅᔪᓇᖅᑐᑦ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᑦ ᐊᑐᕐᓗᑎᒃ

1.2.2 ᐋᓐᓂᐊᕐᑲᕐᓇᖕᒋᑐᓕᕆᓂᖅ ᐊᒻᒪᓗ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᓂᖅ ᐊᒻᒪᓗ ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᖃᓄᐃᓕᕆᐊᕈᑏᑦ

ᑕᒪᕐᒥᒃ ᕿᓂᕐᓂᐅᔪᑦ ᐱᖁᓯᕆᔭᐅᔪᑦ ᖁᑦᑎᓂ ᐅᖃᐅᓯᐅᔪᑦ ᐱᓂᕐᓗᒍᑕᐅᑎᐊᕈᓐᓇᖕᒋᒻᒪᑕ ᖃᓄᐃᓂᖕᒋᓐᓄᑦ ᓴᓇᔾᔪᑦ ᐊᕙᑎᒧᓪᓗᓐᓃᑦ. ᑭᓯᐊᓂ, ᐱᓕᕆᔨᐅᔪᖅ ᐊᒃᑐᖅᓯᔪᓐᓇᖅᑐᖅ ᐆᑦᑕᖅᑐᓕᖕᓂ (ᐃᓚᖕᒋᓂᓗ ᐊᔾᔨᑲᓴᖕᒋᓐᓂᒃ) ᐊᐅᓚᑕᐅᓂᖕᒋᓂ ᐅᔭᕋᐃᑦ ᐲᖅᑕᐅᓯᒪᔪᑦ ᐊᒻᒪᓗ ᐃᑯᑦᑕᖅᑕᐅᓯᒪᔪᓂ ᐊᒍᔭᐅᓯᒪᔪᑦ. ᐊᒻᒪᓗ, ᐊᐅᓚᔪᓂᒃ

ᐊᐅᒪᒃᓴᖃᕈᓐᓇᕐᒥᔪᑦ (ᑕᑯᒃᓴᐅᖏᑦᑐᓂᒃ) ᐲᕚᖅᑐᓂᒃ ᓄᓇᐅᑉ ᖄᖓᓄᑦᒪ ᐅᕙᓘᓐᓃᑦ ᐃᒪᕐᓄᑦ ᐱᕚᐃᓂᖏᓐᓂ ᓄᓇᒥᒃ ᐅᕙᓘᓐᓃᑦ ᐃᑰᑕᖅᑕᐅᓂᖏᓐᓂ.

ᑲᒪᐸᓂᐅᔪᑦ ᔪᓇᓂᔫᒥᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᕿᓂᖅᑐᑦ ᐊᒥᓱᓂᒃ ᖃᓄᐃᓕᐅᕆᐊᕐᑲᖅᑎᑕᐅᓲᖑᖔᑕ, ᓴᐳᓐᓂᐊᖅᑕᐅᔭᕆᐊᕐᑲᕐᓂᖏᓐᓄᑦ ᐃᓄᐃᑦ ᐊᒻᒪᓗ ᐊᕙᑖᑦ, ᒪᑯᓂᖓ ᒪᓕᒋᐊᕐᑲᖅᓱᑎᒃ:

- ᑕᒪᕐᒥᒃ ᐃᓄᐃᑦ ᐱᓕᕆᔪᑦ ᕿᓂᕐᕙᐅᔪᒥ ᐊᑐᕆᐊᕐᑲᖅᑐᑦ ᑕᑯᒃᓴᐅᖏᑦᑐᓂᒃ ᐊᐅᒪᕐᑲᖅᑐᓂᒃ ᐆᑕᕐᓇᖅᑐᓕᖕᓂᒃ (gamma radiation-ᒥᒃ) ᖃᐅᔃᓴᕈᑎᓂᒃ (dosimeter-ᒥᒃ);
- ᐃᓄᐃᑦ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᖏᑦᑐᑦ ᑎᒥᓕᒫᖓᓂ ᐅᖓᑖᓂ 1 millisievert-ᒥᒃ ᐆᒃᑐᕋᐅᒻᒥᒃ ᐊᖏᓂᓕᖕᒥᒃ (mSv) 12-ᓂ ᑕᕿᓂᒃ ᐊᑯᓂᐅᓂᓕᖕᒥᒃ, ᑭᓯᐊᓂ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᒍᓂ ᐃᓕᑕᕆᔭᐅᓯᒪᔪᒥᒃ ᐃᓕᓐᓂᐊᖅᓯᒪᒍᓂ ᐅᑕᕐᓇᖅᑐᒥᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᕆᔨᐅᓂᕐᒥᒃ ᖃᐅᔨᒪᓂᕐᒥᒃ ᐊᒻᒪᓗ ᑲᓇᑕᒥ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᓗᕆᐊᓇᖅᑐᓕᕇᑦ ᑲᒪᓴᓐᒃᑯᑦ (CNSC-ᑯᑦ) ᐃᓱᕐᑲᖅᑎᑦᑎᓪᓗᑎᒃ ᑕᒪᒃᑯᓄᖓ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᕇᒻᒪᕆᐅᔪᓂᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖏᓐᓂᒃ 50 mSv ᐆᒃᑐᕋᐅᑎᓂᒃ ᐊᖏᓂᓕᖕᒥᒃ, ᐊᕐᕋᒍᑕᒫᖅ ᐅᕙᓘᓐᓃᑦ 100 mSv-ᓂᒃ ᐆᒃᑐᕋᐅᑎᓂᒃ ᐊᖏᓂᓕᖕᒥᒃ, ᑕᓪᓕᒪᓂᒃ ᐊᕐᕌᒍᓂᒃ.
- ᓇᓂᑐᐃᓐᓇᖅ ᐃᓂᒋᔭᐅᔪᓂ ᐆᑕᕐᓇᖅᑐᐃᑦ ᓄᖑᔪᐃᑦᑐᓂᖓᖅᑐᑦ ᐳᓪᓚᐃᑦ ᓴᖏᓂᓕᕙᓪᓕᐊᑐᐃᓐᓇᕆᐊᕐᑲᖅᑐᓂ, ᖃᐅᔃᓴᕈᑎᕐᑲᖅᑐᑦ ᓴᓇᕈᑎᓂᒃ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᓂᒃ ᐊᒻᒪᓗ ᑕᒪᒃᑯᐊ ᐱᓕᕆᕙᐅᔪᑦ ᐊᓂᖅᓵᒃᓴᕐᑲᑦᑎᐊᕐᓂᐊᖅᑐᑦ ᐊᓄᕆᓕᐅᕈᑎᕐᑲᑦᑎᐊᕐᓗᑎᒃ.
- ᑕᒪᕐᒥᒃ ᓴᓇᔽᑦ ᐊᔪᕿᖅᑐᖅᑕᐅᓯᒪᓂᐊᖅᑐᑦ ᐅᓗᕆᐊᓇᕐᓃᒃᑯᑎᓂᒃ ᖃᐅᔨᒪᑎᑕᐅᓂᖅ ᑕᐃᒫᒃ ᖃᐅᔨᒪᓂᐊᕐᒪᑕ ᐱᓗᐊᖅᑕᐃᓕᒪᐃᓐᓇᕐᓂᕐᒥᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖅ ᐆᑕᕐᓇᖅᑐᒧᑦ;
- ᑕᒪᕐᒥᒃ ᐃᑰᑕᖅᑕᐅᓯᒪᔪᑦ ᐳᑐᐃᑦ, ᖃᐅᔨᓴᖅᑕᐅᕐᑲᑦᑕᖅᑐᑦ ᖃᐅᓴᕈᑎᓄᑦ ᐊᒻᒪᓗ ᐅᔭᕋᐃᑦ ᐊᒨᕐᑲᖅᑕᐅᕙᓪᓕᐊᔪᑦ ᐃᑰᑕᕐᒥᒃ ᖃᐅᔨᓴᖅᑕᐅᖏᓐᓇᕐᑲᑦᑕᖅᑐᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐆᑕᕐᓇᖅᑐᓕᖕᓂ;
- ᐃᑰᑕᖅᑐᓂ ᑎᑭᑦᑐᕐᑲᖅᐸᑦ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒫᒃᓴᕐᑲᖅᑐᓄᑦ (radioactive-ᖑᔪᓂᒃ) ᐅᔭᕋᓪᓛᖑᓂᐅᔪᓄᑦ, ᑕᒪᒃᑯᐊ ᐅᔭᕋᓪᓛᖑᓂᖏᑦ ᐳᑐᖏᑦ (ᐊᖏᔪᓕᐊᑦ ᐃᑰᑕᕐᑕᐅᓯᒪᔪᑦ) ᓯᒥᒃᑕᐅᕐᑲᑦᑕᖅᑐᑦ ᕿᑯᖏᒥᒃ ᑕᐃᒫᒃ ᒪᕿᕙᐅᔪᓐᓇᕐᓂᐊᖏᒻᒪᑕ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᕐᑲᖅᑐᓂᒃ ᐃᒪᕐᓂᒃ ᐊᕙᑎᒧᑦ;
- ᑕᒪᕐᒥᒃ ᐃᑰᑕᖅᑕᐅᔪᓂᒃ ᐃᒪᐃᑦ ᐊᑐᖅᑕᐅᒃᑲᓐᓂᕐᑲᑦᑕᖅᑐᑦ ᖃᓄᓕᒫᖅ ᐊᔪᕐᓇᖏᓐᓂᓕᒫᖓᓂ; ᑕᐃᒫᒃ ᒥᑭᓐᓂᖅᓴᐅᕐᑲᑦᑕᖅᑐᑦ ᓄᐃᔪᓐᓇᕐᓂᖏᑦ ᐊᐅᓚᔪᓂ ᐊᐅᒪᒃᓴᕐᑲᖅᑐᓂᒃ (radioactive-ᖑᔪᓂᒃ) ᐊᕙᑎᒧᐊᑐᐃᓐᓇᓕᐊᕐᑲᖅᑐᓂᒃ.
- ᐅᔾᔨᖅᑐᖅᑕᐅᑦᑎᐊᓕᐊᕐᑲᖅᑐᑦ ᐱᕐᑯᑏᑦ ᓱᓇᑐᐃᓐᓇᐃᑦ ᐊᒃᑐᐃᓂᐊᖏᑦᑐᑦ ᐃᒥᖅᑕᕐᕙᖕᒥ;
- ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᕐᑲᖅᑐᑦ ᐃᑰᑕᖅᑕᐅᓯᒪᔪᓂᒃ ᐊᒨᕐᑲᖅᑕᐅᔪᑦ ᐊᕙᒃᑐᖅᑕᐅᕙᒃᑐᑦ ᐃᑰᑕᖅᑕᐅᔪᓂᒃ ᐃᒪᕐᓂᒃ, ᑲᑎᖅᓱᖅᑕᐅᓪᓗᑎᒃ ᐹᕐᓄᑦ ᐊᒻᒪᓗ

ᕐᑲᑦᑕᐅᔭᕐᔪᐊᕐᓄᐊᖅᑎᖅᑕᐅᓪᓗᑎᒃ ᐊᐅᓪᓚᖅᑎᑕᐅᓂᐊᕐᒪᑕ ᑲᒪᒋᔭᐅᓗᑎᒃ, ᐃᒋᑕᐅᑦᑎᐊᕐᓗᑎᒡᓗᓐᓃᑦ;

- ᐃᑯᑕᓕᒫᑦ ᓅᑕᐅᓚᐅᖅᑎᓪᓗᒋᑦ ᐃᑯᑕᕐᕕᐅᓯᒪᔪᓂ, ᐃᓂᕕᓂᖏᑦ ᕐᑲᐅᔮᓴᖅᑕᐅᔭᒃᑐᑦ ᐅᔾᔮᖅᑐᖅᑕᐅᓗᑎᒃ ᐱᑕᕐᑲᖅᑎᒋᓂᖏᑦ ᐊᐅᓚᔪᒥᒃ ᐊᐅᒪᒃᓴᕐᑲᖅᑐᓂᒃ; ᐱᔭᓇᐊᕐᑲᕈᑎᒃ, ᓱᕈᖅᑕᐅᓯᒪᔪᑦ ᓱᓇᑐᐃᓐᓇᐃᑦ ᓴᓗᒻᒪᖅᓴᖅᑕᐅᖁᒃᑐᑦ.

ᕐᑭᓂᕐᓂᖅ ᓄᖑᔪᐃᑦᑐᒥᒃ ᒪᓕᒐᕐᑲᖅᐳᖅ ᑕᒪᐃᓐᓂᒃ ᐊᓯᖏᓐᓂᒃ ᒪᓕᒐᓪᓗᑐᖅᓂᒃ, ᐊᑐᓇᐊᕐᑲᖅᑐᓂᒃ ᕐᑭᓂᕐᓂᖅ ᓲᕐᓗ ᐊᓯᓕᒫᖏᓐᓂᒃ ᓄᓇᒥᐅᑕᓂᒃ ᐱᔪᒪᔭᐅᔪᓂᒃ, ᐊᒻᒪᓗ ᒪᓕᒐᕐᑲᖅᑎᑕᐅᓪᓗᑎᒃ ᐊᕙᑎᒥᒃ ᕐᑲᐅᔮᓴᐃᕐᑳᓇᐊᕐᑲᕐᓂᕐᒥᒃ, ᐃᒪᕐᓂᒃ ᐊᑐᕆᓐᓇᕐᓂᕐᒧᑦ ᓚᐃᓴᓐᓯᑖᕈᓐᓇᕐᓂᖅ, ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᓂᖏᓐᓄᑦ ᐱᔪᓐᓇᐅᑎᓂᒃ, ᐊᒻᒪᓗ ᓚᐃᓴᓐᓯᓂᒃ ᐊᓯᖏᓐᓂᒃ ᒪᓕᒍᑎᓂᒡᓗ ᓄᓇᐃᑦ ᐊᑑᑎᒋᔪᓐᓇᖅᑕᖏᓐᓄᑦ ᐸᕐᓇᐅᑎᓂᒃ.

1.3 ᐅᔭᕋᖕᓂᐊᕐᓂᖅ

1.3.1 ᕐᑲᓄᖅ ᐅᔭᕋᖕᓂᐊᓲᖑᖕᒪᖔᑕ

ᑕᒪᐃᓐᓂ ᐅᕐᑲᐅᓯᐅᔪᓂ, ᓄᖑᔪᐃᑦᑐᓕᖕᓂ ᐅᔭᕋᖕᓂᐊᕐᓂᖅ ᐊᔾᔨᒋᔭᐅᑐᐃᓐᓇᖅᑐᖅ ᐊᓯᖏᓐᓂᒃ ᐅᔭᕋᖕᓂᐊᖅᐸᒃᑐᓂᒃ, ᑭᓯᐊᓂ ᐱᔭᓇᐊᑐᓂᖅᓴᐅᑐᐃᓐᓇᖅᑐᖅ ᐱᑕᕐᑲᕐᓂᖅᓴᐅᓂᖏᓐᓄᑦ ᐊᐅᒪᕐᑲᖅᑐᓂᒃ ᐆᑕᕐᓇᖅᑐᓕᖕᓂᒃ (gamma radiation-ᒥᒃ), ᐊᐅᓚᔪᓂᒃ ᐆᑕᕐᓇᖅᑐᐃᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐳᓪᓚᐃᑦ (radioactive radon gas) ᐊᒻᒪᓗ ᓴᓃᑦ ᐱᑕᕐᑲᖅᑐᑦ ᐊᑦᑎᒃᑐᓂᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ. ᑕᒪᒃᑯᐊ ᐅᓗᓇᐊᓇᕈᑕᐅᔪᓐᓇᖅᑐᑦ ᑎᒥᒧᑦ ᒥᑭᓪᓕᑎᖅᑕᐅᓯᒪᔪᑦ ᕐᑲᐅᔮᒪᔭᐅᑦᑎᐊᓕᖅᑐᓄᑦ ᐊᑯᓂᐅᓂᖓᓄᑦ, ᐅᖓᓯᖕᓂᖏᓐᓄᑦ, ᐊᒻᒪᓗ ᐊᕙᓗᔭᐅᓯᒪᑦᑎᐊᕐᓂᖏᓐᓄᑦ ᓄᐃᑕᕕᐅᑕᐃᓪᓚᒪᔾᔪᑕᐅᓪᓗᑎᒃ ᐊᐅᒪᕐᑲᖅᑐᓂᒃ ᐆᑕᕐᓇᖅᑐᓕᖕᓂᒃ (gamma radiation-ᓂᒃ), ᐊᒻᒪᓗ ᐊᑐᖅᑕᐅᓂᖏᓐᓂ ᓴᖏᔪᒻᒪᓈᑦ ᐊᓂᖅᓵᒐᒃᓴᓕᐅᕈᑏᑦ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᓂ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ ᐊᐅᓚᑦᑎᔾᔪᑕᐅᓪᓗᑎᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐳᓪᓚᓂᒃ ᐊᒻᒪᓗ ᓴᓂᕐᓂᒃ ᐳᑦᑕᓚᖅᑐᓂᒃ. ᐱᑕᓕᒻᒪᓇᖕᓂ ᕐᑯᑦᑎᒃᑐᓂ ᐅᔭᕋᖕᓂᒃ, ᕐᑲᓂᖏᑦᑐᒦᑦᑐᒥᒃ ᐊᐅᓚᑎᔾᔪᑏᑦ ᐊᒻᒪᓗ ᐊᕙᓗᔭᐅᓯᒪᔪᑦ ᐊᔾᔨᐅᖏᑦᑐᒥᒃ ᐱᕐᑯᑏᑦ ᐊᑐᖅᑕᐅᕙᖕᒥᔪᑦ.

ᐅᔭᕋᐃᑦ ᓄᖑᔪᐃᑦᑐᖅᑕᓖᑦ ᓄᓇᐅᑉ ᕐᑳᖓᑕᓂ ᕐᑭᓂᒋᔭᖏᓃᑦᑕᕌᖓᒥᒃ, ᐲᔭᖅᑕᐅᒐᔪᒃᐳᑦ ᒪᑐᐃᖓᔪᒥᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᒃᑯᑦ, ᐊᖏᔪᒻᒪᕆᖕᒥᒃ ᐊᖕᒪᔪᓕᐅᖅᓯᒪᔪᒥᒃ ᐊᒻᒪᓗ ᐲᔭᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᓴᓂᕋᖓᓃᑦᑐᑐᕐᑲᐃᑦ ᐊᒻᒪᓗ

ᐊᙱᔪᑦ ᐊᓯᙱᑦ ᐊᑐᕐᓂᐊᙱᑦᑐᑦ ᐅᔭᕋᐃᑦ. ᑭᒡᒐᕕᒃ-ᓯᓵᓐᒥᓗ (Kiggavik-Sissons) ᐅᔭᕋᐃᑦ ᐱᑕᕐᑲᖅᑐᑦ ᓄᖑᔪᐃᑦᑐᓕᖕᓂᒃ ᖃᓂᑦᑐᒦᒻᒪᑕ ᓄᓇᐅᑉ ᖄᖓᓄᑦ, ᐊᒻᒪᓗ ᐅᔭᖕᓂᐊᖅᑕᐅᓇᔭᖅᑐᑦ ᑕᐃᒪᐃᓪᓕᖕᒐᔪᒧᑦ ᐅᔭᕋᐃᔭᐃᕕᖕᒧᑦ. ᓴᒃᑳᑦᓯᐋᓐᒥ, ᐃᔾᔭᖅᑕᐅᓚᐅᖅᓯᑎᒃ ᐅᔭᕋᐃᑦ ᐃᓗᓕᖢᑦ ᐱᔪᒪᔭᐅᔪᓂᒃ, ᑕᐃᒃᑯᐊ ᐊᖕᒪᔪᐃᑦ ᓄᓇᒦᑦᑐᑦ ᐊᑐᖅᑕᐅᓕᖅᐸᒃᑐᑦ ᐊᒃᑯᑕᑯᓄᑦ ᐊᒥᐊᒃᑯᕕᓃᕐᓄᑦ ᐅᔭᕋᐃᑦ ᓯᖅᑲᖖᑦ/ᓯᐅᕋᐃᓪᓗ ᐊᒻᒪᓗ ᐃᓚᙱᓐᓄᑦ ᐅᔭᖕᓄᑦ ᐊᑐᕈᓃᖅᑐᓄᑦ ᐊᑯᓂᐅᔪᒧᑦ ᓱᕈᐃᔪᓐᓴᖅᑐᓂᒃ ᕿᒪᒃᑕᐅᒐᓗᐊᕈᑎᒃ ᐃᓂᒥᓂ.

ᐊᔾᔨᖑᐊᖅ 3. Deilmann-ᑯᑦ ᐱᖓ ᒪᑐᐃᖓᔪᖅ ᓄᓇᐅᑉ ᖄᖓᓃᑦᑐᖅ ᐅᔭᕋᖕᓂᐊᕐᕕᒃ Key Lake-ᒥ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒥ 1994-ᒥ. In 1996-ᒥ, ᐃᓗᑐᓂᖅ ᓄᓇᐅᑉ ᖄᖓᓃᑦᑐᖅ ᐊᑐᖅᑕᐅᓕᓚᐅᖅᑐᖅ ᐊᒃᑯᑕᑯᐃᑦ ᐊᒥᐊᒃᑯᕕᓃᑦ ᐅᔭᕋᐃᑦ ᓯᖅᑲᖖᑦ/ᓯᐅᕋᐃᑦ ᐸᐸᑦᑎᕕᖓᓄᑦ, ᐊᒻᒪᓗ ᐊᒃᑕᑯᓂᒃ ᐊᒡᔭᖅᓯᕗᕕᐅᕙᓕᖅᑐᖅ McArthur River-ᒥᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒥᒃ.

ᑕᐃᒪᓕ ᐅᔭᕋᐃᑦ ᐃᓗᓕᖃᖅᑐᑦ ᐃᑎᓂᖅᓵᒦᑉᐸᑕ, ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᓕᐅᖅᐸᒃᑐᑦ, ᐊᑐᕐᑕᐅᓪᓗᑎᒃ ᓴᓇᔭᐅᓂᖏᑦ ᓱᓕᓪᓕᕐᔪᐊᑦ ᐊᒻᒪᓗ ᖁᒻᒧᐊᒃᑕᐅᑎᖃᖅᓱᑎᒃ ᐊᖅᑲᖅᑎᒋᑎᖃᖅᓱᑎᒃ ᑭᓯᐊᓂ ᐊᒃᑯᒃᓴᐃᑦ ᐅᔭᕋᐃᑦ ᐃᔾᔭᖅᑕᐅᖏᓐᓂᖅᓴᐅᕐᑲᑦᑕᖅᑐᑦ ᐊᒻᒪᓗ ᐊᕙᑎᒧᑦ ᐊᒃᑐᖅᓯᓯᒪᖏᓐᓂᖅᓴᐅᕐᑲᑦᑕᖅᒪᑐᑦ. McArthur River-ᒥ ᐅᔭᕋᖕᓂᐊᕐᕕᒃ ᐊᒻᒪᓗ Cigar Lake-ᒥ ᐅᔭᕋᖕᓂᐊᕐᕕᒃ (ᒫᓐᓇᐅᔪᖅ ᓴᓇᔭᐅᕙᓪᓕᐊᔪᖅ) ᓄᓇᐅᑉ ᐃᓗᐊᓃᑉᐳᑦ ᐅᔭᕋᖕᓂᐊᕐᕖᒃ. ᐃᓚᖏᑦ ᐅᔭᕋᖕᓂᐊᕐᕖᑦ, ᓲᕐᓗ McClean Lake-ᒥ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒥ ᓴᒃᑳᑦᓯᐋᓐᒥ, ᑕᒪᒃᑭᖅᑐᓂᒃ ᐊᑐᖅᑐᑦ, ᑲᑎᖓᔪᓂᒃ ᓄᓇᒧᑦ ᒪᑐᐃᖓᔪᒥ ᐊᒻᒪᓗ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᒥᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ.

ᐊᒥᐊᓕᑲᒥᐅᓂ, ᐋᔅᑐᓖᓕᔭᒥ Australia, ᑳᓵᒃᓯᑖᓐᒥ Kazakhstan, ᐊᓯᙱᓐᓂᓗ, ᐅᔭᕋᖕᓂᐊᓂᖅᑲᕐᒥᔪᑦ ᑕᐃᔭᐅᔪᒥᒃ, ᑖᕝᕙᓂᑦᓴᐃᓐᓇᖅ ᐃᕿᖅᑐᖅᑕᐅᓪᓗᑎᒃ ᐅᔭᕋᖕᓂᐊᕐᓂᕐᒥᓂᒃ. ᐃᓚᖏᑦ ᓄᖑᔪᐃᑦᑐᓖᑦ ᐅᔭᕋᐃᑦ ᐊᑖᓃᑲᑦᑕᕐᒪᑕ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᓂ ᐃᒪᖏᓐᓂ, ᐊᖕᒪᔪᓪᓘᖑᓂᐅᔪᓂ ᓱᓇᑐᐃᓇᒦᑦᑐᓂ, ᐊᒻᒪᓗ ᐱᔭᐅᔪᓐᓇᖅᑲᑦᑕᖅᓱᑎᒃ ᐊᓂᕐᓂᕐᒥᒃ (oxygen-ᒥᒃ) ᐃᓕᐅᖃᐃᕕᐅᓪᓗᑎᒃ ᓄᓇᒦᑦᑐᑦ ᐃᒪᐃᑦ, ᐱᐅᖏᓐᓂᓴᖅᐅᓕᖃᑦᑕᕐᒪᑕ acid-ᖃᕐᓂᖅᓴᐅᓕᕋᒥᒃ ᑕᐃᒫᒃ ᓄᖑᔪᐃᑦᑐᖃᕐᓂᖏᑦ ᐃᔾᔭᖅᑕᐅᔪᓐᓇᖅᓯᓗᕈᖕᒪᑕ. ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᑦ ᐃᒪᕐᓄᑦ ᐃᓚᔭᐅᔪᑦ ᐊᒻᒪᓗ ᐃᔾᔭᖅᑕᐅᓯᒪᔪᑦ ᓄᖑᔪᐃᑦᑐᖖᑦ ᔪᕇᓂᔭᒻᖃᖅᑐᑦ ᐊᓯᐃᓖᒃ ᒥᓪᓗᐊᖅᑕᐅᓕᖅᐳᑦ ᓄᓇᐅᑉ ᖄᖓᓄᑦ, ᔪᕇᓂᔭᖕᖑᓂᖏᑦ ᐃᔾᔭᖅᑕᐅᓪᓗᑎᒃ ᓴᓗᒪᖅᓴᖅᑕᐅᕕᖕᒥ. ᑕᐃᒫᒃ ᐱᓕᕆᔪᑦ ᐱᑕᖃᖏᑦᑐᑦ ᑲᓴᑕᒥ, ᐊᑐᕋᔭᖏᑉᐳᑦ ᓄᓇᕗᒻᒥ.

ᓇᐸᖓᑕ ᐅᖓᑖᓃᑦᑐᑦ ᐱᐅᓂᖅᐹᑦ ᓯᓚᕐᒧᐊᕐᒥ ᓄᖑᔪᐃᑦᑐᓂᒃ ᓴᓇᕕᐅᔪᑦ ᒫᓐᓇᒥ ᐱᔭᐅᖃᑦᑕᖅᑐᑦ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂᒃ, ᖃᓂᒋᔭᖏᓐᓂᒃ

27%ᖏᓃᑦᑐᑦ ᒪᑐᐃᖓᔪᓂᒃ ᓄᓇᒧᑦ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂᒃ, ᐊᒻᒪᓗ 19% ᑖᒃᑲᓂᑦᓴᐃᓐᓇᖅ ᐃᒪᕐᓄᑦ ᐃᕿᖅᑕᐅᑲᒃᑐᓂᒃ ᐅᔭᕋᐃᔭᐃᔪᓂᒃ.

1.3.2 ᐊᓐᓂᐊᖃᕐᓇᖏᑦᑐᓕᕆᓂᖅ ᐊᒻᒪᓗ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᓂᖅ ᐊᒻᒪᓗ ᐊᑲᑎᓕᕆᓂᕐᒧᑦ ᖃᓄᐃᓕᐅᕈᑏᑦ

ᐱᖅᑯᓯᕆᔭᐅᑲᓚᐅᖅᑐᑦ 1940-ᖏᓐᓂ ᐊᒻᒪᓗ 1950-ᖏᓐᓂ ᐅᔭᕋᖕᓂᐊᖅᑏᑦ ᓴᓇᔾᔮᑦᑐ ᓄᓇᕗᐃᑦᑐᓕᕆᓂᕐᒥᒃ ᓄᐃᑕᕕᐅᑲᓚᐅᖅᑐᑦ ᐅᓗᕆᓇᖅᑐᒻᒪᕆᖕᓂᒃ ᐊᖏᓂᓕᖕᓂᒃ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᓕᖕᓂᒃ radioactivity-ᒥᒃ, ᐱᔾᔪᑕᐅᓇᓯᒋᔭᐅᑦᑐᓂᓗ ᐊᒥᓱᒻᒪᕆᐅᓂᖏᓐᓄᑦ ᑳᓐᓴᕐᑲᖅᑐᑦ ᐊᓯᖏᓐᓂᓗ ᐊᓐᓂᐊᕐᓂᕐᑲᕐᓂᖏᓐᓄᑦ ᑕᒪᒃᑯᐊ ᓴᓇᔨᐅᑲᓚᐅᖅᑐᑦ. ᑕᒪᓐᓇ ᓱᓕᔫᒻᒪᕆᐅᔪᖅ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒥ ᓴᓇᔨᐅᓚᐅᖅᓯᒪᔪᓂ Port Radium-ᒥ ᓄᓇᓯᐊᕐᒥ, ᐊᒻᒪᓗ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒥ Beaverlodge-ᒥ ᓴᒃᑳᑦᓯᐋᓐᒥ. ᐅᕐᑲᐅᓯᐅᓯᒪᔪᑦ ᑕᒪᒃᑯᐊ ᐱᔾᔪᑎᕐᑲᑐᐃᓐᓇᕐᓂᐊᖅᑐᑦ ᐅᑦᑐᒥᐅᓕᖅᑐᖅ ᐅᔭᕋᖕᓂᐊᕐᓂᐅᕙᒃᑐᓂᒃ, ᐊᒥᓱᐊᖅᑎᖅᓯᒪᕐᔪᐊᖅᑐᒥᒃ ᐅᓗᕆᐊᓇᖏᓐᓂᖅᓴᐅᓕᖅᑐᑦ ᑕᐃᔅᓯᒪᓂᓂᑖᕐᓂᒃ ᐱᕐᑯᓯᕆᔭᐅᑲᓚᐅᖅᑐᓂᒃ.

ᑕᒪᕐᒥᒃᑲᓴᐃᑦ ᐅᓗᕆᐊᓇᖅᑐᑦ ᓄᓇᕗᐃᑦᑐᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᓂᕐᒥᒃ ᐊᔾᔨᑐᐃᓐᓇᕆᔭᐅᔪᑦ ᐊᓯᖏᓐᓂᒃ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᑲᒃᑐᓂᒃ. ᓄᓇᕗᐃᑦᑐᖅ ᐃᖕᒥᓃᓐᓇᖅ ᒥᑭᑦᑐᒻᒪᕆᖕᒥᒃ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᕐᑲᕐᒪᑦ radioactive-ᖑᓂᕐᑲᕐᒪᑦ. ᑭᓯᐊᓂ, radon, ᐊᐅᓚᔪᖅ ᐊᐅᒪᒃᓴᖅᑲᖅᑐᖅ ᐳᑦᓚᖓ, radiactive gas-ᖑᔪᖅ, ᓄᐃᕐᑲᑦᑕᕐᒪᑦ ᐳᑦᓚᒃᓯᓂ ᒪᔪᕐᑲᑦᑕᕐᒪᑦ ᒥᑭᑦᑑᑎᒻᒪᕆᐊᓗᖕᓂᒃ ᐅᔭᕋᖕᓂᒃ ᐲᔭᐃᕕᐅᔪᓂᒃ ᐊᒻᒪᓗ ᓯᕐᑲᓕᖅᑎᑕᐅᕕᐅᔪᓂ. ᑕᒪᒃᑯᐊ ᐳᑦᓚᐃᑦ ᐱᑕᕐᑲᖅᑐᑐᕐᑲᐅᒐᓗᐊᖅᓯᑎᒃ ᑕᒪᐃᓐᓂᑲᓴᒃ ᐅᔭᕋᖕᓂ, ᐊᒻᒪᓗ ᑕᑯᒃᓴᐅᖏᑦᑐᑦ ᒥᒃᑭᑦᑐᒻᒪᕇᑦ ᐱᑕᕐᑲᖅᑐᑦ ᓯᓚᒥ ᐊᓂᖅᓵᖅᑐᖅᑕᑦᑎᓐᓂ, ᐳᖅᑐᓂᖅᓴᒻᒪᕇᖕᓂ ᓄᓇᕗᐃᑦᑑᑦᑐᑦ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ, radon ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᐃᑦ ᐳᓚᖏᑦ ᐅᓗᕆᐊᓇᕈᓐᓇᖅᐳᑦ ᑎᒥᒧᑦ.

ᐅᔾᔮᖅᑐᖅᑕᐅᑦᑎᐊᕆᐊᕐᑲᖅᐳᑦ ᑕᒪᒃᑯᐊ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ ᐊᒻᒪᓗ ᓯᕐᑲᓕᖅᑎᑕᐅᓂᖏᓐᓄ ᓄᓇᕗᐃᑦᑑᓖᑦ ᐅᔭᕋᐃᑦ, ᓴᐳᓐᓂᐊᖅᑕᐅᔭᕆᐊᕐᑲᕐᓂᖏᓐᓄᑦ ᓴᓇᔾᔨᑦ, ᐃᒪᑦᓕᐅᖅᓯᑎᒃ:

- ᓴᓂᕐᓂᒃ ᖃᖓᑕᔪᓂᒃ ᐊᐅᓚᑦᑎᑦᑎᐊᕐᓂᖅ, ᓴᓃᑦ ᓴᓂᕐᑲᕈᓐᓇᕐᒪᑕ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᕐᑲᖅᑐᓂᒃ ᐊᒻᒪᓗ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᕐᑲᖅᑐᓂᒃ ᐳᑦᓚᓕᐅᕐᑯᓐᓇᖅᓯᑎᒃ;
- ᐊᒃᑐᖅᑕᐅᑎᑦᑎᑦᑕᐃᓕᒪᑦᑎᐊᖅᑐᑦ ᐆᑕᕐᓇᖅᑐᓄᑦ ᓴᓇᔮᑦ ᑕᐃᒪᐃᓐᓂ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ, ᓯᕐᑲᓕᑎᕆᕕᖕᓂ, ᐊᒻᒪᓗ ᐅᔭᕋᕕᓂᕐᑲᕐᕕᖕᓂ ᑕᐃᓖᒃ *ᐊᑦᑎᖕᓂᙵᓃᓂᒃ* *ᓈᒻᒪᖕᓂᕋᖅᑕᐅᓯᒪᔫᓐᓂᐊᕐᒪᑕ* ᐊᒻᒪᓗ ᖃᖓᑕᓖᖅ ᐅᖓᑖᓄᐊᕐᓂᐊᕋᓂ ᖃᓄᐃᓐᓇᖏᑦᑐᓂᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᖅᑐᓂᒃ ᐊᖏᓂᕐᑲᖅᑐᓂᒃ ᖄᖏᐅᑎᖏᑦᑐᓂ.
- ᐊᑐᖅᑕᐅᓂᖏᑦ ᐊᕙᓗᕐᑲᖅᑎᑕᐅᔪᑦ ᐊᔾᔨᐅᖏᑦᑐᓂᒃ ᓴᓇᕿᑎᓂᒃ ᐅᔭᕋᖕᓂᐊᖅᑏᑦ ᐊᑐᖅᑎᑕᐅᕐᑲᑦᑕᖅᑐᑦ ᐊᒃᑐᖅᑕᐅᓂᐊᖏᒻᒪᑕ ᐆᑕᕐᓇᖅᑐᓄᑦ. ᐅᔭᕋᖕᓂᐊᖅᑕᐅᓂᖏᓐᓂ ᐳᖅᑐᔫᒻᒪᕆᖕᓂ ᓄᓇᕗᐃᑦᑑᑦ ᐅᔭᕋᐃᑦ

ᐊᐅᓚᑕᐅᕙᒃᑐᑦ ᑭᓯᐊᓂ ᐊᓯᓃᑦᑐᒥᒃ ᐊᐅᓚᑦᑎᔾᔪᑏᑦ ᐊᑐᖅᑕᐅᓪᓗᑎᒃ (remote control-ᕐᑲᖅᑐᓂᒃ).

- ᐊᑐᖅᑕᐅᓂᖏᑦ ᐆᑕᕐᓇᖅᑐᕐᑲᕐᓂᕐᒥᒃ ᐅᕐᑲᓕᒫᕈᑎᑦ ᑕᒪᐃᓐᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ.
- ᐊᑐᖅᑕᐅᓂᖏᑦ ᓴᖏᔫᑦ ᐱᐅᔫᑦ ᐊᓂᖅᓵᘁᒃᓴᓕᐅᕈᑏᑦ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᓂ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒥ, ᑕᐃᒫᒃ ᐅᔾᔾᖅᑐᖅᑕᐅᓪᓗᑎᒃ ᓄᐃᑕᕕᐅᓂᖏᑦ ᐅᓗᕆᐊᓇᖅᑐᓂᒃ ᐳᓪᓚᓂᒃ ᐊᒻᒪᓗ ᐃᓚᖏᓐᓂᒃ ᐆᑕᕐᓇᖅᑐᓕᖕᓂᒃ ᓴᕿᐸᒃᑐᓂᒃ ᐃᓚᒋᔭᐅᔪᓄᑦ, ᐊᑐᖅᑕᐅᕙᒃᑐᖅ ᑕᐃᔭᐅᔪᖅ ALARA-ᒥᒃ, ᖃᖏᐅᑎᓲᖑᖏᑦᑐᖅ ᐅᓗᕆᐊᓇᖅᑐᒦᑦᑕᕆᐊᕐᑲᖏᓐᓂᕐᒥᒃ ᐳᖅᑐᓂᓕᖕᓂᒃ. ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᕐᑲᖅᑐᓂᖠᖅᑐᑦ ᐳᓪᓚᐃᑦ ᒥᑭᓪᓕᑎᖅᑕᐅᕙᒃᑐᑦ ᐊᖏᔫᒪᕆᖕᓂ ᐊᓂᖅᓵᖅᑐᒐᒃᒥᒃ (ᐊᓂᕐᓂᒥᒃ) ᐃᓚᔭᐅᓪᓗᓂ ᓴᒃᑯᑕᐅᓪᓗᓂᓗ ᓯᓚᒧᑦ.
- ᒪᓕᑦᑕᐅᑎᑦᑎᓂᕐᒥᒃ ᓴᖏᔫᒥᒪᕆᖕᒥᒃ ᓴᓗᒻᒪᐃᓐᓇᕆᐊᕐᑲᕐᓂᕐᒥᒃ ᑕᒪᐃᓐᓄᑦ ᐊᑐᖅᑕᐅᔭᕆᐊᕐᑲᓕᖕᒥᒃ ᓴᓇᔨᓄᑦ, ᐊᐅᓚᑦᑎᔨᐅᔫᓂ ᓄᕓᔪᐃᑦᑐᓂᒃ ᓄᕓᔪᐃᑦᑐᐃᓐᓇᐅᓕᖅᓯᒪᔫᓂᒃ. (ᓄᕓᔪᐃᑦᑐᐃᓐᓇᐅᓕᖅᑎᑕᐅᓯᒪᔪᑦ ᑐᕐᑯᓐᓇᖅᑐᕐᑲᖅᑎᒋᖕᒪᑕ ᑕᐃᒫᑦᓴᐃᓐᓇᑲᓴᒃ ᖃᕐᔫᒃᓴᕐᒥᒃ ᐊᕐᔭᒥᒃ ᓴᖏᓂᕐᑲᖅᑎᒋᔪᒥᒃ, ᐋᔭᐅᓇᔭᖅᐸᑦ. ᑕᐃᒫᑦᓴᐃᓐᓇᖅ ᐅᔾᔾᖅᑐᖅᑎᑕᐅᕐᑲᑦᑕᕐᒥᔪᑦ ᑕᐃᒃᑯᐊ ᖃᕐᔫᒃᓴᔭᓂᒃ ᐊᕐᔭᓂᒃ ᐊᐅᒃᓲᕕᐅᕙᒃᑐᓂ, ᐊᐅᓚᑦᑎᓚᕗᖓᑕ ᐊᕐᔭᒥᒃ.

McArthur River-ᒥ ᐅᔭᕋᖕᓂᐊᕐᕕᒃ ᓴᑲᑦᓯᐋᓐᒥ - ᐳᖅᑐᔫᒪᓇᐅᓗᖕᒥᒃ ᓄᕓᔪᐃᑦᑐᖅᑐᕐᑲᖅᑐᑦ ᐅᔭᕋᖏᑦ - ᐊᑐᕐᑲᑦᑕᖅᑐᑦ ᑖᕙᓃᖏᑦᑐᒥᒃ ᐅᖓᓯᒃᑐᒥᒃ "ᑕᐃᑲᓃᖏᓪᓗᑎᒃ" ᐅᔭᕋᖕᓂᐊᕐᓂᕐᒥᒃ ᐱᖅᑯᓯᕆᐅᔪᓂᒃ. ᐊᑐᕐᑲᑦᑕᖅᑐᑦ ᐃᓚᕐᑲᖅᑐᓂᒃ ᐅᖓᓯᒃᑐᒥᒃ ᓯᕐᑲᓕᑎᕆᕕᕐᑲᖅᓱᑎᒃ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᒥᒃ, ᐊᒻᒪᓗ ᓯᕐᑯᑎᖅᑕᐅᕕᖏᓐᓂᒃ, ᓅᑕᐅᓂᖏᓐᓄ ᐅᔭᕋᐃᑦ ᓄᕓᔪᐃᑦᑑᑦ ᐳᖅᑲᖅᑕᐅᓯᒪᑦᑎᐊᖅᑐᓂ ᕿᔪᕐᑯᑎᓂ, ᐊᒻᒪᓗ ᐊᑐᖅᑕᐅᓪᓗᑎᒃ ᐊᕙᓗᔭᐅᓯᒪᑦᑎᐊᖅᑐᑦ ᓴᐳᑏᑦ ᐊᓪᔭᖅᑐᐃᕕᐅᕙᒃᑐᑦ ᓯᕐᑲᓕᑎᕆᕕᖕᓄᑦ. ᓴᓇᔩᑦ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖏᓐᓂ ᐳᖅᑐᔫᒪᕆᖕᓂ ᓄᕓᔪᐃᑦᑐᕐᑲᖅᑐᓂᒃ ᐅᔭᕋᖕᓂᒃ, ᐱᑕᕐᑲᖏᑦᑐᑦ ᑕᐃᒫᒃ[30]. Cigar Lake-ᒥ ᐅᔭᕋᖕᓂᐊᕐᕕᒃ ᑕᐃᒪᐃᒥᔪᓂᒃ ᐊᑐᖅᐸᒃᑐᑦ.

1.4 ᓯᕐᑲᓕᖅᑎᑕᐅᕐᑲᑦᑕᕐᓂᖏᑦ ᓄᕓᔪᐃᑦᑑᑦ ᐅᔭᕋᐃᑦ

1.4.1 ᖃᓄᖅ ᓯᕐᑲᓕᖅᑎᑕᐅᓲᖑᖕᒪᖔᑕ

ᐅᔭᕋᐃᑦ ᓄᕓᔪᐃᑦᑑᑦ ᓅᑕᐅᓛᖓᑕ ᓄᓇᒥᒃ, ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᑎᒍᑦ ᐅᔭᕋᖕᓂᐊᕐᕕᒃᑯᑦ, ᐅᕙᓘᓐᓃᑦ ᒪᑐᐃᖓᔪᒥ ᓄᓇᒧᑦ ᐅᔭᕋᖕᓂᐊᕐᕖᖕᒥ, ᓯᕐᑲᓕᖅᑎᑕᐅᕐᑲᑦᑕᕐᒪᑕ. ᓯᕐᑲᓕᖅᑎᑕᐅᖓᖓᑕ, ᐅᔭᕋᐃᑦ ᓯᕐᑲᓕᑎᖅᑕᐅᕐᑲᑦᑕᖅᑐᑦ, ᐊᒻᒪᓗ

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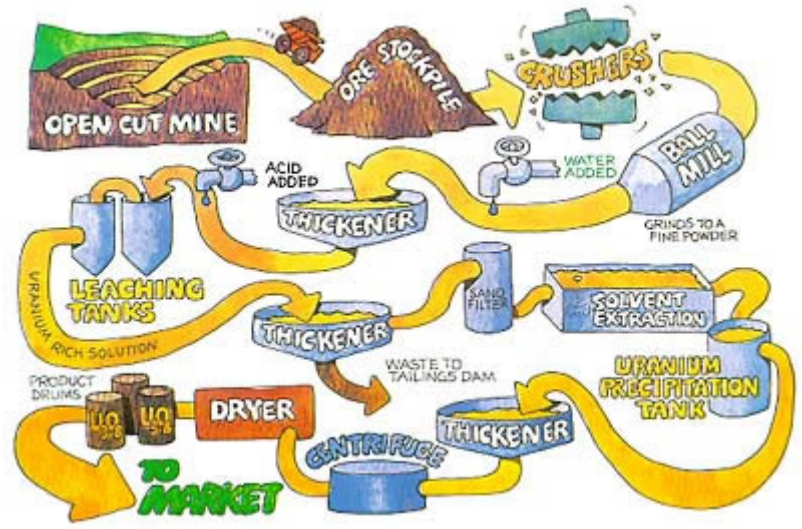
[30] ᓄᓇᒥᐅᑕᑐᕐᑲᓕᕆᔾᔪᑎᑦ ᑲᓇᑕᒥ, ᐅᒻᒪᕐᑯᑎᓕᕆᔾᔪᓂᖏᓐᓂᒃ ᕐᑲᕆᑕᐅᔭᒃᑯᑦ ᑕᑯᓂᐊᕐᕕᖓᓂᒃ ᐱᔭᐅᔪᑦ.

ᐃᓕᓴᐅᑦᓗᑎᒃ ᓯᖅᑲᓕᑎᑭᑎᓄᑦ ᐃᓕᒃᕕᓂᒃ, ᐋᓴᖅᑕᐅᑦᓗᑎᒃ ᐃᓗᐊᑯᓂᑐᑦ ᐱᓇᒪᓴᐅᓇᓯᑦ ᓄᖓᓴᐃᔪᑕᑐᖅᓂᖅᑎᑦᓯᖏᑦ, ᐊᐅᑐᑯᖅᑲᓕᑎᓯᓗᓗ ᐊᒥᐊᐅᑯᓂᑐᖅ. ᑕᑯᓐᓂ ᐊᐅᓴᖓᐊᖅᑎᑦᓂ ᖃᐅᓄᐃᑕᐅᖅᑕᑦᑕᐊᓯᖓᖏᓚᑕᑎᑕ ᐅᓴᕐᓇᑕᒥᖅᓯᒪᔪᑦ.



ᐊᐅᓚᑲᐊᖅ 4. ᑕᒪᕐᒥᒃ ᑕᑯᓪᓗᒍ ᓯᖅᑲᓕᖅᑕᐅᓯᓪᓕᐊᓂᓕᒫᓂᑦ. ᓇᒃᑲᓂᓗᓂᑦ: ᓯᓚᖏᔪᐊᖅᑎᒥ ᓄᖓᓴᐃᔪᑕᓕᕆᓂᕐᒧᑦ ᑲᑐᐊᓴᖅᑎᑕᑭᑯᑦ ᐅᓪᓗᐊᓂᖅᑲᓕᑎᑭᑯᑦ ᐅᖏᖅᑕᕐᓴᖅᓯᒪᓕᖅᑐᖅ.

ᓴᓵᑲᓂᔪᐊᑉᑎᒥ McArthur River-ᒥ ᐅᓴᖏᓂᐊᖏᓐᓇᓗᒥ, ᓯᖅᑲᓕᖅᑎᑕᐅᓇᓗᓂᑦ ᓯᖅᑯᓂᑎᖅᑕᐅᓇᓗᓂᑦᓗ ᐃᓕᑎᓴᐅᓂᑦ ᓯᖅᑲᓕᖅᑎᖅᑕᐅᓯᓂᓕᔪᓂ ᑲᔪᓯᖏᖅᑐᑦ ᓄᓇᐅᑦ ᐃᓗᐊᑯᓂᑐᓂ ᐅᓴᖅᑲᖓᓂᐅᐊᖏᓐᓇᓗᒥ, ᐊᓚᒪᓗ ᐊᒥᐊᐅᑯᖓᓂᑦ ᒪᖏᖏᔪᖅᓯᒪᔪᑦ ᐅᓯᓴᐅᖅᑲᓂᕐᒧᑦ ᐳᖅᑕᐅᓯᒪᓪᓗᑎᒃ, ᓄᓇᐅᑯᑐᑎᐅᑯᑦ ᓯᖅᑲᓕᑎᖅᑕᐅᓇᓗᖓᑦᖓᓂᕐᒧᑦ ᐃᓂᒥᓚᓐᓂᑦ (Key Lake-ᒧᑦ) ᑕᐃᑲᓂᓗ ᐅᓴᖏᓂᕆᓇᓗᒥ ᑲᒪᓐᓂᐅᑦᑲᖅᑲᓂᕐᓴᖅᓯᒪᓂᖅ.

ᐊᐅᓚᑲᐊᖅ 5. Key lake-ᒥ ᓯᖅᑲᓕᑎᕆᓗᒃ ᐅᓴᖏᓂᓂᒃ ᐋᓴᐃᓗᐊᓯᒪᓂᕐᓂᓂᒃ ᐊᓱᖅᑐᐃᓚᓗᐊᓂᕐᒪᖅᑐᖅ McArthur River-ᒥ ᐅᓴᖏᓂᓂᐊᖏᓐᓇᓗᒃ. ᐅᓴᖏᐃᑦ ᓯᐅᖏᓂᓪᓗ ᐊᑐᔪᓂᖅᑐᑦ ᐃᓕᓐᓂᖅᑲᖅᑕᐅᓂᕐᒪᖅᑐᑦ Dielman-ᒥ ᒪᑐᐃᓴᕐᒪᒥ ᓄᓇᒪᑦ ᐅᓴᖏᓂᓂᐊᖏᓐᓇᓗᓂᑦ ᐃᓂᒋᔭᐅᓄᑦ. ᓇᔪᑲᓴᓕᓴᕐᓂ: Cameco Corporation ᑯᐊᐳᕆᓴᖅᑯᑦ.

McClean Lake-ᒥ ᐅᓴᖏᓂᐊᖏᓐᓇᓗᒥ, ᐋᓴᐃᓗᐊᓯᒪᓕᓴᖅᑐᑦ ᐅᓴᖏᐃᑦ ᒪᑐᐃᓴᕐᒪᒥᑦᑎᒃ ᓄᓇᒧᑎᑐᑎ ᐅᓴᖏᓂᓂᐊᖏᓐᓇᓗᒥ, ᐊᓱᖅᑕᐅᓯᖅᑕᐅᓯᓴᖅᑐᑦ ᐅᓴᖏᓂᓂᒃ ᓴᓐᓯᒪᓕᖅᓴᖅᑲᐃᓗᓂᑦ.

ᑕᒪᕐᒥᑲᓴᐃᑦ ᐅᔭᕋᐃᑦ, ᓄᕙᔪᐃᑦᑐᖃᕐᓂᖏᑦ, ᐲᔭᖅᑕᐅᓯᒪᓕᖅᑎᓪᓗᒍ, ᐊᒥᐊᒃᑯᖃᖃᑦᑕᕐᒪᑕ ᐊᐅᒃᑎᑕᐅᔪᓐᓇᖏᑦᑐᓂᒃ ᐃᕿᖅᑐᖅᑕᐅᓯᒫᓂᒃᑐᓂ, ᑕᒪᒃᑯᐊᓗ ᓯᑎᔪᑦ ᐅᕙᓗᓐᓃᑦ ᐊᒥᐊᒃᑯᕕᓃᑦ ᐃᓱᐃᓖᒃ ᐊᕕᒃᑐᖅᑕᐅᖃᑦᑕᖅᑐᑦ ᓄᕙᔪᐃᑐᓕᖕᓂᒃ ᐃᓚᓯᒪᔪᓂᒃ ᐊᒥᓲᓂᒃ ᐃᕿᖅᑐᐃᕕᖕᓂ ᐃᒪᖅ ᐃᓚᓯᒪᔪᖅ ᐃᕿᖅᑑᑕᐅᓪᓗᓂ ᖃᑕᐅᔭᕐᓂᒃ ᐊᑕᐅᓯᕐᒧᑦ ᐃᖏᕋᔪᓂᒃ ᐊᒻᒪᓗ ᐃᕐᒥᒃᑕᐅᓪᓗᑎᒃ ᐅᐊᓴᖅᑕᐅᓯᒪᔪᑦ ᓯᑎᔪᑦ ᓈᑕᐅᕙᓪᓚᐊᓪᓗᑎᒃ ᐃᒡᓗᐊᓄᖓᖅ ᐃᖏᕋᔪᒧᑦ. ᐃᒪᐃᑦ ᐃᕿᖏᑕᐅᔪᑦ ᐃᓗᓕᖃᖅᑐᑦ ᓄᕙᔪᐃᑦᑐᓂᒃ, ᓯᒥᒃᑕᐅᕐᑲᑦᑕᖅᑐᑦ ᐊᒻᒪᓗ ᓄᕙᔪᐃᑦᑐᐊ ᐲᔭᖅᑕᐅᓪᓗ ᐊᓯᖏᓐᓂᒃ ᐊᒃᑕᑯᓂᒃ, ᓄᕗᑎᖅᑕᐅᓪᓗᑎᒃ ᐅᔭᕋᖕᒥᒃ, ᐊᑐᖅᑕᐅᓪᓗᑎᒃ ᐱᔭᐃᔾᔪᑎᑦ ᓴᓗᒻᒪᖅᓴᐅᑎᑦ.

.ᑭᖑᓪᓕᕐᒥ ᓄᕙᔪᐃᑦᑐᑦ ᓴᑐᖅᑕᐅᕙᒃᑐᑦ ᐊᑯᓯᒪᔪᒥᒃ ᓯᒥᒃᑕᐅᓯᒪᓪᓗᓂ ᐳᑐᕐᑲᖅᑐᒥᒃ ᐲᔭᖅᑕᐅᓪᓗᓂ ᐊᒻᒪᓗ ᐸᓂᖅᑎᑕᐅᓪᓗᑎᒃ, ᓄᕙᔪᐃᑦᑐᐃᓐᓇᐅᓂᐊᓕᕐᒪᑦ ᐸᓂᖅᑐᖅ, ᐅᕙᓘᓐᓃᑦ ᖃᓗᓈᑎᑐᑦ "yellowcake"-ᖑᓂᕋᖅᑕᐅᔪᖅ ᐸᓚᐅᒠᒃᓴᐅᔫᖅᑐᖅ ᐸᓂᖅᑐᖅ, ᐊᖏᓂᕐᑲᖅᑐᖅ 99%-ᒥ ᓄᕙᔪᐃᒃᑐᒥᒃ ᐃᒪᓐᓇ ᓇᐃᓈᖅᓯᒪᔪᒥᒃ ᖃᓗᓈᑎᑐᑦ ᐊᑎᖅᑲᖅᑎᑕᐅᓪᓗᓂ: U_3O_8-ᒥᒃ ᓄᕙᔪᐃᑦᑐᒥᒃ ᔪᕌᓂᔭᒻᒥ. ᑕᒪᓐᓇ ᐸᓂᖅᑐᖅ ᐸᓚᐅᒠᒃᓵᐅᔮᓕᖅᑐᖅ ᓄᕙᔪᐃᑦᑐᐃᓐᓇᖅ ᓈᕕᐅᕐᑲᖅᑕᐅᕙᒃᑐᖅ 45 ᒑᓚᓐᓄᑦ ᖃᑦᑕᐅᔭᕐᔪᐊᕐᓄᑦ ᓴᕕᕋᔭᖓᓄᑦ, ᒪᑐᔭᐅᓯᒪᑦᑎᐊᖅᑐᓂᒃ ᓯᒥᒃᑕᐅᓪᓗᑎᒃ ᐊᐅᓪᓚᖅᑎᑕᐅᓂᐊᕐᒪᑕ. ᑖᒪᒃᑯᐊ ᓄᕙᔪᐃᑦᑐᖃᕐᓂᖏᑦ ᒥᑭᑦᑐᒥᒃ ᐊᐅᓚᔪᓂᒃ ᐱᑕᕐᑲᖅᐳᑦ ᐊᐅᒪᒃᓴᕐᑲᕐᓂᐅᔪᓂᒃ. ᐆᑕᕐᓇᖅᑐᖃᕐᓂᖏᑦ ᐊᑕᐅᓯᕐᒥᒃ ᒦᑕᒥᒃ ᖃᑦᑕᐅᔭᕐᔪᐊᕐᒥᒃ ᓄᑖᓂᒃ ᐃᓕᓯᕕᐅᓯᒪᔪᒥᒃ ᓄᕗᒍᐃᑦᑐᓂᒃ, ᐊᖏᓂᕐᑲᖅᑐᖅ ᓇᐸᖏᓐᓂᒃ ᐆᑕᕐᓇᖅᑐᖃᕐᓂᖓᐊᓂᒃ ᓯᕿᓂᕐᒥᒃ, ᐃᑭᒪᓗᓂ ᓱᒃᑲᔪᒥᒃ ᓱᐳᔫᒃᑯᕐᓗᓂ ᖃᖓᑕᓲᕐᒥᓪᓗᓂ. ᐊᒃᑕᑯᐃᑦ ᓯᑎᔪᑦ ᓯᐅᕋᐃᓪᓗ ᐃᕿᖅᑎᖅᑕᐅᖃᐅᔪᓂ ᐃᓚᔭᐅᖃᑦᑕᖅᑐᑦ ᐊᓯᖏᓐᓄᑦ ᐊᒃᑐᑯᓗᐊᖑᔪᓄᑦ ᓴᓗᒻᒪᖅᓴᖅᑕᐅᕕᒋᓂᐊᖅᑕᖏᓐᓂ ᑲᐃᕕᑦᑐᒥ, ᐃᓚᔭᐅᒃᑲᓂᕐᓂᐊᕐᒥᖔᒪᑕ ᐃᓚᒃᓴᓕᖅᑕᐅᓗᑎᒃ ᐱᔪᒪᔭᐅᔪᓄᑦ ᒥᑭᓪᓕᑎᖅᑕᐅᓗᑎᒃ ᐊᒻᒪᓗ ᒥᑦᓗᖅᑕᐅᓕᕐᓗᑎᒃ ᑯᕕᔪᑦ ᐊᒥᐊᒃᑯᕐᑲᕕᖑᑦ ᐊᐅᓚᑦᑎᕕᖑᑦ.


ᐋᕝᔾᔪᐊᖅ 6. ᓴᐅᒥᖕᒥ- ᖁᖅᓱᖅᑐᖅ ᐸᓚᐅᒠᒃᓴᐅᔫᖅᑐᖅ ᓄᕙᔪᐃᑦᑐᐃᓐᓇᑲᓴᒃ, ᓴᓇᔭᐅᓯᒪᔪᖅ ᓯᕐᑲᓕᑎᕆᕕᖕᒥ ᐊᒻᒪᓗ ᐊᐅᓪᓚᖅᑎᑕᐅᕙᒃᑐᓂᒃ Blind River-ᒧᑦ ᓴᓇᔭᐅᒃᑲᓐᓂᕐᓂᐊᕐᒪᑦ ᑲᓇᑕᐅᓗᓐᓃᑦ ᓯᓚᑖᓄᑦ ᐊᐅᓪᓚᖅᑎᑕᐅᓂᐊᕐᒪᑦ. ᑕᓕᖅᐱᖕᒥ - ᖃᑦᑕᐅᔭᕐᔪᐊᑦ ᐊᑐᐃᓐᓇᐅᓕᖅᑐᑦ ᖁᖅᓱᖅᑐᒥᒃ ᓄᕙᔪᐃᑦᑐᑖᑦ, ᐊᐅᓪᓚᖅᑎᑕᐅᑐᐃᓐᓇᕆᐊᖃᓕᖅᑐᑦ.

1.4.2 ᐊᓐᓂᐊᕐᑲᕐᓇᖏᑦᑐᓕᕆᓂᖅ ᐊᒻᒪᓗ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᓂᖅ ᐊᒻᒪᓗ ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᖃᐅᔨᓕᐅᕈᑏ

ᑕᒪᕐᒥᑲᓴᐃᑦ ᐅᕐᑲᐅᓯᐅᓯᒪᔪᑦ ᑖᕙᓂ ᐱᔾᔪᑎᕐᑲᖅᓯᒪᖕᒪᑕ ᕐᑲᓃᒪᓂᖅᑖᖅᑕᐃᓕᒪᔭᕆᐊᕐᑲᕐᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐅᓗᕆᐊᓇᕐᓂᖏᓐᓂᒃ ᐃᓱᒫᑕᐅᕙᒃᑐᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒥ ᓴᓇᔩᓂ, ᐊᑐᕐᒥᔪᑦ ᓴᓇᔩᓂ ᓯᕐᑲᓕᑎᕆᕕᖕᒥ ᓄᖑᔪᐃᑦᑐᓂᒃ. ᐃᓱᒫᑕᐅᓗᐊᖅᐸᒃᑐᑦ ᓯᕐᑲᓕᑎᕆᕕᖕᒥ, ᐳᔪᖑᕐᑲᑦᑕᕐᓂᖏᑦ ᓴᓅᑦ (ᐆᑕᕐᓇᖅᑐᓖᑦ) ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᐃᑦ ᐳᓪᓚᖏᓐᓂᒃ ᐱᑕᓖᑦ ᐊᒻᒪᓗ ᑕᑯᒃᓴᐅᖏᑦᑐᓂᒃ ᐊᐅᒪᕐᑲᖅᑐᓂᒃ ᐆᑕᕐᓇᖅᑐᓖᑦ (ᐱᓗᐊᖅᑐᒥᒃ ᐱᓯᒪᔪᑦ ᐅᔭᕋᖕᓂᒃ, ᓄᖑᔪᐃᑦᑐᓕᖕᓂᐅᖏᑦᑐᖅ ᐂᔭᖅᑕᐅᓚᐅᖅᑎᓪᓗᒋᑦ ᐊᒥᐊᒃᑰᓕᖅᑐᓂᒃ). ᓴᓅᑦ ᑲᑎᖅᓯᑕᖅᐅᕐᑲᑦᑕᕐᒪᑕ ᐅᑎᖅᑎᑕᐅᓪᓗᑎᓪᓗ ᓴᓗᒻᒪᖅᓴᐃᕕᖕᓄᑦ. ᐊᐅᒪᒃᓴᖅᑐᑦ ᐳᓪᓚᐃᑦ ᓴᖏᓕᖅᑎᑕᐅᕐᑲᑦᑕᖅᑐᑦ ᓄᐃᑎᑕᐅᓪᓗᑎᓪᓗ ᓯᓚᒧᑦ, ᐊᖏᔫᒪᕆᖕᓂᒃ ᐃᓚᔭᐅᓯᒪᓪᓗᑎᒃ ᐊᓂᕐᓂᒥᒃ.

ᐊᕙᑎᒧᑦ ᐃᓱᒫᑕᐅᓂᖅᐹᖑᕙᒃᑐᑦ ᓄᐃᑕᕐᑲᑦᑕᕐᓂᖏᑦ "ᓱᕈᖅᓯᒪᔪᑦ" ᐃᒪᐃᑦ ᐃᕐᕈᖅᑐᐃᕕᖕᓃᖕᒎᖅᑐᑦ. ᐅᕐᑲᐅᓯᐅᓯᒪᔪᑦ ᒪᓕᒃᓱᒋᑦ ᐅᓂᒃᑲᓕᐊᖏᓐᓂ ᑲᓇᑕᒥ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᓃᑦ ᑲᒪᔩᒃᑯᑦ (CNSC-ᑯᑦ[31], “ᐅᕐᑲᖅᓯᒪᔪᑦ ᐃᒦᒃ (ᐃᒪᕆᔭᐅᕙᒃᑐᑦ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ ᐊᒻᒪᓗ ᓯᕐᑲᓕᑎᕆᕕᖕᒥ ᐊᖏᕐᓗᐊᕐᒪᑕ ᑐᖅᑯᖅᑕᐅᓯᒪᐃᓐᓇᕈᓐᓇᕐᓂᕐᒧᑦ). ᑕᒪᐃᓐᓂᑲᓴᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒥ, ᐃᒪᐃᑦ ᑖᒃᑯᐊ ᐊᖅᑐᑕᐅᒃᑲᓐᓂᕈᓐᓇᕐᑲᑦᑕᕐᒪᑕ ᐃᕐᕈᖅᑐᐃᕕᖕᓂ ᓯᕐᑲᓕᑎᖅᑕᐅᒃᑲᓐᓂᕐᕕᖕᓂ; ᑭᓯᐊᓂ, ᐊᖏᔪᒥᒃ ᑯᕕᔭᐅᕐᑲᑦᑕᕆᐊᕐᑲᓲᑦ ᓄᓇᒧᑦ ᐊᕙᑎᒧᑦ. ᑕᐃᒪᐃᓕᐅᕈᓐᓇᖅᓯᓚᐅᖏᓐᓂᖏᓐᓂ, ᐃᒪᖅ ᐃᓚᔭᐅᓯᒪᔭᕐᑭᐊᕐᑲᕐᒥᔪᖅ ᐃᓚᖏᓐᓄᑦ ᐃᓚᒃᓴᓄᑦ. ᓲᕐᓗ ᐆᒃᑑᑎᒋᓗᒍ ᐃᓚᔭᐅᓲᑦ barium chloride ᕐᑲᑯᒃᓯᓴᐅᑏᑦ ᐱᔭᖅᑕᐅᔾᔪᑎᐅᖕᒪᑕ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐊᐅᒃᑎᖅᑕᐅᓗᓂ. ᐃᒪᐃᒪᑦ ᐲᔭᖅᑕᐅᔪᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ ᓯᕐᑲᓕᑎᕆᕕᖕᓂ ᑲᓴᑕᒥ ᕐᑲᐅᐲᓴᖅᑕᐅᕐᑲᑦᑕᖅᑐᑦ ᐊᖑᒪᔭᕆᐊᕐᑲᕐᓂᖏᓐᓂᒃ ᐊᖏᓂᖏᓐᓂᒃ ᐃᓚᒃᓴᓂᒃᑕᐅᓯᒪᔭᕆᐊᕐᑲᕐᓂᖏᓐᓂᒃ ᒪᓕᒍᐅᑎᑕᐅᔪᓂᒃ ᑲᓇᑕᐅᑉ ᒐᕙᒪᒃᑯᖏᓐᓄᑦ. ᑕᒪᒃᑯᐊ ᐃᓱᕐᑲᖅᑎᑕᐅᔪᑦ/ᐊᖏᓂᕐᑲᖅᑎᑕᐅᔪᑦ ᐋᕐᑮᐅᒪᔭᐅᔪᑦ ᓱᕈᖅᑕᐅᕐᑯᓇᒍ ᐊᕙᑎ ᐊᔪᕐᓇᖏᓐᓂᓕᒫᒥ ᒥᑭᓕᑎᖅᑕᐅᓯᒪᓂᓕᖅᐹᖑᓗᓂ. ᒫᓐᓇᓵᖅ ᒪᓕᒋᒃᓴᓂᒃ ᓴᕐᑭᑦᑎᔪᕐᑲᓚᐅᖅᑐᖅ ᑕᒪᑯᐊ ᐃᓚᔭᐅᕙᒃᑐᑦ ᐃᕐᕈᑏᑎᕕᓂᕐᓄᑦ ᐊᖏᓗᐊᕐᑯᔭᐅᖏᓯᑎᒃ ᑐᕐᑯᓐᓇᖅᑐᓇᔭᖅᑐᓂᒃ ᐃᕐᑲᓗᖕᓄᑦ.

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31 ᑲᓇᑕᓕᒫᒧᑦ ᐅᓂᒃᑳᓕᐊᑦ ᑲᑎᒻᒪᔾᔮᐅᕐᑲᑕᐅᔪᓂ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᓂᕐᒧᑦ ᐊᑐᖅᑕᐅᓯᒪᔪᓂᒃ ᐆᒻᒪᕐᑯᑎᓕᐅᕈᑎᒃᓴᓂᒃ ᐊᒃᑕᑯᓂ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᓂᕐᒧᑦ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᕐᑲᑐᓂᒃ ᐊ ᐊᐅᓚᑦᑎᓂᕐᒥᒃ; ᓴᓇᔭᐅᓯᒪᔪᑦ ᑲᓇᑕᒥ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᓃᑦ ᑲᒪᔩᒃᑯᓐᓄᑦ (CNSC-ᑯᑦ); ᒪᐃ, 2003-ᒥ.

1.5 ᐊᐅᓚᔪᓂᒃ ᑕᑯᒃᓴᐅᖏᑦᑐᓂᒃ ᐊᐅᒫᒃᓴᖃᖅᑐᑦ ᐅᔾᔨᖕᓂᐊᕐᕕᖕᓂ ᐊᒻᒪᓗ ᓯᕐᖃᓕᑎᖅᑕᐅᕕᖕᓂ ᐊᒃᑕᑯᓂᒃ

ᓄᓇᕐᔪᐊᕗᑦ ᐱᑕᖃᖅᑐᑐᖃᐅᖏᓐᓇᕐᒪᑦ ᐊᐅᓚᔪᓂᒃ ᑕᑯᒃᓴᐅᖕᖏᑦᑐᓂᒃ ᐊᐅᒫᒃᓴᖃᖅᑐᓂᒃ - ᓄᖑᔪᐃᑦᑐᑦ ᔪᕌᓂᔾᒻ, ᑐᐊᕆᔾᒻᒥ thorium, ᕌᑎᔾᒻ radium, ᐊᒻᒪᓗ ᐊᐅᓚᔪᓂᒃ ᑕᑯᒃᓴᐅᖏᑦᑐᓂᒃ ᐊᐅᒪᒃᓴᖃᖅᑐᓂᒃ ᐳᓪᓚᓂᒃ radon-ᒥᒃ. ᐅᔾᔨᖕᓂᐊᕐᕕᖕᓂ ᐊᒻᒪᓗ ᓯᕐᖃᓕᑎᓇᕕᖕᓂ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐊᓯᖏᓐᓂᓗ ᐅᔾᔨᖕᓃᑦᑐᓂᒃ ᖃᓂᒡᓕᔾᔭᑕᐅᕙᒃᑐᑦ ᑕᒪᒃᑯᓂᖓ ᐆᑕᕐᓇᖅᑐᖃᖅᑐᓂᒃ ᐱᖁᑎᓂᒃ, ᐃᓄᖕᓄᑦ, ᐊᒻᒪᓗ ᐳᓚᖏᓐᓂᒃ, ᐃᓚᖏᓐᓄ, ᓲᒃᑲᓂᖅᓴᒥᒃ ᓄᐅᑎᑕᐅᕙᒃᑐᑦ ᓯᓚᒧᑦ.

ᐊᒥᐊᒃᑯᐃᑦ ᐊᒃᑕᑯᐃᑦ ᓯᕐᖃᓕᑎᓇᕕᖕᒥ ᐊᐅᓚᑕᐅᔪᓂᒃ ᓱᓕ ᐊᑕᔪᖃᕈᓐᓇᕐᒪᑕ ᐊᒥᐊᒃᑯᓂᒃ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᖃᖅᑐᓂᒃ ᐅᔾᔨᖕᓂᒃ, ᓲᕐᓗ ᕌᑎᔾᒻᒥᒃ radium ᓄᖑᔪᐃᑦᑐᒥᒃ. ᑕᒪᒃᑯᐊ ᐊᒃᑕᑯᐃᑦ ᐊᒥᐊᒃᑯᕕᓃᑦ ᐃᓕᔭᐅᖃᑦᑕᖅᑐᑦ ᐊᒥᐊᒃᑯᕕᓂᖃᕕᓕᐊᖑᓯᒪᔪᓄᑦ ᓴᓇᔭᐅᓯᒪᓪᓗᑎᒃ ᐸᐸᑦᑎᕕᖕᓄᑦ ᓯᑎᔪᓂᒃ ᐊᒻᒪᓗ ᑯᕕᔪᓐᓇᖏᑦᑐᓕᐊᖑᓯᒪᓪᓗᑎᒃ ᖃᓄᐃᑦᑐᑐᐃᓇᓂᒃ ᐃᒪᖅᑐᓂᒃ. ᑕᐃᒪᓕ, ᑕᒪᒃᑯᐊ ᐊᒥᐊᒃᑯᕕᓂᐅᔪᑦ ᐅᑎᖅᑎᑕᐅᓇᔭᖅᑐᑦ ᐅᔾᔨᖕᓂᐊᕐᕕᖕᓄᑦ ᐅᕙᓅᓐᓃᑦ ᓴᐅᔭᐅᓯᒪᔪᓐᓇᖅᑐᑦ ᐅᔾᔨᖕᓄᑦ, ᒪᕋᕐᓄᓪᓗᓐᓃᑦ, ᐱᕈᕐᕕᐅᒃᑲᓐᓂᕈᓐᓇᖅᓯᑎᓪᓗ.

ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᖃᓂᖏᑦ ᐊᒥᐊᒃᑯᐃᑦ ᐊᒃᑕᑰᓕᖅᑐᑦ ᐊᔾᔨᑐᐃᓐᓇᖃᓴᕆᔭᖏᑦ ᓯᕗᓪᓕᖅᒥ ᐅᔾᔨᖕᓃᓚᐅᖅᑐᓂ, ᐊᒻᒪᓗ ᐊᑕᓗᐊᖅᐸᒃᓯᑎᒃ ᓯᑎᔪᓄᑦ. ᐃᓚᒃ, ᑕᐃᒃᑯᐊ ᐊᐅᓚᔪᑦ ᐊᐅᒪᒃᓴᖃᕐᓂᐅᔪᑦ ᐊᐅᒃᑎᑕᐅᓐᓂᖏᓪᒪᑕ ᐅᕙᓅᓐᓃᑦ ᓂᐱᑦᑐᕕᓂᐅᓐᓂᕐᒪᑕ ᐊᒥᐊᒃᑯᓄᑦ ᐃᕐᕈᖅᑐᖅᑕᐅᒃᑲᓐᓂᖅᕕᖏᓐᓂ. ᓄᖑᔪᐃᑦᑐᑦ ᓯᑎᔪᑦ (U_3O_8) ᓴᓇᔭᐅᓯᒪᔪᑦ ᐅᔾᔨᖕᓂᐊᖅᑕᐅᓂᖏᓐᓂ ᐊᒻᒪᓗ ᓯᕐᖃᓕᖅᑎᑕᐅᓂᖏᓐᓂ ᓄᖑᔪᐃᑦᑐᖃᕐᓂᐊᖕᒪᑕ ᓄᐃᑕᐅᓯᒪᔪᒥᒃ Uranium oxide-ᒥᒃ ᓴᕿᖃᑦᑕᖅᑐᒥᒃ ᐅᔾᔨᖕᓂᐊᖅᑕᐅᓂᖏᓐᓂ ᓯᕐᖃᓕᑎᖅᑕᐅᓯᒪᓂᖏᓐᓂᓗ ᓴᖕᖐᑦᑐᒻᒪᓇᖕᒥ ᒥᑭᔪᒥᒃ ᐊᐅᒪᔪᓂᒃ ᐊᐅᒪᒃᓴᖃᕐᒪᑕ - ᐱᓗᐊᖅᑐᒥᒃ ᐊᐅᓚᔪᒥᒃ ᐊᐅᒪᒃᓴᖃᕐᒪᑕ ᓯᕗᓪᓕᕐᒥ ᐅᔾᔨᖕᓃᓚᐅᖅᑐᓂ ᐊᒥᐊᒃᑰᓕᖅᑐᓂᒃ ᐅᔾᔨᖕᓂᐊᕐᕕᖕᒥ ᐊᒃᑕᑯᓐᖑᖅᓯᒪᔪᓂ. ᐊᔾᔨᒋᒋᑦᑑᑏᑦ ᐊᐅᓚᔫᕙᒃᑐᑦ ᑕᑯᒃᓴᐅᖏᑦᑐᑦ ᐊᐅᒫᒃᓴᖃᖅᑐᑦ ᑎᒥᖏᑦ ᐆᒪᓂᖃᕐᒪᑕ ᕿᓚᒻᒥᓚᓇᓘᔪᐊᒥᒃ ᒥᓂᑦᓴᓄᑦ ᑕᑭᓂᖃᖅᑐᒥᒃ, ᐃᑲᕐᕋᓄᑦ ᑕᑭᓂᖃᖅᑐᓂᒃ, ᐅᕙᓗᓐᓃᑦ ᐅᓪᓗᒐᓴᖕᓂᒃ ᑕᑯᓂᖃᖅᑐᒥᒃ ᐆᒪᕕᖃᖅᓯᑎᒃ. ᑕᒪᒃᑯᐊ ᐊᐅᓚᔪᑦ (ᐃᖏᕐᕋᐃᓐᓇᖅᑐᑦ) ᐊᐅᒪᒃᓴᖃᕐᓂᐅᔪᑦ ᐊᐅᒪᒃᓴᖃᕐᓂᖏᑦ ᑐᖁᕙᓪᓚᐊᓪᓚᖃᑦᑕᖅᑐᑦ ᐊᑯᓂᕈᖅᐸᓪᓚᐊᓂᕐᒥ, ᑕᒪᒃᑯᐊ ᐆᒻᒪᑎᖏᑦ ᐊᐅᒪᐃᑦ ᓱᕈᖅᐸᓪᓚᐊᖃᑦᑕᕐᒪᑕ ᐊᐅᒪᖃᕈᖅᓯᓂᖅᓯᑎᒃ. ᑐᖁᕙᓪᓚᐊᔪᓐᓇᕐᓂᖏᑦ ᐊᐅᒪᐃᑦ ᐊᑕᔪᑦ ᐃᓚᐃᓐᓇᖓᒍᑦ, ᐊᐅᒪᖏᑦ ᐆᒪᔪᓐᓇᕐᓂᖏᓐᓂ, ᑕᒪᓐᓇ ᑐᑭᖃᖅᑐᖅ ᓇᑉᐸᕐᒥ ᐆᒪᓂᖃᖅᑐᑦ half life-ᖑᓂᕐᕋᖅᑕᐅᔪᖅ, ᕿᓚᒻᒥᒪᓇᐊᓗᒃ ᓱᕈᖅᐸᒃᑐᑦ ᓱᒃᑲᔪᒥᒃ ᓄᖑᐸᓪᓚᐊᓪᓗᑎᒃ. ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᐊᑐᓂ ᐆᑕᕐᓇᖅᑐᖃᖅᑐᓂ, ᐳᖅᑐᓂᐅᖅᓴᐅᒃᐸᑕ

ᐅᑕᕐᓇᖅᑐᖅᓂᖅᐹᑦ, ᐊᖏᑎᓂᖏᓐᓂ ᐅᑕᕐᓇᖅᑐᓕᒃ, ᕿᑭᒪᒥᐅᓂᖅᓴᖅ ᓇᐸᕐᒥᒃ ᐅᒪᔪᓐᓇᕐᓂᖅᖃᖅᐸᒃᑐᑦ.

ᑕᒪᒃᑯᐊ ᐃᓕᓴᐹᓚᕆᐅᔪᑦ ᐊᑐᖅᑕᐅᔪᓂ ᐊᐅᓪᑕᐅᓂᖏᓐᓄᓐᓇ ᐊᐅᓪᑕᔪᓂᒃ ᐊᐅᒪᒃᓴᖅᑲᖅᑐᖅᑐᒃ ᐊᒃᑕᑯᓂᒃ ᑕᒪᐃᓐᓂ ᖃᒃᓇᐃᖅᑐᑐᐃᓇᓂ ᐊᐅᓪᑕᑎᓂᐊᕐᓂᖅᑐᑦ:

- ᓇᖓᔪᐃᖅᑐᐃᓇᓂ ᐊᓪᒪᓗ ᐊᓱᖅᖏᖅᑐᑐᓂ ᓴᖏᑦᓪᓕᖅᑎᖅᑕᐅᓱᒪᔪᓂ ᐃᓪᓴᐅᑦᓗᑎᒃ, ᐃᑎᐅᖅᑲᖅᑕᐅᓂᖏᑦᓗ
- ᕿᖓᐅᓂᐊᔪᑦ ᐊᓪᒪᓗ ᓱᑭᖅᓱᒪᓪᓕᖅᑎᑦᓗᔪᒍ (ᑐᖅᑯᓱᒪᓪᓕᖅᑎᑦᓗᑦᑐᑦ)

ᓱᕐᓪᓕᖅᖢᒃ ᒪᖅᕼᒃ ᐊᑐᖅᑕᐅᕐᒧᑉᓱᑦ ᐊᐅᓪᑕᑕᐅᓂᖏᓐᓄᓐᓇ ᐊᐅᐃᒃᓴᖅᑲᕈᐅᖅᓯᓱᒪᔪᓂᒃ ᐊᒃᑕᑯᓂᒃ. ᐊᒃᑐᑯᐃᑦ ᓇᑦᓪᑐᐃᑦᓇᖏᐅᖅᑎᑦᓇᒪᑕ, ᓱᐅᓗ ᓇᖓᔪᐃᖅᑐᐃᓇᐅᐅᑦᓪᓕᒃ ᐃᖏᒪᔪᖏᓪᓕᖅᑎᑕᐅᓗᓂᒃ, ᐅᕐᓗᓵᓂᑦ ᐄᖏᓪᑎᖅᑕᐅᓗᓂᒃ ᓴᖏᑕᓗᕈᐅᖅᑐᓂᐊᕐᕿᒪᑕ ᓀᖏᒪᔪᓂᒃ, ᐊᒪᒪᓗ ᑯᐊᖅᑐᐃᓇᓂ ᐊᐅᕐᒧᑎᓪᓗ; ᑐᕈᖅᑲᖅᑐᖅ ᐊᒃᑕᑯᐃᑦ ᑐᐅᑯᖅᑕᐅᖅᑲᓕᕐᖅᑐᑦ ᐊᒪᒪᓗ ᐊᐅᓪᑕᔪᒥᒃ ᐊᐅᒪᖅᑲᖅᓂᖏᓪᓂ ᐃᖏᒥᓂᖅᖢᓪᓕᐊᕐᖅᑐᑦ ᑐᐅᐅᓪᑕᐊᑐᒃᑐᒃ ᐱᓕᕐᓂᖅᖢᓪᓕᐊᖏᓐᓄᑦ ᐅᓪᓗᓂᑐᖅᑐᑦ ᐃᒪᔪᐃᑦ ᐊᐅᒪᖏᓂᑦ. ᑕᒪᓐᓇ ᐅᓴᖅᑲ ᐊᖏᑎᓂᖅᑲᓕᕐᓇᖅᑐᖅ ᒥᑕᓂᒃ ᐊᖏᑎᓂᓕᕐᓂᒃ ᐱᓕᓂᒃ ᐊᖏᑎᓂᓕᕐᓂᒃ ᐅᓴᖅᓂᒃ, ᐱᓗᐊᖅᑐᒥᒃ ᒪᑕᐃᖏᔪᒥᒃ ᓇᓐᒪᒃ ᐅᓴᖅᓂᓕᕐᖅᑐᒥᒃ. ᑕᒪᓐᓇ ᐅᓴᖅᑲ ᐊᖏᑎᓂᖅᑲᑕᐅᓇᓕᕐᖅᑐᖅ ᐊᖏᑎᓂᖅᑲᖅᑐᖅᑐᒃ ᐊᖏᑎᓂᖅᑲᖅᑐᖅᑐᒃ 0.03%-ᒥ ᓇᖓᔪᐃᑐᒥᒃ, ᐅᓴᖅᑕᓗᒃ ᐊᖏᑎᓂᖅᑲᒥᒃ ᐱᑕᖅᑲᖅᑐᖅ 0.03%-ᒥᒃ, ᕿᓱᐊᓂ ᓱᓕ ᒥᕿᓗᐊᖅᑐᒥᒃ ᓂᐅᕕᖅᑕᐅᔪᓇᖅᑲᖅᑐᒥᒃ, ᐃᓕᑕᒪᖅᐅᓱᒪᓕᐅᖅᑐᖅ ᓱᓕᓗ ᐊᖅᐅᖏᑦᑐᑐᒃ ᐊᒃᑕᑯᓂᖅᑕᐅᓗᓂᒃ.

ᕿᑐᓕᒃᓴᖅᑲᖅᑐᖅ acid-ᒥᒃ ᐅᓴᖅᑕᐃᑦ ᑯᕕᔪᓂ ᑐᕈᖅᑲᖅᑐᖅ ᐱᐊᖏᑦᑐᑐᒥᒃ ᐃᒪᖅᑲᓂᖅᒥᒃ pH-ᖅᑲᖅᑐᒥᒃ (acid-ᖏᑦᓇᐅᓕᖅᑐᑐᒥᒃ) ᐅᕐᒧᑎᓂᓕᓂ ᓇᓇᑉᑦᑐᒥᒃ ᐃᒪᖅᒥᒃ ᓇᐃᖅᑲᓂᖅᑲᖅᑐᒥᒃ ᑕᑎᐅᓕᓂᓂ, ᐅᕐᒧᑎᓂᓕᓂ ᓇᖓᔫᑦᓕᐊᓕᒪᓂᖏᓐᓂ ᑕᑎᐅᓕᐅᖅᑲᖅᑐᖅᑐᖅ ᐱᑕᖅᑲᓂᒃ ᐅᓴᖅᓂᓂ ᐊᐅᐃᒧᓂᓂᓗ. ᑕᒪᒃᑯᐊ ᐅᓴᖅᓂᓂᒃ ᑯᕕᔪᓂ, ᑯᕕᓇᓴᐅᑎᒃ ᖃᓄᐃᓂᕆᐅᖅᓴᖅᑲᖅᑐᖅᑐᒃ pH

ᐃᒪᕕᖕᓄᑦ, ᓱᕈᕐᓇᖅᑐᓕᐅᕈᓇᕐᒪᑕ ᐊᒻᒪᓗ ᑐᕐᑯᓇᖅᑐᒥᒃ ᐸᑐᓖᒃᓴᔭᓕᐅᕐᓗᑎᒃ ᐊᕙᑎᒥᒃ. ᐊᐅᒃᑎᑎᔪᓐᓇᕐᒥᔪᑦ ᐊᓯᖏᓐᓄᑦ ᓴᕕᖕᓂᒃ ᐊᒃᑕᑰᓂᑦᑐᓂ ᐅᔭᕆᖕᓂ ᐊᒻᒪᓗ ᑕᒪᒃᑯᐊ ᑯᕕᕙᓪᓕᐊᔪᓐᓇᖅᑐᑦ ᒪᓴᖑᖅᑎᑦᑎᓗᑎᒃ ᐊᕙᑎᒧᑦ.

ᑲᓇᑕᒥ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᔩᑦ ᑲᒪᔨᒃᑯᑦ (CNSC-ᑯᑦ) ᐅᓂᒃᑲᓕᐊᖏᑦ Cigar Lake-ᒥ,ᐊᕙᑎᖓᓂ ᖃᐅᔨᓴᐃᓯᒪᓂᖏᓐᓂ ᐅᖃᖅᓯᒪᔪᑦ ᐃᒫᒃ, "ᓴᖄᑦᓱᐋᓐᒥ, ᐃᓚᖏᑦ ᐊᒃᑖᓕᖅᑐᑦ ᐅᔭᕋᐃᑦ ᐃᓗᓕᕐᑲᕐᒪᑕ ᑐᕐᑯᓐᓇᖅᑐᒥᒃ ᐊᒻᒪᓗ ᓴᕕᕋᔭᒃᓴᓂ ᐃᓗᓕᓕᖕᓂᒃ, ᐊᒥᐊᓱᖅᑎᖅ ᐊᑯᓂᐅᔪᒥ ᑲᒪᒋᔭᐅᖏᓐᓇᕆᐊᖅᑲᓕᖅᐸᒃᑐᑦ ᑕᐃᒪᑦᑐᓖᑦ ᐊᒻᒪᓗ ᐊᒻᒪᓗ ᐊᐅᓚᑕᐅᓇᓱᐊᖏᓐᓇᕐᓗᑎᒃ ᑕᒪᒃᑯᓂᖓ ᐊᐅᓚᔫᓂᖅᑐᓂᒃ ᐊᐅᒪᒃᓴᖃᖅᑐᓂᒃ ᓱᕈᖅᑕᐅᓯᒪᔪᑦ, ᑕᐃᒪᐃᓐᓂᖓᓄᑦ ᑲᒪᒋᔭᐅᖏᓐᓇᕆᐊᖃᕈᑕᐅᕙᒃᑐᑦ ᐊᒥᐊᒃᑳᓕᖅᑐᑦ ᐅᔭᕋᐃᑦ, ᐊᐅᒪᒃᓴᖃᕐᓂᖏᑦ ᐱᔾᔪᑕᐅᓇᓂ." ᐃᓚᖏᑦ ᐃᓗᐊᓃᓲᑦ ᐊᖅᔭᒃᓴᐅᔭᖃᕐᓂᖏᑦ ᐊᒻᒪᓗ ᑕᕆᐅᒃᓴᔭᐅᔮᖅᑐᑦ ᓴᕕᕋᐅᖏᑦᑐᑕᖃᕐᓂᖏᑦ (Molybdenum ᐊᒻᒪᓗ Selenium) ᐃᓱᒪᑑᑕᐅᖕᒥᔪᑦ ᐃᓚᖏᓐᓂ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒥ ᐊᒻᒪᓗ ᐊᔾᔨᐅᖏᑦᑐᓂᒃ ᐅᔾᔨᖅᑐᖅᑕᐅᑦᑎᐊᓂᖅᓴᐅᔪᓂᒃ ᑲᒪᒋᔭᐅᔭᕆᐊᓖᑦ, ᑕᐃᒪᐃᓕᖓᖓᒪᑕ Cigar Lake-ᒥ ᐅᔭᕋᖕᓂᐊᕐᕕᒃᓴᒥ, ᒦᓐᓇᐅᔪᖅ ᓴᓇᔭᐅᕙᓪᓕᐊᓕᓵᖅᑐᒥ.

ᑕᐃᒪᖓᓕᒦᖅ, ᐊᒃᑕᑯᐃᑦ ᐅᔭᕋᐃᑦ ᐃᓕᐅᖅᖃᑕᐅᖃᑦᑕᖅᑐᑦ ᖄᖓᓄᑦ ᐅᕙᓘᓐᓃ ᐊᑐᖅᑕᐅᓪᓗᑎᒃ ᐃᓗᓕᖅᑐᕈᑕᐅᓂᕐᒧᑦ ᓄᓇᐅᑉ ᐃᓗᐊᓃᑦᑐᓄᑦ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓄᑦ. ᑭᓱᐊᓂ, ᓄᐃᑕᔫᒥᑎᑕᐅᒍᑎᒃ ᓄᓇᐅᑉ ᖄᑐᐃᓐᓇᖑᓂ ᐊᑯᓂᐅᔪᓂ, ᐃᓚᖏᑦ ᑕᒪᒃᑯᐊ "ᐊᔾᔨᐅᖏᑦᑐᑦ ᐅᔭᕋᐃᑦ" ᐊᓯᔾᔨᖅᐸᓪᓕᐊᔪᓐᓇᕐᒪᑕ ᐆᑕᖅᓇᖅᑐᓕᐅᕐᓗᑎᒃ acid-ᒥᒃ ᐹᑐᓖᒃᓴᔭᕐᒥᒃ ᐅᕙᓘᓐᓃ ᓄᐃᑦᑎᕙᓪᓕᐊᓗᑎᒃ ᓴᕕᕋᔭᖕᓂᒃ ᓱᒃᑲᓂᖓ ᓱᕈᕈᑕᐅᔪᓐᓇᖅᓱᓂ ᐊᕙᑎᒧᑦ. ᒦᓐᓇᐅᔪᖅ ᐱᖅᑯᓯᕆᔭᐅᕙᒃᑐᑦ ᐊᐅᓚᑕᐅᓂᖏᓐᓄᑦ ᐊᔾᔨᐅᖏᑦᑐᑦ ᐊᒃᑕᑯᐃᑦ ᐅᔭᕋᐃᑦ ᑲᒪᒋᔭᐅᕙᒃᑐᑦ ᐊᕕᒃᑕᐅᓪᓗᑎᒃ ᓯᓚᒦᖃᑕᐅᔪᓂᒃ (ᓲᕐᓗ ᐆᒃᑑᑎᒋᓗᒍ, ᓅᑕᐅᓗᑎᒃ ᓇᑎᐊᓄᑦ ᐅᓕᑕᐅᓯᒪᔪᒥ (ᐃᒪᕐᒧᑦ) ᓄᓇᒥ ᐃᓗᑐᓂᕐᒥ ᒪᑐᐃᖓᔪᒥ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᒥ.

1.7 ᐊᐅᓚᑕᐅᖃᑦᑕᕐᓂᖏᑦ ᐊᒥᐊᒃᑯᐃᑦ ᐅᔭᕋᐃᑦ

1.7.1 ᓱᕚᓪᓚᖅᐹᑦ ᐅᖃᐅᓯᒃᓴᐃᑦ

ᓱᑎᔪᑦ ᐊᒃᑕᑯᓚᐊᖑᔪᑦ ᓱᖃᓚᑎᕆᕕᖕᒥ ᐊᐅᓚᑕᐅᔪᓂ, ᒥᓪᓗᐊᖅᑕᐅᖃᑦᑕᕐᒪᑕ ᒪᕋᐅᓪᓗᑎᒃ ᓱᑎᔪᑦ ᐊᒻᒪᓗ ᐃᒪᖑᖅᓯᒪᓪᓗᑎᒃ ᑕᐃᒫᒃ ᐊᒃᑐᖃᕐᕕᐅᓕᐊᖑᓯᒪᔪᒧᐊᖅᑕᐅᖃᑦᑕᖅᓱᑎᒃ, ᐅᖃᐅᓯᐅᓯᒪᔪᓂ 1.5-ᒥ. ᑎᓯᔪᑦ ᑲᑎᖅᓱᖅᑕᐅᓯᒪᔪᑦ ᔾ ᓲᕐᓗ ᓯᐅᕋᐃᑦ - ᐃᒪᐃᓪᓗ, ᐊᒃᑕᑯᐃᑦ ᑯᕕᐅᔭᐅᕙᒃᑐᑦ.

ᐊᐅᓚᑦᑎᔩᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓂ ᑲᒪᑦᑎᐊᔪᓴᖅᑐᒪᓇᐅᔭᓇᐊᓖᑦ ᐅᔾᔨᖅᑐᕐᓗᑎ ᑕᒪᒃᑯᐊ ᓱᕈᐃᑦ ᓱᕈᐃᔭᓇᐊᖅᑲᖏᓐᓂᖏᓐᓂᒃ ᐊᕙᑎᒥᒃ. ᐊᒃᑕᑯᓂᒃ ᐊᐅᓚᑦᑎᓂᑯᖏᑦ ᑐᕋᒐᖅᑲᖅᑐᑦ ᐊᐅᓚᑕᐅᑦᑎᐊᕐᓗᑎᒃ ᐊᒻᒪᓗ ᐃᓱᖅᑲᖅᑎᑕᐅᓗᑎᒃ

ᓄᐃᑐᐃᓐᓇᐊᕐᓂᖏᓐᓂᒃ ᓯᑕᕆᓇᓯᑐᑦ ᐊᓂᒍᓴᖅᓴᖏᓐᓂᑐᑦ ᐊᐅᑎᒧᑦ. ᐅᓪᓗᖅᑐᖅᑕᐅᑎᑦᑎᐊᓇᐊᕐᓂᖅᖅᑐᑦ ᖃᓂᐅᓚᕆᓐᓂᒃ ᐊᓂᒍᐃᑦ ᐊᓂᒍᓴᖅᓴᖏᓐᓂᑎᑕᐅᔪᓕ ᐅᓪᓚᐊᓇᐊᕐᓂᐊᖅᓯᖅᓂᐊᖅᖅᑐᑦ ᐃᓄᖅᑐᓄᑦ, ᐱᑕᖅᑐᓄᑦ, ᐄᓕᔪᓄᑦᓱᖅᓂᑦ. ᐊᓂᒍᐃᑦ ᐃᓕᓴᐅᖅᓂᑕᖅᑐᑦ ᐄᓐᑐᕆᖅᑕᐅᖅᓂᐅᖅᓂᒡᓗ ᓄᐃᑕᐅᓕᐅᖅᓯᐊᖅᓯᐊᖅᓂᑦ ᐊᐅᑎᒧᑦ, ᒪᓕᓂᐅᐊᓇᐊᖅᖏᓕ ᑕᒪᐃᐊᖅᑐᑦ ᐃᒪᓕᓇᓂᕐᒧᑦ ᒪᓕᑎᕆᑦ.

1.7.2 ᖁᓇᐃᓐᒋᖁᓂᕐᓂᖅᓂᑦ ᐊᐅᑕᑯᐃᑦ

ᔪᑎᔪᑦ ᐊᐅᑕᑯᐃᑦ ᑯᐃᖁᑎᖅᑕᖅᓂᑐᑦ ᑯᐃᔪᒥᐅ ᒪᖁᖁᒥᐅ ᐊᐅᑐᑯᖁᓂᐃᖅᓂᒥ ᑕᐃᒪᓐᓂᐊᕐᓂᐊᓚᐅᔪᑦ ᐋᓴᖁᑕᐅᔪᓚᐅᔪᑦᑐᐅᒃ ᐅᓴᖁᓐᓂᐅᒃ ᔪᑲᓐᓕᖅᒥ ᐱᓴᖁᑕᐅᓕᐅᖅᑐᐅᒃ ᓄᐃᒥᐅᒃ, ᐳᔪᐊᓂᑕᐅᖅ, ᐊᔪᖅᑐᓂᒃ ᐃᓗᓕᖁᓴᖅᑐᑦ ᖁᓚᒪᓗ ᐃᓕᐅᓴᓴᓂᒃ ᐃᓕᓴᐅᓕᐅᖅᑐᐅᒃ ᔪᖁᑲᓕᑎᖅᑐᑦᓱᖅᓂᑕᖅᑎᑦᓗᑎᑦ.

ᑕᐃᒪᒋᓴᓐᓇᖅ ᖁᔪᓚᐅᓂᒃ ᐅᓴᖁᓂᓂᐊᖁᔨᓂ, ᓄᑦᓗ ᔫᓗᔪᐅᖁᓇᓂ, ᐊᒥᐊᐅᑕᐃᑦ ᐊᐅᑕᑯᓯᖅᑐᑦ ᓄᓯᒪᔨᐃᓕᑎᒃ ᐅᓴᖁᓂᓂᐊᖁᓱᓚᖅᑐᑦ ᐱᑕᖁᑐᐃᓐᓇᓇᐊᕐᓂᖅᑐᑦ ᐅᖁᑎᐃᓕᑕᑐᓂᒃ ᖁᓚᖁᓴᓂᒃ, ᐊᓱᓚᐅᓂᒃ ᐃᓗᓕᖁᓴᖅᑐᐅᒃ ᐊᓚᑦᑐᐃᓐᓇᐅᓂᐅᓂᒃ. (ᑕᐃᒪᒃ ᐊᒥᐊᐅᑕᐃᑦ ᑕᒪᐅᑯᐊ ᐊᓂᒍᑎᓴᐅᔪᑦ ᑕᐃᐅᑯᓄᖅ ᐊᓂᒍᐅᓂᐅᓂᖁᓴᐅᑕᐅᔪᓄᑦ ᐊᐅᑕᑯᓄᑦ, ᐅᖁᐅᔪᐅᔪᒪᔪᓂ 1.6-ᒥ). ᖃᓄᐅᓕᕆᓂᒥ ᐅᓴᖁᓂᓂᐊᖁᓱᓚᖅᑐᑦ, ᑕᒪᐅᑯᐊ ᐃᓕᓴᐅᑭᓐᓄᑦ ᖁᓚᖁᓴᓚᒥᐅᒃ, ᑐᖁᑯᓐᓇᖅᑐᓂᒃ, ᐊᖁᓴᓚᓚᐅᓴᖁᓂᓂᐊᕐᓂᖅ ᐊᓚᒪᓗ ᑕᓚᐅᓴᓚᐅᓵᖁᓴᖅᑐᑦ ᖁᓚᐅᖅᓂᐅᑕᑐᖅᑐᓂᒃ (Molybdenum ᐊᓚᒪᓗ Selenium). ᐃᓕᖁᑭᓐᓇᕆᔪᑦ ᓄᓯᓗ pyrite-ᒥᐅ ᔪᔅᓴᖅᑐᒥᐅ, ᐅᑕᖁᓐᑐᓕᐅᑭᐅᓐᓇᖅᑐᖅ ᕿᑐᓴᓚᓴᓂᒃ, ᖁᓗᒪᓕᕐᑐᓂᒃ ᑯᐃᔪᓂᒃ ᑕᐅᕐᓂᑦ ᐊᓂᒍᑎᖁᓴᐅᔪᓂᓕᕆᓂᖅᑐᒃ.

ᐱᓗᐊᖅᑐᒥᐅ ᐱᒋᓕᓚᐅᔪᖅ ᑲᓴᑯᓇᓂ ᑎᑎᕆᖅᑕᐅᓄᒪᔪᓂ, ᐳᔪᐊᓂ, ᐊᓂᒍᑯᖁᓂᐃᖅᑐᑦ ᓄᓯᒪᔨᐃᓕᑎᒃᑐᒥᐅ ᐅᓴᖁᓐᓂᐅᐊᕐᓂᖅᓯᐊᖅᓗᒃ ᐃᓗᓕᓴᐅᓇᖅᑐᑦ ᒥᑭᔊᑎᓂᓂᒃ ᐊᐅᑕᔪᓂᒃ ᐊᐅᒧᓴᓴᓂᒃ, ᐅᓪᓗᓈᓂᑦ ᓄᓯᒥᒃᑕᓕᐊᓂᓂᐊᕐᓂᖅᓯᐊᖅᓗᒃ ᐊᐅᑕᔪᓂᒃ ᐊᐅᒪᓴᓴᐃᓕᓴᐅᔪᓂᒃ. ᐱᓗᐊᖅᑐᒥᐅ, ᐱᑕᖁᑎᒃ ᐅᑕᖁᓐᓇᖅᑐᓂᒃ radium-ᒥᐅ ᐱᑕᖁᑕᐅᖅᑐᒥᐅ ᐅᓴᖁᓐᓂᒃ ᔪᑲᓐᓕᖅᒥ. ᑕᒪᐃᓐᓇ ᐅᑕᖁᓐᓇᖅᑐᑕᓐᓂᒃ radium ᐊᐅᑕᔪᓂᒃ ᐊᐅᒪᖁᑎᖅᓂᐊᖅ ᔪᑲᖅᕿᓂᕐᒥᐊᑕᖅᑎᑦᓗᑐᒍ, ᓄᐃᖁᑕᖁᑎᒃ ᐅᓂᒃᑕᐃᑦ ᑕᒪᐃᓐᓇᐊᕐᓂᖅᑕᖅᑕᐊᖅᑐᑦ ᑕᒪᐃᐊ radon ᐅᓂᒃᑕᐃᑦ ᐊᒪᓚᓗ ᔪᑲᖅᔪᒪᓂᐊᕐᓂᓗ ᐃᑕᑎᓕᖁᑎᖁᑕᖅᑕᐊᖅᑐᑦ ᑕᒪᐃᐊ ᐊᐅᑕᔪᑦ ᐊᐅᒪᖁᑎᖅᑐᑦ radiactive-ᖅᓯᔪᑦ ᖁᓇᐃᑕᐅᐅᑕᐅᓕᖅᑐᑦ ᒥᑭᓕᑎᖅᑕᐅᓇᔪᐊᖅᓂᐊᕐᓂᓄᑦ ᐅᑕᖁᓐᓇᖅᑐᓪᓚᑦ ᐅᓂᒃᑕᐃᑦ.

ᔪᑎᔪᑦ ᐊᐅᑕᑯᐃᑦ ᐃᓕᑎᖁᖅᑐᑦ ᐅᓪᓚᐊᓇᓐᓂᖁᓴᐅᓂᑕᐅᓂᒃ ᐅᓴᖁᓐᓄᓂᒃᑕᐅᖅᑐᒃ, ᑭᔪᐊᓂ ᐃᑕᑎᒍᓐᓄᑦ ᐊᔪᖁᑐᐃᓐᓇᐅᔪᑎᑦᑕᖁᑎᒡᓗᑕ. ᑕᐃᒪᒃᑯᐊ ᐃᓕᑎᒋᓚᖅᓂᑦ, ᑕᐃᒪᐃᓐᓂᓄᓇᓄᑦ, ᓄᓴᖁᐃᓐᓂᓄᓂᐊᕐᓂᖅᑐᑦ (ᔪᓂᓗ ᐅᓄᑐᑎᑎᓪᓗᒍ, ᓄᓯᒪᖁᑎᖅᑕᐅᓂᐊᕐᓂᖅᑐᑦ ᓄᓇᐅᓕᐊ ᐃᓕᓴᐅᓂᐊᕐᓂᖅ ᓄᓕᓴᐅᓂᐊᕐᓂᖅ ᖁᓕᓴᐅᓂᑕᐅᓂᒃ

ᐃᒪᖏ), ᐊᒻᒪᓗ ᑕᐃᒪ ᓴᖏᔫᒪᕆᓐᓂ ᐃᓚᔭᐅᓯᒪᔪᓂ ᐃᕿᖅᑎᖅᑕᐅᓯᒫᓂᖕᓂᖕᒋᑦ ᓯᖃᓕᑎᖅᑕᐅᕕᓐᓂ, ᖃᐅᕌᒪᓇᖅᑐᖅ ᑕᒪᒃᑯᐊ ᓱᓕ ᐊᑕᔪᑦ ᖃᓐᓂᒪᒍᑕᐅᔫᓇᖅᑐᑦ ᐆᔭᖅᑕᐅᔭᖏᓂᖕᒋᑦᑐᒻᒪᕆᐅᔪᑦ ᐆᔭᖅᑕᐅᓇᓱᐊᑦᓚᕆᖕᒋᓂᐅᔪᓐᖏᑐᐊᕈᑎᒃ ᓲᖏᓗ ᐊᒃᑕᑯᖃᖏᕕᖕᓂ.

1.7.3 ᐊᐅᓚᑕᐅᓂᖕᒋᑦ ᐊᒃᑕᑯᐃᑦ

ᑕᐃᒪᖓᓕᒫᖅ, ᐊᒃᑕᑯᓐᖑᖅᐸᑦᓕᐊᔪᑦ ᐊᑐᖅᑕᐅᙱᒃᑐᑦ ᐃᓗᓕᖅᑎᕈᑕᐅᑦᑐᑎᒃ ᓄᓇᐅᐸ ᐃᓗᐊᓃᑦᑐᓂ ᐅᔭᕋᖕᓂᐊᖏᕕᖕᓂ, ᐅᙱᓐᓃᑦ ᐃᓕᐅᖃᖅᑕᐅᙱᒃᓯᑎᒃ ᐊᑦᑎᖕᓂᐅᔪᓂ ᓄᓇᐅᐸ ᖄᖑᓂ, ᐊᑕᐅᓯᖏᓚᑦᑎᑕᐅᑦᑐᑎᒃ ᓯᒥᖃᖅᑎᑕᐅᑦᑐᑎᒃ ᐅᙱᓐᓃᑦ ᓴᐳᑎᖃᖅᑎᑕᐅᑦᑐᑎᒃ. ᖄᖑᓃᑦᑐᑦ ᐊᒃᑕᑯᓐᖑᖅᓯᒪᔪᑦ ᑕᐃᒪᐃᓕᖑᑐᐃᓐᓇᕿᓐᓇᖅᑐᑦ ᒪᑐᐃᖑᔪᒥ, ᐅᙱᓐᓃᑦ ᓴᐅᔭᐅᑐᑎᒃ ᐃᑉᔪᖅᒧᑦ, ᐅᙱᓐᓃᑦ ᐃᒪᖏᑦ ᐅᓕᑕᐅᑐᑎᒃ. ᑭᓯᐊᓂᓕ, ᒫᓐᓇᓵᖑᓕᖅᑐᖅ, ᒪᓕᒐᖅᑎᒍᑦ ᐱᔭᕆᐊᖃᓕᖏᔪᑦ ᑕᒪᐃᓐᓂᒃ ᐊᒃᑕᑯᓕᐊᖑᓯᒪᔪᑦ ᑲᒪᒋᔭᐅᓂᖕᒋᑦ ᒪᓕᒐᖃᖏᓂᖅᓴᑦᓚᕆᐅᓕᖅᑐᑦ. ᒫᓇᓵᖅ ᐊᒥᐊᒃᑯᐃᑦ ᐊᒃᑕᑯᐃᑦ ᐊᐅᒪᑕᐅᓂᖕᒋᑦ ᐃᓚᖃᖅᑎᑕᐅᓕᖅᑐᑦ ᐃᓚᔭᐅᖃᑦᑕᕆᐊᖃᖏᓂᖕᒋᓐᓂᒃ ᐊᒃᑕᑯᐃᑦ ᓴᓗᒻᒪᖅᓴᖅᑕᐅᓗᑎᒃ ᐃᓕᐅᖃᖅᑕᐅᓚᐅᖕᒋᓐᓂᖕᒋᓐᓂ ᐊᒃᑕᑯᖃᖏᕕᖑᒧᑦ, ᐊᒻᒪᓗ ᐃᓕᐅᖃᖅᑕᐅᓯᒪᕕᒃ ᓴᓇᔭᐅᓯᒪᓂᖓ ᐃᓕᓯᓯᒪᕕᐅᔪᖅ ᖃᖓᓃᑦᑐᓂᒃ ᐊᒃᑕᑯᓂᒃ ᓴᓇᔭᐅᓯᒪᑦᑎᐊᖃᑦᑕᓇᖃᓕᖅᑐᑦ ᐊᑯᓂᐅᔪᒧᑦ ᐋᑭᐅᒪᐃᓐᓇᖏᓂᐊᖏᒪᑕ. ᐃᓚᖕᒋᓐᓂ ᐅᔭᕋᖕᓂᐊᖏᕕᖕᓂ, ᐊᒃᑕᑯᐃᑦ ᐅᑎᖅᑎᑕᐅᖃᑦᑕᖅᑐᑦ ᓄᓇᐅᐸ ᐃᓗᐊᓄᑦ, ᑕᐃᒪᖓᓕᒫᖅ ᑕᐃᑲᓂ ᑐᖅᑯᖅᑕᐅᓯᒪᓂᐊᖏᒪᑕ. ᐊᐅᓚᑦᑕᐅᓂᖕᒋᓐᓂ ᐅᔭᕋᖕᓂᐊᖏᕖᑦ, ᐊᒥᐊᒃᑯᐃᑦ ᐊᒃᑕᑯᓕᐊᖑᕙᑦᓕᐊᔪᑦ ᐅᓕᑕᐅᖃᑦᑕᖅᑐᑦ ᐃᒪᖏᓄᑦ ᒥᑭᓪᓕᓂᐊᖏᒪᑕ ᖃᖑᓃᑦᑐᑦ ᐊᐅᓚᔪᑦ ᐊᐅᒪᖅᑲᖏᓂᖕᒋᑦ ᐊᒻᒪᓗ ᐳᑦᓚᐃᑦ ᑕᒪᒃᑯᓇᖑᑦ ᓄᐃᖃᑦᑕᖏᓂᖕᒋᑦ. ᑕᐃᒪ ᐅᖃᐅᓯᐅᓯᒪᔪᓂ ᐃᓗᓕᖕᒋᓐᓂ 1.3.1-ᒥ 1.4.1-ᒥᓗ, ᐅᔭᕋᐃᑦ ᐃᓚᔭᐅᖃᑦᑕᖏᒪᑦ ᐅᖑᓱᒃᑐᒥᒃ ᐅᔭᕋᖕᓂᐊᖏᕕᖕᒥ, ᐊᑕᐅᓯᖏᒦᑎᑕᐅᔪᓂ ᓴᓇᕕᖕᒥ ᐊᒻᒪᓗ ᐃᒋᐅᖃᖅᑕᐅᓂᖕᒋᑦ ᐊᒃᑕᑯᐃᑦ ᐊᐅᓚᑕᐅᖃᑦᑕᖅᑐᑦ ᒪᑐᐃᖑᔪᓂ ᓄᓇᒥ ᐅᔭᕋᖕᓂᐊᖏᕕᖕᓂ ᐊᒥᐊᒃᑯᔪᓂᒃ, ᓯᕗᓂᐊᓂ ᐅᔭᕋᖕᓂᐊᖏᕕᐅᓚᐅᖅᑐᓂ ᑖᒃᑯᐊ ᐃᓂᖕᒋᓐᓂ.

ᐱᔭᕇᖅᑕᐅᑎᓪᓗᒋᑦ ᐊᐅᓚᑕᐅᓂᖕᒋᓐᓄ ᐅᔭᕋᖕᓂᐊᖏᕖᑦ, ᐱᖁᓯᓇᔭᐅᖓᔫᒃᐸᖅ ᑕᒪᒃᑯᐊ ᐊᒃᑕᑯᐃᑦ ᐅᔭᕋᕕᓂᑦ ᓴᐅᔭᐅᖃᑦᑕᖅᑐᑦ ᒪᖏᕈᖕᓂᒃ ᒦᑕᓂᒃ ᐆᑦᑐᕋᐅᑎᓂᒃ ᐃᑎᓂᓕᖕᒥ ᒪᕋᖏᒃ, ᐊᒻᒪᓗ ᓄᓇᒥ ᐃᔾᔪᖏᒃ, ᐆᑕᖃᖅᑐᖅᑲᖅᑎᑕᐅᑕᐃᓕᒪᓂᖕᒋᓐᓄᑦ ᑕᐃᒫᔅᓴᐃᓐᓇᖅ ᐱᖁᓯᓇᔭᐅᓚᐅᖅᑐᓄᑦ ᐅᑎᖅᑎᑕᐅᓇᓱᐊᖅᓯᑎᒃ ᐊᕕᒃᑐᖅᓯᒪᓂᖕᒋᓐᓂ ᐱᑕᖃᖅᑐᖃᐅᓚᐅᖅᑐᓂᒃ ᐅᔭᕋᔭᖃᖏᓂᖕᒋᓐᓂ ᐊᒻᒪᓗ ᐱᕈᖃᐅᒃᑲᓐᓂᕈᓐᓇᖅᓯᓂᐊᖏᒪᑦ.

ᓄᖑᔪᐃᑦᑐᑦ ᐅᔭᕋᖕᓂᐊᖏᕕᖕᓂ ᓯᖃᓕᑎᕆᕕᖕᓂᓗ ᐊᒃᑕᑯᐃᑦ ᐃᓚᖃᖅᑐᑦ ᐱᖓᓱᐃᓕᖃᖓᔪᓂᒃ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᒃᓴᖃᖏᓂᐅᔪᓂᒃ ᐊᒃᑕᑯᓂᒃ; ᐊᒃᑕᑯᐃᑦ ᐃᓂᖕᒋᑦ ᖃᓄᐃᓕᕆᐊᖃᖏᓐᖓᓄᑦ ᒪᓕᒐᖅᑎᒍᑦ ᑲᒪᒋᔭᐅᙱᒃᑐᑦ ᑲᓇᑕᒥ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᖏᑦ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᔾᔪᑦ ᑲᒪᓵᒃᑯᓐᓄᑦ (CNSC-ᑯᑦ). ᐊᐅᓚᑕᐅᓂᖕᒋᑦ ᐊᒃᑕᑯᐃᑦ

ᐅᔭᕆᖕᓂᐊᕐᕕᓂᒃ ᐱᓕᕆᓐᓇᖅᑐᒻᒪᕆᐅᒐᓗᐊᖅᑎᓪᓗᒍ, ᐊᑯᓂᐅᔪᒥ ᓯᕗᓂᒃᓴᒧᑦ ᐊᐅᓚᑕᐅᓂᖕᒋᑦ ᐊᒃᑕᑯᐃᑦ, ᐊᒥᓱᓂᑦ ᐊᕐᕋᒍᓂᒃ ᒪᑕᔭᐅᓯᒪᓕᖅᑎᓪᓗᒍ ᐅᔭᕆᖕᓂᐊᕐᕕᒃ ᐱᓕᕆᓇᕐᓂᖅᐹᖑᕗᖅ ᐊᒃᓱᕈᓐᓇᕐᓂᖕᒋᓐᓄᑦ ᐸᕐᓇᐃᓂᕐᒥᒃ ᐊᐅᓚᑕᐅᑎᐊᕆᐊᕐᑲᕐᓂᖕᒋᓄᓪᓗ ᐅᓪᓗᒥᐅᓕᖅᑐᖅ ᓄᖑᔪᐃᑦᑐᒥᒃ ᐅᔭᕆᖕᓂᐊᕐᕕᑦ. ᐃᓱᒪᓘᑕᐅᑐᐃᓐᓇᕆᐊᕐᑲᖅᑐᖅ ᐅᑭᐅᖅᑕᖅᑐᒥ ᐱᔾᔪᑎᕐᑲᖅᑐᖅ ᐊᐅᒃᐸᓪᓕᐊᑐᐃᓐᓇᕆᐊᕐᑲᕐᓂᖓ ᕐᑯᐊᖑᐃᓐᓇᖅᑐᖅ ᓄᓇ, ᐱᔾᔪᑕᐅᓗᓂᑎᒃ ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖓ. ᑕᒪᓐᓇ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᖅᑐᖅ ᐊᑯᓂᐅᔪᒥ ᒪᑭᑕᔪᓐᓇᑦᑎᐊᕐᓂᖕᒋᓐᓄᑦ ᓴᓇᔭᐅᓯᒪᔪᑦ ᔩᖅᓯᓯᒪᕕᐅᔪᑦ ᐊᒃᑕᑯᓂᒃ ᐊᒻᒪᓗ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᑦᑎᐊᕆᐊᕐᑲᖅᑐᑦ ᓴᓇᔭᐅᓯᒪᓂᖕᒋᓐᓂᒃ.

1.8 ᓴᓗᒻᒪᖅᓴᐃᓂᖅ ᐊᒻᒪᓗ ᐅᑎᖅᑎᑎᕆᓂᖅ

ᐅᔭᕋᐃᑦ ᐆᔭᖅᑕᐅᓯᒫᓂᒃᐸᑕ, ᐃᓂᖓ ᐅᔭᕆᖕᓂᐊᕐᕕᐅᑉ ᓴᓗᒻᒪᒃᓴᖅᑕᐅᔭᕆᐊᖃᓕᖅᐳᖅ ᐊᒻᒪᓗ ᐅᔭᕆᖕᓂᐊᕐᕕᒃ ᐊᑐᕈᓂᖅᑎᑕᐅᓗᓂ. ᐅᑎᖅᑎᑕᐅᕙᓪᓕᐊᓂᖕᒋᑦ ᐱᕐᑯᑏᑦ ᐃᒡᓗᕐᔪᐊᓪᓗ ᓄᓇᒥ ᐱᒋᐊᕋᔭᖅᐳᑦ ᐊᒻᒪᓗ ᐅᑎᖅᑎᑕᐅᓗᓂ ᓄᓇᓂ ᐱᕐᑯᓯᑐᕐᑲᓚᐅᖅᑕᖓᓄᑦ, ᐅᔭᕆᖕᓂᐊᕐᕕᐅᓚᐅᕐᒋᓐᓂᖓᓂ, ᐊᔪᕐᓇᕐᒋᓂᓕᒫᒃᑯᑦ. ᑕᒪᓐᓇ "ᐊᑐᕈᓂᖅᑎᑦᑎᓂᕋᐅᔪᖅ" ᐊᑐᖅᑕᐅᔪᓐᓇᕐᒥᔪᖅ ᑐᑭᖓ ᑐᑭᖃᕐᓗᓂ ᐱᕐᑯᓯᓇᔭᐅᔪᓂᒃ ᐊᑐᖅᑕᐅᓇᔭᖅᑐᓂᒃ ᒪᑐᔭᐅᕌᓂᒃᑎᓪᓗᒍ ᐅᔭᕆᖕᓂᐊᕐᕕᒃ. ᓯᕗᓪᓕᖅᐸᕐᒥ ᐊᕈᓃᖅᑎᑦᑎᓂᖕᒋᓐᓂ ᐱᓕᕆᐊᒃᓴᓂ, ᐱᓕᕆᐊᖑᕐᑳᕆᐊᕐᑲᖅᐳᑦ ᐊᒃᑕᖅᑕᐅᑦᑎᐊᕐᓂᖕᒋᑦ ᐅᓗᕆᐊᓇᖅᑐᓕᒫᑦ, ᑕᐃᒫᒃ ᓴᓗᒻᒪᖅᓴᖅᑕᐅᖕᒋᓐᓇᕆᐊᕐᑲᕐᓂᐊᖕᒋᒻᒪᑕ. ᖃᐅᔨᓴᖅᑕᐅᔾᔪᑏᑦ ᐱᑕᕐᑲᕆᕐᑲᖅᑐᑦ ᑕᑯᑎᑦᑎᓂᐅᓂᐊᖅᑐᓂᒃ ᑕᒃᑯᐊ ᑐᕌᕆᔭᐅᔪᑦ ᒪᓕᒃᑕᐅᓯᒪᓂᖕᒋᓐᓂᒃ.

ᒪᓕᒐᓪᓗᑐᐃᑦ ᐊᑖᓂ ᑲᓇᑕᒥ ᓄᖑᔪᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᕗᑦ ᑲᒪᓴᓐᒃᑯᑦ (CNSC-ᑯᑦ) ᒪᓕᒐᕐᑲᖅᑐᑦ ᐊᑐᕈᓅᖅᑎᑦᑎᓂᐊᕐᓂᕐᒧᑦ ᐸᕐᓇᒃᓯᒪᔭᕆᐊᕐᑲᕐᓂᕐᒥᒃ ᐊᒻᒪᓗ ᑮᓇᐅᔭᒃᓴᕐᑲᕆᐊᕐᑲᕐᓂᖕᒋᓐᓂᒃ ᓯᕗᓂᐊᒧᑦ ᓴᓇᔭᐅᔪᒪᔪᑦ ᐊᐅᓚᑦᑎᔪᓐᓇᕐᓂᕐᒧᑦ ᓚᐃᓴᓐᓯᑖᖅᑎᑕᐅᓚᐅᖕᒋᓐᓂᖕᒋᓐᓂᒃ. (ᑕᒃᑯᐊ ᐸᓯᔭᒃᓴᐅᔪᓐᓇᕐᓂᖕᒋᑦ ᐊᒻᒪᓗ ᑮᓇᐅᔭᓂᒃ ᐱᑕᕐᑲᖅᑎᑦᑎᕙᕿᕆᐊᕐᑲᕐᓂᖅ ᐅᕐᑲᐅᓯᐅᔪᑦ ᐃᓗᓕᖕᒋᓐᓂ 4.7.4-ᒥ ᑖᒃᑯᓇᓂ ᑎᑎᕆᖅᓯᒪᔪᓂ). ᐊᐅᓚᑦᑎᓂᖕᒋᓐᓂ, ᐸᕐᓇᐅᑏᑦ ᐃᓚᓅᒃᑯᑦ ᕐᑭᒥᕐᕈᐊᖅᑕᐅᕙᒃᑐᑦ, ᐊᒻᒪᓗ ᐱᔭᕆᐊᕐᑲᕈᑎᒃ, ᐋᕐᑭᒋᐊᖅᑕᐅᕙᒃᓯᑎᒃ. ᐃᓱᒪᓕᐅᖅᑐᕐᑲᖅᐸᑦ ᒪᑐᔭᐅᕐᑯᔭᐅᓕᕐᒧᓂ ᑕᐃᒪᖓᓕᒫᖅ, ᓇᓗᓇᐃᖅᓯᒪᓪᓗᑐᖅᑐᓂᒃ ᐸᕐᓇᐅᑎᓕᐊᕙᓂᖕᒋᑦ ᐊᒻᒪᓗ ᐊᕙᑎᒥᓂᒃ ᖃᐅᔨᓴᐃᓂᖅ ᐱᒋᐊᓕᕋᔭᖅᐳᖅ. ᐊᕙᑎᒥᒃ ᖃᐅᔨᓴᐃᓂᖅ ᐃᓚᕐᑲᕈᓐᓇᕐᒥᔪᖅ ᐃᓄᓕᒫᓂᒃ ᓈᓚᒋᐊᖅᑐᖅᑎᑦᑎᓂᕐᒥᒃ, ᐃᓱᒪᖅᓱᕐᓗᑎᒃ ᒪᓕᒐᕐᑲᖅᑎᑦᑎᔪᑦ ᑎᒥᖕᒋᑦ. ᑲᓇᑕᒥᐅᑦ ᐊᒻᒪᓗ ᐊᓯᖕᒋᑦ ᒪᓕᒐᓕᕆᔨᐅᕐᑲᖅᑕᐅᔪᑦ ᑎᒥᖕᒋᑦ ᓈᒻᒪᒃᓴᖅᐸᑕ ᐱᓕᕆᐊᖕᒋᓐᓂᒃ, ᐆᔭᐃᕙᓪᓕᐊᓂᕐᒧᑦ ᓚᐃᓴᓐᓯᑖᖅᑎᑕᐅᔭᖅᑐᑦ ᐊᒻᒪᓗ ᐱᔭᐃᓪᓚᑖᕆᐊᓕᕐᒍᑎᒃ.

ᐱᔭᐃᕙᓪᓕᐊᓂᖕᒋᓐᓂ, ᑕᒪᕐᒥᒃ ᒪᓕᒐᓪᓗᑐᐃᑦ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᕐᑲᖅᑐᓂᒃ ᓴᐳᓐᓂᐊᖅᑕᐅᓂᕐᒧᑦ ᒪᓕᒐᐃᑦ, ᑕᒪᕐᒥ ᐅᓗᕆᐊᓇᕆᐊᕐᑲᓐᖕᒋᓐᓂᖕᒋᓐᓂᒃ ᐊᒻᒪᓗ ᐊᕙᑎᐅᑉ

ᓴᐳᓐᓂᐊᖅᑕᐅᓯᒪᔭᕆᖃᕐᓂᖓ ᓱᓕ ᒪᓕᒃᑕᐅᔭᕆᐊᖃᖅᐳᑦ. ᑕᒪᒃᑯᐊ ᓲᕐᓗ ᑮᓇᐅᔾᑯᑦ ᐃᑲᔪᕐᓂᖃᕋᔭᕐᒪᖔᑕ ᖃᐅᔨᓴᕋᔭᖅᑐᑦ ᐊᐅᓚᑦᑕᐅᓂᖏᓐᓄᑦ ᐅᑦᕋᖅᑐᓖᑦ, ᐊᑦᑎᒃᑐᒦᓐᓂᖏᓐᓂᒃ, ᐊᒻᒪ ᑮᓇᐅᔭᓕᐅᕈᓐᓇᕐᓂᖏᑦ ᐊᒻᒪᓗ ᐃᓅᖃᑎᒌᒃᑐᑦ ᐃᓱᒪᒋᔭᐅᖃᑕᐅᓗᑎᒃ ᐱᓕᕆᓂᖏᓐᓂ.

ᐱᔭᕇᖅᑕᐅᓚᐅᕐᓗᑎᒃ ᐲᔭᐃᓂᖏᑦ, ᐊᑯᓂᐅᔪᒥᒃ ᖃᐅᔨᓴᖅᑕᐅᕙᓪᓕᐊᖏᓐᓇᕆᐊᖃᕆᕗᑦ, ᖃᐅᔨᒪᑎᑦᑎᔾᔪᑎᐅᓗᑎᒃ ᐱᓕᕆᓯᒪᓂᖏᓐᒃᓂ ᐊᕙᑎᒥᒃ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᓂᒃ ᓂᕆᐅᒋᔭᐅᒪᐅᖅᑐᓂᒃ. ᑕᒪᓐᓇ ᖃᐅᔨᒪᔭᐅᑦᑎᐊᓕᖅᐸᑦ, ᐱᔪᓐᓇᖅᓂᖅᑖᕋᔭᖅᑐᑦ ᐊᐅᓚᑦᑎᐅᔪᑦ ᐊᑐᕈᓃᕈᓐᓇᕐᓂᖅ ᓚᐃᓴᓐᓯᒋᓚᐅᖅᑕᒥᓂᒃ ᒪᓕᒐᓕᕆᔨᓂᒃ - ᐅᖃᐅᓯᐅᒐᔾᒃᑐᖅ ᓲᕐᓗ "ᕿᒪᐃᔪᓐᓇᖅᓯᓂᕐᒥᒃ" ᒪᓕᒃᑕᐅᓗᑎᒃ ᑲᓇᑕᒥ ᓄᕐᒃᐃᑦᑐᓕᕆᓂᕐᒧᑦ ᐅᓗᕆᐊᓇᖅᑐᓕᕆᔩᑦ ᑲᒪᔨᒃᑯᑦ (CNSC-ᑯᑦ) ᒪᓪᓗᒐᓪᓗᑐᕆᑦ. ᑲᒪᑦᑎᐊᕐᓂᕆᑦ ᓄᓇᒥᒃ, ᐊᑯᓂᐅᔪᓪᓗ ᖃᐅᔨᓴᕈᑎᒃᓴᖃᖅᑎᑦᑎᓗᑎᒃ ᐅᕙᓗᓐᓃᑦ ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᕐᓂᕆᓐᓄᑦ ᐊᐅᓚᑦᑎᔾᔪᑎᒃᓴᖃᖅᑎᑦᑎᓗᑎᒃ, ᑐᓂᔭᐅᓕᕋᔭᖅᐳᑦ ᑯᐃᓐᒧᑦ ᐅᕙᓘᓐᓃᑦ ᐊᓯᐊᓄᑦ ᓄᓇᒥᒃ ᐱᑯᑎᖃᖅᑐᒥᒃ. (ᐅᖃᐅᓯᐅᓂᕆᓐᓄᑦ ᑎᑎᖃᐃᑦ ᐱᕙᓪᓕᐊᔭᐅᒃᑲᓐᓂᕈᓐᓇᕐᓂᕆᓐᓄᑦ ᑲᓇᑕᐅᑉ ᐊᕕᒃᑐᖅᓯᒪᓂᕆᓐᓂ ᐃᖃᓇᐃᔭᕙᓐᓂ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐱᓕᕆᐊᖃᖃᕈᑎᒃᓴᐃᑦ ᓂᕆᐅᒋᔭᐅᓚᐅᖅᑐᑦ ᓴᖄᑦᓯᐋᓐᒥ, 2005-ᒥ).

ᐃᖃᐅᒪᔭᕆᐊᖃᓗᐊᖅᑐᖅ ᓄᕐᒃᐃᑦᑐᓕᔪᓂᒃ ᐊᐅᓚᑕᐅᔪᑦ ᐱᖃᓯᐅᔾᔨᒐᔪᕆᒻᒪᑕ ᐳᖅᑐᓗᐊᖅᑐᓂᒃ ᐅᑦᕋᖅᑐᓕᕐᓂᒃ ᐅᓗᕆᐊᓇᕈᑕᐅᑲᐅᑎᒋᓇᔭᖅᑐᓂᒃ ᓴᓇᔨᓄᑦ ᐃᓄᕐᓄᓪᓗᓐᓃᑦ. ᐃᓱᒪᔫᑕᐅᓗᐊᖅᑐᖅ ᐱᔾᔪᑎᖃᖅᑐᖅ ᒥᑭᓪᓕᖅᑕᐅᓯᒪᔭᕆᐊᖃᕐᓂᕆᑦ ᐳᖅᑐᓯᕙᓪᓕᐊᑐᐃᓐᓇᕆᐊᖃᕐᓂᕆᑦ ᐊᕆᓂᕆᑦ, ᓯᕗᓂᒃᓴᒧᑦ ᑲᔪᓯᕙᓕᐊᓂᕐᒥ.

1.9 ᖃᐅᔨᓴᐃᓂᖅ

1.9.1 ᖃᐅᔨᓴᕈᑎᓄᑦ ᐊᑐᖅᑕᐅᓇᔭᖅᑐᑦ

ᐱᔭᕆᐊᑐᔪᒻᒪᕇᑦ ᖃᐅᔨᓴᕈᑏᑦ ᐊᑐᖅᑕᐅᕙᒃᑐᑦ ᑕᒪᐃᓐᓂ ᐅᔭᕋᕐᓂᐊᕐᕕᒃ ᐃᕐᕋᕐᕋᓂᖓᓂ ᐊᒻᒪᓗ ᒪᑐᔭᐅᓯᒪᓕᖅᑎᓪᓗᒍ, ᑕᐃᒫᒃ ᐊᐅᓚᔪᓂᒃ ᐊᐅᒪᓖᑦ ᐊᐅᓚᕙᓪᓕᐊᓂᐊᕐᒥᒪᑕ ᓯᓚᒧᑦ (ᐊᓂᕐᓂᕐᒧᑦ) ᐃᒪᕐᒧᓪᓗᓐᓃᑦ, ᑕᒪᒃᑯᓇᖓᓪᓗ ᓂᕆᔭᐅᔪᓂᒃ ᐊᓂᖅᓵᖅᑐᖅᑕᐅᔪᓂᒃ ᐆᒪᔪᕐᓄᑦ, ᐊᒻᒪᓗ ᑕᒪᒃᑯᓇᖓᑦ ᐃᓄᖕᓄᑦ. ᖃᐅᔨᓴᕈᑎᑦ ᒪᑯᓂᖓ ᐃᓚᖃᖅᐳᑦ:

- ᒪᓕᒡᓗᑎᒃ ᒪᓕᒃᑕᐅᔭᕆᐊᖃᖅᑐᓂᒃ ᖃᐅᔨᓴᐃᖏᓐᓇᕐᓂᕐᒥᒃ ᑕᑯᒃᓴᐅᑎᑦᑎᔪᓂᒃ ᒪᓕᒐᐃᑦ ᐊᕗᒪᔭᐅᔪᑦ, ᒐᕙᒪᒃᑯᑦ ᑎᒥᖁᕆᓐᓄᑦ ᐋᕿᒃᑕᐅᓯᒪᔪᑦ. ᑕᒪᓐᓇ ᖃᐅᔨᓴᐃᓂᖅ, ᐅᔭᕋᕐᓂᐊᕐᕖᑦ ᐃᓂᕆᓐᓂᒃ, ᐱᔾᔪᑎᖃᖅᑐᖅ ᖃᐅᔨᓴᖅᑕᐅᓂᕆᓐᓂ ᓯᓚᐅᑉ ᐃᓚᐃᓪᓗ ᐆᒃᑐᕋᖅᑕᐅᖃᑦᑕᕐᓂᕆᑦ ᓱᓇᑐᐃᓐᓇᐃᑦ ᓄᐃᑕᔪᑦ ᐅᕆᑖᓐᓂᕆᓐᓂᕆᓐᓂᒃ ᒪᓕᒐᕐᓂ ᖄᕆᖅᑕᐅᓯᒪᔭᕆᐊᖃᕆᑦᑐᓂᒃ.

- ᐊᕙᑎᒥᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᓂᕐᒥᒃ ᖃᐅᔨᓴᐃᓂᖅ ᑕᐃᒫᒃ ᖃᐅᔨᒪᓇᕐᑐᓂ ᐊᕙᑎ ᐱᐅᙱᑦᑐᒥᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᙱᑦᑐᖅ, ᐅᔭᕆᓐᓂᐊᕐᕕᙵᑦ, ᑕᐃᒪᐃᑐᓄᑦᑐ ᐱᓕᕆᐊᖑᔪᓄᑦ. ᑕᒪᓐᓇ ᖃᐅᔨᓴᐃᓂᖅ ᓯᓚᒥᒃ, ᐃᒪᕐᓂᒥᒃ, ᐆᒪᔪᕐᓂᒃ, ᐃᖃᓗᙵ, ᐊᒻᒪᓗ ᐱᕈᖅᑐᓂᒃ ᑕᐅᕚᓐᓂᐊᖅᐳᖅ ᑕᐅᕙᓂᐅᙱᑦᑐᕐᓗ ᐊᓯᙵᓃᑦᑐᒥᒃ.

1.9.2 ᐊᑯᓂᐅᔪᒧᑦ ᖃᐅᔨᓴᐃᓂᖅ ᐊᒃᑕᑯᓂᒃ

ᑕᒪᐃᓐᓂᑲᓴᒃ, ᐅᔭᕋᙶᓂᐊᕐᕕᒃ ᒪᑐᔭᐅᓚᐅᖅᑎᑦᑐᒍ ᓄᓇᕕᓂᙶᓄᑦᑐ ᐅᑎᖅᑎᑎᖅᑕᐅᑐᓂ, ᐊᒃᑕᑯᖃᕐᕖᑦ ᐅᓕᑕᐅᓯᒪᔪᓐᓇᖅᑐᑦ ᐅᕙᑐᓐᓃᑦ ᓱᕋᖅᑎᖅᑕᐅᓯᒪᔾᔪᑎᖃᕐᑐᓂ. ᑭᓯᐊᓂ, ᖃᓄᐃᑦᑐᖃᖅᑐᕕᓂᐅᔪᓐᓇᖅᐳᖅ ᐊᒃᑕᑯᐃᑦ ᖃᐅᔨᓴᖅᑕᐅᖃᑦᑕᓇᐊᖃᕐᓂᐊᕐᓂᕆᓐᓂᒃ ᐊᒥᓲᒪᓇᖓᓄᑦ ᐊᕐᕌᒎᓄᑦ ᑭᖑᓂᐊᓂ ᐅᔭᕋᙶᓂᐊᕐᕕᒃ ᒪᑐᔭᐅᓚᐅᕋᓗᐊᖅᑎᑦᑐᒍ, ᐃᒻᒪᖄᓘᓐᓃᑦ, ᖃᖓᓖᒻᒧᑦ, ᓲᕐᓗ ᖃᖓᓕᒻᒥᖅ ᐊᑲᐅᖏᓕᐅᕈᑕᐅᓕᕈᓐᓇᕐᓂᓕᒫᖓᓂ, ᐊᒥᓱᒪᓇᐅᓗᖕᓅᖓᔪᓐᓇᖅᑐᖅ ᐊᕐᕌᒍᓄᑦ ᑭᖑᓂᐊᒍᑦ.

ᓲᕐᓗ ᐆᒃᑑᑎᒋᓗᒍ, 1997-ᒥ ᑲᓇᑕᒥ ᐳᕚᕕᓐᓯᖕᖓᑕᓗ ᐊᕕᒃᑐᖅᓯᒪᓂᖕᖓᑕ ᑲᑎᒪᔨᖏᑦ ᐱᒋᐊᖅᑎᑕᐅᔪᒪᔪᓂ Cigar Lake-ᒥ ᐅᔭᕋᙶᓂᐊᕐᕕᖕᒥ ᓄᖑᔪᐃᑦᑐᓂᒃ ᓴᖄᑦᓯᐊᓐᒥ ᐅᖃᓚᐅᖅᑐᑦ ᐃᒫᒃ: "ᐊᑐᓕᕐᑯᔭᐅᕗᖅ ᐊᑯᓂᐅᔪᒧᑦ ᑐᕌᖓᔪᒥᒃ ᖃᐅᔨᓴᖅᑕᐅᕚᓪᓕᐊᕆᓐᓇᕐᑯᓪᓗᒋ ᓴᐳᓐᓂᐊᖅᑕᐅᓂᐊᕐᒪᑕ ᓈᒻᒪᕆᒃᑐᓂᒃ ᐊᒃᑐᖅᑕᐅᑐᐃᓐᓇᓇᐊᖃᕐᓂᕐᒥᒃ." ᐅᓂᒃᑲᓕᐊᑦ ᐅᖃᓇᐊᓪᓚᓚᐅᕐᒥᔪᑦ, "ᐋᕿᐅᒪᔪᖃᓇᐊᖃᕐᓂᐊᖅᑐᖅ ᖃᐅᔨᓴᖅᑕᐅᖃᑦᑕᕐᓂᐊᕐᓂᕆᓐᓂᒃ ᖃᖓᓕᒫᒧᑦ ᑖᓐᓇ ᐃᓂᒋᔭᐅᔪᖅ, ᐊᒻᒪᓗ ᕿᓇᐅᔭᐃᑦ ᐊᑐᖅᑐᒃᓴᐃᑦ ᐱᑕᖃᕐᓗᑎᒃ ᒥᑭᓕᑎᕈᑕᐅᓂᐊᖅᑐᑦ ᐱᐅᖕᒋᑦᑐᓂᒃ ᐊᒃᑐᖅᑕᐅᑐᐃᓐᓇᓇᖃᕐᓂᕐᒧᑦ." ᑲᑎᒪᔩᑦ ᐊᑐᓕᕐᑯᔭᓕᐅᓚᐅᖅᑐᑦ ᕿᓇᐅᔭᓂᒃ ᐸᐸᑦᑎᕕᒃᑖᕐᑯᔨᓪᓗᑎᒃ ᕿᓇᐅᔭᖃᑭᑕᐅᓂᐊᖅᑐᓂᒃ ᑕᒪᒃᑯᓄᖓ ᐱᓕᕆᐊᒃᓴᓄᑦ ᐊᒻᒪᓗ ᐊᐅᓚᑦᑎᔨᓂᒃ ᐋᕿᒃᓯᓯᒪᓗᑎᒃ ᐊᐅᓚᑦᑎᔨᐅᓂᐊᖅᑐᓂᒃ.

ᐅᔾᔨᕈᓱᒃᐳᒍᑦ ᑕᒪᕐᒥᒃ ᐅᔭᕋᙶᓂᐊᕐᕖᑦ ᐊᔾᔨᒌᖕᒋᓪᒪᑕ, ᐊᒻᒪᓗ ᑕᒪᕐᒥᒃ ᐊᑯᓂᐅᔪᒧᑦ ᖃᐅᔨᓴᖅᑕᐅᔪᐃᓐᓇᐅᖃᑦᑕᓇᐊᖃᕋᔭᕐᒋᑦᑐᒃᓴᐅᕙᑦ. ᖃᐅᔨᒪᕐᑯᔨᔪᒍᑦ ᐊᑯᓂᐅᔪᒥ ᖃᐅᔨᓴᐃᓂᖅ ᑲᔪᓯᑎᑕᐅᓇᔭᖅᑐᒃᓴᐅᔪᖅ ᓴᓇᔨᓄᑦ ᓄᓇᓕᖕᒥᐅᓂ ᖃᓂᒋᔭᐅᔪᓂ, ᐊᒻᒪᓗ ᕿᓇᐅᔭᓕᐅᕈᑕᐅᒫᓗᓐᓇᕋᔭᖅᑐᖅ ᐊᒥᓱᓄᑦ ᐊᕐᕋᒍᓄᑦ.

1.10 McClean Lake-ᒥ ᐊᐅᓚᑕᐅᔪᑦ

Maclean Lake-ᒥ ᐊᐅᓚᑕᐅᔪᑦ ᐃᓚᒋᔭᐅᔪᑦ ᐱᖓᓱᓂ ᒪᓐᓇᐅᔪᖅ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᓐᓂᐊᖅᑐᓂ ᓴᑉᑳᑦᓯᐋᓐᒥ. ᐊᐅᓚᑕᐅᔪᑦ, ᐃᓚᖃᖅᑐᑦ ᒪᑐᐃᖓᔪᒥ ᓄᓇᒥ ᐅᔭᕋᓐᓂᐊᕐᕕᖕᒥ ᐊᒻᒪᓗ ᓯᖃᓕᑎᓄᕕᖕᒥ, ᐃᓚᒋᔭᐅᓚᐅᖅᑐᖅ ᒪᕿᙵᓄᑦ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᓐᓂᐊᖅᑐᓂᒃ ᑕᑯᓂᐊᖅᑕᐅᓚᐅᖅᑐᓂᒃ ᑐᓐᖓᕕᒃᑯᓐᓄᑦ ᐊᒻᒪᓗ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖕᒋᓐᓄᑦ, ᐊᓯᖕᒋᓐᓄᑦᑐ ᓄᓇᕗᒻᒥᐅᑕᓄᑦ ᐅᑭᐊᒃᓵᒃᑯᑦ 2005-ᒥ.

ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᓐᓃᑦᑐᖅᑲᖅᓂᖅ ᖃᐅᔨᔭᐅᖄᓚᐅᖅᓯᒪᔪᖅ McClean Lake-ᒥ 1979-ᒥ, ᐊᒻᒪᓗ ᐊᓯᖏᑦ ᐅᔭᕋᐃᑦ ᐱᑕᖃᑦ ᓇᓂᔭᐅᑦᑐᑎᒃ 1980-ᖏᓐᓂ.[32] yᐅᔭᕋᓐᓂᐊᖅᑐᑦ ᐊᐅᓚᑕᐅᔪᑦ AREVA Resources Canada Inc-ᑯᓐᓄᑦ, ᐃᓚᒋᔭᐅᔪᑦ AREVA-ᑯᑦ ᓇᖕᒥᓂᖓᔭᐅᔪᓄᑦ ᑲᒪᐸᓂᖏᓐᓄᑦ ᐅᑯᐊ. (AREVA). ᓇᖕᒥᓂᖓᔭᐅᓂᖏᑦ McLean Lake-ᒥ ᐊᐅᓚᑕᐅᔪᑦ ᐃᒪᐃᓕᖓᔪᑦ: AREVA (70%), Denison Mines ᐅᔭᕋᓐᓂᐊᕐᕕᒃᑯᑦ (22.5%), ᐊᒻᒪᓗ OURD Canada (7.5%). ᓄᖑᔪᐃᑦᑐᓂᒃ ᐅᔭᕋᓐᓂᐊᕆᐊᓕᓚᐅᖅᑐᑦ 1999-ᒥ, ᐊᕐᕌᒍᑕᒫᖅ ᓴᓇᑦᑐᑎᒃ ᖃᓂᒋᔭᖏᓐᓂ 6 ᒥᓕᔭᓐᓂ ᐸᐅᓐᓂᒃ, ᓄᖑᔪᐃᑦᑐᓂᒃ. ᓯᖃᓕᑎᓄᕕᖓᑦ ᓄᑖᕆᐊᖅᑕᐅᓯᒪᓕᖅᑐᖅ ᐊᒻᒪᓗ ᒫᓇᐅᔪᖅ ᓚᐃᓴᓐᓯᖃᖅᓯᑎᒃ ᐊᐅᓚᑕᐅᔪᓂᒃ ᓴᓇᔪᓐᓇᕐᓂᖅ 12 ᒥᓕᔭᓐᓂᒃ ᐸᐅᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ ᐊᕐᕌᒍᑕᒫᖅ. ᑎᓯᐱᕆ 2004-ᒥ, ᐊᒥᐊᒃᑯᖏᑦ ᑲᑎᖅᓱᖅᑕᐅᓯᒪᔪᑦ/ᓄᐊᑕᐅᓯᒪᔪᑦ ᐊᒻᒪᓗ ᑕᐃᑲᓃᑦᑐᑦ ᐊᒥᐊᒃᑯᐃᑦ ᐅᖃᐅᓯᐅᓚᐅᖅᑐᑦ ᐊᖏᓂᖅᑲᓂᖏᓐᓂᒃ 32.9 ᒥᓕᔭᓐᓂᒃ ᐸᐅᓐᓂᒃ ᓄᖑᔪᐃᑦᑐᓂᒃ, ᐊᖏᓂᖅᑲᖅᑐᓂᒃ ᐃᓗᐊᓂ 1.7%-ᒥᒃ.[33]

ᒪᑐᐃᖓᔪᒥᒃ ᓄᓇᐅᑉ ᖃᖓᑑᑦᑐᖅ JEB-ᒥ ᐅᔭᕋᐃᑦ ᐲᔭᖅᑕᐅᕙᓪᓕᐊᓂᖏᑦ ᐱᒋᐊᓚᐅᖅᑐᑦ 1995-ᒥ. ᑕᐃᒪᓂ ᐅᔭᕋᐃᑦ ᐃᓗᓕᖏᑦ ᐲᔭᖅᑕᐅᓚᐅᖅᓯᑎᒃ ᐃᓕᐅᖃᖅᑕᐅᑦᑐᑎᒡᓗ JEB-ᒦᑦᑐᑦ ᓄᓇᐅᑉ ᖃᖓᓂ ᓴᓇᔭᐅᓚᐅᖅᑐᑦ ᐊᒃᑕᖃᕕᓕᐊᖑᑦᑐᑎᒃ. ᒪᑐᐃᖓᔪᓂᒃ ᐅᔭᕋᓐᓂᐊᕐᕖᑦ ᑕᓕᒪᓂᒃ Sue-ᖑᔪᒥᒃ ᑕᐃᔭᐅᔪᓂ ᐅᔭᕋᖃᕕᐅᔪᓂ ᒫᓇᐅᔪᖅ ᐱᕙᓪᓕᐊᓕᖅᑐᑦ, ᑕᐃᓐᓇ McClean-ᒦᑦᑐᖅ ᐅᔭᕋᖃᕕᐅᔪᖅ ᓯᕗᓂᒃᓴᒥ ᓄᓇᐅᑉ ᐊᑖᓂᑦᑐᒥᒃ ᐅᔭᕋᓐᓂᐊᕐᕕᖑᕈᒫᖅᑐᖅ. ᒪᑐᐃᖓᔪᓂᒃ ᐅᔭᕋᓐᓂᐊᕐᕖᑦ ᐱᔪᒪᔭᐅᔪᓂᒃ ᐱᕙᓪᓕᐊᓯᒪᔪᑦ ᐱᔭᕆᐊᖃᖅᑐᑦ ᒪᓕᒃᑕᐅᑦᑐᑎᒃ ᐅᔭᕋᓐᓂᒃ ᐊᔾᔨᖅᓯᖃᑦᑕᕐᓂᐊᕐᒪᑕ ᓯᖃᓕᑎᓄᕕᖕᒧᑦ ᓯᕗᓕᐅᔪᒥᒃ (Sue C-ᒦᑦᑐᑦ) ᐱᔮᖅᑕᐅᑦᑐᑎᒃ 2002-ᒥ ᐊᒻᒪᓗ ᑭᖑᓂᐊᓂ (Sue A-ᒦᑦᑐᖅ) ᐱᒋᐊᕐᕕᒃᓴᖃᓚᐅᖅᑐᖅ 2005-ᒥ. ᑭᖑᓂᐊᓂ ᐱᒋᐊᕈᒫᕐᒥᔪᑦ Sue E-ᒥ, ᐊᖏᖅᑕᐅᒍᑎᒃ ᒪᓕᒑᑦᑐᑐᓕᕆᐊᔪᓄᑦ.

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[32] ᐃᓚᖏᑦ ᖃᐅᔨᐅᒪᑎᑦᑎᔾᔪᑏᑦ McClean Lake-ᒥ ᖃᐃᑕᐅᓚᐅᖅᑐᑦ AREVA-ᑯᓐᓂᒃ

[33] http: //www.arevaresources.com/operation/mcclean/index.html

◁ᓴᖓ◁ᖅ 7. ᓄᓇᐅᑦ ᖁᖃᖅᑐᓂᒃᑯᖅ ᓄᓇᐅᑦ, ᐅᓴᖏᓂ◁ᖏᕐᕕᒃ McClean Lake-ᒥ.

McClean Lake-ᒥ ᓯᖏᑲᒥᑎᓗᕕᒃ (ᑕᐃᓴᐅᔨᖅ JEB-ᒥᒃ ᓯᖏᑲᒥᑎᓗᕕᒃ) ᓴᓇᓴᐅᓯᒪᔨᖅ ᓴᓇᕕᐅᖏᑎ◁ᑭᵅᓇᖅᓯᓂ ᐱᐅᔪᓂᒃ ᐱᑕᖏᑲᒥᵅᓂᒃ ᓄᖕᓴᐃᔭᑐᑲᒥᵅᓂᒃ, ◁ᓕᒪᓗ ᐱᐅᔨᒪᓚᵅᒥ ᓴᐳᵅᓂ◁ᖅᑕᐅᓯᒪᖏᑦᔨᓗᒋᑦ ᓴᓇᔭᑦ ◁ᓕᒪᓗ ◁ᕐᑎᖓᓐᓄ, ᓴᓇᓴᐅᓯᐸᖏᓗᑎᒃ ᐱᑕᖏᑲᒪᒪᓚᵅᑐᓂᒃ ᓄᖕᓴᐃᔭᑐᑲᒥᵅᓂᒃ. ᓯᖏᑲᒥᑎᓗᕕᓐᒥ ◁ᑐᖏᑲᕈᖏᑐᑦ ᐱᖏᔨᓚᓴᐅᔨᓂᒃ ◁ᕕᒃᑐᐃᔭᖏᑲᕈᖏᑐᑦᓂᒃ ᓄᖕᓴᐃᔭᑐᑦᒥᒃ ᐅᓴᖏᓂᒥᒃ, ◁ᓕᒪᓗ ᓴᑐᖏᑕᐅᓂᓐᒥᓄᓇᓄ ᓄᖕᓴᐃᔭᑐᑦᑐᓕ, ◁ᑐᖏᑕᐅᓯᓪᓗᑎᒃ ᐃᓕᒃᓴᐃᑦ. ᑕᒃᔨ◁ ᓴᓇᓴᐅᔨᑦ <ᓂᖏᒃᑎᑕᐅᖏᑲᒥᑎᖏᑐᑦ ᐅᓄᓇᖏᑐᓴᒪᓚᓐᓂᒃ ◁ᓕᒪᓗ ᓄᖕᓴᐃᔭᑐᑦᐃᓇᐅᑕᑲᓐᓴᒪᑕ ᐳᖏᖏᒃᖏᑕᐅᓯᒃᑲᒥᑎᖏᑐᑦᓄᓇᒃ ᖁᒥᑕᐅᓴᖏᔨ◁ᖏᓄᑦ.

◁ᓴᖓ◁ᖅ 8. ᓯᖏᑲᒥᑎᓗᕕᒃ McClean Lake-ᒥ ᐅᓴᖏᓂ◁ᖏᕐᕕᓐᒥ/ᓯᖏᑲᒥᑎᓗᕕᓐᒥ

ᓯᕐᑲᓕᑎᕆᕙᒃ ᐊᒥᓱᓂᑦ ᓄᑖᓂᒃ ᐱᑕᕐᑲᖅᑐᖅ ᓴᐳᔾᔭᐅᓯᒪᔾᔪᑎᓂᒃ ᓴᓇᔩᑦ ᐊᕙᑎᖕᒐᓪᓗ. ᐆᑕᕇᒃᑯᑏᑦ ᐊᕙᓗᐃᑦ ᐊᒻᒪᓗ ᓄᕐᑲᖕᒐᔾᔪᑏᑦ ᐊᒃᑐᖅᑕᐅᑕᐃᓕᔾᔪᑏᑦ ᐊᑐᖅᑕᐅᓪᓚᕆᒃᑐᑦ. ᐊᓂᖅᓵᖅᑑᑎᓕᐊᕐᒋᑦ ᓴᓇᔭᐅᓯᒪᔪᑦ ᐋᕿᒋᐊᕈᓐᓇᖅᓯᑎᒃ ᐊᔾᔨᒌᖕᒋᓐᓂᖕᒋᑦ ᐊᓂᕐᓂᕐᑲᕐᓂᐅᔪᑦ. ᑲᔪᓲᓐᓇᖅᑐᒥᒃ ᐃᖕᒋᕐᕋᐃᓐᓇᖅᑐᑦ ᓄᑖᓂᒃ ᐊᓂᕐᑐᒐᒃᓴᓂᒃ ᓴᓗᒪᔪᓄᑦ ᐱᓕᕆᕙᖕᓄᑦ (ᓲᕐᓗ ᐊᐅᓚᑦᑎᕙᖕᒥ ᐃᒡᓗᕈᓯᕐᒥ) ᐊᒻᒪᓗ ᓴᖕᒌᓐᓂᖅᓴᓂᒃ ᐊᓂᖅᑐᒐᒃᓴᓕᐅᖅᑐᓂᒃ ᓱᕈᖅᓯᒪᔪᕐᑲᖅᕙᖕᓂ ᒪᑐᔭᐅᓯᒪᔪᓂ (ᓲᕐᓗ ᐊᕙᓗᔭᐅᓯᒪᔪᓂᒃ ᐃᓂᖕᒋᓐᓂᒃ ᐃᕐᕈᖅᑐᐃᕙᖕᓄᑦ ᖃᑦᑕᐅᔭᕐᑲᕐᕙᖕᓂ) ᐊᓂᖅᓵᖅᑐᖅᑕᐅᔪᖅ ᐊᑐᖅᑕᐅᕙᒃᓱᓂ ᑕᒡᕙᓂ. ᑕᓪᓕᒪᓂᒃ ᐊᕐᕋᒎᓂᒃ ᐊᐅᓚᑦᑎᖃᑦᑕᖅᓯᒪᓂᖕᒋᓐᓄᑦ ᓇᓗᓇᐃᖅᓯᓯᒪᔪᑦ ᑕᒪᕐᒥᒃ ᒪᓕᒋᐊᓖᑦ ᒪᓕᒃᑕᐅᖕᒋᓐᓇᕐᓂᖕᒋᓐᓂᒃ ᖃᐅᔨᒪᔭᐅᔪᑦ, ᐅᖓᓯᒌᒃᑐᒻᒪᕆᐅᓪᓗᑎᒃ ᖃᓄᐃᓕᓪᓚᖃᑦᑕᕐᓂᖕᒋᑦ, ᐊᒻᒪᓗ ᒥᑭᓂᖅᐹᒦᑦᑐᓂᒃ ᒪᓕᒃᑕᐅᔭᕆᐊᓕᖕᓂᒃ, ᒪᓕᖅᑲᑦᑕᕐᒪᑕ ᐅᖓᑖᓄᑦ ᒪᓕᒐᐃᑦ.

McClean Lakeᒥ ᐊᒃᑕᑯᕐᑲᕐᕙᒃ ᐱᑕᕐᑲᖅᑐᖅ ᓄᑖᑦᑎᐊᓂᒃ ᐊᑐᖅᑕᐅᔪᓂᒃ ᓴᐳᓐᓂᐊᖅᑕᐅᓂᖕᒋᓐᓄᑦ ᐊᓐᓂᐊᓕᖅᑕᐃᓕᒪᓂᖕᒋᓐᓄᑦ, ᐅᓗᕆᐊᓇᖅᑑᒥᑦᑕᕆᐊᕐᑲᖕᒋᓐᓂᖕᒋᓐᓄᑦ ᐊᒻᒪᓗ ᐊᕙᑎᒧᑦ ᓴᐳᓐᓂᐊᖅᑕᐅᔭᕆᐊᕐᑲᖅᑐᓄᑦ. ᐊᒃᑕᑯᓕᔭᕐᕙᒃ ᓴᓇᔭᐅᓯᒪᓕᖅ ᐊᕙᑎᒥᒃ ᓴᐳᓐᓂᐊᖅᓯᒪᐅᑕᐅᓪᓗᓂ ᑕᒪᐃᓐᓂ ᐊᐅᓚᑕᐅᔪᓂᒃ ᐊᒻᒪᓗ ᐊᑯᓂᐅᓂᐊᖅᑐᒥ. ᓲᕐᓗ ᐆᒃᑑᑎᒋᓗᒍ, ᐊᒃᑕᑯᐃᑦ ᐅᓯᔭᐅᖅᑲᑦᑕᖅᑐᑦ ᓅᑕᐅᓪᓗᑎᒃ ᓯᕐᑲᓕᑎᕆᕙᖕᒥᒃ ᐊᒃᑕᑯᕐᑲᕐᕙᖕᒧᑦ, ᖃᐅᔨᓴᖅᑕᐅᖕᒋᓐᓴᖅᓯᑎᒃ ᓯᓗᓪᓛᑦ ᓯᓗᓪᓕᒡᔪᐊᐸ ᐃᓗᐊᓃᑦᑐᑦ. ᐃᓕᐅᖅᑲᖅᑕᐅᕙᒃᑐᑦ ᐊᒃᑕᑯᐃᑦ ᐊᒃᑕᑯᕐᑲᕐᕙᖕᒧᑦ ᐊᑖᓂ ᐃᒪᐅᑉ ᓴᐳᔾᔭᐅᓯᒪᖅᑲᑦᑕᖅᑐᑦ ᐊᐅᓚᑦᑎᓃᑦ ᐃᖃᓇᐃᔭᖅᑎᐅᔪᑦ ᐊᒃᑐᖅᑕᐅᑐᐃᓐᓇᕆᐊᖃᕐᓂᕐᒥᒃ ᐆᑕᕐᓇᖅᑐᓂᒃ ᐊᒻᒪᓗ ᖁᐊᖅᑲᑦᑕᖕᒋᓯᑎᒃ ᐊᒃᑕᑯᐃᑦ ᐅᑭᐅᒃᑯᑦ ᐊᐅᓚᑕᐅᓂᖕᒋᓐᓂ. ᐊᕙᑎᖓ ᓴᐳᔾᔭᐅᓯᒪᖕᒥᔪᖅ ᖁᒻᒧᒃᑕᖅᑐᖅᑲᖅᑐᓂᒃ ᐊᑐᕐᓂᖕᒋᓐᓂ ᐊᒃᑕᖅᑕᐅᕙᖕᒥ ᐊᐅᓚᑕᐅᓂᖕᒋᓐᓇ ᐊᒻᒪᓗ ᐊᑯᓂᐅᔪᒧᓄᑦ ᐅᓗᕆᐊᓇᕈᒃᑯᑕᐅᓂᕐᒧᑦ ᐲᔭᖅᑕᐅᓯᒪᓕᖅᑎᓪᓗᒍ ᐅᔭᕋᖕᓂᐊᕐᕙᒃ, ᓴᓇᒋᐊᖅᑕᐅᒃᑲᓐᓂᕆᐊᖅᑲᖅᓂᐊᖕᒋᓯᑎᒃ ᑕᐃᒫᒃ. ᐸᕐᓇᒃᑕᐅᕙᓪᓕᐊᓂᖕᒋᓐᓂ ᐊᒃᑕᑯᐃᑦ ᓲᕐᓗ ᑐᕐᑯᓇᖅᑐᖅᑲᕐᓂᖕᒋᑦ (ᓱᐳᐳᑕᐅᔪᓐᓇᖅᑐᑦ ᐱᑕᕐᑲᖅᑐᑐᕐᑲᐃᑦ ᐅᔭᕋᕐᓂᖕᒐᖅᑐᑦ) ᒪᑭᑕᔪᓐᓇᑦᑎᐊᖅᑐᒧᑦ ᐊᓯᔾᔨᖅᑕᐅᖅᑲᑦᑕᖅᑐᑦ ᐊᕙᑎᒧᑦ ᓱᐳᐳᑕᐅᔪᓐᓇᐃᓪᓕᓗᑎᒃ. ᐊᒃᑕᑯᕐᑲᕐᕙᒃ ᓴᓇᔭᐅᓯᒪᖕᒥᔪᖅ ᐊᑐᐸᓐᓃᐸᓖᕐᓂᕐᒧᑦ ᓯᕗᓂᒃᓴᐅᔫᖅᑐᓂ, ᑕᐃᒫᒃ ᐅᓕᑕᐅᓯᒪᔪᑦ ᓯᒥᒃᑕᐅᓯᒪᓪᓗᑎᒃ ᑕᐃᒫᒃ ᐃᒪᕐᓄᑦ ᐊᕐᑯᑕᐅᔪᓐᓇᖅᑐᓂᒃ, ᐊᕙᓗᖅᑲᖅᓯᑎᒃ ᐅᔭᕋᖕᓂᒃ. ᑕᐃᒫᒃ ᓴᐳᔾᔭᐅᓯᒪᔪᓐᓇᕐᓂᐊᖅᑐᖅ ᐊᕙᑎᖓ ᓄᐃᔪᓂᒃ ᓱᐳᕐᓇᖅᑐᓂᒃ, ᐊᑯᓂᐅᓂᐊᖅᑐᒧᑦ.

ᐊᖅᓴᖓᐊᖏᖅ 9. ᓴᐅᒥᖏᒥ– ᑕᑯᓪᓗᑎᑦ ᑕᒪᖏᑦ McClean-ᒥ (JEB-ᒥ) ᓯᖏᑲᓪᑎᓚᕆᑦ, ᐅᓴᖃᐃᓴᖏᖅᑕᐅᓯᒪᔪᓂᒃ ᐃᓕᓐᐅᖏᖅᐃᕆᕆᖏᖅᓯᑎᑦ ᓴᐅᒥᐊᓂ, ᐊᐸᑕᑯᖏᖅᕆᕆᑦ ᐅᓴᖃᕆᓂᖏᓂᒃ ᓯᕐᓂᐊᓂ ᐊᓪᒪᓗ ᓄᓇᓕᖏᒋᓚᓴᐅᔪᖏᖅ ᑕᓕᖏᐱᐊᓂ; ᖏᑎᐊᓂ ᑕᓕᖏᐱᖅᒥᓗ - JEB-ᓄᑦ ᐅᓴᖃᖅᓂᒃ ᐊᐸᑕᑯᖏᖅᕆᕆᖏᖅᓱᒃ, ᐊᐸᑕᑯᐃᑦ ᐅᓕᑕᐅᓯᒪᓕᒡᓗᑎᒃ ᐃᒪᖏᑦᒧᑦ.

Kinguliit Makpigaat

Mikhaanut

NTIkut Uraniumni Pikuyakhait

Munagiyit Nunatiligiyit ovalo Pitkutiligiyit
Nunavut Tunngavik Timinga
Novembermi 2006

Hivuliit Ukautait

NTIkut paknayakhimayut *Pikuyakhait Ihumagiyainik Uraniumni Uyagakhiuktut Nunavumi – Uraniumni Pikuyakhait.* Hamna makpigaak pinahuaktut tunilugit taiguaktut *Uraniumni Pikuyakhait* ilahimaplugit kinguani tuhagutikhait avataanut tunihimayut pikuyakhait makpigaat. Ukautait naitumik amigaitut ilangit uraniumni uyagakhiuktut ovalo uraniumni havakviini. Ukautait ihuakhakhimayut aatjikutaatut ukautainit tunihimayut *Uraniumni Pikuyakhait*, pikaluangitut ilaukataut jutainik kitkani hivuliit ukautait malguni makpigaani.

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1 Tuhagutikhait Uraniumni Pikuyakhait

Nunavut nakuutiaktunik pilaakaktut hanatiligiyiinik uraniumni nalvaagutikhainik ovalo ublumi angilikhutik akiit uranium, amigaiktut kinikhiayut uraniumni ovalo niuvigutikhainik uyagakhiuktut inminiigutikhainik. Hamna ilauyuk tamamik pilaaktakhainik ovalo – ilangit Inuit – ilangit ihumaalugiyainik. Ilangit hapkoa ihumaalugiyait ukakhimayut ihivgiugutaini 1989 uktugutikhainik uyagakhiugutikhainik Kiggavik-Sissons uraniumni nalvaagutikhait uataani Kamanituaqmi. Pinahuaktait Uraniumni Pikuyakhait ilinahualugit ovalo ililugit NTIkut inikhait mikhaanut uraniumni uyagakhiugutikhait Nunavumi, ilaa akhuugutikhainik IOLmi.

1.1 Nunat ovalo Pitkutikhait Nunavumi

Ataani Nunavumi Nunataagutit Angigutaanut (NLCA), Inuit – mikhaanut Aviktukhimayut Inuit Katutjikatingit (RIA) – tiguhimayut inminiigutikhainik 356,000mik Square Kilometres nunanik, taihimayut Inuit Inminiigutait Nunait (IOL). IOL nani Kanatami tiguhimayait uyagakhiukvikhait (ilangit 98% Nunavumi ovalo 90% IOLmi) ukakhimayut “Kaagani IOL.” RIAkut munagiyut hapkoa nunat ovalo tunivaktut itigutikhainik tunivlutik Nunat Atugutikhait Laisinsiit ovalo Atugutikhainik. IOL nani NTIkut tiguhimayut inminiigutikhainik uyagahiukvukhait – kinguliit 38,000mik square kilometers ovaluniit 2% Nunavumi – ukakhimayut “Ataani IOL.” NTIkut munagiyut uyagakhiukvikhait inminiigutikhait Ataani IOLmi (kihimi inminiigutikhait tiguhimayagaluit ataani CMR) mikhaanut tunikhaitjutainik Kinikhiayut Angigutaanut, ataani tiguhimayut inminiigutikhait pihimayakhait Hanatjutikhait Atugutikhainik mikhaanut uyagahiuktut pihimakpata maligutikhainik.

Iluaniitut NTI/RIA makpigaat taihimayut Maliktakhait ovalo Maligutikhait Munagitjutainik Inuit Inminiigutikhait Nunat (Maliktakhait ovalo Maligutikhait) ilihimayut inikpiakhimayhunik maligutikhainik nunaligiyit IOLmi. Maliktakhait ovalo Maligutikhait keelinikangitut mikhaanut uraniumni ovalo thoriumni, mikhaanut kaatani inminiigutikhait ovaluniit ataani inminiigutikhait.

Kanatami Munagiyit Inuligiyiit (INAC) munagiyut inminiigutikhainik uyagakhiugutikhait tamamik Kanatami nunait ovalo tamamik Kaagani IOL mikhaanut Kanatami Uyagakhiuktut Maligaliugutikhait (CMR). Munagiyutlu inminiigutikhainik tahapkoa nunat Ataani IOLmi nani uyagakhiukhugutikhait inminiigutikhainik ataani CMR nani NLCA atulimata. Uyagakhiugutikhait inminiigutikhait tunihimayut ovaluniit munagiyauyut ataani CMR keelinikangitut ovaluniit nutkaktikangitut kinikhiatjutikhainik ovaluniit uyagakhiugutikhainik uraniumni.

Ilangit nunat IOLmi pilaaktukaktut nalvaagutikhainik uraniumni nalvaagutikhait ovalo atauhik (BL-22) nalvaakhimayukatuk. Ilangit ihumagiyait Inuit tiguhimayait tahapkoa nunat pilaaktakhainik pilaalutik ikayugutikhainik hivunikhaptini uraniumni uyagakhiuktukhat ovalo ilaulutik angigutikhainik mikhaanut munagitjutikhait hamna

uyagakhiuktut. Kihimi, ataani Kinikhiayut Angigutaanut, NTIkut ublumi inminiigutikangitut kinikhialutik ovalo uyagakhiuklutik uraniumni ovalo thoriumni.

RIAkut tunivaktut itigutikhainik inminiigutikhait kinikhiayut ovalo uyagakhiuktut – ilauyut uraniumni – ilaukatauyunut tiguhimayut uyagahiugutikhainik inminiigutikhait ataani CMRmi. Tiguhimayut uyagakhiugutikhait inminiigutikhait pilaitut angigutikhainik RIAkunit, NLCA tunihimayut tiguhimayunut atulaaktut Nunavumi Kaangani Inminiigutikhait Akigaktuiyit itigiagani havagumayainut.

1.2 NTIkut Uyagakhiuktut Pikuyakhait Atugutikhait

NLCA ovalo maligutikhait ilangit NTIkut bilaangit ovalo Katimayiit *Iniktigutait Pikuyakhait* ilihimayut tamaat maligutikhait NTIkuni. *Uyagahiuktut Pikuyakhait* ovalo aalat pikuyakhait ovalo nuutitigutait mikhaanut nunat ovalo pitkutikhait tunihimayut inikhimayunik mikhaanut tahapkoa. Maliktakhait ovalo Maligutikhait tuihimayut havagutikhainik munagitjutikhaini nunat ovalo pitkutikhait aatjikutainut pikuyakhait maligutikhainik. Pigaagata tamamik, hapkoa tuniniaktut atugutikhainik nani uraniumni uyagakhiuktut ihumagiyakhauplutik.

Ikayulaaktuk naitumik ihivgiuguptat NTIkut pihimayait pikuyakhait mikhaanut uyagakhiuktut ovalo kanuk ilaulaaktut *Uraniumni Pikuyakhainut.* NTIkut ublumi malgunik pikuyakaktut ikayulaaktut uyagakyhiuktunut – *Uyagakhiuktut Pikuyakhait*, ovalo *Imanut Pikuyakhait.* NTIkut ovalo RIAkut hanaluktut *Utiktigutikhainik Pikuyakhainik*[1], inikyukiliktait. *Uyagahiuktut Pikuyakhait* ukaktut "hanatiligiyiit uyagakhiuktut pitkutikhainik Nunavumi." Taimaimat, munagiyut tamamik ilanginik uyagakhiuktut ovalo tunihimayut NTIkut inikhainik uyagakhiuktuni tamamik nunat Nunavumi. Ukakhimayut "NTIkut ikayuniaktut ovalo tuhaktitilutik hanatiligiyiit uyagakhiuktut pitkutikhainik Nunavumi pikakata angiyumik ungahiktumut inuligiyiit ovalo hanatiligiyiit ikayugutikhainik Inuinut Nunavumi ovalo aatjikutaukpata munagitjutikhainik nunat ilanganut Nunavumi Nunataagutit Nunainut."

Imat pikuyakhait munagiyut hivulimik Inuit inminiigutikhait mikhaanut imat atugutikhait IOLmi ovalo ililutik maligutikhainik atugutikhait hamna imat. *Utiktigutikhait Pikuyakhait* munagiyut utiktigutikhainik IOLmi hapkoa nunat atugutikhait havakviit, ilauyut utiktigutikhait uyagakhiukviit. Hapkoa pikuyakhait ukakhimaitut mikhaanut uraniumni kinikhiayut ovalo uyagakhiuktut, tamamik ukautait uyagakhiuktunik ovaluniit nunat atugutikhainik atulaaktut uraniumni kinikhiayunut ovalo uyagakhiuktut havagutainit.

Ilanganut hapkoa pikuyakhat – ihumagilaaktut inikpiakhiayut munagitjutikhait humagiyainik ikayuktut kinguliit tuhagutikhait ovalo takupkaiyut ukagutikhait ovalo ovaluniit ukakatigitjutikhait – NTIkut ukalaaktut inikhainik kituni ihumagiyainik nuutitilutik Katimayiinit. Ilangani, hapkoa ihumagiyaulaaktut inikhailaktut iniktinagit

[1] Hatjs, Utiktigutikhait Pikuyakhat angiktauhimaitut Katimayiinit.

ihuakhagutikhait ukautait. NTIkut nuutitihimayut malgunik mikhaanut uraniumni uyagakhiugutikhanut.

1997mi nuutitigutait ukakhimayut akigaktuitjutainik Akukitukmiut ihumagiyait paknaiyautainik uraniumni igitigutait ovalo aalat uraniumni havagutait Russiami ovalo Amialikami. Nuutitigutait akigaktuktut paknaiyautainik tutkuktigutainik uraniumni atugutainik ovalo akayagutainik tahapkoa ukiuktaktumi. 1999mi, NTIkut nuutitiyut ilitagivlugit hanatiligiyiit, inuligiyiit ovalo hilakyuamut ihumagiyait mikhaanut uraniumni uyagahiuktut ovalo pitkuvlugit Munagiyit Nunaligiyiit hanalutik ukagutikhainik makpigaanik mikhaanut uraniumni uyagakhiuktut Nunavumi ovalo NTIkut Atanguyait pitkulugit katimayigalaanik hanaykhanik pikuyakhait mikhaanut uraniumni uyagakhiugutainik tuniyaagani NTIkut Katimayiinut. Nuutitigutait ilauyut amigaitunik uraniumni uyagakhiuktut ovalo uraniumni kuliligutikhainik ihumagiyauyukhat pikuyakhainut.

Ikpinaktuk nalungilutik NTIkut bilaangit, pikuyakhait, nuutitigutait ovaluniit Maliktakhait ovalo Maligutikhait nutkaktinahuangitut ovaluniit pitkungilugit uraniumni kinikhiayut ovalo uyagakhiuktut IOLmi.

NTIkut ilaupkaingitut Inuit talvatuak Nunavumi ihumagiyainik kihihimi ilaukatauyut nunakyuanut ilaukatauyunut angiyunik tamaat ukiuktaktumi ihumagiyainik. Inuit Ukiuktaktumi Katimakyuat (ICC) atauhiuyuk tahapkoa katimayiit. Hatja, talvatuak pikuyakhait tunihimayut mikhaanut uraniumni uyagakhiuktut Nunavumi ukakhimayait malguuk nuutitihimayut ICCkuni nani NTIkut atauhiuyuk Kanatamit ilaukatauyut.

Hivuliit hapkoa, 1983mi ukakhimayut akigaktuitjutainik ICCkut ihivgiugutainik uraniumni anguyagutikhat ovalo atugutikhait urnaiumni kuliligiyiit Ukiuktaktumi ovalo “kinikhiayut ovalo atugutikhait uraniumni, thoriumni, lithium ovalo aalat havagutikhait mikhaanut uraniumni havakviit.” Takukhauyut 1983mi ICCkut pikuyakhait pinahuakhimayut munagilugit uraniumni anguyagutikhait ovalo ublumi ihuakhakhimaliktukhat ovalo naunaiyatialugit. Ilangit ICCkut ilaukatauyut, talvatuak Akukiktuk pipkaihimaliktut nutkaktigutikhainik uraniumni uyagakhiuktunik. Kavamtkut munagiviit ilaukatauyut hitamani Inuit aviktukhimayut Kanatami nutkaktailihimaitut ovalo Kivalliq talvatuak aviktukhimayut Nunavumi ublumi atuktut uranmiumni mikhaanut maligutikhainik ilihimayut nunat atugutikhait paknaiyautaini.

Kinguliit ICCkut nuutitigutait 1998mi ilitagiyut uraniumni kinikhiayut piliktut ublumi ovalo angiyunik nalvaakhimaliktut. Hamna nuutitigutait keelinikatut ihumaalugutainik uraniumni uyagakhiuktut “pilaaktukhainik hilakyuami ovalo inuligiyini ikpinagutainik” uraniumni uyagakhiuktunik ovalo takuhimaliktut ukautainik “nutaat havagutait uyagakhiuktuni” pipkailaaktut uyagakhiuklutik mikiyuukpata ihumaalugutait ovalo pipkailugit Inuit pipkailaalutik “pilaaktukhanik hanatiligiyiit hivunikhainut Inuit.” Takukhauyut pinahuaktait nuutitigutait pitkunahualugit ihivgiugutikhainik uraniumni uyagakhiuktut hilakyuat ovalo inuligiyiit ihumagiyait ukagiagani. Pikuyakhait takukhauyut angmaliktut ukuangit uraniumni uyagkahiuktut, nakuuyumik ihivgiukata ICCkunit.

Iniktigutaini ilangani, *Uraniumni Pikuyakhait* ukakhimayut NTIkut pitkuniaktut ICCkunik ihivgiulugit, naunaiyatialugit ovalo ihuakhaklugit inikhait mikhaanut uraniumi uyagakhiugutikhainut.

1.3 Hanatiligiyiit Uraniumni PIkuyakhait

Piyumayait Uraniumni Pikuyakhait

NTIkut pikakata *Uyagakhiuktut Pikuyakhainik* ovalo aalanik pikuyakhainik, apigivaktut hunmat piyumayut aalanik pikuyakhainik mikhaanut uraniumni. Kiutjutaa *Uraniumni Pikuyakhait* ukakhimamata ihumagiyainik tungaakhimayut hapkoninga:

1. Kaasiliit kungmuutjutait uraniumni ovalo ilanginit (ilaa; radon ovalo radium) pikatukhat nutaanik maligutikhainik malilugit aniaktailigiyiit havaktiit ovalo nunakatigiit aniktailigilugit ovalo ihuiktailugit hilakyuat.

2. Atulaaktut hanatjutait uraniumni uyagakhiuktut – ilaa uranium – ihumaalugiyait ilangit Inuit ovalo ihumagiyauyukhat.

3. Aliaginaungitut Inuit ihumagiyait 1989mi uktugutikhiat uyagakhiuktut Kiggavik nalvaakviit uataani Kamanituaq piyukhat ihumagiyait mikhaanut uraniumni uyagakhiuktut ihivgiuktaulutik.

4. Uraniumni kinikhiayut piliktut amigaktuni Nunavumi, ilauyut IOLmi ovalo NTIkut pikangitut nalunaitumik ovalo aatjikutainik inikhainik hamna havautait.

5. Pikangitut Maliktakhat ovalo Maligutikhait ukaktunik mikhaanut uraniumni ovalo pikangitut maliktakhainik ovalo maligutikhainik laisinsiinut ovalo atugutikhainut tunihimayut kaagani itilaagutainik IOLmut.

Hanatiligiyiit Pikuyakhat

Hivuliit havakhimayait hanatiligiyiinik NTIkut pikuyakhait mikhaanut uraniumni uyagakhiuktut ukiuni 1996mit 1999mut. June 1999mi, NTIkut katimayiit nuutitihimayut NTIkut Munagiyit Nunatiligiyiit hanalilutik ukakatigutjutikhainik makpigaamik ihumagiyainik hanatjutikhainik inikpiakhimayut *Pikuyakhait Mikhaanut Uraniumni Uyagakhiuktut Nunavumi* (Uraniumni Pikuyakhat). Katimayiit nuutitihimayait tunihimayutlu iliyakhainik katimayigalaat hanayaangani pikuyakhainik, tuniyaangani Katimayinut ihumagiyakhainik. Ilangit havatakhait ukakatigitjutikhainik makpigaak havakhimayait talimani ukiuni, kihimi auyami 2004 akiit angililimata uraniumni kinikhiayut havalikpiamata Kivalliqmi ovalo Kitikmeoni, havalimiut ukakatigitjutikhainik makpigaamik piliktut. Ukakatigitjutikhait makpigaak uktugutikhakatunik pikuyakhainik iluani inikhimayuk Marchmi 2005 ovalo tunihimayuk NTIkut ovalo RIAkut havaktiit ovalo atanguyait ilangit ihivgiugiagani.

Ukakatigitjutikhait ovalo ukaktakhait ilangani NTIkut ovalo RIAkut havaktiit ovalo ilaukatauyut pipkaihimayuk hanatiligiyiit Ukakatigitjutikhait Makpigaat ovalo Uraniumni Pikuyakhait paknaiyakhimayait Munagiyit Nunaligiyiit ovalo tunivlugit Nunat Pikuyaligiyiit Katimayigalaat (LPAC) Marchmi 2006. Hapkoa makpigaat tunihimayut amigaitunut Nunavumi havakviit ihivgiugiagani. Ukautait ovalo ihumagiyait ihuakhagiagani hamanga atugutainit ilauliktut iluani aipaa makpigaat pikuyakhait makpigaami ovalo iluanut Ukakatigitjutikhait Makpigaak hamna makpigaangunialiktuk.

1.4 Pikuyakhait Ihumagiyauyukhat

Ilinahuakhugit inikhainik mikhaanut uraniumni uyagakhiuktut, NTIkut piyukhat ihumagiyakhainik malgunik hapkoa:

1. NTIkut pihimalaaktut nutkaktihimalugit inminiigutikhait kinikhiayut ovalo uyagakhiuktut uraniumni Ataani IOLmi angigutaini pivaktakhait kapaninut. Aatjikutauyaagani, NTIkut pinahuaniaktut pitkungilugit ovaluniit nutkaktihimalugit uraniumni kinikhiayut ovalo uyagakhiuktuni Kaagani IOLmi ovalo ilautinahualugit Kanatami nunait.

2. NTIkut unguvalugit nutkaktihimatjutikhait atuktut Ataani IOLmi ovalo akigaktulaitait uraniumni uyagakhiuktut IOLmi ovaluniit Kanatami nunait. Pitkuyaagani kinikhiayut ovalo uyagakhiuktut havaktut pipkaiyunik tunilutik anginikhaanik pilaaktakhainik ikayugutikhait Inuit mikiyunik ikpinagutikatunik, NTIkut pitkuniaktut ovaluniit pitkuhimalutik ilanginik maliktakhait ilautkulugit.

NTIkut ukpigigumik uraniumni uyagakhiuktut havalaitpata munaglugit aniaktaligiyiit havaktiit ovalo nunaktigiit haniani ovalo hilakyuat, piniaktait hivuliit ihumagiyait hamani. Ihumaalugiyait atugutikhainik uraniumni kuliligiyiit ovaluniit pilaakata Nunavumi uranium atulaaktuk uraniumni anguyagutikhainik pipkailaaktut hamani angingilutiklu. Amigaitut Inuit ihumaaluktut mikhaanut uraniumni kuliligiyiit ovalo hanatiligiyiit uraniumni anguyagutikhait, ilaa kihimi ukakhimayut hamani makpigaami, hapkoa ukautaukatainakhimayut ihumaalugiyauyut. Mikhaanut ihumagiyait kinikhiayunut ovalo uyagakhiuktut havakviit, NTIkut takuhimayut uyagakhiuktut havakviit akhut maligaliugutikatut ovalo havalaaktut munagilugit Inuit ovalo hilakyuat. Iniktigutait hamna amigaitut ihumaaluktut ukakhimayait akigaktuiyut Kiggavik-Sissons hanayakhat mikhaanut hilakyuat ihivgiugutait atugutainik, maligaliugutit mikhaanut ovalo ihumagiyait ikpinagutainik ovalo ikayugutikhainik kinikhiayut ovalo uyagakhiuktut havakviit akhut ukautauhimaliktut ovaluniit ukalaaktut iluani Uraniumni Pikuyakhaini.

Atulaaktut hivulimi pilaaktainik tunilaaktut NTIkunut amigaivyaktunik aalanik ayokhagutikhainik:

1. Uranium aatjikutikatuk pitkutainik amigaitut uyakat ovalo uyagaliat. Taimaimat, mikiyut uraniumni uyagakhiulaaktut uyagakhiuktut havakviini aalanik kinikhiayuni. Nutkaktinahuagumik uraniumni kihimi nutkaktinahuangitumik aalanik uyagalianik, apigilaaktut kanuk angitjutait uraniumni pipkailaaktut uyagakhiuktukhanik tahapkoa. Keeliniit ihumagiyauniaktut kitut uraniumni uyagakhiuktut ovalo kitut uyagakhiungitut naunaiyaktukhat.

2. NTIkut tiguhimayut uyagakhiugutikhainik inminiigutikhait Ataani IOLMI, mikitkiyat 2%mik nunani Nunavumi. Inuit (mikhaanut RIAkut) inminiigutikatut Kaangani IOLmi, Kanatami inminiigutikatut uyagakhait, ilauyut uranium. Uyagakhiuktut inminiigutikhait tunihimayut ataani CMR ilauyut inminiigutikhait kinikhiayunut ovalo uyagakhiuktunut uraniumni. Taimaimat NTIkut munagilaaktait nutkaktigutikhainik talvatuak 2%mik Nunavumi, kinikhiayut ovalo uyagakhiuktut pipkalaaniaktut ilanganut 98$mik, maligumik maligaliugutikhait pihimayakhainik.

3. Pinahuagumik nutkaktigutikhainik uraniumni uyagakhiuktunut Ataabu IOLmi ikayulaitait hilakyuat ovalo inuligiyit-hanatiligiyit ihivgiugutait atugutikhainik – kitkaniitut ilangit pitkutit muangitjutikhait atuktainik Nunavumi – ihivgiukhugit pilaaktait ikpinagutikhait ovalo ikayugutikhait uyagakhiuktut hanayakhait uktugutikhainik. Unguvaktilaat pilaaktakhainik uktugumayut takupkailutik uyagakhiulaaktut uraniumni mikiyunik ikpinagutikhainik hanatitlugit ikpinaktunik ikayugutikhainik. NTIkut nutkaktinahuakata akigaktulaaktut nunat atugutikhait paknaiyautikhait ovaluniit ukaktait Inuit nunaini ovaluniit aviktukhimayuni angilaamata piyumayut uraniumni uyagakhiuktunik hanayakhait pitkulugit.

4. Nunat tiguhimayainik NLCAmi, Inuit tiguhimayut ilanginik nunat naunaiyakhimayut nalvaagutikhainik uraniumni ovaluniit pilaaktukhanik nalvaalaatunik uraniumni nalvaagutikhainik. Inuit pilaitut pilaaktakhainik hapkoa nunat mikhaanut kaagani akiliktugutikhainit ovalo inuligiyit-hanatiligiyit ikayugutikhainik, uraniumni uyagakhiuktut pitkungitpata.

Ilanganut hamani hunmat ayokhaniaktut ovaluniit piyumayaulaitut NTIkut akigaktugumik uraniumni uyagakhiuktunut, hapkoa ihumagiyavut hunmat NTIkut pilaaktut aipainik piyakhainik:

1. Atugumik uraniumni kuliliugutikhainik hanayunik kuliligiyiit – “uraniumni kuliligiyit” – ilaulaaktut ikpinaktunik aalatkiit ihuakhaitjutikhait mikhitinahualutik nunakyuami kungmuutjutait kaasiliit ovalo ikayuklutik nutkaktinahuagutainik hilat aalanguligutainut.

2. Uraniumni uyagakhiuktut Nunavumi ikayulaaktut uraniumni kuliligiyiit ovalo mikhitinahualugit kungmuutjutait kaasiliit.

3. Nunavut nakuutiatunik pilaaktukaktut uraniumni nalvaagutainik. Kinikhiayut

ovalo uyagakhiuktut hapkoa nalvaahimayut pilaaktut tunilutik angiyumik hanatiligiyiit ikayugutikhainik Inuinut.

4. Uraniumni uyagakhiuktut havalaaktut mikhilutik pilaaktakhainik ikpinagutikhait Inunut ovalo hilakyuamut.

5. Aalat piyumayait ovalo ihumaalugiyait mikhaanut uraniumni uyagakhiuktut ukalaaktut iluani hamna pikuyakhait.

1.5 Kanuginiagutait Pikuyakhait

Uraniumni Pikuyakhait hivulimi ihumaaluktut NTIkut inikhainik mikhaanut uraniumni kinikhiayut ovalo uyagkahiuktut Nunavumi, ilaa IOLmi. Taimaimat munagiyut pilaaktakhainik ikayugutikhait ovalo ikpinagutikhait hapkoa havagutait ovalo ilaukataulutik nunani Inuit havagutaini ovalo angigutikhaini. Kihimi, ilaa kitkaniitut atugutikhait uraniumni kuliligutikhainut – tamamik anguyagutaungilutik ovalo anguyaktinut atugutikhainik – NTIkut Katimayiit pitkuhimayut pikuyakhait ukautilugit apigitjutait kinguani atugutikhait uraniumni nalvaakhimayut Nunavumi. Taimaimat, pikuyakhait ukaniaktut atugutikhainik uraniumni ukhukhainik kuliligiyiit angiyumik atulaaktut kuliligiyiinut nunakyuami. Pikuyakhait munagiyut maligutikhainik piyukhat hamna uranium nuutitilaitut atugutikhainik anguyagutikhanik. Taimaimat pikuyakhait uakhimayut NTIkut ikayuniaktut munagitiatunik ovalo anguyagutaungitumik atugutikhait uraniumni kuliligiyiit ovalo ukaktut NTIkut inikhait nani uraniumni uyagakhiuktut havalaaktut. Ukangitut pilaaktakhainik atugutikhait uraniumni kuliligiyiit Nunavumi. Ovaluniit ukangitut pilaaktakhainik igitigutikhait uraniumni ukhuit igitigutikhainik Nunavumi, atulaaktut angiktauhimaituk NTIkut Katimayiinit.

Ilaa uyagakhiugutit Thoriumni Nunavumi ihumagiyaungitut – ovalo ihumagiyaulaitunakhiyuk – ilangit NTIkut ovalo ICCkut ukautait ilauyut ukautainut thorium ilanganut uranium. Pikuyakhami, kihimi ukautait naunaiyakhimakpata, ukautait “uranium” nalunainiaktuk ilaulutik “thorium” (Thorium ukakhimayut naitumik hamani).

2 Uranium ovalo Aninaktuliit Kungmuutjutait

2.1 Uranium ovalo Thorium

Uranium haviuyuk ovalo atauhik ukumaitkiyak. Nalunaitjutaa inminik aninaktuliit kungmuutjutait, nani ilaupkaiyuk kungmuutjutainik nunakyuami. Uraniumni atauhiuyuk amigaitkiyauyuk ilangit nalvaaktauvaktut nunakyuami ataani. Nalvaaktaulaaktuk kuyaginak nunani, uyakani, kuugani ovalo tagiumi. Ilangit uraniumni nalvaalaaktut nikini ovalo Inuni. Uraniumni amigaitkiyauyuk kolinit ovalo silvernit ovalo amigaitjutikatut aatjikutaatut haviit. Ilaulaaktut amigaitunut kihimi nalvaakpaktut oxide (ilaa, ilaukatingit anikhaanaktut, oxygen) - U_3O_8.

Ilangit uraniumni aalatkiiktut kanugitjutait ilaukatigiiyumata ovalo nani nalvaakhimayuit. Ilaa; uraniumni nalvaaktaugumik granitemi, nalunaituk uyagak, hitamanik ilaukatigikatut uraniumni per million ilanganut granite, i.e. 4ppm. Ilangit uraniumni hanatiligiyuilaaktut uyagakhiugumi ihumagiyauyut. Aatjikutait uyakat uraninite, ilaani ilauyut pitchblende. Mikiyut ilaukatingit (ilaa; 0.1% uranium) ilangit 1,000 ppm uranium ovalo angiyuni uyagaini (ilaa; 20% uranium) ilangit 200,00 ppm uranium. Uranium nalvaakhimayut tamamik nunakyuami kihimi anginikhaat naunaiyautait nalvaakhimayut Kanatamiitut.

Inminik pikataktut uraniumni ilauyut hivulimi malgunik aalatkiit uranium atoms ovaluniit isotopes. Ilangit 99.3% uranium 238 (U-238) ovalo 0.7% uranium 235 (U-235). Ataani ilangit nucleus U-235 kitkanut kipilaaktut ovaluniit fisson, uraniumni kuliligiyiit, hanalaaktut angiyunik kuliligutikhainik hanatjutaini. Ilaa hamna ilanga, U-235 ilauyut ikpinaktunik kulililiugutainik uraniumni kuliligiyiit.

Ilaa ilangit pihimayut pikuyakhait ukakhimamata thorium, naamaniaktuk naitumik ukagumik. Thorium inminik pikataktut mikiyumik aninaktuliinik kungmuutjutikahutik haviit. Nalvaakhimayut mikiyuni uyakani ovaluniit nunani, nani pingahunik amigatkiyauyut uraniumni ovalo pikaktut amigaituni nalvaakhimayut aalani nunani. Pikatut amigaitunik havagutainik atulaaktainik, inminik ovaluniit iluani oxide ovalo aatjikutaatut uraniumni, atulaaktut ukhukhainik uraniumni kuliligiyiit. Amigaitut hanatiligiyiit havaktakhait piyukhat pitinagit thorium ukhukhait atulilaagiagani kinauyaliugutikhainik. India pikaktut amigaitunik thorium ovalo paknaiyakhimayut uraniumni kuliligiyiit pilihimayukhaini atulaagiagani inminik, nungutilugit uranium. Ublumi pikangitut thorium hanatjutainik Kanatami, ovaluniit paknaiyautihimaitut.

2.2 Aninaktut Kungmuutjutait ovalo Hilakyuakatigiit

Nalungitugut ilangit hilakyuakatigiit, ilangit takulaaktut kaumayut, kagitauyakut igatjutit ovaluniit naalautikut tuhagutait. Hapkoa nalunaitut aninaituliit hilakyuakatigiit. Hamani makpigaami ihumaaluktugut aninaktuliit hilakyuakatigiit, pilaaktut ahigulugit inuutjutit ukpatiptini – ukaniaktavut « hilakyuakatigiit. » Nunakyuak ovalo tamamik umayut kaagani atuktaunginaktut hilakyuakatigiinit hilamit, ilaa mikiyut nipaluktut. Hamna

hilamit hilakyuakatigiit aalangini nunakyuami aalatkiikamik kangikhianiitut ovalo ikpinagutait nunakyuami kungmugutainait.

Tamamik hunvaluit pikaktut atoms ovalo amigaitut atoms nutkangangitut; ilaa, nuutitiinaktut inminik. Aninaktuliit atom pinahuagaagamik nuutitigutainik, anitivaktut kuliligutikhainik taivaktut hilakyuakatigiinik. Hamna pigaagata hivuliit atom aalangukpaktut nutaanut atom. Aalangugutait kitkaniitut nutkangangitut atom pipkaivaktut kungmuutjutainik hilakyuakatigiit taivaktut aninaktuliit kungmuutjutait; hamna pivaktut aalangugutait ukakpaktut "ahiguktigutait" atoms. Kanugitjutait hilakyuakatigiit ilauyut aninaktuliinut kungmuutjutait taihimayut kablunaatut; alpha particles, beta particles ovalo gamma rays. (Hapkoa ilangit hilakyaukatigiit ovalo autlaktigutait neutron particles hanalikpaktut ikitjutainik uraniumni kuliligiyiit).

Aninaktuliit kungmuuyut nalvaalaaktut tamaat nunani ovalo kungmuunginaktut. Hamna "kinguliit hilakyuakatigiit" pivaktut inminik nunanit, imanit ovalo nunauyanit. Mikiyut naunaiyautait uraniumni, thorium ovalo nungutiktut hanatjutait nalvaakpaktut kuyaginiak hilami. Ilangit hapkoa hanatjutit nigiyauvaktut Inunit nikini ovalo imani, ilangit radon anikhakpaktut. Kanugitjutait nunakyuamit aalatkiitut aalani nunani nunakyuami. Tamamik hapkoa hilakyuakatigiit mikiyut, inminik ilaugamik hilakyuami. Atuktaukatainaktugutlu mikiyuni naunaiyautainik Inuit havakhimayainik hilakatigiinik, ilangit; X-ray – kigutiligiyinit ovalo ukpaginik X-raygutait – ovalo niuvikhimayunit, ilangit; tipakuut higaagutit (poloniumn-210), hanatjutit hanalgutait ovalo kagaktigutait kaasiliit (kaasiliit, puaktikiit).

Ilangit aktugutait kinguani hilakyuakatigiit ovalo Inuit hanahimayait pitkutait ukakhimayut hamani takukhaungitut aninaktuliit mikiyuugamik naunaiyautait, aktugutait angitkiyainik naunaiyautainik hilakyuakatigiit aniaktigutikalaaktut ovalo inuuhaanut aniagutikalaaktut ovalo angiyut naunaiyautait hilakatigiini ihuinaaktilaaktut ukpatainut ovaluniit tukulaaktut. Kihimi tahapkoa aktugutait kitkaniitut ovalo angiyut naunaiyautainut hilakyuakatigiini pikatakyuangitut aniktailigutikaligamik havaktiit atuktut uraniumni havakviini ovalo hakugiktut maligaliugitkhait tamamik ilangani uraniumni havakviini ovalo tamamik atugutait uraniumni nalvaagutaini.

Inuit aniaktiligiyiit ihivgiugutait naunaiyautikangitut angililiktut aniagutikhait ukpatainut mikitkiyait ataani 100 millisievert (mSv). Kihimi ihumaalugutait atuktut ihimalutik angitjutait hilakyuakatigiit aniagutigilaaktut. 2005mi tuhaktakhait mikhaanut Chernobyl Katimakyuaktut (makpigaami 12) ukakhimayut ukiuk tamaat kinguliit aktulaaktut Inunut nunakyuami kitkaniitut 2.4 mSv, kitkaniitut 1mit – 10mut mSv. Tuhaktakhat inuutjutainik aktugutait inminik hilakyuakatigiit hamaniilaaktut 100mit – 700mut mSv. Kanatami Uraniumni Aniktailigiyit Kamisitkut (CNSC) keeliniit uraniumni kuliligiyiit havaktiit anginikhaat 50 millisieverts (mSv) ukiuk tamaat ovaluniit 100 mSv avataani talimat ukiuni.

3 Uraniumni Kuliligiyiit

3.1 Kinguliit mikhaanut Uraniumni Kuliligiyiit

3.1.1 Piyumayait Kuliligutikhait

2004mit, kuliliugutait kuliligiyiit ilauyut 16.2% nunakyuami tamaat kuliligiyiit atukpaktut. Kuliligiyiit pivaktut hapkoninga: 39.8% puatikiinit, 16.1% kuuganit, 15.7% uraniumnit, 19.6% kaasiliinit, 6.7% ukhukyuanit ovalo 2.1% aalanit pitkutinit. [2]

Nalunailiktuk 2050mi nunakyuat inugialigutait angiliniaktuk 50%mik 2000mit mikhaanut 9 billion Inuit. Avataani 90% nunakyuat inugialigutait anginiaktut hivunikhaptini iniktihimaitut nunani. Angiklitjutait nunakyuami inugialigutait malguiktulutik piyumayainik Inuit iniktikhimaitut nunani nakuuhinahualugit inuuhiit pipkainiaktut angiyumik angiklitkutainik tamaat kuliligiyiit atugutikhainik, ilauyut kuliligiyiit. Talvani ukiuni 50ni, nalunailiktuk Inuit piyumaniaktut amigailiktunik kuliligutikhainik tamaat atuktakhainit tamamik kinguliptinit. Talvani, amigailiktut ihumaalugitait mikhaanut hilakyuat ikpinagutainik kuliligiyiit atugutikhainut ovalo naunaiyautait ublumi atuktait hilakyuamut tamainaniaktut.

Amigaitkiyait piyumayait kuliligiyiini pikatainaktut puatikiinit, ukhukhuanit ovalo kaasiliinit, taivaktut “nunanit ukhuit” ilaa, pivamata nunauyanit ovalo umayunit umayuuyut millionsni ukiuni. Kihimi amigaitut ayongitut ihumayut nunakyuami hanatjutait ukhukyuat iniktiliktut ovaluniit iniktilaaliktut ovalo pikalualailaaktut pipkailutik akiit angilililutik. Nunakyuami hanatjutait kaasiliit iniktingitut ublumi amigaituni ukiunut, akiit angilihaktut akhut ukiuni ovalo ilangit pitkutikhait ukhukyuat ovalo kaasiliit akiliktuniaktut akhut aalanut atugutikhainut – ilangit autlaagutikhait ovalo atugutikhait ukhukyualigiyit havakviit – atugutikhainik kuliliugutikhait kuliligiyit. Ilanganut nungutigutait ukhukyuat ovalo kaasiliit, ikualaagutait hapkoa hunavaluit hanayaagani kuliligiyiinik amigaitunik nutkagutikaktut. Kihimi, nunakyuak pikaktut amigaitunik puaktikiit, nalvaaktukhat akhut mikhitinahualugit kungmuutjutait kaasiliit ovalo halumaiyagutait hilaptinik atugutainit. Pinahuagutait ovalo tutkuktigutikhait kungmuutjutait uktugumayut ihuakhagiagani kihimi hamna piyukhauyut piyakhainik angiyumik akituyumik nakuuhiyaagani atugutikhait ovalo ililugit havagutikhainik. Taimaimat, uraniumni kuliligutikhait ilauniaktut ikpinaktumik ilanginut nunakyuami hanatjutainik kuliligiyikhait.

Ikpinaktuk akhut ukangitugut ublumi uktuliluta uraniumni kuliligiyiit atulilugit Nunavumi. Hamna kinguliit uraniumni kuliligiyiit tuniyut taiguaktunut nakuutkiyamik naluhuigiagani kanuk uraniumi uyagakhiuktut Nunavumi atulaaktut ilangani nunaini Kanatami ovalo aalani nunani hanayaagani kuliligutikhainik.

[2] Kitkaniitut Nunakyuami Ihivgiugutait 2006; Nunakyuami Kuliligiyiit Havakviit.

3.1.2 Atugutikhait Uraniumni Kuliligiyiit hanayaagani kuliligutikhainik

Kuliligutikhait hanavaktut uraniumni kuliligiyiini[3] mikhaanut atukhutik uraniumni kuliliugutikhainut (Ilangani 2.1). Hamna autlaktigutait angiyunik unakutinik, atukpaktut unakhitikhugit imait, nuutitivaktait inikutit, taimaatut kuliliulikpaktut. Ukaktavut kuliligutikhait uraniumni kuliligiyiit.

Ukautait "uraniumni ukhuit atugutait' atukpaktut ukautainik tamaat atugutait nani uraniumni atukpaktut hanayaagani kuliligutikhainik. Ilauyut hivulimi ilauyut kinikhiayut, uyagakhiuktut ovalo halumaktiligiyut, kitkani ihuakhagutait, nuutitigutait ovalo ukhukhainik hanatjutainik; ovalo iniktigutaini ilauyut kuliligutikhait inikutainik uraniumni kuliligutainut ovalo tutkuktigutainik ovalo igitigutainik uraniumni ukhuit igitukhat. *Uraniumni Pikuyakhait* kungiaktut hivulimi atugutainik ilauyut kinikhiayut uraniumni nalvaavikhainik ovalo uyagakhiulugit ovalo halumaktigilugit uyagait Nunavumi.

Ublumi Kanatami, tamamik uyagakhiuktut uraniumni pivaktut Saskatchewanmi, kitkani havakpaktait havakviini Ontariomi, Quebecmi ovalo New Brunswickmi. Uraniumni havakviit pikatainaktut nani inugiaktuni ovalo amigaitut kuliligiyiit piyumayainik, ilangit nigiagani Ontariomi, pivaktut kitkanit kuliligiyiit uraniumni kuliligiyiinit.

Ilaani ilangit uraniumni ukhuit atukpaktut pivaktut atukatagutainit aalanik uraniumni hanalgutainit, kitkanit 60% ublumi pivaktut uyagakhiukhimayunit uraniumni. Kanata ovalo Australia nunakyuami angitkiyauyut atuktivaktut uyagakhiuktunik uraniumni, amigaivyaktut aalat nunat ikayukhutik. Kanata nunakyuami hanayut hivuliuyut uyagakhiugutainik uraniumni, tamamik Saskatchewanmit uyagakhiukviinit. Hamna hanatjutait ilauyut 28%mik nunakyuami hanatjutainik 2005mi, ilangit angiliniaktut akhut Cigar Lakemi uyagakhiukvikhait angmakata 2009mi.

Uranium ovalo uraniumni havakviit ikpinaktut Kanatami hanatiligiyiinut ovalo ikayulaaktut amigailikata nunakyuami piyumayainik kuliliugutikhainik. Pikahutik 18nik uraniumni kuliligiyiit[4] ovalo paknaiyaktut Ontariomi, Kanata angitkiyauyut atugutainik uraniumni.

3.1.3 Ihumaalugutait mikhaanut Uraniumi Kuliligutikhait

Ihumaalugutait mikhaanut uranium kuliliugutait ilauyut aniktailigutikhait inikutainit, hanatiligiyiit hanayaagani kuliligiyiit, igitigutait uraniumni igitakhait ovalo pilaaktut uraniumni igitukhat ovalo nuutitigutait uraniumni atugutikhainik anguyagutikhat. Ihivgiuniaktavut tamamik hapkoa naitumik.

[3] Amigaituugaluit aalatkiit inikutikhait, ukaktavut atuktainik CANDU inikutait atuktut Kanatami ovalo aalat nunat.

[4] Ontario pikaktut malgunik inikutinik Pickeringmi. Havakvik havangituk ovalo malguuk Brucemi, havakvik ihuakhaktauyut ovalo angmaniaktut 2009mi ovalo 2010mi.

Aniktailigutait

Aninaktut kungmuutjutait ovalo hilakyuakatigiit akhut ihumaalugiyauyut amigaituni Inuni ovalo ilauyut kitkaniitut akigaktuktauyut uraniumni kuliligutikhait. Hamna ilauyuk ilaa nalunginmata pilaaktut akhut ayokhalaagutait mikiyut, pitkutait ayokhalaagutait angiyuulaaktut. Taimaimat uraniumni havakviit nakuutiaktumik aniktailigutikatut naunaiyautait Kanatami ovalo nunakyuami aatjikutaitut aalat kuliligiyiit havakviinit – malguinait angiyut ayokhagutihimayut amigaitkiyainit 10,000nit hanatjutainik ukiuni havakviini uraniumnit kuliligiyiinit 32nu nunani – kihimi tahapkoak malguuk ayokhagutit amigaitut Inuit ihumalikpaktut apigigaagamik uraniumni aniktailigutainik ukagaagata.

Ayokhagutait Chernobyl uraniumni havakviit 1986mi akhut ayokhagutihimayut kinguliptini uraniumni kuliligiyiit havakviini, pipkaihimanmat angiyunik autlaktigutainik radionuclides kaagani Europemi. Ayokhagutait pipkaihimayut hanatiakhimaitunik Sovietmi kuliligutikhait hanauyautainik, mikiyut havaktiit ayoikhagutainik ovalo amigaitut pitiangitut ihuinaakhimayut aniktailigutainik havagutainik maligutait. Talvatuak ayokhakhimayut kinguliptini kinauyaliuktut uraniumni kuliligiyiit nani aninaktut kungmuutjutait ayokhakpiakhimayut. 2005mi, amigaivyaktut United Nationsmi havakviit ovalo ilaukatauyut Belarus, Ukraine ovalo Russian Federation, pingahut nunat ikpinagiyauhimayut, ilaukatauhimayut ihivgiugutainik ayokhagutait ovalo aniaktiligiyiit, hilakyuat ovalo inuligiyit-hanatiligiyit pipkaihimayut. Hapkoa ukautait pihimayut tuhaktakhamit hanahimayut mikhaanut Chernobyl Katimakyuaktut[5].

Ayokhaktunik havaktiit ovalo talvani havaktiit 1,000kuyut Inuit, pihimayut anginikhaamik aninaktunik kungmuuyunik ovalo ilangit (ilaa 28kuyut) tukuhimayut. Ovalo ihumagiyait nunakyuamit ayongitut ilaukatauyut ihumayut “ilangit akhut aktuktauhimayut inugiagutait, tamaat aninaktulikautut inuuhimayut amigakhimayut mikiyunik ilanganut Chernobylmit aninaktuliinit kungmuutjutainit.” Angiyut pipkaihimayut nutakat aninagutikaliktut ukpagainit pipkaihimayunit aninaktuliit kungmuutjutainit atauhiuyuk aniaktailigiyt ikpinagutainik ayokhakhimayunit, pipkaihimayut 4,000kuyut aninaktilikaktut naunaiyakhimayut 2002mi.

Nunat 200,000 square kilometres Europemi halumaihimayut radiocaesium ovalo avataani 335,000kuyut Inuit nuutititauhimayut. Tuhaktakhat ukakhimayuk 1986mit, “aninaktuliit kungmuuyut naunaiyautait ikpinagiyauhimayumi hilakyuami mikhiliktut akhut ilaa inminik pitkutainik ovalo ihuakhagutainit. Taimaimat amigaitut “aninaktulikaktut” nunat nakuuhiliktut utiktivigiagani ovalo hanatiligiyaagani. Kihimi Chernobylmi nunait ovalo ilangit keelinikaktut nunat atuktikuyaungitut nunat atugutikhainik tiguhimaniagamik ukiuni inminik halumaktitilalugit.”

[5] Chernobyl Katimakyuaktut: 2003-2005: Chernobylmi Pihimayait: Aniaktailigiyiit, Hilakyuami ovalo Inuligiyit-hanatiligiyt Ikpinagutait ovalo Pitkuhimayait Kavamatkut Belarus, the Russian Federation ovalo Ukraine; aipaa makpigaat; 2005. (takulugit kagitauyakut: www.iaea.org).

Malihugit tuhaktakhat IAEAkut, Chernobyl ayokhakhimayut "ukakhimayut pihimayainit atutiangitut aniktailigiyiit, talvatuangituk Chernobyl havakviinit, kihimi tamaat Sovietmi hanauyautait, havagutait ovalo maligaliugutait havakviit uraniumni kuliligiyiit pihimayuugaluit talvani." Nutaat ihivgiugutait[6] ukakhimayut tamamik Sovietmi hanahimayut inikutait nakuuhihimaliktut akhut. Hamna pihimayut akhut hanatiligiyiit atugutikhait aniktailigiyiini pitkuhimayut amigaitut ikayukatigiit Kivataani voalo Uataani ovalo akhut tutkuktuitjutainik nakuuhitjutikhainik kuliligiyiit." Ilaa hamna angiyumik nakuuhiyuk ublumi pitkuhimayait ayokhakhimayunit.

Three Mile Island ayokhagutit uraniumni kuliligiyiit haniani Harrisburg, Pennsylvaniami. Pipkaihimayuk ilaukatinit hanalgutit ahigugutainit, naamangitut hanauyautait, hanatiakhimaitut hanalgutait ovalo pihimaitait havakviit havaktiit naluyaagani uraniumni inikutait kanugitjutainik. Taimaatut, Chernobyl ayokhagutait, aniktukangituk, tukutukaungituk ovaluniit piyumangitainik aniaktailigiyiit ovaluniit hilakyuami ikpinagutait Three Mile Islandmi ayokhagutainit.

Hanatiligiyiit

Mikhaanut hanatiligiyiit uraniumni kuliligiyiit, hivulimi akiit hanayaagani uraniumni kuliligivikhait angiyut mikhaanut aalat hanatjutait kuliligutikhainit, havagutait akiit mikitkiyauyut. Tamaat akiit hanayaagani uraniumni kuliligiyikhait mikhaanut ovaluniit mikitkiyait akiit hanayaagani kuliligutikhait aalanit, ilaa tamamik akiit hilakyuami ikpinagutait kuliligutikhainit – ilauyut akiit kungmuutjutikhait kaasiliit – ihumayauhimayut. Ovalo, nutaat inikutikhait hanahimayut ilauplutik nutaat aniktailigutikhait piyaagani ayokhagutikhait pinginahuakhugit ovalo akhut mikilugit hanatjutait akiit mikhaanut ublumi havagutait atugutikhainik.

Uraniumni Ukhuit Igitjutait ovalo Uraniumni Nuutitigutikhait

Igitigutikhait igitukhat uraniumni inikutainit ihumagiyait ilangit Inuit angiyuuyuk ayokhagutigilikpaktait atugutikhait uraniumni kuliligiyiinut. Hamna ihumagiayait ukakhimayuk ilangani 3.4.

Amigaitut Inuit ihumaaluktutlu pilaaktakhainik uranium atuktukhat uraniumni inikutainut nuutitilaaktut hanatjutainik uraniumni anguyagutikhainik ovaluniit uraniumni ukhuit igitukhat inikutainit atulaaktut tahapkononga. Ilangani 3.5, ihivgiukhimayugut atugutikhainik Kanatami ovalo nunakyuami nunait nutkatinahualugit hamna pilaaktunik.

Ilangit Inuit ihumaaluktut ukakhimayut hamani angiyuumata ihumaalugiyait ukpigiyut atugutait uraniumni kuliligiyiit piyukhaungitut ovalo ilangit Europemi nunait pihimayut nutkakhutik uraniumni kuliligiyikhait pilihimayuit. Tamamik kihimi amigaitut nunat nalungitut ikayugutikhainik uraniumni kuliligiyiit ovalo hanaluktut ovaluniit paknaiyaliktut nutaani inikutikhainik.

[6] Nunakyuami Uraniumni Katutjikatingit kagitauyakut takulviit.

3.2 Hivunikhait Uraniumni Kuliligiyikhait ovalo Uranium

3.2.1 Kanuginiaktut Uraniumni Kuliligiyikhait

Ukakhimayut tuhaktakhat Nunakyuami Atomic Kuliligiyiit Havakviit[7], pikatut 441nik uraniumi kuliligiyikhainik havaliktut December 31mi, 2005 ovalo 27nik hananahualuiktait, nani 16kuyut Asiami, kitkaniiliktut amigailiktut. Hapkoa havakvikhait tunilaaktut 16%mik nunakyuami kuliligiyikhainik. Ilangit nutaat ihivgiugutait hivukhaptini atugutikhait uraniumni kuliligiyiit ihumayut amigaikpianiaktut atugutikhainik uraniumni kuliligiyikhait 20ni ukiuni ovalo ilangani hamna ukiut. Ukakhimayut Uraniumni Kuliligiyiit Havakviit, 77nik nutaanik inikutikhait ublumi paknaiyakhimaliktut ovaluniit uktugumaliktut.

Nutaat makpigaat[8] ihivgiukhimayut tamamik kuliligiyikhait atulaaktut ovalo pitkuihimayut tamalaigutikhainik atugutikhait nunanit ukhuit ihumayut talimaalilutik amigaitjutikhait uraniumni kuliligiyikhait nungutingani hapkoa ukiut – 2,000nik havakvikhainik nunakyuami, amigailutik kitkani hapkoa ukiut. Paknaiyautikatut akhut amigailugit uraniumni kuliligiyikhait amigaituni nunani, ilauyut India, China, Japan, Republic of Korea ovalo Russia Federation. Ilaa, India ublumi 15nik havakvikaliktut ovalo 8nik hanalikhutik. Pinahuaktut 31nik havakvikhainik 2020mi ovalo amigailugit 2050mi. China ublumi 9nik havaktunik havakvikaliktut pingahunik hanaliktut. Paknaiyaktut hanalutik 30nik nutaanik havakvikhainik 2020mi. Japan paknaiyakimayut ilalutik kulinik havakvikhainik 2014mi ovalo malguiktuklugit uraniumni atulaaktainik 2050mi. Paknaiyakhimayut ukakhimayuni nutaanik havakvikhainik aalani nunani ilauyut; Kanatami, France, Finland ovalo Amialikami. Australia, pikangitut havakvikhainik, ublumi ihivgiuliktut pilaaktakhainik uraniumi kuliligiyikhait ovalo ilangit ilaukatauyut Europemi (ilaa Netherlands) aalanguliktait inikhainik atungitjutikhait uraniumni kuliligiyikhainik.

Hamna aalanguligutait uraniumni kuliligiyiinut ihumayut ihumagiliktait kanuk amigaitut kavamatkut nunakyuami ihumagihimayait nakuungitjutait ovalo nakuutjutait mikhaanut uraniumni kuliligiyiit ovalo pinahualiktut hanalutik nutaanik havakvikhainik ovalo autlaktifaakhimayait utukait havakviit. Kanatami ublumi, Ontariomi ovalo New Brunswickmi ukakhimaliktut ihuakhalugit pihimayait havakviit ovalo Ontariomi paknaiyakhimaliktut nutaanik hanalutik. Hamna piniaktuk piyumayainik uyagakhiugutikhainik uraniumni hivuliuyumalimagit ukhugutikhait uraniumni havakviit..

3.2.2 Kanuginiaktut Uranium

[7] Uraniumni Havagutait Ihivgiugutait 2006; tuhaktakhait Atanguyat Nunakyuat Atomic Kuliligiyiit Havakviit; Julymi 2006.

[8] Jaccard, Mark; Tamalaitjutait Nunanit Ukhuit, Ilangit Kinikhiatjutait Halumayunik ovalo Atuinalaaktunik Kuliligiyikhait; Cambridge Universitimi Makpigaaligiyit; 2005mi.

Niuvikviit uraniumni kingulimi akhut akiit aalangukatainaktut. Mikiyuuplutik $7:00mit 2001mi, niuvigutait akiit[9] uranium akililiktut $60:00mut ublumi. Amigaitut ihivgiuktit ihumayut akiit angilihimainaniaktut ovaluniit angilifaalutik ukiuni, ilaa, nunakyuat piyumayainik kuliligiyiit aalatkiit, ilaa, kuliligiyikhainik, angiliniaktut ovalo aipait pitkutait uraniumni nungutpata.

Naunaiyautait pilaaktait hivunikhaptini nunakyuat piyumayait uranium mikhaanut kuliligutikhainik aalatkiiktut tamaat, takukhauyut tamamik pilaaktait angiliniaktut piyumayunik. Makpigaat hanahimayait OECD/IAEA[10] ihumayut amigainiaktut "nunakyuami havakviit mikhaanut uraniumni atuniaktut" kitkanit 22%mit 50%mut 2025mi. Hamna amigainiatut pilaaktait piniaktut "Kivataani Asia" ovalo "Kitkani, Kivataani, ovalo Nigiagani Kivataani Europe." Makpigaak ukakhimayuk "aipait pitkutikhait (uranium) mikhitiniaktut ikpinagutikhait, ilaa avataani 2015" ovalo havakviit piyumayait maligutikhainik piyukhaumata "amigailugit" pihimayait hanatiligiyiit atulaaktut ilautilugit hanatiligiyiit ilakhainik hanavikhainik aalanik ukhukhait atugutikhainut"[11].

Makpigaak ukaktut "naluyut hapkoa pilaaktakhainik ukakatigiinamata atugutikhainik uraniumni kuliligutikhait ilauniatut hivunikhaptini kuliligiyiit piyumayainut." Ukagaagani ilangit kitkaniitut pipkailaaktut hivunikhaptini uraniumni kuliligiyiit atulaaktait – atukhutik amigaitjutait kuliligiyiit piyumayainik, Inuit angigutainik ovalo hanatiligiyiit akiliktugutikhainik - makpigaak ukaktut: "Ihumaalugutait ungahiktumut tutkuktuitjutikhait atulaaktakhainik nunani ukhuit ovalo namut uraniumni kuliligiyiit ikayugutigilaaktut pinahuaktainik kaasiliit kungmuutjutaini mikhitigutikhait tugaagumayait ikayulaaktut angiyumik pilaaktainit angilitjutikhait uraniumni piyumayainik avataani ukiuni ungahiktumut."

Naitumik ukalugit, amigaitut nutaat tuhaktakhat ukakhimayut uraniumni kuliligiyikhait tunikataniaktut ikpinaktunik ilanganut nunakyuami kuliligiyiit. Hamna piyumayait pipkaihimayut uraniumni akiit ubluminut angitjutainik ovalo angilitifaaniaktut nalunaituk. Taimaimat, angililiktut uraniumni akiit pipkailiktut amigailiktunik kinikhiayunik uraniumni nalvaagutainik. Hamna pilaaktiniaktut tahapkononga nunani tamaat nunakyuami – ilauyuk Nunavut – nalvaavikamata uraniumni ovaluniit nunait nalunainmata nalvaavigilaaktut pilaaktakhainik nutaanik nalvaavikhainik.

3.3 Uraniumni Kuliligiyiit ovalo Hilakyuat Aalanguligutait

Uraniumni kuliligiyiit pilaaktut hanalutik atugutikhainik kuliligutikhainik tunilutik pikatainaktakhainik ovalo nakuuyunik kuliligutikhainik ikayugiagani naamgutikhainik nunakyuami piyumayainik, nutkaktingilutik nakuungitunik ikpinagutikhainik kuliligutikhait hanavaktut nunanit ukhuinit.

[9] Uranium niuviktitauvaktut ataani ungahiktumut katrakhainut, ilangit niuviktauvaktut " niuvikviinit"
[10] Uranium 2005 – Pitkutikhait, Hanatiligiyiit ovalo Piyumayait; 2006; Havakviit Hanatiligiyiit, Ilaukatigiit ovalo Hanatiligitjutait (OECD) ovalo Nunakyuami Atomic Kuliligiyiit Havakviit [IAEA]; Ukautait.
[11] Hamna ukaktut atukhutik ukhuit ilangit; thorium ovalo plutonium himautainik uranium.

Atauhik ikpinagiyauyut nakuuyunik ilangit uraniumni kuliligiyiit hanatjutainit kuliligutikhainit hamnatut kungmuutjutait carbon dioxide hilamut. Taimaimat ikayungituk nunakyuami unaligutainut ovalo hilat aalanguligutainut. Ilaa, ilangit carbon dioxide kungmuuvaktut ilangit havaktitlugit mikhaanut nalvaakhiugutait, uyagakhiugutait ovalo halumaktiligutaini uranium uyagait, halumaktitititlugit atugutikhait ovalo nuutitigitilugit uyagait ukhuliuktitlugit ovalo ilaa, hanatitlugit ovalo havaktitlugit (nutkaktitititilugitlu) uraniumni kuliligiyiit havakviit ovalo tutkuktuititlugit ovalo igitititiklugit uraniumni ukhuit igitukhait. Kihimi, ihivgiukhimayut IAEA takupkaihimayut tamaat carbon dioxide kungmuutjutait tamaat atuktainit uraniumni kuliligiyiit mikitkiyauyut kuliligutikhainit atugutainit nunanit ukhuit, ilangit puatikiit ovalo kaasiliit ovalo ilaa, mikitkiyaulaaktut utiktilaaktunit pitkutikhainit, ilangit; hikinimit, kuugamit ovalo anugimit. Hamna nalunaituk pipkaivaktut angikpiaktunik unakutainit kuliligiyiinit pivaktut uraniumni ikualaagutainit.

Ikualaagutait nunait ukhuit pipkaivaktut halumaigutainik ovalo kungmuutjutainit kaasiliit ilaupkaiyuktut nunakyuami unaligutainik ovalo hilat aalanguligutainik. Kaasiliit ilangit carbon dioxide ovalo carbon monoxide taivaktut “nunanit kaasiliit” ilaa, ilaumata nunakyuami hilainut, nani, hikuliatut nunani iluani, ikayukpaktut tamailaigutainik unakutiit kungmuulutik hilamut pipkailimata nunakyuami unakutainik taivaktut nunakyuami unaligutait. Hamna unaligutait pipkaivaktut amigaitunik ilanganut hilat aalanguligutainik. Ikpinagutait hilat aalanguligutait ayokhaktilaaktait tamalaigutainik hanatiligiyiit atugutikhait, ilaa ukiuktaktumi Kanatami, akhut ikpinaginialiktuk mikhitinahualugit nunanit ukhuit kungmuutjutait tamaat nunakyuami pilaakata.

Nutaat Stern ihivgiugutait hanatiligiyiini hilat aalanguligutaini[12] takupkaiyut amigaivyaktunik atugutikhainik (Ilauyut IEA; makpgaak 235) ilauyut uraniumni kuliligiyiit ihuakhagutikhainik pilaaktut ikpinagutikhait mikhitigutikhainik kungmuutjutait kaasiliit hilamut ovalo ikayuklutik pilaaktakhainik ayokhalaagutit hilat aalanguligutainut. Aalat atulaaktut ilauyut kuliligiyiit nakuutjutikhainik, akhut amigailugit atugutikhait utiktilaaktut ilangit kuliligutikhait ovalo pinahualugit carbon dioxide ikualaakhimayut nunanit ukhuinit ovalo tutkuktuihimalugit nunat ataani.

Tamamik hapkoa ayokhagutigilaaktut. Atugutikhait utiktilaaktut pitkutikhait, ilangit hikinimit ovalo anugimit, piyumayait aalangayut nunanit ukhuit, keelinikaktut ilaa kuliligutikhait namungaunginamata ovalo atuinalaimata pitkutikhait. Pinahuakhugit carbon dioxide ovalo tutkugutikhait nunata ataanut nakuutiaktuk pitkutikhait; kihimi takupkaihimaitut hamna pilaaktut angiyunik naunaiyautainut akituvalaangilutiklu. Ukakhimayut hamani, ihumaalugitait amigailiktut atugutikhait uraniumni kuliligutikhait kitkaniituk akigaktuktauyut igitjutait atulaitut ovalo uarniumni anguyagutikhait; hivulimi akiit hanayaagani inikutikhait aipaa ihumaalugiyauyut. Angitkiyat kuliligiyiit nakuutjutikhait – ilangit kuliligiyiit nakuutjutait akhaluutini ovalo ikluni – pilaaktuk angiyumik ilangit mikhitigutikhainik kaasiliit khimi ukakhimayuk Stern ihivgiugutait, tamamik aalat atugutikhait ihivgiuktauyukhat.

[12] Stern Ihivgiugutait: Hanatiligiyiit hilat aalanguligutait; HM Treasury; 2006; takulugit kagitauyakut: http://www.hm-treasury.gov.uk

Hanayaagani kuliligiyiit uraniumni kuliligutikhaini himautainut nunanit ukhuit nigiagani Kanatami ovalo aalani nunani nunakyuami ilaukatauyut mikhitinahuakhugit kaasiliit kungmuutjutait ovalo ilauplutik aalat atugutikhait ikayulaaktut nutkaktinahualugit hilat aalanguligutait. Uraniumni uyagakhiuktut Nunavumi ikayulaaktut hanatiligiyiinut uraniumni kuliligiyiit.

3.4 Igitigutikhait Uraniumni Igitukhat IOLmi

Pikalunagitut igitigutikhainik igitukhat uraniumni inikutainit – ukaktut "uraniumni ukhuit igitukhat" – ukainaktait angiyut kinguvalaagutait uraniumni kuliligiyiit. Ublumi Kanatami pikangitut havakvikhainik ungahiktumut tutkuktuivikhait ovalo igitigutikhait tahapkoa igitukhat. Kihimi mikhaanut tutkuktuitjutikhait ovalo kinguani igitigutikhait ihivgiuktauhimayut amigaituni ukiuni Kanatami ovalo aalani nunani aatjikutainik pikatunit.

Inikpiakhimayut ihivgiugutait igitigutainik uraniumni ukhuit, hanahimayait Uraniumni Igitigutikhait Munagiyiit Havakviit (NWMO) Novembermi 2005, pitkuhimayut atulutik tutkuktuitjutait uraniumni inikutait havakviinit, kitkani tutkuktuitjutait ovalo ililugit atukhimayut ukhuit igitigutikhaini ataani nunat Kanatami uyagalianganut – taivaktut Ataani Nunat Igitiviit – ilaulugit munagitjutikhait atugutikhait taivaktut Atulaaktut Atuinalalugit Munagitjutait hivunikhaptini igitigutikhait uraniumni ukhuit igitigutait. Kavamatkut tunigumik pilaaktut, NWMOkut kininiaktut piyumayunik nunani pilaaktut kitkanit havakvikhainik. Ihumagiyaumata mikhaanut akayagutikhait igitukhat havagutit, igitivikhait Ontariomi, nani amigaituumata igitukhat hanahimayait.

1997mi Katimayiit nuutitihimayut, NTIkut ukakhimayut akigaktuugutainik igitigutikhait uraniumni ukhuit igitukhat Ukiuktaktumi. *Uraniumni Pikuyakhait* ukakhimayut NTIkut inikhait ukakhimaplutik pipkailaaktut aninaktuliit kungmuutjutait igitukhat hanahimayut uraniumni uyagakhiukviinit IOLmit tutkukhimalaaktut ovalo igitilugit IOLmi. Ilauyut kuviviniit ovalo nutaat igitukhat uyagait ovalo mikiyunik naunaiyautiliit aninaktuliit igitukhat, ilangit hanalugit ovalo havagutit atukhimayut uyagakhiuktinit havakviit.

3.5 Atugutikhait Uraniumn Anguyagutingilugit

Amigaitut Inuit ihumaaluktut pilaaktakhainik niuviktigutikhaini uranium atugiagani hanatigutikhainik anguyagutikhanik. Kanata atauhiuyuk hivuliit nunani uraniumni atugutingilugit uraniumni anguyagutikhainik, pipkaihimayut pikuyakhainik nutkaktinahuakhugit atugutikhainik uraniumni angiguyagutikhaini, pikuyagigaagamiut ovalo pitkugigaagamik anguyagutingilugit. Ilaukatauyut nunakyuami angigutinik – ilangit angigutait Hanatjutigigilugit Uraniumn Anguyagutikhait (NPT) – ovalo haniani angigutait kungiaktauyait Nunakyuamai Atomic Kuliligiyiit Havakviit (IAEA), Kanatami Uraniumn Aniktailigiyiit Kamisitkut (CNSC) ovalo Munagiyit Aalani Nunaligiyiit ovalo Nunakyuami Niuviktiligiyiit (DFAIT) nutkaktinahuagutainik uraniumn

niuviktigutikhainik aalanut nunanut pitkulugit ovaluniit ikayugutikhainik uraniumni anguyagutikhainik.

NPT, atikhimayut 1968mi, pitkungitut hanatiligiyiinik uranium anguyagutikhait ovalo/ovaluniit nuutitilugit uraniumni anguyagutikhainik hanatjutait aalanut nunaut. Kanata hivuliuyut atiktuihimayut NPTnik ovalo kitkaniigiyait inminik uraniumni hanatiligiyiinik pikuyakhait angigutaaanut ilangani. Ublumi 187 nunat ilaukatauyut NPTmut, ilauyut tamamik talimat angikhimayut Uraniumni Anguyagutikaktut Nunait. Avataani 550 havakviit ovalo avataani 100kuyut aalat havakviit ihivgiuktaukataktut. NPTkut ilihimayut piyakhainik nutkaktinahuaktut uraniumni anguyagutikhait, tuhaktitilutik ilaukatautjutikhainik anguyangilutik atugutikhait uraniumni kuliligiyiit ovalo uraniumni nutkaktigutikhainik.

Haniani angigutait pikaktut hakugiktunik maligaliugutikhaini atugutikhainut uraniumn niuvigutikhaik Kanatamit. Ilaa, uraniumni pikaktut laisinsiit tunivaktut Kanatamit ukakhimayut keeliniinik ilihimayut laisinsiinut niuvilaaktut ovalo niuviktukhat uraniumni pikaktut angikhimayainit.

Niuviktitakhait ovalo niuviktakhait Atugutikhait Pikuyakyuat ovlao NSCA titigakhimayut atugutikhainik pihimayukhat angigutainik niuviktitaanganit Kanatamit. Hapkoa katitihimayut ovalo maligaliugutikhait munagiyauyut DFAITkunit mikhaanut Niuviktitakhait ovalo Niuviktakhait Atugutikhait Pikuyakyuanit ovalo CNSCkunit ataani Uraniumni Aniktailigiyiit ovalo Munagiyiit Pikuyakyuamit (NSCA).

CNSCkut munagiyut maligaliugutikhainik hamani uraniumni havakviit ovalo munagiyukhat Kanatami aniktailigiyiit angigutait. Ilihimayut 2000mi ataani nutaat NSCA ovalo maligaliugutait, pihimayait Atomic Kuliligiyiit Munagiyiit Katimayiit pitkuhimayait 1946mi. Hapkoa ukauhiit CNSCkut havaktait CNSCkut kagitauyaini:

> "CNSCkut munagiyut iniktigutikhainik Kanatami uraniumni anguyagutikhainik pikuyakhait pihimayut malguk angiyut, pihimagaayakhainik:
>
> 1. Pinahualutik Kanatamiut ovalo Nunakyuami nunait Kanatamit uraniumni niuvikataktait ikayulaitut hanatiligiyiinik uraniumni anguyagutikhainik ovaluniit aalanik uraniumni kagaktagutikhainik; ovalo
> 2. "Tuhaktinahualugit nakuuyumik ovalo inikpiakhimayumik nunakyuami uraniumni anguyaliugutikhainik munagiyiit."

Ovalo, CNSCkut "mikhaanut (NSCA) ovalo aatjikutait maligaliugutait, iniktinahualugit Kanatami NPT piyakhainik: pingilutik, hanangilutik ovaluniit niuvingilutik uraniumni anguyagutikhainik ovaluniit uraniumni kagaktagutikhainik; angilutik (IAEA) aniktailigutikhainik tamamik uraniumni havagutikhait anguyagutigingilugit Kanatami; ovalo pinahualutik Kanatami uraniumni niuvigutikhait nunait atuktukhat IAEAkut aniktailigiyiit."

Nunakyuami, IAEAkut ilihimayut tamamik angikhimaplutik nuutitigutainik United Nationsmi 1957mi ikayugiagani nunat hanatjutikhainik uraniumni kuliligiyiit

anguyagutigigilugit. IAEAkut hakugiktumik atugutikatut ovalo maligutikatut – taivaktut "aniktailigiyiit" – ilihimayut pinahuakhutik nunat atulaitut uraniumni hanatiligiyiinik anguyagutikhainut. Hapkoa ilauyut:

- Havagutait tuhaktitilugit tamaat: nalungilugit tamamik inminut ovalu hilataanut nuutitigutait ovalo namungautjutait havagutait uraniumni havakviit. Hamna ilauyuk uktugutikhait ovalo ihivgiugutikhait uraniumn havagutikhait, havakviini ihivgiugutikhait, ihivgiugutikhait ovalo naunaiyaktakhait havakviit makpigaangit.
- Inuit itiktivigilaitait: nutkatitlugit itilaagutikhainik uraniumni havagutait havakgiinut atuktainik.
- Tutkukhimalugit ovalo Kungialugit – atuklutik nipitigutikhainik, piksaliutinik ovalo aalanik naunaiyautikhainik naluhuigiagani tuhaktitingitut nuutitigutait ovaluniit aktukhimayait uraniumni havagutainik ovalo ihivgiukatalugit havakviit.[13]

Naitumik, nunakyuami angigutait ovalo haniani angigutait kungiaktauyut IAEA, CNSC ovalo DFAIT pinahualutik uraniumni niuviktauyukhat aalanut nunanut pipkailaitut ovaluniit ikayulaitut uraniumni anguyagutikhainut.

3.6 Naitumik Ukautait

Hamani ukautait ilangani, kungiakhimayugut ilanganik uraniumni havakviit. Ikpinaktuk ukatugut nalungilutik amigaitunik ilangani ukatait – ilangit havagutait uraniumni inikutait ovalo igitigutait igitukhat hapkoa inikutainit – tuniluta taiguaktunik kinguliit tuhagutikhainik kanuk uraniumni uyagakhiuniaktut Nunavumi atuniaktut hanayaagani kuliligutikhainut. Naniiniaktut uraniumni inikutikhait havakviit ovalo igitigutikhait igitukhat ukangitut Nunavumi. *Uraniumni Pikuyakhait* ukatut mikhaanut U*raniumni Kinikhiayut ovalo Uyagakhiuktut*. Hatja kungianiaktugut kanuk kinikhiatjutait uraniumni nalvaakviit pivaktut ovalo kanuk nalvaakhimayut uyagakhiuniaktait ovalo uyagait halumaktiniaktut.

[13] "Aniktailigiyiit Nutkatigutikhainik Uraniumni Anguyagutigigilugit", Nunakyuami Uraniumni Katutjikatingit, Novembermi 2003.

4 Uraniumni Kinikhiayut ovalo Uyagakhiuktut

4.1 Kinguliit Uraniumni Uyagakhiuktut Kanatami

4.1.1 Hivuliit Ukiut

Hivuliit uraniumni uyagakhiukviit Kanatami piliktut 1933mi Port Radiumi nalvaakviit kivataani hinaani Great Bear Lake Nunatiami. Talvani, uranium kinauyaliugutigitpalaaktut inminik, uyagait uyagakhiukpaktut unguvatilugit radiumni, atukpaktut aniaktailigiyiinut. Port Radium uyagakhiukvik hanaliktut uraniumni 1942mi ovalo uyagakhiuviuvaktu umiktinagu 1960mi.

Hivuliit kinikhiayut uraniumni akhut piliktut 1947mi, nutkagutait kinikhiayaamik inminik uraniumni havagutikhainik. 1949mi, hivuliuyut Saskatchewanmi uraniumni havakviit, hanatiligiyihimayut uyagakhiukvikhainik Beaverlodgemi. Talvanga 1953mi, uranium nalvaakhimayut Elliott Lakemi Ontariomi. Havakpiagutait nutkahimayut 1959mi ovalo uraniumni havakviit nutkangagaakhimayut.

Aninagutait aktugiagani uranium ovalo ilangit tamaat ihumaalugiyaungitut nutaani ukiuni uyagakhiuktunut ovalo maligaliuktunut pipkaihimayut angiyunik aktugutainik ubluminit. Taimaimat, havaktiit aktuktikatakhimayut aninaktunik kungmuuyunit ovalo nalunaituk ilangit aniagutikalikhimayut hamanit aktugutainit.

Pikahimayutlu angiyunik hilakyuami ikpinagutainik mikhaanut kinguliit uyagakhiuktut havakviit Ontariomi (ilaa Elliott Lakemi), Saskatchewanmi (ilaa Beaverlodgemi) ovalo Nunatiami (Port Radiumi). Hapkoa havakviit havaktut ataani hakugingitut maligaliugutikhaini havagiagani hilakyuangani ilihimayut ihumaalugingihugit aniktailigiyiit ovalo munagitjutikhait hilakyuamut ovalo talvani pilaaktunik aninalaaktunik kungmuuyunit ihumaalugiyauhimaitumik.

4.1.2 Ublumi Ukiut

Ukiuni 1960’s, nunakyhuami niuvikviit uraniumni pifaaliktut hanatiligiyiinut ovalo angiligutainut uraniumni kuliligiyiit. Hivuliit angiyut Kanatami uraniumni kuliligiyiit havakviit Pickering, Ontariomi havaliktut 1971mi. 1970’s, akiit uranium tikitut angitjutainut $43mik U.S. ukumaitjutainut (lbs).

Saskatchewanmi, angililiktut uranium akiit 1960’s ovalo 1970’s pipkaifaaliktait kinikhiayut, nalvaavigivlugit amigaivyaktut kitkanit ovalo angiyunik nalvaakviit nutaanik naunaiyautainut – atuinaktut kitkanit. Rabbit Lake, Cluff Lake ovalo Key Lake uyagakhiukviit hanaliktut ukiuni 1975mit 1983mut. Kinikhiayut akiliktugutait talvani pipkaihimayut nalvaagutainik amigaitut aalat nalvaakviit, ilauyut Midwest (1978), McClean Lake (1979), ovalo Cigar Lake (1983). Hanatjutait uraniumni angiliyut 1980’s,

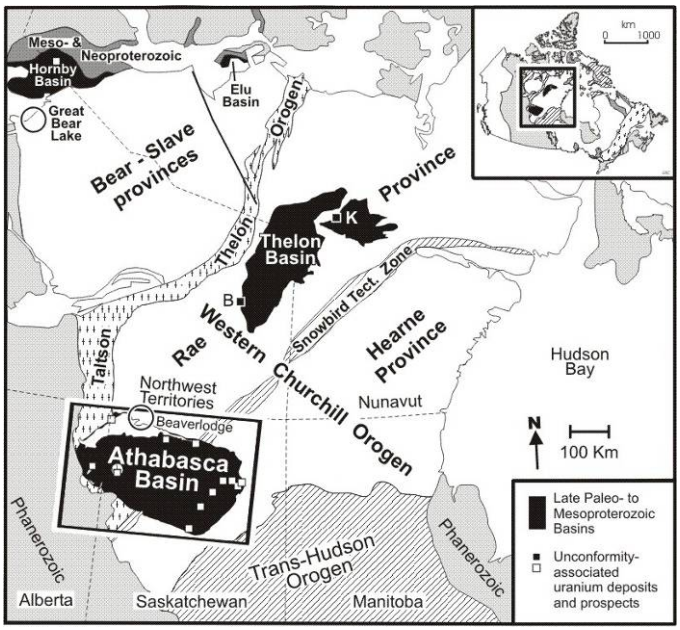
kihimi ovalo akiit mikhitihimayut ukiuni, katakhutik $7lbs Januarymi, 2001 pilaaligamik uraniumni unguvaktigutainit Russiami anguyagutainik.

Talvanga hanahimagamik 1988mi[14], Cameco nalvaakhimayut angiyunik naunaiyautikatunik McArthur Rivermi, hanaliktut 1999mi ihivgiuktautaagami hanatjutikhait. Ublumi Rabbit Lake, McClean Lake ovalo McArthur River talvatuak hanatiligiyiuliktut uraniumni uyagakhiukviit Kanatami. Akiit uranium angililiktut ublumi $60/lbs pipkailiktut nunakyuami uraniumni kinikhiayut kilamik.

4.2 Uraniumni Nunavumi

4.2.1 Taiguagutikhait

Nunavumi, amigaiktut kinikhiayut pihimayut 1970nit 1980nut. Angiyut nunat Thelon Basin (naunaiyauti 1) hilataani Thelonmi Mingiuktikvik ovalo ilangit[15] Hornby Bay Basin tikuaktukhimayut ovalo kinikhiaviuyuk avataani 12nik kinikhiayut kapaniit. 1970mi, Urangesellschaft Canada Limited (UG) nalvaakhimayut nalvaagutainik taihimayuk "Lone Gull – atikhimayuk "Kiggavik" – ovalo 1980ni nalvaakhimayut haniani – Andrew Lake ovalo End Grid nalvaakviit. Ukahimayavut Kiggavik-Sissons hanayakhat hamani ilangani.



Naunaiyauti 1. Nunauyaliugutaini basin uataani Kanatami pilaaktunik nalvaagutikhainik uraniumni. "K" naunaiyautaa Kiggavik. Pihimayut: Jefferson *et al.*

1990s, mikiyut naunaiyautait uyagaliagutainik nalvaakhimayut Thelon Basin tamaktihimayait angiyugaalumik nalvaagutait Athabasca Basin Saskatchewanmi. Hamna aipaitlu mikhitigutait uraniumni akiit 1990s ovalo nalunagutainik maligaliugutait atuktainut pipkaihimayut kapaniit ilivlugit kinikhiatjutait nunani nutkatilahugit. Kinikhiayut Hornby Bay nutkahimayut talvani.

[14] Eldorado Nuclear Limited (formerly Eldorado Mining and Refining) and its subsidiary, Eldorado Resources, merged with the Saskatchewan Mining and Development Corporation (SMDC), a Crown corporation of the Saskatchewan government, to create the privately-owned Canadian Mining and Energy Corporation – Cameco.

[15] Havakhimayut nunani takuhimagamik Basal naunaiyautikatunik.

Kilamik angiligutait akiit uranium mikiyunit 2001mi pipkaihimayut amigaihakhutik uraniumni kinikhiayut aipaagaunut pingahunit hitamanut ukiuni, amigaikpiakhutik kinikhiayut ovalo niuviktut kinikhiatjutikhainik atugutikhainik. Ovalo nalunaituk Kiggavik-Sissons hanayakhat havafaaliktut.

4.2.2 The Kiggavik-Sissons Hanayakhak

Ubluminut, uraniumni uyagakhiuktukangituk ovalo atauhik uktugumayut uyagakhiulutik nunai ublumi Nunavumi. Kiggavik-Sissons hanayakhat, ilauyut amigaivyaktut uraniumni nalvaakviit 75 kilometres uataani Kamanituaq, ilauyut malguunik hanayakhanik: Kiggavik hanayakhak, ublumi piutaa 995mik AREVA Resources Canada Inc.[16], pikatunik Kiggavik nalvaagutainik; ovalo Sissons hanayakhat (piutikatut 50%mik AREVA), ilauyut Andrew Lake ovalo End Grid nalvaakviit. Nunat uyagakhiuktut atugutikhainik ilauyut malguunik nalvaakviinik tikuaktitauhimayut Inuit Ataani IOLmi nunait nunanik tikuaktitigutaini. (atugutikhait "pihimayagaluit" CMRkut, Kanatami Inuligiyiit pitkuhimayait kinauyakhainik pilaaktut hanatiligiyiinit uraniumni hamani nunainit NTIkunut).

Tamaat nalvaakhimayut pingahuni nalvaaviinit ilaukatauyut Kiggavik-Sissons hanayakhaini 50,000mik tones uraniumni (ilaa, 120 million lbs U_3O_8) kitkani naunaiyautait 0.4% uranium. 1986mi ihivgiugutait hanayakhami uktugumayut nalvaakhimayut uyagakhiuniaktait ilaukatauyunik angmaumayut ovalo nunat ataani ovalo nalvaaktakhait hanatjutikhainik akyalugit akhaluutikut uyagakhiukvimit Kamanituaqmut ovalo umiakut akyalugit talvanga.

1988mi, UGkut inikhimayut ovalo pihimagumik hilakyuami ihivgiugutikhait atuktakhainik. Nunanit ilaukatauyut ovalo ilakatigiiktut aviktukhimayunit ovalo nakit Kanatami ukakhimayut ihumaalugiyainik tamamik hilakyuat ihivgiugutikhait atugutikhait ukautait uktugumayut hanayakhainik. Marchmi 1990 niguaktitihimayut nani amigaitut Kamanituaqmiut nunakatigiit akigaktukhimayut hanayakhamik, havaktiit UGkut angikhimayut nutkatilalugit hanayakhat.

Havaktuinahualigamik hanayakhami 1993mi, AREVAkut (taihimatitlugit COGEMA Resources Inc.) havakhimayut ikuutakhutik ovalo aalanik kinikhiavlutik havakhimayait Sissons ilanganut hanayakhait 1997mut, kinguliani ukiumi nunani havakhimayut kapaniit Nunavumi. Talvani ukiumi, kapaniit inikhimayut ihivgiugutikhainik, iniktigutait ihumagiyauyut naamangitut pikamata talvani ihumagiyainik. 2000mi, kapaniit unguvaktihimayait hanalgutikhait ovalo ukhukyuat havakviinit ovalo unguvakhugit havakviit ovalo hanalgutikhait.

Octobermi 2006, AREVA angmakhimayut titigakvikhainik Kamanituaqmi. Takukhauliktut angilitigutait akiit uranium pipkailiktait nani Kiggavik-Sissons

[16] Junemi 2005 "AREVA Resources Canada Inc." himautigiyait "COGEMA Resources Inc." atianut Kanatami uyagahiuktut ilaukatauyunut AREVA ilaukatauyut kapaniit.

nalvaakviit, AREVA ihumaliktut hanatiligiykhainik Nunavumi hivuliit uraniumni uyagakhiukvikhainik.

4.3 Uraniumni Kinikhiayut, Uyagakhiuktut ovalo Halumaktiligiyut

Atugaagutikhait Uyagakhiukviit

Havagutikhait uyagakhiukviit ihumagiyait amigaivyaktut ilangit: Kinikhiayut, kinikhiayut ovalo hivuliit kinikhiatjutait, mikhaanut ihivgiugutait pilaaktut uyagait, hanatiligiyiit, ilauyut hanatjutainik uyagakhiukviit, uyagahiukviit ovalo halumaktiligutait uyagait; ovalo utiktitjutait ovalo nutkaktiligutait ilauyut kungiagutait.

Hapkoa havagutait ilauyut angingitunik aktugutikhainik ilaa, ayokhalaagutait aniaktailigiyiit ovalo aniktailigiyiit havaktiit ovaluniit Inuit. Kitkaniitut ihumaalugiyait katitigutainik havagaaligaagamik. Ukahimayavut tamamik hamani atugutainik.

Kinikhiayut

Kinikhiayut ilauyut malgunik aalatkiit ilanginik – hivuliit kinikhiayut ovalo ihivgiuktut pilaaktakhainik uyaganik, ukapaktut uyagaliat nalvaakhimayut ihivgiugutait (Hamani makpigaami ukatugut aipaanik iniktiliktut ihivgiugutait ilanginik). Uraniumni kinikhiayut atugutait aatjikiiktut atuktait kinikhiatjutainik aalat uyagalianik, kihimi atugutait ilauyut maligutainik – nalvaakhiugutait kaasiliit kungmuuyunik ihivgiugutait ovalo ihivgiugutait uyakanik scintillometres – naunaiyautait inminik kungmuutjutait nunani ovaluniit ihivgiuktainik.

Amigaitut kinikhiayut atugutait pikangitut ovaluniit pikaluangitut ikpinagutikhainik aniaktailigiyiit havakviinut ovaluniit hilakyuamut. Kihimi, havaktiit aktuniaktuk uraniumni (ovalo ilanganik) havaktitlugit uyakat ihivgiugutait ovalo ikuutakhimayut uyagait. Ihumaaluktut kungmuuyut havagutait nalvaalaaktut kaagani nunat ovaluniit imani unguvaktitititlugit ovaluniit ikuutaktitlugit. Taimaimat, naunaiyautait pihimayukhat munagiyaagani havaktiit ovalo hilakyuat.

Uyagakhiuktut

Aatjikutaatut kinikhiayut, uraniumni uyagakhiuktut – ilauyut nunat ataani ovalo angumaumayut uyagakhiukviit atukhutik – aatjikutauyut aalanit uyagakhiugutainik, kihimi ayonagutikatut pikamata kungmuulaaktunik hiugalianik, radon gas ovalo gamma radiation kungmuuyunik. Hamna pilaaktut aniktaligiyiit mikitiyauvaktut atukhutik hakugiktunik anikhaagutikhanik atugutainik ataani nunat ovalo – ilaa, angiyunik nalvaagutiliit uyagait – nutkaktinahualugit munagitjutikhait ovalo nutkagutikhait hanalgutinik.

Ilauplutik uyagakhiuktut, ilaa angmaumayut uyagakhiukviit, igitigutait uyakat haniani uraniumni nalvaakviit unguvaktukhat tikitaangani uyagakhiuktainik. Hamna uyakat pikatut mikiyunik naunaiyautainik kaasiliit kungmuuyunik havagutainik, ukumaitut haviit ovaluniit sulphide uyagaliat, taivaktut pyrite. Kuvitjutait sulphide uyagaliat pipkalaaktut aninaktulinik uyakanik. Tahapkoa "nutaat igitugutait uyakat" nutkativaktut hilamungauyunik nutkaktiyaagani piyumangitait havagutikhainik halumaiktailinahuagutainik imat. Utiktivaktut uyagakviukvianut atuktainut.

Halumaktiligiyiit

Halumaktititlugit ilangani, uyagait ahiguktivaktut ovalo hiugalialiukhugit. Uranium unguvaktauvaktut uyakanit ovalo ilivlugit niuviktaulaaktunik havagutikhait, ilaani taivaktut "Yellowcake." Igitigutait halumaktilivinit unguvakpaktut kuviviinut havakviinut. Igitigutait pihimayut kaasiliinik kungmuulaaktunik uyakani – amigaitkiyait radium ovalo radon – havaktiit uraniumni uyagakhiukviit munagiinaktut akhut kuvitjutait munagiviinit aniktilaitait Inuit, nunauyat ovaluniit umayut.

Utiktitjutait ovalo Kungiagutikhait

Amigaituni, uyagakhiukviit umigaagata ovalo nunait utiktigaagata, munagiviit kaanganunganiaktut umiktiklugit uyagakut ovaluniit nunait nutkakhimalikata. Kihimi ilaani, kuviviit kungiaktauniaktut amigaituni ukiuni umikpagit uyagakhiukviit. Munagitjutikhait kuviviniit ovalo igihimayut uyakat ukakhimayut ilangani 4.7.4mi. Ilangani 1 ukafaakhimayut atugutainik ukakhimayut hamani.

4.4 Saskatchewanmi Atulaaktuk Uraniumni Uyagakhiuktut

Ukahimayut ilangani 4.1, Saskatchewan kingulikaktut uraniumni uyagakhiuktunik, kinguanut 1940's ovalo 1950's Beaverlodge, Gunnar ovalo Lorado uyagakhiukviit hanayaumata. Uraniumni uyagakhiuktut Saskatchewanmi ilaukataunginaktuk akhut nunakyuami kuliligiyiit ilanganut ovalo ublumi ilautipkaiyut 30%mik nunakyuami uraniumi uyagakhiuktut hanatjutainik. Hapkoa uyagakhiukviit Kananagani Saskatchewanmi iluani nunat taivaktut Athabasca Basin.

Amigaivyaktut hunmat nakuuyuk ihivgiugiagani nutaat pivaktait uraniumni uyagakhiuktut Saskatchewanmi hamani:

- Saskatchewan ublumi talvatuak havaktut uraniumni uyagakhiuktut Kanatami.
- McArthur Rivermi nutaanguyuk uyagakhiukvik angmaktuk Kanatami ovalo anginikhaanguyuk hanatjutainik ovalo angiyumik naunaiyautaliit tamamik uraniumni uyagakhiukviit nunakyuami.
- Cigar Lakemi uyagakhiukvik aipaa anginikhaak naunaiyautainik uyagakhiuvivik nunakyuami ihivgiuktauliktuk atugutikhainik ovalo ataani hanayauliktuk.
- McClean Lakemi halumaktivik nutaanguyuk havakviit Amialikami 20ni ukiuni ovalo ilangit Kuviviit Munagiviit Havakvik takukhauyuk nutaangutiaktumik

halumaktiligiyiit uraniumni uyagainik. McClean Lake talvatuak Kananagani Saskatchewanmi havakviit angmaumayuk uyagakhiukvia (takulugit ilanga 1.10, Ilangani 1).

- Cluff Lakemi uyagakhiukvik iniktiliktuk umiktigutainik, taimaimat atulaaktuk kanuk uraniumni uyagakhiukviit umiktilaaktut.
- Saskatchewanmi uyagakhiukviit takupkaiyut nuutaatianik atugutainik ovalo nakuuyunik munagitjutait atuktut tamamik havagutaini.
- Saskatchewanmi inikpiakhimayunik maligaliugutikatut atugutainik, ilauyut inikhimayut maligutikhait hilakyuamik ihivgiugutikhainik.
- Saskatchewanmi uyagakhiukviit havakviit kungiaginaktut piyumayainik ukiuktaktumiut ovalo ukakatigiinaktait nunakatigiit tamamik ilaani ovaluniit nutaanik pinahuagaagata.
- Inikpiakhimayunik tuhagutikatut ihivgiulaaktait nunakatigiit atugutainik 1990mit ubluminut ilihimayut nutaanik uyagakhiuvikhanik nunani. Nakuuyut tuhagutikhait piaaktut tamamik inminik ovaluniit Inunit pilaaktakhainik, ilauyut Kanatami-Pravinsini Ihivgiuktiit Katimayiit ovalo Kanatami kiutjutait katimayiinit tuhaktakhainit, tunilaaktut naunaiyautainik kanuk kavamatkut munaginiaktut ovaluniit kiulaaktut aatjikutainik ihumagiyainut Nunavumi. Nutaat hilakyuami ihivgiugutait makpigaat tunilaaktut nakuuyunik tuhagutikhainik tamamik ilanganut uktugutikhait hanayakhat.
- Aatjikutakaktut kitkanit Nunavumi ovalo Kananagani Saskatchewanmi inugiagutainik, ilihagutait naunaiyautainik, inuligiyiit-hanatiligiyiit ovalo aalanik.
- Inuit pulaakhimayut Saskatchewanmi havakviit ovalo nalungitut pilaaktakhainik ikayugutikhait ovalo kanuk pilaaktut ikpinagutikhait munagiyauvaktut.

Ihivguilta uraniumni havakviit Saskatchewanmi, naluhuilaaktugut akhut tammat havagutainut nani uyagakhiukvik hanalaaktuk, havaklugu ovalo nutkaktigilugu/umiktuktiklugu. Naluhuiyaluta maligaliugutainik atuktait iluani uyagahiuktut havakviit havakpaktut. Ilaa, Saskatchewanmi uyagakhiukviit havagaakhimagamik, hanatjutainut nutaanik ovalo hilakyuamut munagitjutikhainik, nakuutiaktut atulaagutainik malilaaktut uraniumni havakviit Nunavumi.

Ilaa hilakyuat maligaliagutikhait, havaktiit aniktailigiyiit ovalo inuligiyiit-hanatiligiyiit maliktakhait atuniaktut uraniumni uyagakhiuktut Nunavumi aatjikutauniaktut tahapkoa atugutait Saskatchewanmi, ilaa aalangayauniaktut malguugamik maligalugutait.

Hamani taimaimat, ihivgiugutait Saskatchewanmi havakviit nakuuyut tuniyaagani tuhagutikhainik kanuk nutaat uraniumni uyagakhiukviit havakpaktut ovalo hunat atugutikhait ilihimayut munagiyaagani havaktiit, hanianiitut nunat ovalo hilakyuat. 1999mi ovalo ukiakhami 2005mi, Cameco ovalo AREVA, malguuk kapaniit havaktut Saskatchewanmi uraniumn uyagakhiukviit, pulaaktitikatalugit havakviit NTIkunut ovalo RIAkunut nunaligiyiit ovalo atanguyait. Havaktiit ovalo Katimayiit IPGkut, Kavamatkut Munagiyiit ovalo ilangit Kamanituaqmiut pulaakhimayut 2005mi. Nunavumi pulaaktut takuyut nutaat uraniumni uyagakhiukviit akhut maligaliugutikaktut ovalo maligutikaktut (Hivuliit maligaliuktit CNSCkut ataani Kanatami Kavamatkut munagiyait). Takuyut

havalaaktut aniktailigutikatunik angiyunik ikpinagutait aniaktailigiyiit havaktiit ovalo nunanit inukatigiit ovaluniit hilakyuat.

Naunaiyauti 2. NTIkut ovalo RIAkut pulaaktut McClean Lake uyagakhiukvik (haumikmi) ovalo McArthur River uyagakhiukviit Septembermi 2005.

Ihumagilugit hivunikhaptini uraniumni uyagakhiuktut hanayakhat Nunavumi, Saskatchewanmi pihimayait akhut ihivgiuktauyukhat ovalo atulaakata, atuklugit Nunavumi.

4.5 Ikayugutikhait Uraniumni Kinikhiayut ovalo Uyagkahiuktut

Amigaitut ikyaugutikhait pilaaktut tamamik kinikhiayunit ovalo uyagakhuiuktunit. Pigalualutik uraniumni uyagahiunahuat hanayaagani Nunavumi, kinikhiayut uraniumni nalvaakhiuktainit pikatainaniaktut amigaituni ukiuni. Hamna havaktait tunilaaktut ilaani havaktukhanik amigaitunik Inunik nunanit ovalo busniit pilaaktakhainik niuvikviinik niuvigutikhainik ovalo ikayugutikhainik. Ovalo NTIkut ovalo RIAkut pilaaktut kinauyakhainik mikhaanut kinikhiayut angigutainut ovalo nunat atugutikhainik laisinsiit ovalo atugutikhainit.

Pilaaktut ikayugutikhait angililaaktut angitjutainik havakviit ovalo angiyunik kinauyakhainik taksinit ovalo akiliktuktakhainit pilaaktut talvanga ovaluniit ilanganut uraniumni uyagakhiuktut havakviit Nunavumi. Ihumagalaaktugut pilaaktakhainik ikpinagutait hanatiligiyiit atuktainit NTIkunit ovalo Kavamatkut Nunatiamit (GNWT) kolinit ovalo niuviktaulaaktunik uyaganit uyagakhiuktait.[17] Malikhugit iniktigutait NTIkut atuktainik, mikiyut uyagahiukviit akililaaktut akiliktakhainik $35mit $40million ovalo angiyunit uyagakhiukviit akililaaktut akiliktakhainik $80mit $90million havagaaktitlugit uyagakhiukviit. Anginikhat nalvaakhimayut akiligutikhait akiliktakhainik angitkiyainik[18]. Uyagakhiukviit Ataani IOLmiitpata, akiliktakhait

[17] We do not have access to economic models for uranium mines in the North.
[18] The McArthur River Mine in Saskatchewan provides an example of the royalties and taxes that can flow from a very profitable uranium mine. For this mine, the total government revenues over the 20-year life of the mine are estimated at about $1.4 billion to $3.7 billion dollars (according to the 1997 Panel report),

tuniniaktut NTIkunut ovalo nunat Kanatami inminiigutait uyagahiukvinit, akiliktakhait tuniniaktut Kanatami Kavamatkunut ovalo ilangit akiliniaktut Nunavumi Tutkuktuiyinut.

GNWTkut hanatiligiyiit atuktait (Bullen, 2003[19]) takupkaihimayut aatjikutainik. Sherlock et al[20] ukakhimayut iniktigutainik atuktait ovalo naunaiyakhimayut kipliktut uyagakhiuktut havakviit, "akiliktakhait avataanut $600 million akilikpaktut avataanut 25ni ukiuni uyagakhiukviit havaktitlugit pilaaktut." Nalungitukhat hamna atuktait "pivaktut nunakyuami pihimayuni Ekati ovalo Diavik uyagakhiukviit Nunatiami," taimaimat tamamik kipliktunik uyagakhiukviit akililaitut akiliktakhainik taimaatut. Tuhaktakhait ukaktut,"…..kolinik uyagakhiukviit mikitkiyait kihimi pilaaktut $60 milllion avataanut 15ni ukiuni uyagakhiukviit havaktitlugit. Aatjikutaatut, uyagakhiukviit aalanut pilaaktut $20nit $25 million avataanut 20ni ukiuni uyagakhiukviit havaktitlugit. Tamamik NTIkut ovalo GNWTkut atuktait pivaktut akiliktakhainik pilaaktut uyagakhiuktut havakviinit ukiuktaktumi. Uraniumni uyagakhiukviit pilaaktut aatjikutainik akiliktakhainik. (nalungilutik hapkoa atuktait talvatuak ovalo havagutait tunilaaktut aalanik iniktigutainik).

Uyagahiukviit angiyunik utiktulaaktut kavamatkunut taksinik. Malilugit NTIkut atuktait Nunavumi Kavamatkut pilaaktut taksinik aatjikutainik akiliktakhainik ukakhimayut hamani ovalo Kanatami Kavamatkut pilaaktut malguiktainik. Taksiit akiliktut Nunavumi Kavamatkunut ikayulaaktut ikayugutikhainik Nunavumiut, ilangit, ihuakhaklugit iklukhait, ilihagutikhait ovalo aniaktailigutainik.

Ikpinaktuk Inuinut inuuyut haniani uyagakhiukviit pilaaktut ikayugutikhainik nunanut ovalo busniit. Uyagakhiukviit tunilaaktut amigaitunik ukiuni nakuuyunik havagutikhainik havaktiinut. Havakviit IOLmi (kaagani ovaluniit ataani), RIAkut ovalo kapaniit aivalaaktut IIBAnik, piyaagani amigaitunik havaakhainik ovalo busniit pilaaktakhainik pilaaktut Inuit nunaini[21] ovalo aviktukhimayunut. Nunat ikayuktaulaaktut nakuuhitjutikhainik havakatigiigutikhainik, ilangit apkotit ovalo uhiiyakviit.

NTIkut *Uyagakhiuktit Pikuyakhait* piyukhat angiyunik pilaaktakhainik ikayugutikhait uyagakhiuktut pihimalugit Nunavumi. *Uraniumni Pikuyakhait* ilihimayut ilakhainik maligutikhainik ikayulaaktut Inuit piyaagani ikayugutikhainik. Hapkoa atuniaktut uraniumni kihimi aalanik ikayugutikhainiklu.

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more than the amount of cash Inuit received under the NLCA. It is unlikely that many uranium mines will be as rich or as profitable as the McArthur River Mine, possibly the richest in the world.

[19] Bullen, W. and Zhang, J.; 2003; The economics of mining projects in the Canadian Arctic. *In* Proceedings, Seventh International Symposium on Mining in the Arctic; CIMM, pp. 3-18.

[20] Sherlock et al, ibid.

[21] If the mine is on Crown land, Article 27 of the NLCA requires that the proponent consult with the DIO—NTI—with respect to employment, contracting and many other matters.

4.6 Uraniumni Pilaaktut Inuit Inminiigutait Nunait (IOL)

Hamani ukaktugut aalatkiit uraniumni nalvaalaaktut ovalo ukaktavut nani ihumayugut uraniumni nalvaalaaktut. (ilangit ukautait havagutainut atuktut). Kanatami uyagakyuat – nunat utukait uyakat ilauyut kitkanit nunaini Kanatami – angiyut nunait pikaktut uyagakhiugutikhainik uraniumni pitkutikhait nunakyuami. Amigaitunik aalatkiinik uraniumni nalvaalaaktut, kihimi Kanatami pitkutikhait malgunik pikaktut – Paleoplacer ovalo aatlakiit nalvaalaaktut. Hivuliit pivaktut Elliot Lakemi Ontariomi ovalo kinguliani Athabasca Basin, angiyut nunat hiugaliagutini ovalo aalani uyakani ukiuktaktuani Saskatchewanmi. Hamna nunat nunakyuami hivuliuyut uraniumni nunait nalvaalaaktut ilaa angiyut nakuutiaktunik pitkutikaktut aalatkiinik nalvaalaaktut.

Ilaa nunait aatjikiimata kitkanit Athabasca Basin ovalo ilangit nunat Nunavumi, uraniumni kinikhiayut Nunavumi piniaktut aalatkiinik nalvaalaaviit. Tahapkoa nalvaaaviit pilaaktut nunani pivaktuni haniani angiyut aalatkiinik kitkanit utukait "ataani" uyakat ovalo nutaani aalatkiit hiugaliat Proterozoic ukiungani. Hapkoa nalvaaviit ilauyut 33%mik nunakyuamit (ilaungitut Russia ovalo China) uraniumn pitkutikhainik, ilauyut ilangit anginikhaanguyut ovalo nakuutiaktunik nalvaaviit. Angiyut nalvaalaaktut akituniaktut ovalo kinauyaliulaaktut uyagakhiugumik.

Ilaa uraniumni pilaaktut Nunavumi nalunaikhimaitut, ihumayut nakuutiaktut pilaaktakhait nalvaagiagani aalatkiinik uraniumni nalvaagutikhainik malguni nunani Nunavumi – Thelon Basin haniani Kamanituaq ovalo Hornby Bay Basin nigiagani Kugluktuk. Pilaagunakhiyutlu nanikiak, ilangit Elu Basin nigiagani Ikaluktutiak (takulugit naunaiyautait 1). Kiggavik-Sissions nalvaalaakviit uataani Kamanituaq ovalo ilangit pilaagunakhiyut Hornby Bay Basinmi aalatkiiknik. Uraniumni kinikhiayut Nunavumi kiniktut nalvaaktakhainik hapkononga.

Ukakahimayut ilangani 1.1, ilangit nunat Ataani IOLmi ihumayut nakuuyut pilaaktakhait nalvaalaakviit uraniumni nalvaavikhainik.[22] *Uraniumni Pikuyakhait* pitkuhimayut hapkoa nunat (ovalo Kaangani IOLmi) pitkuhimayut NTIkut akhut ihivgiuklugit uraniumni pilaakvikhait hapkoa nunat piyaagani ovalo RIAkut nakuuyumik paknaiyagiagani atugutikhainik nunait. Ovalo tahapkoa ihivgiugutait ikayugiagani NTIkut havagiagani maliktakhainik angigutaanut piniaktait kapaninut, ilaulugit angitjutikhait maliktakhait ilaukatautjutikhainik ihumagiyait hivunikhaini uraniumni uyagakhuivikhait hanayakhat hapkonani nunaini.

4.7 Ikpinagutait Uraniumni Kinikhiayut ovalo Uyagakhiuktut

Pilaaktakhait ikpinagutikhait hanatiligiyiit havaktait, ilauyut uyagakhiuktut ihumagiyauyukhat ilauyut malguni angiyuni ilaukatautjutainut – nunaligiyiit ovaluniit

[22] Parcel BL-22 has the Andrew Lake and End Grid deposits that make up part of the Kiggavik-Sissons project.

inuligiyit-hanatiligiyit. Malilugit maligutikhait[23] titigakhimayait Nunavumi Ikpinaktut Ihivgiuktit Katimayiit, "Nunaligiyiit ikpinagutait ukakhimayut ikpinagutikhait angiyut nunat ilaukauyut nunauyat ovalo hilakyuangit, havaklutik nunakatigiigutait ilauyut nunanut. Inuligiyit-hanatiligiyiit ikpinagutait ukaktut inuligiyiinut ovalo hanatiligiyiit ikpinagutait, ilauyut ikpinagutait nunani hanatiligiyiit, aniaktailigiyiit, nunakatigiit, inuuviginiit inuuhiit, inuuviviniit naamagutikhait, inuligiyiit inuuhiit, ingilgaat atugutait pitkutikhainik, pihimayut ikayugutikhait ovalo havakatigiigutikhait ovalo nunanit ovalo nunat kavamatkut havakviit."

Iluani *Uraniumni Pikuyakhait*, ilangit pilaaktut inuligiyit-hanatiligiyiit ikpinaguait uraniumni kinikhiayut ovalo uyagakhiuktut ihumagiyait Pinahuaktaini 3, munagiyut muangitjutikhainik Inuit aniaktiligiyiit ovalo ilangit Pinahuaktaini 5 , ihumaaluktut nunanit ilaukatauyukhanik. Ataani Pinahuaktaini 4, pikuyakhait ihumayut ilanginik nunaligiyiinut ikpinagutait, ilauyut umayut ovalo munagitjutikhait kuviviit ovalo igitukhat uyakat. Ihumayutlu maligaliugutikhait atuniaktut ilihimayukhat keelinikhainut ovalo munagilugit ikpinagutikhait.

4.7.1 Munagitjutikhait Inuit Aniaktailigiyiit

Atugutikhait uraniumni ovalo ilangit kungmuutjutait aninaktut ilangit radon aninaktulilaaktut Inuit aniaktailigiyiinut (takulugu ilangani 2). Ilaa hapkoa kungmuutjutait aninagutilaaktut ovalo aninaktuitut ikpinagutait, uraniumni uyagakhiuktut pihimayukhat nutaanik ihumagiyakhainik avataanut pihimayukhat aalanut uyagahiuktunut. Angiyut ihumaalugiyauyut inminik aktugutikhainik uyagakhiuktit havaktiit ovalo aalanut nunanut haniani uyagakhiukviit kungmuutjutainik. (ukafaakhimayut tuhagutikhait Ilangani 1).

Iniktigutait hapkoa nutaat kungiaktakhait uraniumni uyagkahiuktut akhut maligaliugutikaktut atuktait uyagkahiuktut Kanatami ovalo nutkaktigutikhait ihumagiyauyut havaktiit atuktitauyukhaungitut kungmuutjutainik kaagani keeliniit. Ilaa, inikpiakhimayut maligutikhait tuniyaagani halumayunik hilakyuami ovalo kungiaktainaktait havaktiit ovalo havaktiit, havaktiit Saskatchewanmi uraniumni uyagkahiuktut pivaktut mikitkiyainik 5 mSv ukiuk tamaat – avataaniingitut inminik kinguanit 2.4 mSv ukiuk tamaat ovalo ataaniitut anginikhaat keeliniit 50 mSv ukiuk tamaat ovaluniit 100 mSv avataanut talimani ukiuni ilihimayait CNSCkut malikhugit nunakyuani maligutikhainut. Taimaimat, uraniumni uyagkahiuktut piniaktut angitkiyaungitunik ikpinagutait aniaktailigiyiit havaktiit aalanut uyagakhiuguainit ovaluniit aatjikutainik havakviit havagutainut.

Ilanganut ihumaalugiyauyut inminik atugutikhainik kungmuutjutainik uyagakhiukvini, ihumaaluktutlu pilaaktakhainik ikpinagutikhait aniaktailigiyiinut tahpakoa nunat ovalo ungahiktumut mikhaanut atugutikhait kungmuutjutait pilaaktut hilakyuami (ilangit imat ovalo hilat) ovaluniit nigigaagamik aninaktuliinik nunauyanik ovaluniit umayunik. Hapkoa ikpinagutikhait ukakhimayut mikhaanut munagitjutait kungmuutjutainik

[23] Guide to the Nunavut Impact Review Board.

uyagakhiukvinit. Ilangani 4.7.4, ihumayugut munagitjutikhainik kuviviit ovalo igitigutainik uyakat.

Ihumagiyauyutlu, pilaaktakhait aktugutikhainik havaktiit kinikhiatitlugit mikitkiyauyut uyagakhiuktitlugit havakviit. Pilaaktukhait ikpinagutikhait hivuani kinikhiatitlugit ilauyut atugutikhait havaktiinut aninaktulinik havaktitlugit ikuutagutait ihivgiugutainik, pualgiyaktitlugit ovalo kagaktitititlugit ovaluniit havaktitlugit uyakat ihivgiukhimayut pihimalaamata uraniumni uyagaliagutainit. Pilaaktutlu aalat Inuit aktulaaktut haniani tutkuktuiviini ikuutagutit ihivgiugutait ilauyut kungmuutjutikhainik ilakaktunik.

Ihivgiuktitlugit, havaktut maligaliugutikatut CNSCkunit ataani UMMRmi. Nutaani kinikhiayut, UMMR atulaitut. Kihimi, amigaitut kapaniit atuktut maligutikhainik atuktait kinikhiatitlugit maligutikhainut hanahimayut atuktainik Saskatchewanmi. Naunaiyakhimayut maligutikhait atuktait kapaniit uraniumni uyagakhiuktut Saskatchewanmi munagiyaagani havaktiit ilauyut, naamakpata naunaiyakhimayuni atuktainik atuktukhat Nunavumi. *Uraniumni Pikuyakhait* pitkuhimayait hanatiligiyiinik ovaluniit atuklugit aatjikiinik maligutikhainik.

Aniktailigiyiit ovalo hilakyuat atuktangit uyagkahiuktut angiyunik uraniumni nalvaakhimayait Saskatchewanmi takupkaiyut pilaaktut uyagakhiuktut atugutikhainik aniktailigiyiinik havaktiinut ovalo nunanut haniani ovalo munagilugit umayut ovalo hilakyuangit.

4.7.2 Maligaliugutihait Pihimayukhat

Uktugumayut uraniumni hanayakhat maliniaktut tamamik maligaliugutikhait pihimayukhat atuktakhainik kinikhiayuni ovalo uyagkahiuktuni aalanut uyagakhiuktakhainik ilauyut maliktakhait pihimayukhat nunat atugutikhait paknaiyautikhait ilihimayait NPCkut ovalo ikpinaguait ihivgiugutikhait atugutikhainik Nunavumi Ikpinaktut Ihivgiuktit Katimayiit (NIRB). Ovalo, pikaktut nutaanik pihimayukhanik uraniumni uyagakhiuktut. Ihivgiukhimayavut pihimayakhait angiyumik hamani.

<u>Nunat Atugutikhait Paknaiyautikhait</u>

Tamamik kinikhiayut ovalo uyagkahiuktut havaktut Nunavumi maligutikatukhat Nunat Atugutikhait Paknaiyautikhaini aviktukhimayuni, pikakata.. Kivalliq Nunat Atugutikhait Paknaiyautait ukakhimayut uraniumni uyagkayuktunik pilaitut kihimi ihivgiuktauhimakpata munagikatigiini katimayiinit ovalo takapkao uyagakhiuktut ikayuktaukpata Inunit aviktukhimayunit. NTIkut ikayuktut naunaiyautikhainik kanuk hapko ukautait ukautiginiaktut ovalo kanuk pihimaniaktut iniktigutikhait.

<u>Hilakyuat Ihivgiugutikhait Hanayakhanik</u>

Mikhaanut hilakyuat ihivgiugutikhait hanayakhat, NLCAmi tunihimayut inikpiakhimayunik ihivgiugutikhainik ovalo kungiagutikhainik atugutikhait tamamik hanayakhat uktugumayunut. NIRBkut ihivgiuniaktut tamamik uktugumayunik naunaiyagiagani ihivgiugutikhait pihimayukhauyaagani ovalo piniakata, naunaiyaklugit nunaligiyiit ovalo inuligiyit-hanatiligiyit ikpinagutikhait piniagiagani hanayakhat uktugumayunit. Ihivgiugutikhait uraniumni uyagakhiuktut uktugumayunit piniaktait NIRBkut ataani pihimayukhat Ilanganut 5, Ilangani 12 NLCAmi ovaluniit ataani Ilanganut 6, Kanatami hilakyualigiyit ihivgiugutait katimayigalaanit. Hilakyuat ihivgiugutait atugutikhait inikpiakhimayut ovalo tunihimayut amigaitunik pilaaktakhainik Inuit ilaukataulutik. Hilakyuat ihivgiugutait ataani Kanatami Hilakyualigiyti Ihivgiuktit Pikuyakyuat pihimaniaktut CNSCkuni, pilaagamik pihimayukhainik ilaukataulutik NIRBkuni ihivgiugutainut.

Maligaliugutikhait Havakviit

Havakviit uraniumni uyagakhiukviit ovaluniit ihivgiugutikhait pilaaktut uyagakhiugutait maligaliugutikaktut CNSCkunit ataani Uraniumni Aniktailigiyiit ovalo Munagiyiit Pikuyakyuat (NSCA) ovalo maligaliugutainit. Kanatami Kavamatkut maligaliuktit, CNSCkut naunaitumik atanguyauyut kaagani uraniumni havagutikhait ovalo havaktainik Kanatami. Maligaliugutait ataani NSCAmi atuniatut tamamik havaktait ilauyut munagitjutainik uraniumni havagutainik, ilauyut akyagutikhait aninaktuliit pikatunik. Uraniumni Uyagkahiuktut ovalo Halumaktiligiyit Maligaliugutikhait (UMMR) atuniaktut ihivgiugutainik nalvaakhimayut uraniumni naunaiyakata ovalo ihivgiuktauhimalikata naunaiyautainik hanatiligiyit naamagiagani oval tamamik uyagakhiuktut havagutait mikhaanut umiktigutainik uyagakhiukviit.

Nunat Atugutikhait, Imat ovalo Aalat Atugutikhait

Pikatut amigaitunik maligaliugutikhainik atuniaktut kinikhiayunut ovaluniit uyagakhiuktunut hanayakhainik. Ihivgiugutait maligaliugutikhait atuniaktut Kanatami nunaini takulaaktut *Kinikhiayut ovalo Uyagkahiuktut Kanatami Nunaini Nunavumi Maligutikhait Makpigaat* titigakhimayait Kanatami Inuligiyit. Pingitkalualutik maligaliugutikhait ovalo pikuyakhait titigakhimayut Kanatami nunaini (ilaa, Nunavumi Nunat Pikuyakyuat), tamamik pihimayukhat atuniaktut IOLmi[24]

Hamani pikangitut uraniumni mikhaanut pihimayakhainik nunat atugutihait laisinsiini ovaluniit atugutikhainik tunivaktut RIAkunit kinikhiayunut ovaluniit uyagakhiuktunut. *Uraniumni Pikuyakhait* pitkuhimayut nunat atugutikhait maliktakhait ovalo maligutikhait hanayakhat ovaluniit atuklugit. Hivuliini, maliktakhait atuktukhat uraniumni kapaniit Saskatchewanmi munagiyaagani Inuit ovalo hilakyuangit hivulini kinikhiatitlugit ihivgiuktauyukhat, ovalo atulaakata, atuklugit atugutikhainik IOLmi.

Kinauyanik Tutkuktuitjutikhait

[24] NTI is currently drafting a similar guide for IOL.

Piyaagani utiktitjutikhait uyagakhiukviit pihimayukhat uyagakhiuktut havakviit umiktikpata, havakviit tunihimayukhat kinauyanik tutkuktuitjutikhainik uyagakhiukviit havaliktinagit. Uraniumni uyagkahiukviit IOLmi, kinauyat tutkukhimayukhat pihimayukhat CNSCkuni ataani NSCAmi; Nunavumi Imaligiyit Katimayiit imanut atugutikhainik (tutkuktuitjutait tiguhimayakhait INACkut); ovalo RIAkut, mikhaanut nunat atugutikhait ataani kinauyaligiyit atugutikhaini. Pihimayakhait RIAkut tiguhimayakhainik akiliktugutikhainik ovalo tiguhimayakhait tutkuktuihimayukhat mikhaanut uraniumni uyagakhiuktut havakviit akhut ihivgiuktauyukhat ovalo inikhimalutik hanayakhat ihivgiuktautjutainik atugutainut.

Taimaimat, NTIkut ikayuktut pihimayunik maligaliugutikhainik atugutikhainik, kihimi naunaiyakhamayut ihumagiyainik ihumaalugiyainut (Ilangit hilataaniitut maligaliugutihait atugutikhaini) nani pihimayukhat nutaat nalungilugit. Pikuyakhat naunaiyakhimayutlu atugutikhainik NTIkut ovalo RIAkut piniaktut mikhaanut munagitjutikhainik IOLmi.

4.7.3 Umayut

Ikpinaktut ihumaalugiyauyut amigaituni Inuit pilaaktakhainik ikpinagutikhait uraniumni uyagakhiukviit tuktunut ovalo aalanut umayunut ovalo nunauyanut nunani. Amigaitut ihumaaluktut ukaktakhait aatjikutauyut tahapkoninga havakviit uyagakhiuktut aalanik, ilangit koliniit ovalo kipiktut. Hapkoa ilauyut ikpinagutikhait uyagakhiukviit inminik ovalo havaktigiigutikhait, ilangit apkotikhait havaktuni umayunut.

Ukakatigivlugit hivunikhainik tuktut, tuhaktakhat[25] Beverly ovalo Qamanirjuaq Tuktut Munagiyiit Katimayiit (BQCMB) naunaiyakhimayut apkotikhait, kinikhiayut ovalo uyagakhiuktut, ilauyut pilaaktakhainik katitigutait ikpinagutainik, nunat atugutikhait havaktut pipkailaamata angiyunik aninagutikhainik Beverly tuktuit. Qamanirjuaq tuktuit pivaktutlu aninalaagutainik kuugani kuliligiyiit hanatiligiyiinik. Malikhugit tuhaktakhat, havaktut mikhaanut uaygakhiuktut pilaaktakhainik nakuungitunik ikpinagutikhait tuktunut ilauyut amigailiktut tingmikataktut tingmiat, hanayuat apkotikhanik ovalo milvikhanik, autlaakataktut akhaluutit, uyagahiuktut hanatjutainik ovalo havagutainik ovalo halumaiyagutait nunanik ovalo imanik aninaktulinik. Tuhaktakhat ukakhimayut hapkoa havagutait pipkailaaktut taimaitjutikhainik nunainik, amigaitunik Inugialiktunik ovalo ihuinaagutainik tukunut; apkotikhait nutkaktilaaktutlu autlaaktut amigaigumik ovaluniit pualgiyagumik kingiktunik apotinik. Ukakhimayutlu ihumaalugiyainik hilat aalanguligutait akhut ikpinagiyaulaaktut tuktunut.

Ihumaalugiyait pilaaktakhainik ikpinagutikhait uraniumni uyagakhiuktut keeliniungitut ukpatainut ikpinagutikhait havakviit tuktunut ovalo aalanut umayunut. Ihumaaluktut aninaktulinik ovalo aalanik pilaaktakhainik kungmuuyunik itilaamata nigiyainik ovalo pilaaktainik tuktut ovalo aalat umayut, ikaluit ovalo tingmiat ovalo mikiyut umayut nigivaktainik ovalo kinguani nigiyauvaktut Inunit. Pikaktut aatjikutainik ihumaalugiyait

[25] 20th Anniversary Report of the Beverly and Qamanirjuaq Caribou Management Board

naunauyanut, ilaa tahapkoa paungat. Uyagakhiuktut havaktiit inminik ihumaalugiyaungitut Inunut. Titigakhimayainik NTIkunut[26], BQCMBkut naunaiyakhimayut "ikpinagutikhait aninaktuliit anikhaanaktut" ovalo "ihuinaagutikhait nunauyanut ovalo imat pitkutikhait aninaktulinik ovaluniit inminut aalanguligutainik" pilaaktut ikpinagutikhait kinikhiayunit.

Ihumagivlugit pilaaktakhinik umayut anialigutikhait ovaluniit aninaktuliit nigitaukpata aninaktulinik kungmuuyunit pihimayut uraniumni uyagakhiukviit havakviinit, tuhatianaktuk takulugit nalvaagutait hilakyuat kungiagutainit nunanit ilaukatauyunit haniani ukiuktaktumi Saskatchewanmi nunaini. Kungiagutait nalvaakhimayut mikiyunik ikpinagutikhainik uyagkahiuktut havakviinit, ihivgiugutainik pihimayut haniani nunat Wollaston Lakemi haniani Rabbit Lake uyagahiukvini. Tuhaktakhat ihivgiugutait Wollaston Lakemi nalvaakhimayut "tamamik naunaiyautait ikalunit, nunauyanit ovalo umayunit mikiyut ovalo takukhaungitut aninaktuliit nigiyaagani mikhaanut haniani."

Nalunaituklu Ukiuktaktumi Ihivgiukhimayut nalvaakhimayut tuktuit Kanatami ukiuktaktumi pikaktut angiyunik naunaiyautainik kungmuuyunik aninaktunik. Ihivgiukhimayut pihimayut nunakyuamit uraniumni uyagkahiuktunit pingitut kihimi katakhimayunit uraniumni uktukhimayunit ovalo Chernobyl ayokhagutainit, pihimayut 1970nit ovalo 1980nit. Tuktut takupkaihimayut aninaktuituktunik hapkonanga angiyumik ovaluniit Inuit nigihimayainik tuktunit.

Tamamik ihumaalugiyauyut mikhaanut ikpinagutikhait uyagakhiuktut tuktunut ovalo aalanik umayunik ovalo nunauyanik tamaat ukautiniaktut hivunikhaptini hilakyuat ihivgiugutikhainik uraniumni uyagkahiuktut hanayakhanik, pihimayukhat tamamik pilaaktakhait ikpiangutikhait ihumagiyaulutik ovalo ihuakhaklugit. Ihivgiugutikhait atugutikhait pihimayukhat akhut kungigutikhainik ovalo ihvgiukatagutikhainik umayunut ovalo nunauyanut haniani uyagakhiukviit tahpakoa aktugutikhait aninaktunik ovaluniit ikpinagiyauyaagani uyagahiuktunit. Tuktut munagitjutikhait maligutikhainik ublumi pihimayut munagiyaagani tuktuit ivatitlugit ovalo ivataakhimatitlugit ikpinagiyauyukhat.

4.7.4 Munagitjutikhait Kuviviit ovalo Igitigutikhait Uyakat

Uyagakhiukhimayut igitigutikhait ovalo kuviviit pihimayut uyakat pihimayut ataanit kaaganut. Igitigutikhait uyakat ahiguktikhimayut ovalo ilauyut havagutait aalatkiinik angiyut; kuviviit ahiguktikhimayut hiugaktut. Hamna atugutait pilaaktut aalatkiinik hunavalunik ilauyut aninaktuliit, ukumaitut haviit ovaluniit aalat piyumangitut haviit ovalo aninaktuliit uyagaliat atuklaamata hilakyuamut ovalo Inunut. Ilaa aninaktuliit hunavaluit kayumiitumik aninaktuliiniaktut ovalo aalanik uyagaliat nutkaktilaaktut ilaani, hapkoa havagutait aninaktulikalaaktut ukiuni amigaituni – ilangit tamalaitut. Pinahuaktainik munagiyaagani Inunut aniaktailigiyiit ovalo hilakyuat atuniamata hivunikhapinut inuuyukhanut ovalo ublumi, ihuakhautikhait iniktigutikhainik mikhitiktukhat aninaktut haponanga.

[26] Letter dated May 1, 2006, providing comments on the draft Uranium Policy and draft Consultation Document.

Havakviit ungahiktumut tikitjutikhait utiktinahualugit nunait havakviini atugiagani hivunikhapinut. Tamamik havakviit uyagakhiukviit kinauyakhainik tutkuktuihimayukhat naamaktunik nutkaktiyaagani tamamik uyagakhiukviit uyagakhait inikata. Ungahiktumut munagitjutikhait nutaat igitigutikhait uyakat (uyakat pihimayut hunavalunik pipkailaaktut hilakyuanik ihuinaagutikhainik[27]) ovalo kuviviit pihimayukhat kungialugit. Nutaat uyagakhiuktut igitigutikhait utiktivaktut uyagakhiukvinut havaguigaagata ovalo kuviviit ilivaktut angmaumayunut uyagakhiuvinut nani uyakat pihimayut ovalo hanauyakhimayut pilaaktakhainik. Ilangani 1 ukakhimayut ilangit maligutikhait ublumi atuktainik Saskatchewanmi uyagakhiukviini.

Ungahiktumut kungiagutikhait nutaat igitigutikhait uyakat ovalo kuviviit kimakhimayut uyagakhiuktut havakviit inikata pihimayukhat munagilugit hivunikhat inuuyunut nakuungitumik ikpinagutikhainut hapkoa havagutikhainit. Pilaaktut piyumayut tahapkoa kungiagutikhait hapkoa havagutikhait, ilaa, kuviviit, piniaktut nutaanik ihumagiyakhainik uraniumni uyagakhiuktut uktugutikhaini. Ovalo, CNSCkut piyukhat kinauyakhainik ilihimalutik kinauyakhainik ungahiktumut kungiagutikhainut ovalo pilaakata ihuakhaitjutikhainut kuviviit munagivikhait ovalo atanguyautait ilihimalutiklu kungiaktauyaagani.

CNSCkut Maligaliugutait Pikuyakhait P-290 (2004mi) ukakhimayut atugutikhainik pihimayukhat CNSCkuni “hanagaagamik maligaliugutikhainik angigutainik mikhaanut aninaktuliit igitigutikhait munagitjutikhainik.” Ovalo titigakhimayut *Utiktigutikhait Pikuyakhait* hanahimayait NTIkut ovalo RIAkut atuniaktut IOLmi ilauyut atugutikhainik utiktigutikhainik ovalo nutkaktigutikhainik uyagakhiukviit havakviit IOLmi. DIANDkut *Uyagakhiukviit Nunait Utiktigutikhait Pikuyakhait Nunavumi* atuktut hanatiligiyiit Kanatami nunaini, ilangit atulaaktut uyagakhiukviit havakviini Kaangani IOLmi.

Uraniumni Pikuyakhait pitkuhimayut ihumagiyait mikhaanut kuviviit ovalo igitigutikhait uyakat, ilauyut pilaaktakhainik pihimalutik ungahiktumut kungiagutikhainik, tunilutik nutaanik ihumagiyakhainik uraniumni uyagakhiuktut uktugutikhainik. Pitkuhimayutlu ilaukatigilugit Inuit ikpinagiyauyuni nunanit hilakyuat kungiagutikhaini uraniumni uyagakhiuktut Nunavumi, tamamik havaktut uyagakhiukviit ovalo ukiuni uyagakhiukviit nutkakhimalikata ovalo havaguikata.

4.8 Nunat Ilaukatigitjutikhait

Inuligiyit-Hanatiligiyiit Ihumagiyakhait

Ilanginut ihumaalugiyait mikhaanut Inuit aniaktailigiyiit, hilakyuat ovalo umayut (ilaa nunakatigiit), pikaktut inuligiyit-hanatiligiyiit ihumagiyauyukhat. Ukakhimayut Ilanganut 4.5, pikaktut amigaitunik hanatiligiyiit ikayugutikhainik uraniumni uyagakhiuktunit. NLCAmi pitkuhimayut Inuit pilaaktukhainik ilaukataulutik ikayugutikhainit. Kihimi,

[27] Takulugit Ilangani 1, Ilanganut1.6 tuhafaagumaguvit.

ihumaalugutikatut mikhaanut ikpinagutikhait hanatiligiyiit Inuit inuuviviniinut, Inuuhiinut ovalo nunat naamagutikhainut. Hapkoa ihumaalugiyauyut ukakhimayukhat Inuit tamaat ilaukatauyaagani hanatiligiyiit pilaaktakhainit.

Tuhaktituitjutikhait ovalo Ukakatigitjutikhait

Ukagaagata pilaaktakhainik ikpinagutikhait – ovalo ikayugutikhait – hanayakhami, ikpinaktuk hanayakhat uktuktut ovaluniit havaniaktut tuhaktitilutik nakuuyumik nunanut ilaukatauyuni. Pingitpata tamamik ilaukatauyut pilaaktut ihuitumik hilakyuat ihivgiugutainik atugutikhait ovalo ihumaalulutik ovalo kangikhitiangilutik mikhaanut ikpinagutikhait ovalo ikayugutikhait pilaaktunik havaktitlugit uyagakhiukviit. Ilangani, hamna pipkalaaktut nakuungitumik pihimayakhait havakviit/uktuktut nunanut ukakatigitjutainik atugutikhainut kihimi pilaaktut akhuugutikhainik tuhaktituitjutikhait mikhaanut kablunaat kauyimayatukangit ovalo ayonaktut ilanginut havakvikhait.

5 Naitumik Ukautait ovalo Titigagutait

CMR	Kanatami Uyagakhiuktut Maligaliugutikhait
CNSC	Kanatami Uraniumni Aniktailigyit Kamisitkut
DFAIT	Munagiyit Nunakyuani Munagiyit ovalo Niuviktiligiyit
DIO	Naunaiyakhimayut Inuit Havakviit
EIS	Hilakyuami Ikpinagutait Ukautait
IAEA	Nunakyuani Uraniumni Kuliligiyiit Havakviit
ICC	Inuit Ukiuktaktumi Katimakyuat
INAC	Kanatami Inuligiyit
IOL	Inuit Inminiigutait Nunait
KRLUP	Kivalliq Nunat Atugutikhait Paknaiyautikhait
NIRB	Nunavumi Ikpinaktut Ihivgiuktit Katimayiit
NLCA	Nunavumi Nunataagutit Angigutaanut
NORM	Inminik Pikataktut Aninaktuliit Havagutikhait
NPC	Nunavumi Paknaiyaiyiit
NPT	Angigutait Atugutikhait Anguyagutikhainik Uraniumni
NSCA	Uraniumni Aniktailigiyit ovalo Munagitjutikhait Pikuyakyuat
NTI	Nunavut Tunngavik Timinga
RIA	Aviktukhimayut Inuit Katutjikatingit
UMMR	Uraniumni Uyagakhiuktut ovalo Halumaktiligiyut Maligaliugutikhait

Ilangani 1 Kinikhiayut, Uyagakhiuktut ovalo Halumaktiligiyut Uraniumni

1.1 Hivuliit Tuhagutikhait

Havagutait uyagakhiukviit ihumalaaktut amigaitunik atugutainik: kinikhiayut, kinikhiatitlugit ihivgiugutainut pilaaktut nalvaagutikhait; hanatiligiyiit, nani ilauyut paknaiyautait, atuligutikhainut, naunaiyautait ovalo hanatjutainut; uyagakhiuktut ovalo halumaktiligutainut uyakat; ovalo utiktigutainit ovalo nutkaktiligutainut, ilauyut kinguani kungiagutikhainut. Tamamik hapkoa atugutait pihimayut amigaitunik aalatkiit atugutainik. Hamani Ilangani[28], tunihimayut ilangani tuhagutikhainik ikayugiagani tunihimayut Ilanganut 4.3mi. Hamna naitumik ukautait atugutikhainik hapkoa atugutikhainik ilauyut hapkoa atuniaktait, ayokhalaagutait aniaktailigiyiit ovalo aniktailigiyiit havaktinut ovalo nunani Inunut, ikpinagutait hilakyuamut ovalo atugutikhait atuniaktut mikhitigutikhait hapkoa ayokhalaagutait.

1.2 Kinikhiayut

1.2.1 Kanuk Kinikhiayut Pivaktut

Kinikhiayut uraniumni nalvaagutikhainik atuktut aatjikutainik atugutikhainik atuniaktait nalvaakhiugutikhainik nalvaalaagutikhainik aalanik. Kitkaniitut aalangutait uraniumni kinikhiatjutikhait ilauyut atugutikhainik nalvaakhiugutikhainik aninalaagutainik nalvaagiagani pipkaivaktut nungutigutainik uraniumni.

Kinikhiayut atuktait ilauyut kinikhiayunit, uyakanik kinikhiatjutainik, uyakat ihivgiugutainik ovalo nunanik nunauyaliugutainut, tamamik ilauyut atugutainik Scintellometer havaktait havaktiit naunaiyagiagani uraniumni. Aalat atuktait ilauyut nunanik ihivgiugutainik naunaiyagiagani uraniumni ovalo aatjikutainik nunauyanik, katitigutainik nunat kaagani nalvaalaagutainik, nunauyat ovalo imat. Hamna atugutikhait ilaani pivaktut ikayuktauplutik “kinguani ikuutagutainik” nani katitikpaktut ihivgiuktakhainik kaagani havagutikhait ihivgiutiagutikhainut. Tamamik hapkoa atuniaktait, ihivgiuktakhat katitiklugit ovalo autlaktiklugit ihivgiufaagiagani.

Nunani ihivgiugutait atuktait ilauyut tamamik nunani ovalo tingmiakut ihivgiugutait, atulutik naunaiyauligutainik aninaktuliit ovalo aalanik atuklutik, ilauyut nalvaakhiugutainik hanalgutinik atuklutik ovalo nunanik ihivgiugutainut naunaiyagiagani naagiagani nunauyat kanugitjutainik.

Pitaakata hapkoa alatjiit ihivgiugutait naluhuikata kanugitjutait pilaaktakhainik nalvaagutainik uraniumni, pivaktut ihivgiulugit ikuutakut. Kinikhiagutainut aalanik

[28] The information is extracted from an internal NTI report titled “Discussion Paper – Policy Concerning Uranium Mining In Nunavut”, 2005.

niuviktilaagutainik, ilangit kolinik ovaluniit zinc, ikuutakhimayut pivaktut uyagainik. Kitkaniitut unguvakhimayut ihivgiuklugit ovalo ilangit naamakpata, hamna ilanga kupitilikpatait malgunut, atauhik autlaktilugit ihivgiufaagiagani. Kupikhimaitut kitkaniitut ovalo ilangani kupikhimayut tutkukhimalugit nunani kiukutinik ovaluniit tutkhimalugit.

Ilangani hanayakhani, pualgiyagutait unguvalugit ihivgiuktakhait pilaaktut. Ihivgiugutaini ilangani kinikhiayut hanayakhat, nalvaakhimayut kinikhialaaktut ataani nunat itiktigutikhainik hanalutik.

1.2.2 Aniaktailigiyit ovalo Aniktailigiyit ovalo Hilakyuat Naunaiyagutait

Amigaituni kinikhiayut atuktait ukakhimayut hamani pikangitut ikpinagutikhainik aniaktailigiyiinut havaktiinut ovaluniit hilakyuamut. Kihimi havaktiit atukpaktut uraniumni (aalatlu ilangit) havagutainik uyakat ihivgiuktakhainik ovalo ikuutagutainik. Ovalo, pilaaktut aninalaagutainik havagutikhainit nalvaalaaktut kaagani nunat ovaluniit imani unguvaktigutainik ovaluniit ikuutagutainik.

Kapaniit havaktut uraniumni kinikhiayut amigaitunik piniaktut munagilugit Inuit aniaktailigiyiit ovalo hilakyuat hapkoa ilauyut:

- Tamamik havaktut kinikhiayuni nunaini atuniaktut gamma aninaktunik havagutikhainik;
- Inuk aktuktilaitut tamaat ukpatainik angitkiyainik 1 millisievert (mSv) 12ni tatkikhiutini kihimi naunaiyakhimakpata ovalo ayoikhakhimalutik Uraniumni Kuliligiyiit Havaktiit (NEW); CNSCkut keeliniit NEWkut 50 mSv ukiuk tamaat ovaluniit 100 mSv talimani ukiuni;
- Nani radon gas katitilaaktut, kungiagutait hanalgutit atuniaktut ovalo havakviit atuktukhat nakuuyunik anikhaagutikhainik;
- Tamamik havaktiit tuniyauvaktut aninalaagutikhainik ayoikhaitjutikhainik mikiyaagani atugutikhainik aninalaagutikhanik;
- Tamamik ikuutagutit “ihivgiuktauniaktut” hanalgutinik ovalo unguvakhimayut uyakat ihivgiuktauniaktut aninalaagutikhainik;
- Nani ikuutaktut pigaagata aninalaagutikhainik uyakat, hapkoa ilangani ikuutakhimayut tutkukhimaniaktut kiukutinik havinik atuklaigiagani aninalaagutainik imait hilakyuamut;
- Tamamik ikuutagutit imait atukataniaktut ovalo atufaalugit pilaakata; ovalo hamna mikiligutiginiaktut unguvagutainik aninalaagutainik imait hilakyuamut;
- Munaginiaktut havagutait aninalaagutainik imamungalaitut atuktakhainik;
- Aninalaagutit ikuutagutit aviktukhimaniaktut ikuutagutit imainik, katitiklugit puukhainik ovalo tutkuklugit katakyuanut akyagiagani halumaktigutikhainut ovaluniit igitigutikhainut;
- Ikuutagutit unguvagaagata kinikhiavinit, nunat ihivgiuktauniaktut piyaagani aninalaagutit naunaiyautainik aninalaagutikhainik; pilaakata, aninaktuliit havagutait halumaktiniaktut.

Kinikhiayut uraniumni piniaktut tamamik aalanik maligaliugutikhainik piyakhainik atuniaktut aalanik uyagaliagutikhainik, ilauyut hilakyuat ihivgiugutikhainik, imat laisinsiinik, nunat atugutikhait atugutikhainik ovalo laisinsiit ovalo maligutikhainik nunat atugutikhait paknaiyautikhainik.

1.3 Uyagakhiuktut

1.3.1 Kanuk Uyagakhiuktut Pivaktut

Ilaani, uraniumni uyagakhiuktut aalangugitut aalanik uyagakhiuktunit kihimi ayonalaaktut pikamata naunaiyautainik gamma radiation, aninalaagutit radon gas ovalo anikhaagutainik mikiyunik naunaiyautikatunik aninalaagutikhanik. Hapkoa pilaaktut aniktailigiyiit mikitivaktut nalunaitunik atugutikhainik, ukiuni, ungahiktuni ovalo nutkaktinahualugit aktugutikhainik gamma radiation ovalo atuklutik hakugiktunik anikhaagutikhainik atuklutik ataani uyagakhiukvini munagiyaagani radon naunaiyautainik ovalo anikhalaagutikhainik. Angiyunut uyagaliakhaini, munagitjutait hanalgutinik ovalo nutaanik nutkalaagutikhainik hanalgutinik atuklutik.

Nani uyakat kaanganiitpata, atuniaktut angmaumayunik uyagakhiugutainik, ilauyut angiyut angmagutainik ovalo unguvaktiklugit aalanik uyakanik ovalo amigaitunik igitigutikhainik uyakanik.. Kiggavik-Sissons nalvaavikhait kaanganiitut ovalo uyagakhiuniaktait taimaatut. Saskatchewanmi uyagait unguvagaagata, angmaumayut atukpaktut tutkuktuitjutainik igitigutikhainik uyakat ovalo kuviviit ovalo ilangit igitigutikhainik uyakat pilaaktukhanik ungahiktumut ukiuni hilakyuamut kimakhimakpata.

Figure 3. Deilmann angmaumayut Key Lakemi uyagakhiukvik, 1994mi. 1996mi, angmaumayut atuliktut kuviviinik McArthur Rivermi uyagakhukvik.

Nani uyagaliat ungahikpata ataani, ataaninut uyagakhiukpaktut, ilauyut hanalutik itigutikhainik ataani ovalo ataani apkotiliulutik kihimi mikitkiyauyut igitigutikhainik uyakanik ovalo mikitkiyauyut hilakyuamut ikpinagutikhait. McArthur Rivermi uyagakhiukvik ovlao Cigar Lakemi uyagakhiukvik, (ublumi hanayauliktut) ataani uyagakhiukviit. Ilangit uyagkahiukviit, ilangit McClean Lakemi uyagakhiukviit Saskatchewanmi, atuktut tamamik angmaumayunik ovalo ataani uyagakhiuktut.

Amialikami, Australiami, Kazakhstanmi ovalo aalani, uyagakhiuktut atukpaktut taihimayunik *in-situ leach* (ISL) uyagakhiuktut atukhutik. Ilangit uyagaliat nalvaakhimata ataani imani aalatkiinik hanalgutikhainik ovalo pilaaktut nungutiklugit ataani imainut ovalo nungutigutainik uraniumni, pappautikut kaaganut, nani uraniumni pivaktut ililugit halumaktigutainut havakviinut. Hamna atugutait atungitut Kanatami, atulaitut Nunavumi.

Avataani kitkanit nunakyuami uraniumni hanatiligiyiit pivaktut ataani uyagakhiugutainik, kitkani 27% angmaumayunik ovalo 19% ISLkut.

1.3.2 Aniaktailigiyit ovalo Aniktailigiyit ovalo Hilakyuat Maligutikhait

Atuktangit 1940nit ovalo 1950nut nani uyagkahiuktit ovalo aalat havaktiit uraniumni uyagakhiuktut havakviini aktuktitauvaktut angiyunik aninaklaaktunik ihumagyut ilauyut angiyunik aninagutikhainik ovalo aalanik aniagutikhainik ilangani hapkoa havaktiit. Hamna ilaa nalunaitut havaktiit havakhimayut Port Radiumi Nunatiami ovalo Beaverlodgemi uyagakhiuvik Saskatchewanmi. Ukaniaktavut talvatuak ukaktut nutaat uyagakhikviit atuktainik, amigaitut aninagutaitut utukanit atugutikhainit.

Amigaitut ayokhagutait mikhaanut uraniumni uyagkahiuktut aatjikutauyut uyagakhiuktuni aalanik kinikhiayunik. Uraniumni inminik mikiyunik aninalaagutikatut. Kihimi radon, aninalaagutiliit kaasiliit, autlaktivaktut hilakyuamut mikiyumik uyagaliat uyagakhiukhimayut ovalo ahiguktigaagata. Radon pivaktut inminik uyakani ovalo mikiyut naunailikpaktut anikhaaktaptinik, mikhaanut ilauyut katitigutainik uraniumni uyagkahiuktut, radon pilaaktut aniaktailigiyiinut ayokhalaagutainik.

Nutaat pihimayakhait uyagakhiuktitlugit ovalo halumaktitlugit uraniumni munagiyaagani aniaktailigiyiit havaktiit ilauyut hapkoa:

- Naamaktunik anikhaaktainik munagitjutikhait, ilaa, aninakhait pikalaamata aninaktunik ovalo kungmuupkaiyumata radon kaasliniinik;
- Keelinikalugit aninaktunik akugutikhainik havaktiinut uyagakhiuvini, halumaktiligiyini ovalo kuviviinit nunaini ilaa *mikinikhaagutikhait naamaktunik pilaaktakhainik* (ALARAmik atuktut), ovalo avataanungangilugit pilaaktut aktugutikhait keeliniit;
- Atuklutik nutaani nutkaktigutilinik hanalgutinik havaktiinut mikhitigiagani aktugutikhait aninaktukhanik. Uyagakhiuktut angiyunik uyagalianik pivaktut atukhutik alguyaktuktunik munagitjutainik atukhugit;
- Atuklutik aninaktunik naunaiyautikatunik hanalgutinik tamamik uyagakhiuvini;
- Atuklutik nakuuyunik anikhaagutikhainik atugutikhainik ataani uyagakhiukviit piyaagani aktugutikhait radon kaasiliinik ovalo aninaktuliit ilangit hanahimayut ALARAmik ovalo avataanungalilugit ilihimayut naunaiyautait aniktailigiyiit. Radon nungutikpaktut angiyumik hilamut ovalo anitiklugit hilamut;
- Ilitigutikhainik hakugiktunik inminik halumaktigutainik maligutikhainik havaktiinut munagiyut uraniumni oxide katitigutainik. (Uraniumni oxide pikatut

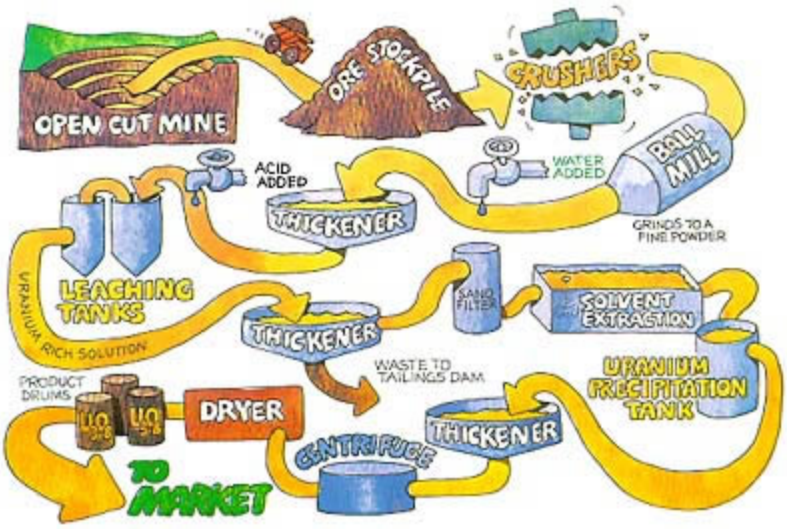
aninalaaktunik aatjikutainik lead oxide nigigaagata. Aatjikutainik munagitjutikhainik tahpakoa lead igatjutainik pivaktut havagutigigaagata).

McArthur Rivermi uyagakhiukvik Saskatchewanmi – pikatut angiyunik uyagalianik – atuktut alguyaktuktunik, "itigutaitut" uyagakhiukviit atugutainik. Naunaiyautait ilauyut alguyaktuktunik ataani uyagakhiukviit ahiguktiliit ovalo nungutigutiliit havakviit, akyagutikhait uyagalianik mungitjutikatunik puukhainik ovalo atuktut nutaani nutkatigutilaktunik havakviinit halumaktiligiyinut. Havaktiit aktukpaktut angiyunik uyagalianik tamaat nutkaktihimaliktut[29]. Cigar Lakemi uyagakhiukviit atuniaktut aatjikutainik atuklutik.

1.4 Halumaktiligutait Uraniumni Uyagaliat

1.4.1 Kanuk Halumaktilikpaktut

Uyagaliat unguvagaagata nunanit, ataanit uyagakhiukvinit ovaluniit angmaumayunik, halumaktilikpaktut. Halumaktiligutait nani uyagaliat ahiguktikpaktut ovalo halumaktiklugit hanalgutinut, unguvalugit uyagaliat uraniumni pikatut, igitlugit igitigutikhait hanayakhat taivaktut halumaktiligiyiit kuviviinik. Atugutait takulaaktut hamani hanauyautaini.



Naunaiyautait 4. Kungiagutait halumaktiligutikhait. Pihimayut: Nunakyuani Uraniumni Katutjikatiginit kagitauyat takulvianit.

Saskatchewanmi McArthur Rivermi uyagkahiukviit, ahigutiligutait ovalo nungutigutait ilangit halumaktiligiyini pivaktut ataani uyagkahiukviit ovalo pipkaivaktut makluliugutainik akyakhugit puukatunik halumaktiligiyinut (Key Lakemi Halumaktiligivik) nani ilangit halumaktilikpaktut.

[29] Natural Resources Canada, Energy Sector web site.

Naunaiyautait 5. Key lakemi halumaktiligivik havakhimayut uyagaliat McArthur Rivermi uyagakhiukviinit. Kuviviit tutkuktiviani Deihmann angmaumayunit. Pihimayut: Cameco Kuapurisitkunit.

McClean Lakemi halumaktiligivik, uyagaliat angmaumayunit uyagakhiukvimit pivaktut halumaktiligivinut halumaktiligiyiini atuktainik. Amigaitut uyagaliat – ilangit ilauyut uraniumni nungutigaagata kuviviinut ovalo hapkoa igitukhat ovaluniit 'kuviyakhat' aviktukpaktut uraniumnit ilangani katakyuakut nani uakpaktut igitukhat aalanut nuutitilikpaktut aipaanut. Imait pihimayut uraniumni halumaktilikpaktut ovalo uraniumni aviktuklugit piyumangitainit nungutiklugit uyagaliat atukhutik unguvaktigutait atukhugit.

Kinguani uraniumni utiktivaktut halumaktiligutainik nungutigutainik halumaktiklugit ovalo panikhiilugit hanayaagani uraniumni oxide pitkutainik ovaluniit "yellowcake" 99%mik U_3O_8. Yellowcake puutukhimavaktut katakyuanut umikhugit akyagiagani. U_3O_8 mikiyumik aninalaagutikatut: Aninalaagutit naunaiyautait 1 metre katakyuamit nutaat halumakhimayut U_3O_8 kitkaniitumik cosmic ray (hikinimit) tingmiakut aatjikutaatut. Kuviviit iniktigutainit kuvivaktut katitikhugit igitigutikhainik ilanganut kuviviini paknaiyautingani, halumaktifaakpaktut atukhugit piyumayainik ovalo pupautakhugit Kuviviit Munagiviani Havakvianut.

Naunaiyautait 6. Haumikmi – Yellowcake pivaktut halumaktiligiyinit ovalo akyakhugit Blind Rivermi halumaktifaagiagani ovaluniit akyaklugit. Talikpiani – Katakyuat yellowcake paknaiyakhimayut akyagiagani.

1.4.2 Aniaktailigiyit ovalo Aniktailigiyit ovalo Hilakyuat Atugutikhait

Amigaitut ukautigiyait ukaktut aniaktailigiyit ovalo aniktailigiyit ihumagiyait mikhaanut uyagakhiuktut havaktiit naamaktut havaktiinut uraniumni halumaktiligiyiini. Kitkaniitut ihumaalugutigiyait halumaktilivini uyagakhiukvini anikhaakataktait (pikaktut aninaktunik pikatunik), radon kaasiliit ovalo gamma aninaktuliit (uyagalianit, uraniumni aviktukagit pingitut kuviviinit). Anikhaakataktait katitilikpaktait ovalo utiktivaktait atugutainut. Radon kaasiliit nungutikpaktait ovalo autlaktilugit hilamut angiyumik.

Kitkaniitut hilakyuami ihumaalugiyait autlaktigutait "aninaktuliit" imait halumaktiligiyinit atuktainit. Malikhugit tuhaktakhait CNSCnit[30], "angitjutait imat atuktait uyagakhiukvinit ovalo halumaktiligiyinit angivalaamata tutkukhimayaagani. Amigaitut uyagakhiukviit ilangit haman imait atufaalaaktut halumaktiligiyini; kihimi amigaitut autlaktilikpaktait hilakyuamut. Pitinagit hamani, imat halumaktilikpaktait ilavlugit halumaktigutinik. Ilaa, barium chloride halumaktigutit ilavaktut unguvagiagani radiumni kungmuuyaagani hilamut. Imat autlaktivaktut uraniumni uyagkahiukviinit ovalo halumaktiligiyiinit Kanatami kungiaktaunginaktut piyaagani pivaktut keeliniinik halumaktigutainik katitigutainik ukakahimayut Kanatami Kavamatkut. Hapkoa keeliniit pivaktut ikpinagutait hilakyuamut mikiniaktut. Ublumi, maligaliugutikhait atuliktait pitkuhimayut autlaktitait tukutilaitait ikalunut."

1.5 Aninaktuliit Uyagakhiukvini ovalo Halumaktilivini Igitigutait

Nunakyuat inminik pikaktut amigaitunik aninaktuliit havagutainik – uraniumni, thoriumni, radiumni ovalo aninaktiliit kaasiliit radon. Uyagakhiukviit ovalo halumaktiligiviit uraniumni ovalo ilangit aalat uyagaliat kailikpaktut hapkoa aninaktuliit havagutait hanianut Inuit ovalo radonmi ovalo ilangit hanatjutait, kayumiktilikpaktait autlaktigutait hilakyuamut.

Igitigutait halumaktiligiyinit havakviit pikaktut aninaktuliit uyagalianit, ilangit radium. Hapkoa igitigutait autlaktivaktut kuviviit munagitjutainit hanahimayut tutkukhimatjutaikhainik napututait ovalo nutkativaktut kuvitjutainik imaktut. Kinguani kuviviit utiktilaaktut uyagahiukvinut ovaluniit kaaganungalugit uyakanut ovaluniit maklunut, utiktiyaagani nunait.

Aninaktuliit pikatut kuvivini aatjikutauyut hivulinit uyagalianit ovalo ilauyut naputigutainut. Ilaa, aninaktuliut ukabgut nungutikhimaitut ovaluniit ilauhimayut kuviviinut paknaiyautainut atuktainik. Uraniumn Oxide (U_3O_8) pivaktut uyagakhiukvinit ovalo halumaktiligivinit uraniumni uyagaliat mikiyunik aninaktuliit – amigaitut aninaktuliit hivulimit uyagaliamit kimakpaktut uyagakhiukviit kuviviini. Amigaitut

[30] Canadian National Report for the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management; Produced by the Canadian Nuclear Safety Commission; May, 2003.

aninaktuliit isotopes kitkaniitunik atugutikatut, mikikpiaktunit ikaaninit mikhaanut billions ukiunut. Aninaktuliit mikhitikpaktut ubluini hapkoa isotopes nungutilikpamata nutkaktigutainut, aninaktuitumik. Kayumigutait nungutigutait isotopes himautainut kitkaniitut atugutikhait; naitut atugutait ukaktut kayumiktumik nungutilikpaktut. Taimaimat, tamamik aninaktuliit angitkiyauyut naunaiyautait aninaktiligutait kanugitjutainut havagutainik, naitut atugutikhainik ilauyut.

Pingahut maligutait atuktait munagitjutainik aninaktuliit igitigutainik tamamini:

- Katitiklugit ovalo tutkukhimalugit
- Nungutiklugit ovalo autlaktilugit
- Nutkaktiklugit ovalo nungutiklugit inminik.

Hivuliit malguk atukpaktut munagitjutaini aninaktuliitunik igitigutaini. Igitigutait katitikpaktut ovalo tutkukhimalugit ovaluniit nungutiklugit naamatunik naunaiyautainut ovalo autlaktilugit hilakyuamut. “Nutkaktilugit ovalo nungutiklugit” kihimi nutaanguyut aninaktuliit igitigutait munagitjutainut; ukaktut igitigutait tutkukhimavaktut ovalo aninaktuliit mikhitikpaktut inminik nugutigutivlugit radioisotopes iluaniitut.

1.6 Munagitjutait Igitukhat Uyakat

Malguk kitkaniitut igitigutait atuktait ilauyut uraniumni uyagakhiukviit ovalo halumaktiligiviini kuviviit ovalo igitukhat uyakat. Kuviviit munagiyauvaktut hanahimayuni TMFmi, ukakhimayut hamani. Igitukhat uyakat havagutait unguvaktukhat nalvaakviinit piyaagani uyagaliat. Hamna havagutait angililaaktut millions cubic metres uyakanit, ilaa angmaumayuni uyagakhiukvini. Ilangit hapkoa igitkuhat uyakat havagutigilaaktut mikiyunik naunaiyautainik uyagaliat ovaluniit pihimayut angiyunik katitikhimayunik atulaaktainik uyagalianik. Kipitigutait naunaiyautait igitukhanik uyakat pikaktut 0.03%mik uraniumni, havagutait angitkiyait 0.03%mik kihimik mikitkiyait hanatiligiyiit naunaiyautain ukakhimayut “nutaat igitukhat.”

“Aninaktut uyakat kuviviit” (ARD) ukaktut mikiyut pH (ilaa aninaktut) kaagani ovaluniit ataani imat pipkaivaktut nungutigutainik sulphide uyagaliat ovaluniit nungutigutainik aninaktut pipkaiyuktut uyagaliat nalvaakpaktut uyakanit ovaluniit puatikiinit. Hamna ARD nalvaagumik imani, aninaktulilaaktait hapkoa ovalo pilutik hakugiktunik aninaktunik hilakmyuamut. Nungutilaaktut aalanik havinik igitukhat uyakani ovalo pipkailugit itiktilugit hilakyuamut.

CNSCkut tuhaktakhait Cigar Lakemi hilakyuat ihivgiugutaini ukakhimayut, “Saskatchewanmi, ilangit igitukhat uyakat pikaktut aipainik aninaktulinik ovalo nickel uyagalianik, ungahiktumut munagitjutikhainik ovalo munagitjutikhait hapkoa aninaktuitut hunavaluit atukpaktait naunaiyautainut munagitjutikhait pihimayukhat munagiyaagani igitukhat uyakat, aninaktuitaungitainik.” Molybdenum ovalo selenium naunaiyautait ihumaalugiyauyut ilangini uyagakhiukvini ovalo halumaktitauyukhat, ilaa Cigar Lakemi uyagakhiukviit ublumi hanayauliktumi.

Kingulimi, igitukhat uyakat tutkukhimavaktut kaagani ovaluniit atukpaktut utiktigutainik ataani uyagakhiuvimi. Kihimi, kimakhimagumik kaagani, ilangit hapkoa “nutaat igitukhat uyakat” hanalaaktut aninaktunik ovaluniit autlaktilutik haviit kayumiktumik ihuinaalaaktunik hilakyuamut. Ublumik atuktait munagitjutainik nutaat igitukhat uyakat nutkaktilugit hilakyuamut ilanganut (ilaa, ataanungalugit angmaumayunut uyagakhiuvigalunut).

1.7 Munagitjutikhait Kuviviit

1.7.1 Hivuliit Ukautait

Napuyut igitukhat halumaktilivinit papaulikpaktait imakatunik napuyut ovalo imakatunut TMFnut ukakhimayut ilanagani 1.5. Napuyut katitilikpaktut – imakatunik ovaluniit hiugakatunik havagutainik – ovalo imat ovaluniit ilangit, kuvipkaivlugit.

Havaktiit uraniumni uyagakhiukviit pivaktut munagitiakhutik kuviviit pipkaivaktait ihuinaaktaililugit hilakyuamut. Igitukhat munagitjutait pinakhuaktut munagilugit ovalo keelinikalugit autlaktigutait pilaaktut aninaktuliit hunavaluit TMFmit hilakyuamut. Munagilutik piyukhat autlaktut TMFmit pikalaitut aninaktunik Inuinut, nunauyanut ovaluniit umayunut. Autlaktigutait halumaktivaktut ovalo ihivgiukhugit autlaktitinagit hilakyuamut tikinahuakhugit tamamik imat maligutikhait.

1.7.2 Kanugitjutait Kuviviit

Naptuyut kuviviit nutkativaktut imauyakatunit TMFmi aatjikutauyut ilanganit uyagaliat hivulimit unguvakhimayut nunanit kihimi pikaktut ilangani aipainit uyagalianit ovalo halumaktigutait atuliktait halumaktiligiyiit atugutainit.

Aatjikutaatut kuviviit aalanit uyagakhiukvinit, ilangit koliniit uyagakhiukviit, kuviviit uraniumni uyagkahiukviit pikaktut ukumaitunik haviknik unguvakhimaitut halumaktititilugit atugutainit. (taimaatut, kuviviit aatjikutauyut nutaat igitukhat uyakat ukakhimayut hamani ilangani 1.6). Saskatchewanmi uyagkahiukviit, hapkoa ilauyut nickel, arsenic, molybdenum ovalo selenium. Pikaktutlu sulphide uyagaliat taivaktut pyrite pipkailaaktut hanatjutainik aninaktuliit imaini ilanganut pivaktait kuviviit havakviinit.

Angiyut hamani makpigaami, kihimi kuviviit uraniumni uyagakhiukvini pikaktut mikiyunik aninaktuliit havagutikhainik ovaluniit nungutivaktut kaasliit radon. Kuviviit ilauyut amigaituni hivulim uyagaliani (ilaa, uyakat halumaktihimayut) ovalo pikaktut amigaitkiyainik aninaktuliinik. Ilaa pikaktut radium ilauyut hivulimi uyagaliani. Radium pigaagata inminik aninaktuliit nungutigutainik atauhik ilauyut radon kaasiliit. Ilaa radon ovalo nungutigutait hanatjutainik aninaktuliit, naunaiyautait mikitinahualugit kungmuutjutait radon kaasiliit.

Napuyut kuviviit pikaktut angitingitunik aninaktunik hunavalunik hivulimit uyakanit, kihimi iluaniitut ihuakhakhimalaaktut. Hunavaluit pikalaaktut, taimaimata angitkiyainik nuutitilaagutainik (nungutilaaktut ataani imat ovalo kaagani imat), naunaitut pivaktut hakugiktunik kuvitjutainik maligutait halumaktiligiyit atugutainut ukakhimayut ilangit uyagaliat kuvihalaitut kayumiktumik inminik TMFmi.

1.7.3 Munagitjutikhait Kuviviit

Kingulimi, kuviviit atukpaktut utiktilugit ataani uyagakhiukviit ovaluniit ililugit kingingitunut kaagani nunani ovalo nutkaktikalugit hanahimayunik nutkakhimajutainik. Kaagani kuviviit kimalaaktut inminik, kaanganungalugit nunauyanik ovaluniit imaktiklugit. Kihimi, ublumi, maligaliugutit pihimayukhat mikhaanut kuviviit hakugikhiliktut.

Nutaat kuviviit munagitjutait atuktait ilauliktut halumaktigutikhainik kuviviit autlaktititinagit TMFmut; ovalo tutkukviit munagitjutait kaagani kuviviit hakugiktunik hanatjutait ungahiktumut nutkavikhainik. Ilangit uyagakhiukviit, kuviviit utiktilikpaktut ataani uyagakhiukvinut tutkukhimayaagani. Havaktitlugit havakiit, kuviviit kaaganungakpaktut imanik nutkaktiyaagani kaagani aninaktuliit ovalo radon kungmuutjutainik. Ukakhimayut Ilangani 1.3.1 ovalo 1.4.1, uyagaliat halumaktigutait hanianiingitut uyagakhiukvinit kitkanit havagutaini ovalo igitigutait kuviviit hanahimayunik angmaumayuni kimakhimayut uyagkahiukviit hivulinit nunainut.

Inigaagata uyagakhiukviit havakviit, atuinaktait kuviviit kaanganungalugit ilangit malgunik metres makluit ovalo nunauyanik nutkaktiyaagani aninaktuliit naunaiyautait hanianut tahapkoa pivaktait uyagalianit ovalo nunauyanik kaaganungalugit inminik.

Uraniumni uyagkahiukviit ovalo halumaktiligiviit ilauyut atauhimik pingahunut ilaukataitjutainik igitukhat. Kuviviit nunait ilauliktut ataani maligaliugutikhait munagiyait CNSCkut. Munagitjutait kuviviit uyagakhiukviit havaktitlugit angiyumik ayokhagutigiyauyut, ungahiktumut munagitjutikhait kuviviit amigaituni ukiuni uyagakhiukviit umikpata, ukakhimayut hamani ilangani, ilauyut atauhik anginikhat ayokhagutit paknaiyautaini ovalo havagutaini nutaat uyagakhiukviit. Pilaaktut ihumaalugiyait ukiuktaktumi makhaktiligutait nunakput ataani hilat aalanguligutait. Hamna ikpinagiyaulaaktut ungahiktumi nutkaktigutikhait hanahimayut atuktait nutkaktiligiyiini kuviviit ovalo ihumagiyakhait hanauyautainik ovalo hanatjutainik.

1.8 Utiktigutikhait ovalo Nutkaktiligutikhait

Uyagaliat uyagakhiuktautaapata, nunait utiktiyukhat ovalo uyagakhiukviit nutkaktitilugit. Utiktigutikhait ilauyut unguvaktitilugit tamamik ikluit ovalo havagutait nunaini ovalo utiktinahualugit nunait hivulianut inminiigutikhainut pilaakata. Ukautaa “Nutkaktiligutikhait” atulaaktut ukautait atugutikhait piyukhat malilugit umiktiligutikhait uyagkahiukviit. Hivuliuyut pinahuaktait nutkaktiligutikhait igitlugit tamamik aninaktuliit

havagutikhait ihuakhakatagutikhait munagiyuiyaagani. Kungiagutikhait pilihimayuit pihimayukhat takupkailutik hapkoa piyakhait pihimaliktut.

Maligaliugutikhait ataani Uraniumni Aniktailigiyit ovalo Munagitjutait Pikuyakyuat pihimayut maligutikhait nutkaktiligutikhainik paknaiyautait ovalo kinauyakhait pikaktut hanayakhat tuniyautinagit havagutikhait laisinsikhainik. (Ihumagiyait mikhaanut akiliktigutikhaini ovalo kinauyut tutkuktuitjutikhaini ukakhimayut Ilangani 4.7.4 haman makpigaami) Havaktitlugit, paknaiyautait ilaani ihivgiukataktukhat ovalo ihuakhaklugit pilaakata. Angiktaakata umiktinialiktait havakviit, inikhimayut pakhaiyautikhait ovalo hilakyuat ihivgiugutikhait pilaaliniaktut. Hilakyuat ihivgiugutikhait ilaulaaktut Inuit katimapkailugit tuhagiagani, ukakatigitjutaini maligaliuktit havakviinut. Kanatami ovalo aalat maligaliuktit havakviit naamagilikata hamna havaktait, nutkaktitililaaktut laisinsiit tunilugit ovalo nutkaktitililutik uyagakhiukviit.

Nutkaktitilikata, tamamik maligaliugutikhait aninaktunik munagitjutikhait, aniktailigiyiit ovalo hilakyuat muanagitjutikhait atuinaniaktut. Hapkoa pihimayukhat ilangit akiit ikayugutikhait ihivgiugutait takupkaiyukhat havaktait maliktut munagitjutikhainut aninaktuliit mikiliktut naamaktunut pilaaktakhainut, hanatiligiyit ovalo Inuligiyit mikhaanut ihumagiyait ihumagiyauyukhat ilautilugit.

Iniktaakata nutkaktiligutikhait, ukiut kungiagutikhait maliktukhat takupkaiyaagani nunait piliktut hilakyuat ihivgiugutainut malilugit. Hamna takupkaipata, apiginiaktut tunilugit havaktiit nutkaktilugit laisinsiit maligaliuktinit – ukaktut “kimaktiligutait” CNSCkut maligaliugutainik. Munagitjutait nunat, ilauyut ungahiktumut kungiagutikhait ovaluniit nunat atugutikhait munagitjutikhainut, utiktilugit Kanatamut ovaluniit aalat inminiigutainut nunainik. (Ukakatigitjutait makpigaat nuutiyaagani hanatiligiyiit pravinsini ungahiktumi havakviit munagitjutikhait atugutikhainik utakihimayut Saskatchewanmi 2005mi.)

Ukaktukhat uraniumni havakviit ilauyuitut angiyunik aninalaaktunik nunaini ihumaalugilugit ayokhalaagutikhait aniaktailigiyiit ovalo aniktailigiyiit havaktiinut ovaluniit Inunut. Kitkaniitut ihumaalugiyauyut mikhitinahualugit pilaaktut katitigutikhait aninaktuliit ungahiktumi ukiuni.

1.9 Kungiagutikhait

1.9.1 Kungiagutikhait Pilihimayuit

Ungahiktumut kungiagutait pilihimayuit pivaktut tamamik uyagkahiuktut havaktitlugit ovalo uyagakhiukviit nutkaktiltiklugit piyaagani aninaktuliit havagutait nuutitingitut nunauyanut ovaluniit hilamut ovaluniit imanut ovalo tahapkonanga nigitautitlugit umayunit ovalo Inunit. Hapkoa ilauyut:

- Maligutikatut kungiagutait takupkaiyut maligaliuligiyit maligutait pihimayukhat kavamatkut havakviinit pihimayukhat. Hamna kungiagutait piyukhat

uyagakhiukviit, ilauyukhat hilami ovalo imani ihivgiugutait naunaiyagiagani kungmuutjutait maliktut maligaliuktit atuktainik.

- Hilakyuani ikpinagutikhait kungiagutait pihimayut hilakyuat akhut ihuinaakhimaitut ikpinagutikhainik uyagakhiuktunit ovalo ilanganut havagutainit. Hamna kungiagutikhait hilamut, umayunut, ikalunut ovalo nunauyanut pikataktukhat iluani ovalo haniani uyagkahiukviit.

1.9.2 Ungahiktumut Ukiuni Kungiagutikhait Kuviviit

Amigaituni, uyagakhiukviit umigaagata ovalo nunait utiktigaagata, TMF umiktiniaktut ovaluniit nutkakhimatilugit. Kihimi, pilaaktut nani kuviviit kungiakataktukhat amigaituni ukiuni uyagkahiukviit umiktaukpata, pilaaktut "ilaani" kungiakatalugit, ovaluniit ungahiktumut pilaakatakata ayokhalaagutit, kungiaktaukataktukhat amigaituni ukiuni hivunikhaptinut.

Ilaa, 1997mi tuhaktakhat Kanatami-Pravinsini katimayigalaat uktugumayut Cigar Lakemi uraniumni uyagkahiukviit Saskatchewanmi ukakhimayut "Pitkuhimayut ungahiktumut ukiuni kungiagutikhait atuktakhait munagiyaagani hivunikhaptinik Inuukatiit nakuungitunik ikpinagutkhainit." Tuhaktakhat uakhimayutlu, "Piyakhainik piyukhat kungiagutikhainik hamna nunait ilaani ovalo pitkutkhainik pihimalutik akigaktuitjutikhainut piyumayaungitut ikpinagutikhait." Katimayigalaat pitkuhimayut kinauyakhainik ilihimalutik hamna havagiagani ovalo atanguyautikhait ilihimalutik kungiagiagani.

Nalungitugut tamamik uyagkahiukviit inminik pikaniamata kanugitjutait ovalo ungahiktumut ukiuni kungiagutikhait ilaani pilaitunakhiyut. Ukakhimayugutlu tahapkoa ungahiktumut ukiuni kungiagutikhait pikatalaaktut havaktiinit hanianit nunanit ovalo tunilaaktut mikiyuugaluaktunik kinauyaliugutikhainik amigaitunut ukiunut.

1.10 McClean Lakemi Havakviit

McClean Lakemi havakviit atauhiuyuk pingahunit ublumi havaktut uraniumni uyagakhiukviit Saskatchewanmi. Havakviit, ilauyut angmaumayut uyagkahiukviit ovalo halumaktiligiviit, atauhiyuk malgunit uraniumni uyagakhiukviit havakviit pulaaktauhimayut NTIkunit ovalo RIAkunit ovalo aalanit Nunavumiut ilaukatauyunit ukiukhami 2005mi.

Uraniumni uyagalialiugutit nalvaakhimayut hivulimi McClean Lakemi nunaini 1979mi, ilait uyagaliat nalvaakhimayut 1980mi.[31] Hanayakhat havaktauyut AREVA Pitkutiligiyit Kanatami Timinga, ilauyut AREVAmi ilaukatauyut kapaniit (AREVA). Inminiigutait McClean Lakemi havakviit, AREVA (70%), Denison Uyagakhiuktit (22.5%) ovalo OURD Kanatami (7.5%). Uraniumni uyagakhiuktut havaliktut 1999mi, ukiuk tamaat

[31] Some of the Information about McClean Lake was supplied by AREVA.

hanatiligiyiit hanaplutik 6 million lbs U_3O_8. Halumaktiligivik ihuakhaktauhimayut talvanga ovalo ublumi laisinsikaktut pilaaktakhainik havakviit 12 million lbs U_3O_8 ukiuk tamaat. Decembermi 2004, kinguani nalvaalaaktut ovalo pilaaktakhait tuhaktitihimayut 32.9 million lbs U_3O_8 kitkanit naunaiyautiliit angitjutait 1.7%.[32]

Angmaumayuni uyagkahiukvik JEBmi uyagaliat piliktut 1995mi. Uyagaliat unguvamata ovalo tutkuktimata, JEBmi angmaumayuk hanahimayauyuk kuviviit munagitjutkhait havakviinik TMF). Angmaumayut uyagkahiukvik uyagkahiukhimayut talimanik Sue uyagaliat pilikhugit, kimakhugit McCleanmi uyagaliat hivunikhaptini ataani nunat uyagakhiulaaktut. Angmaumayut uyagkahiuktut Sue uyagaliat piliktut malikhugit uyagaliat halumaktiligivianut hivulimi (Sue C) inikhimayut 2002mi ovalo aipaa (Sue A) paknaiyakhimayut havalilugit 2005mi. Hamna kilamik maliniaktut Sue E utakiyut maligaliuktit angigutikhainik.

Naunaiyauti 7. Angmaumayuk uyagkahiukvik McClean Lakemi uyagkahiukvik.

McClean Lakemi halumaktiligivik (JEBmi halumaktiligivik) hanauyakhimayuk tamamik nakuuyunik hanayaagani angiyunik naunaiyautikatunik uraniumni pikatunik ovalo tunilaaktut angiyunik naunaiyautainik munagitjutikhainik havaktiinut ovalo hilakyuamut hanatitlugit angiyunik naunaiyautikatunik uyagalianik. Halumaktiligivik atuktut maligutainik atuktunik atugutikhainik kuvilaaktunik uraniumni uyagalianit ovalo utiktilaaktunik uraniumni nalvaagutait iniktikhimayunik uraniumni pikaktut ihuakhagutikhainik. Nalvaakhimayut panikhiiplugit unakpiaktunik panikhiivinik ovalo iniktigutainik atuktakhait puutikhimaplugit katakyuanut akyagiagani.

[32] http: //www.arevaresources.com/operation/mcclean/index.html

Naunaiyauti 8. Halumaktiligivik McClean Lakemi uyagakhiukvik/halumaktiligivik havakviit.

Halumaktiligivik pikaktut amigaitunik nutaanik atugutikhainik munagiyaagani havaktiit ovalo hilakyuat. Aninaktuliit munagitjutikhait ovalo tutkukhimatjutikhait pilaaktunik aninaktuligiyinik akhut atukhimayut. Anikhaagutait atugutikhait hanauyakhimayut pihimayaagani nuutitigutainik aalatkiinik. Nakuuyut nuutitigutainik pihimainaktut anikhaalaaktunik anikhagutikhainik atuktut halumayunik havakviini (ilaa munagivik ikluanga) ovalo mikiyut nuutitigutainik pilaaktukhanik aninaktuliinik umikhimalaaktunik (ilaa nutkaktigutikatut ikluat kuviviinik kataktukakhutik), nani anikhalaat anitivaktut. Talimani ukiuni havakhimayut naluhuigamik pihimayait tamamik maligaliuktit pihimayakhainik pikatainaktait, angiyumik pikahutik kitkanit havaktainit ovalo mikiyuni pihimayukhat havaktakhainut.

McClean Lakemi Kuviviit Munagitjutait Havakviit (TMF) tunihimayut nutaakpianik munagitjutikhainik atuktait aniaktailigiyit, aniktailigiyit ovalo hilakyuat. TMF hanauyakhimayut tunilutik hilakyuami munagitjutkhainik tamamik havagutainit ukiunganut ovalo ungahiktumut. Ilaa, kuviviit akyakpaktut halumaktiligivinit TMFmut kungiaginakhugit puyukviit atukhugit atugutainik. Igitigutikhait kuviviit TMFmi ataani imat munagitjutigivlugit havaktiit pilaaktunik aninalaaktunit ovalo anikhaagutainit kungmuutjutainik ovalo nutkaktigutikatunik kikilaitunik kuviviit ukiumi havaktitlugit. Hilakyuat munagitjutikhait atuktut nutkaktigutikatunik tutkuktuiviit TMFmi havaktitlugit ovalo ungahiktumut aniktailigiyiit tamamik nutkatititlugit atungilugit havagutainik atuktainik. Atuktait paknaiyautainik kuviviit, nuutitilaalugit arsenic (pilaaktut aninaktuliit pikaktut hivulinit uyagalianit) nutkalaakatunik angililaagutainik hilakyuat munagitjutikhainik. TMF hanauyakhimayutlu nutkaktiligutikhainik ilaa pilaaniamata, kimaklugit umiktigutikhainik kuviviit iluani nunat atugutikhainik, tamamik hiugauyut uyagait. Hamna tuniniaktut naamatunik munagitjutikhainik hilakyuamut autlaktitigutikhainik aninaktulinik ungahiktumut ukiunut.

Naunaiyauti 9. Haumikmi – Takuyakhait McCleanmi (JEB) halumaktiligiviit uyagalianik tutkukhimayut haumiani. JEBmi Kuviviit Munagitjutikhait Havakviit (TMF) hivuani ovalo havakviit talikpiani; Kitkani ovalo talikpiani - JEBmi TMF kuviviit ataani imat.