Kiggavik Project

Final Environmental Impact Statement

Tier 3 Technical Appendix 2P: Occupational Health and Safety Plan

September 2014

History of Revisions

Revision Number	Date	Details of Revisions
01	December 2011	First Issue with Draft Environmental Impact Statement
02	September 2014	Issued for Final Environmental Impact Statement

A management plan is a living document which is continually reviewed and revised throughout the life of the Project to ensure it meets health, safety, and environmental performance standards. This process of adaptive management and continual improvement (Tier 2, Volume 2, Section 17) is consistent with the Inuit Qaujimajatuqangit (IQ) principles of Qanuqtuurunnarniq *being resourceful and flexible to solve problems* and Pilimmaksarniq *maintaining and improving skills through experience and practice.*

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Attachments

Abbreviations

AED ..... Automated External Debrillator

ALARA ..... As Low As Reasonably Achievable

ARC ..... AREVA Resources Canada Inc.

CPR ..... Cardio Pulmonary Resuscitation

DNV ..... Det Norske Veritas

EH&S ..... Environment, Health and Safety

EFAP ..... Employee Family Assistance Plan

ERT ..... Emergency Response Team

GN HSS ..... Government of Nunavut Department of Health and Social Services

IMS ..... Integrated Management System

IRS ..... Internal Responsibility System

ISO ..... International Standard for Organization

OHC ..... Occupational Health Committee

OH&S ..... Occupational Health and Safety

OHSAS ..... Occupational Health and Safety Assessment Series

SAT ..... Systematic Approach to Training

SCBA ..... Self Contained Breathing Apparatus

SHEQ ..... Safety, Health, Environment and Quality

TDG ..... Transportation of Dangerous Goods

U/U ..... Uranium in Urine

WHMIS ..... Workplace Hazadous Materials Information System

1 Introduction

1.1 Overview

AREVA Resources Canada Inc. is committed to establishing and maintaining a comprehensive occupational health and safety program for the Kiggavik Project which focuses on accident prevention and risk management. Personal injury accidents, untoward incidents, property damage and occupational illnesses are not the inevitable costs of doing business.

At ARC, the Occupational Health and Safety program is made up of several components that implement the AREVA Safety Policy and its objectives. To provide a healthy and safe workplace for employees and contractors, the program is designed to meet legislated requirements, internal AREVA Resources Canada Inc. standards and the Occupational Health and Safety Assessment Series (OHSAS) 18001 standard.

1.2 Scope of Kiggavik Project OH&S Plan

This Occupational Health and Safety Plan provides a general overview of the OH&S management system used by AREVA at its operations in Canada, and identifies project-specific safety management activities which will be implemented for the Kiggavik Project. The plan addresses requirements of the *Nunavut Safety Act* and *General Safety Regulations* and *Nunavut Mine Safety Act and Mine Health & Safety Regulations* and the *Canada Labour Code* applicable to workplace health and safety at the Kiggavik Project.

Through AREVA's community engagement events and Inuit Qaujimajatuqangit (IQ) interviews, the company learned that people had questions about worker safety (EN-BL NIRB April 2010[1], EN-BL OH Oct 2012[2], IQ-RIW 2009[3]). Community members wanted to know what occupational health and

[1] EN-BL NIRB April 2010; *Elder's husband worked at the Rankin Inlet Nickel mine as an underground miner and became ill. What is the plan to protect the people and workers?*

[2] EN-BL OH Oct 2012: *What will you do to protect workers' health?*

safety plans AREVA will have in place to protect workers. Additional feedback noted a familiarity with mining and that mining can be safe for workers as long as occupational health and safety plans are in place (EN-CI OH Nov 2013[4], IQ -BLRW 2009[5]) and a familiarity with personal protective equipment (IQ-WCE 2009[6]) and safety (IQ-RIHT 2009[7], IQ-CIYA 2009[8]). This document discusses the procedures and programs that will be in place to ensure the protection of workers. The overall management system for OH&S will continue to evolve as the Project develops with activity-specific safety management documentation developed as it is required.

Policies, processes, procedures and training programs will be developed during licensing that incorporate an integrated approach to the management of human performance. Some of the topics that will be covered to address human performance in greater detail at the time of licensing include:

- Safety culture policy & internal responsibility
- Contractor Management
- Specific work programs/practices to reduce human error
- Fire safety
- Incident investigation
- Systematic approach to training
- Contractor management
- Working Alone
- Worker fatigue/hours of work
- WHMIS & Chemical Safety
- Right to Refuse

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[3] IQ-RIW 2009: *The women were also worried about worker health and safety.*

[4] EN-CI OH Nov 2013: *Late husband worked underground. She believes underground is safe.*

[5] IQ -BLRW 2009: *Workers believe that mining is safer than it used to be. They are not worried about occupational health and safety overly; just about large accidents and evacuation*

[6] IQ-WCE 2009: *In the old days, people didn't have all sorts of health and safety protective equipment. Therefore they had to learn to be careful; for example, not to fall off a boat into the sea. Now, people depend on the equipment to save them rather than learning how to survive without it.*

[7] IQ-RIHT 2009: *HTO members carry satellite phones and ground positioning system (GPS) devices for safety reasons.*

[8] IQ-CIYA 2009: *They [young hunters] also go out in groups or pairs for safety reasons.*

This plan is to be used in conjunction with the:

- Spill Contingency and Landfarm Management Plan (Tier 3, Technical Appendix 10B),
- Emergency Response Plan (Tier 3, Technical Appendix 10C),
- Radiation Protection Plan (Tier 3, Technical Appendix 2Q),
- Noise Abatement Plan (Tier 3, Technical Appendix 4F) and
- Other program specific procedures.

1.3 AREVA Resources Canada's Health & Safety Policy

AREVA Resources Canada Inc. is committed to providing a healthy and safe work environment for all of its employees and contractors, and to ensuring that all work is performed in a safe and responsible manner that meets regulatory and company standards.

To meet this commitment, AREVA shall:

- comply with applicable legislation and other requirements to which AREVA subscribes;
- develop internal objectives and targets to achieve continual improvement in health and safety performance;
- measure performance against established goals;
- support all employees and contractors in fulfilling their health and safety responsibilities;
- develop, implement, maintain and test emergency procedures;
- investigate reported incidents that result or could result in employee illness or injury;
- identify and address workplace risks and hazards;
- promote and maintain dialogue with stakeholders on health and safety issues; and
- foster a common safety culture throughout the organization.

1.4 Guiding Principles

AREVA's commitment to providing a healthy and safe workplace is guided by the following five basic principles:

- We make safety a recognized value
- We do not compromise standards, rules and procedures
- We lead behaviours through observation, example and explanation
- We maintain positive control over conditions and activities
- We recognize warning signs and don't live with problems

1.5 Occupational Health & Safety Standards

1.5.1 Safety Management System Standards

AREVA uses the Occupational Health and Safety Assessment Standard 18001:2007 safety management system. It is AREVA's expectation that safety management systems are developed to meet the OHSAS 18001 standard.

1.5.2 AREVA Group Standards, Directives and Guidelines

There are some AREVA specific directives that AREVA Resources Canada Inc. follows. These directives are at least or more stringent than local and federal regulations.

- AREVA Group Occupational Safety Policy
- AREVA Asbestos Directive
- AREVA Guide to Safety Culture
- AREVA Directive for the Occupational Safety Control of Contractors

1.5.3 Federal, Provincial and Territorial Regulations

ARC must be compliant with the applicable regulations within the jurisdictions in which it conducts work. For the Kiggavik Project, the key acts and regulations governing occupational health and safety are as follows:

Federal

- Canada Labour Code Part II
- Canada Occupational Health and Safety Regulations
- Nuclear Safety and Control Act
- Uranium Mines and Mills Regulations
- General Nuclear Safety Regulations

Nunavut

- Safety Act and General Safety Regulations
- Mine Safety Act and Mine Health & Safety Regulations

1.5.4 Guidelines for Environmental Impact Statement

For the Kiggavik Project, section 9.5.1 of the "Guidelines for the Preparation of an Environmental Impact Statement For AREVA Resources Canada Inc.'s Kiggavik Project", May 2011 provide specific requirements described by the Occupational Health &Safety Plan. Radiation Protection is described in the Radiation Protection Plan.

2 Organizational Structure and Responsibility

2.1 Integrated Management System (IMS)

The IMS manual is the top tier document in ARC's Corporate IMS. It provides a structured framework of policies, guidance and expectations to operating sites, departments and major processes of the organization. The IMS is designed to meet three objectives:

- that activities are conducted in a safe and efficient manner that will meet applicable regulatory requirements
- that the requirements of ISO 14001 and OHSAS 18001 standards are met as applicable
- that the principles of sustainable development are implemented throughout the organization

The Corporate IMS Manual addresses the activities of the corporate senior management and sets requirements and expectations and provides guidance for the company. Each site will also have a site specific IMS, complete with specific procedures, work instructions and forms to ensure that corporate requirements are implemented.

2.2 Internal Responsibility System

There were concerns and beliefs raised by a community member that *safety management of the company should be top down to ensure it is effective* (EN-BL OH Nov 2013[9]). AREVA is committed to ensuring a safe workplace for its employees; safety expectations of both employees and management are listed below. The Internal Responsibility System (IRS) exists in the commitment by all persons (workers and management) to provide a healthy and safe workplace by proactively identifying and solving occupational health and safety problems that occur. The commitment is internal with both workers and supervisory management sharing direct responsibility for the safe and

[9] EN-BL OH Nov 2013: *Health and Safety needs to be something that is important to a company and coming from the top down or it is very hard to make a safe site*.

efficient performance of work. The following descriptions of groups and individual positions describe specific safety roles within AREVA Resources Canada Inc.

2.3 Safety, Health, Environment and Quality (SHEQ) Department

The SHEQ Department is stationed in the Saskatoon corporate office and is responsible for providing leadership in safety, health, environmental and quality affairs of ARC. The SHEQ Department is a group of highly skilled, knowledgeable individuals who contribute their expertise to the ARC team to make certain it is an efficiently managed, learning organization, which thoroughly contemplates the effects of its activities in order to protect human and ecosystem health.

Groups within the SHEQ Department include Health and Safety, Environmental Science, Geosciences, Quality, Radiation Protection and Administration.

2.4 Training Group

The Training Group is responsible for providing some of the Safety training on site such as Orientation. In addition, they will organize safety training to be provided by the Safety Group or they may make arrangements for bringing external instructors to provide specialized safety training for employees and the Emergency Response Team.

The Training Group is also responsible for management of training records and ensuring training of employees is up to date.

2.5 Emergency Response Team (ERT)

The Emergency Response Team will comprise of site employees who receive special training to assist in an emergency. The General Manager, in consultation with the SHEQ Manager, will select qualified candidates in sufficient numbers to facilitate the response programs required by the plan.

The Emergency Response Team will receive the special training required for adequate response to onsite emergencies. Some of the emergencies the team may respond to include:

- emergencies involving injuries and fatalities
- evacuations
- fires or explosions
- spills or other accidental releases

2.6 Senior Management

Corporate management has a contributive responsibility in workplace health and safety. It is the responsibility of corporate management to:

- define the standards, requirements, and expectations in health and safety
- ensure there are adequate resources to fulfill the requirements
- monitor to ensure the requirements are fulfilled
- take corrective actions as necessary

2.7 Operational and Functional Managers

Operational and functional managers, who have the direct responsibility for the AREVA's work activities, must developing plans, processes and procedures for the fulfillment of health and safety requirements in their areas of responsibility. It is the responsibility of operational and functional managers to:

- develop a safety management system applicable to their area of responsibility following the corporate direction provided through the corporate IMS
- assign responsibilities for the execution, maintenance and monitoring of the safety management system
- take corrective actions as necessary

2.8 Supervision

Supervisors have a direct responsibility for enacting the plans, processes and procedures for safe accomplishment of AREVA's activities. It is the expectation of AREVA Resources Canada that all supervisors:

- are knowledgeable, trained and experienced in the areas they supervise
- obtain applicable provincial or territorial supervision certificates, as required by legislation
- promote workplace health and safety
- contribute to health and safety objectives
- investigate incidents in their areas
- proactively identify and correct deficiencies
- have daily contact with their employees in the workplace
- conduct daily toolbox meetings
- conduct routine safety meetings

2.9 Workers

Workers are responsible for conducting themselves in a manner that will not pose a risk to themselves or any other persons. All workers have the obligation to adhere to plans, wear the proper personal protective equipment including carrying radios with them, follow processes and procedures designed to conduct work safely. Workers are expected to:

- understand the safe work practices and requirements which apply to their activities
- only conduct activities which they believe they can do safely
- reporting unsafe acts, workplace hazards, accidents, near accidents, injuries, or illnesses immediately
- contribute to the identification of hazards and the mitigation of risk
- contribute to the continuous improvement of safety performance

2.10 Safety Professionals

Safety professionals are employed by AREVA to facilitate the development, execution and continual improvement of safety management systems and safety performance.

Key positions and their responsibilities within the Safety Group will likely include:

2.10.1 Health and Safety Coordinator:

- responsible for the coordination of non-radiological health and safety programs

2.10.2 Safety Officer:

- responsible for the effective functioning of the safety program, fire prevention systems and emergency response program
- implementing health and safety program
- responsible for completing, reviewing and filing safety reports

2.10.3 Safety Technician:

- assist the Safety Officers with reviewing and filing of reports and assisting with safety programs

2.10.4 Industrial Hygienist:

- responsible for the operation of Industrial Hygiene programs and activities dealing with non-radiological workplace exposures

2.10.5 Occupational Health Nurse:

- responsible for operating the health centre and providing nursing services on-site

2.11 Occupational Health Committee (OHC)

An Occupational Health Committee (OHC) will be formed. The OHC will be comprised of both employee and employer members from both shifts. The purpose of the committee is to assist workers and employers communicate and work together to identify and control hazards. Their role is to monitor the IRS to ensure it is functioning properly through contribution of recommendations and advice to management.

Some specific duties of the OHC will include reviewing significant changes to procedures and provides suggestions. They may also choose to participate in accident investigations. The OHC will meet on a monthly basis to inspect the workplace and discuss issues that may be brought forth to them.

3 Risk Management (Plan)

3.1 Hazard Identification and Risk Assessment

A critical element in the planning of safe work is the identification of workplace hazards, their assessment, and the development of controls to mitigate risk. Health and safety programs at AREVA include processes for the identification of hazards and the evaluation and mitigation of risks. AREVA must take all precautions that a reasonable and prudent person would take in the circumstances. Processes are applied to work activities, designs and changes of facilities. The assessments are documented and the risks are catalogued. More information is provided in Attachment A.

3.2 Safe Work Planning and Procedures

As an outcome of the hazard identification and risk assessment process, procedures to conduct work safely will be developed in order to mitigate risk. They will be written in compliance with the regulations and requirements of the Nunavut Mine Health and Safety Act and Safety Act and General Safety Regulations. The Health and Safety Group will develop and maintain these written procedures to support safe work, some of which will include:

- Driving Regulations and Vehicle Operation
- Portable Ladders
- Confined Space Entry
- Ground Disturbance
- Hot Work
- Lockout
- Working in Hot Environments
- Working Alone or in an Isolated Environment
- Line Blowing / Clearing
- WHMIS
- Fall Protection
- Cranes and Rigging
- Powered Mobile Equipment Operation
- Respiratory Protection
- Electrical Safety
- Barricade Tape Usage
- Personal Protective Equipment

3.3 Change Control

The Change Control process ensures that physical changes to a process, system, structure or component are managed effectively and adequately documented. The multistep process involves many stages which include problem identification and justification for change, risk assessment performed by various groups such as Maintenance, SHEQ and Engineering, approval for implementation, and validation following implementation. It ensures that changes consider operational needs as well as safety, health, radiation protection, environmental protection and licensing requirements. The Health and Safety Group will be actively involved in reviewing changes to facilities, procedures and processes before implementation.

3.4 Human-Wildlife Encounters and Protocols

Human-wildlife encounters are minimized through a number of preventative measures, as outlined in Tier 3, Technical Appendix 6D - Wildlife Mitigation and Monitoring Plan.

Orientation to all employees will include specific training to avoid wildlife and how to handle them should an encounter occur.

3.5 Emergency Preparedness and Response

AREVA develops plans to address predictable emergencies, such as fires, spills, system failures, interactions with hazardous substances, transportation accidents and personal injuries. To develop the emergency preparedness and response plan, the foreseeable potential emergencies are identified, the possible consequences of the emergency considered and a plan for the response prepared. Refer to the Technical Appendix 10C - Emergency Response Plan and Technical Appendix 10B - Spill Contingency Plan.

3.6 Preparedness of Mine Safety Equipment and Devices

Emergency equipment will be maintained by the Health and Safety Group and the Emergency Response Team (ERT).

Monitoring systems such as fire detection and fire protection will be managed by the Safety Group with the assistance of various departments as required.

Some types of emergency equipment located in strategic locations throughout site such as fire extinguishers, eye wash stations, first aid kits and emergency showers will be checked on a regular basis by each respective department. In the event maintenance, repair or replacement of equipment

is necessary, personnel will notify the Safety Group. Emergency used by the Emergency Response Team such as turnout gear, SCBA, respirators and hazmat suits will be maintained by the ERT and the Safety Group.

Ventilation monitoring underground and within the mill will be the responsibility of the Operations and Radiation Protection Group. The Maintenance Department will assist in the maintenance and repairs of the ventilation equipment.

The personnel performing monitoring safety systems for chemicals in the mill will be a joint responsibility of the mill operations and safety group. The maintenance group will provide preventative maintenance on the equipment to ensure they are functioning. Equipment will also be calibrated as required.

3.7 Safety by Design

AREVA has a robust design control process in place for the development of new facilities and for changes to existing facilities. The process involves the identification development and implementation of safety standards in the design process. Design review requires the participation of technical leads in appropriate disciplines, including safety professionals, in assessing hazards associated with the design. Tools such as hazard and operability analysis, failure mode and effects analysis, and what if analysis, are used to identify and evaluate hazards introduced by the change or new facility. At the design stage, when hazards are identified the focus is first on elimination, then substitution, then implementation of engineering controls to mitigate risk.

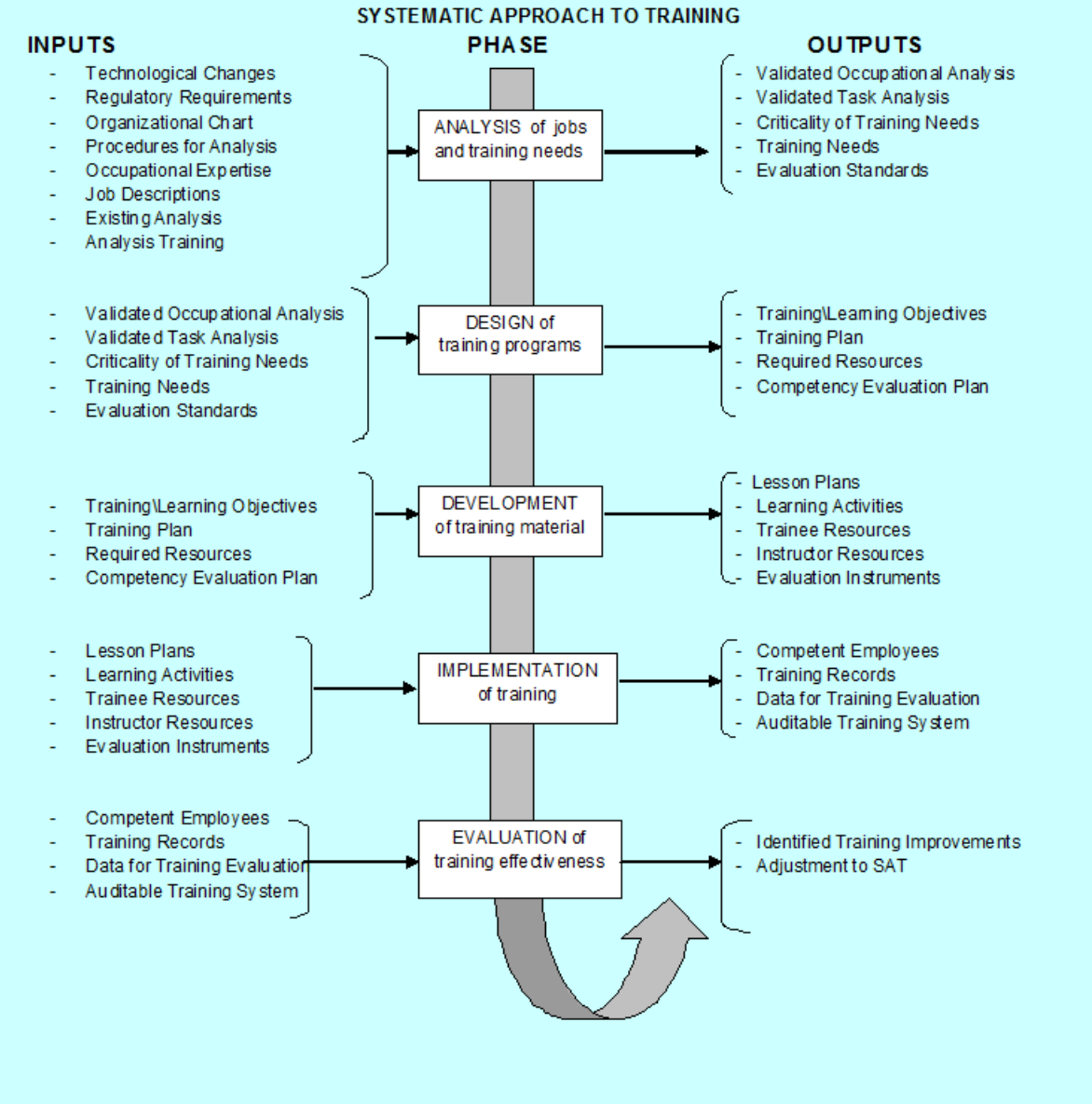
3.8 Safety Awareness Programs

3.8.1 Systematic Approach to Training

The Kiggavik Project will use a systematic approach to training (SAT). This will involve analyzing tasks employees do for the employer, designing training for competent performance of the tasks, developing and delivering learner focused training, and testing for competent performance. The systematic approach will also include evaluating the effectiveness of the training and continuous improvement.

The Systematic Approach to Training has the following 5 objectives, with the inputs and outputs of the program diagrammed below:

- Occupations are effectively analyzed to determine training needs
- Training programs are effectively designed to meet training needs
- Trainings materials are developed that meet the requirements of the training design
- Training is implemented that provides the knowledge skills and attitudes required for successful performance of the tasks
- Training programs are evaluated and revised as required



3.8.2 Orientation Training

All new employees including contractors are trained with an initial orientation upon arrival at site. New employees or employees who have been away for a specified period must take the orientation training again. Some of the topics that will be covered during orientation include:

- Administrative issues
- Mine Site & Camp Rules
- Site Orientation
- Health Centre Orientation
- Muster Point Locations and evacuation procedures
- General road regulations
- Haul Road Procedures
- Nunavut Mine Health and Safety Act and applicable regulations
- Use of emergency fire fighting equipment
- Shift work
- Radiation Protection overview (additional training to be provided for designated Nuclear Energy Workers)
- Kiggavik Emergency Safety overview
- Waste Management
- Mine Orientation (if required)
- Mill Orientation (if required)

3.8.3 Drug and Alchol Free Workplace

AREVA is committed to providing a healthy and safe work environment for all of its workers, and to ensuring that all work is performed in a safe and responsible manner that meets regulatory and company standards (Health and Safety Policy). The site will be a dry site, meaning alcohol and drugs will not be permitted at workplace. There will be assistance available through an Employee & Family Assistance Plan (EFAP) for those employee and family members who require substance abuse counselling (Volume 9, Part 1, SocioEconomic Environment, Section 6.3.6 Effects on Wellbeing). There have been *several questions raised by community members on regarding the drug and alcohol policy will be at site* (EN- KIV OH Oct 2009.[10,11,12,] EN - CH KIA Feb 2010[13]). A

[10] EN- KIV OH Oct 2009: *Should employees have a personal problem (family, alcohol and/or drugs), will AREVA help?*

comprehensive policy will be written during the licensing phase to ensure all employees are aware of what will be expected of all employees when they come to site to work.

The following is an overview of some of the current means of drug detection used at ARC's operational sites which may be considered for Kiggavik:

- Pre-employment and pre-access substance testing
- Drug detection on company property
- Drug detection at points of entry and exit
- Drug detection of individual property
- Post-Incident and Reasonable Cause Testing
- Searches by Aircraft Carriers
- Seizure
- Disciplinary Action

3.8.4 Prerequisite Training

Prerequisite safety training will be provided to all new employees prior to them being involved with site activities. For example, there will be specific safety training for employees handling chemicals; including how to choose and use the right Personal Protective Equipment (PPE), WHMIS training and how to refer to a Material Safety Data Sheet. Any employees working in areas where they may be exposed to noise levels that may affect their hearing will be provided Hearing Conservation and Hearing Protection training. Anyone who requires the use of specialized personal protective equipment will be provided the necessary information and training. All employees will be shown the emergency response equipment in their area and how to use them if required such as protective clothing, emergency showers, fire extinguishers and eye wash stations.

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[11] EN - KIV OH Oct 2009: *Will the site be dry (no alcohol or drugs)?*

[12] EN-KIV OH Oct 2009: *Do you guys do assessments with employees?* I have experience in mine work and they did drug tests. Will this happen at your mine?

[13] EN - CH KIA Feb 2010: *What will be the drug and alcohol policy? How will it be controlled?*

Ongoing and refresher training is provided to ensure employees achieve full competency in the performance of assigned tasks and duties. Training will also be given to ensure a working knowledge of regulatory requirements and license agreements.

3.8.5 Site Specific Training

Following orientation, area specific safety training will be provided by the supervisor, departmental training groups or the safety group.

Training for specific safety procedures will be provided for high-hazard work, such as work involving confined space entry, lockouts, fall protection, respiratory protection, scaffolding, working with powered mobile equipment, rigging and hoisting and electricity.

In addition, training required by legislation will be provided to employees, as required, for:

- WHMIS (Workplace Hazardous Materials System)
    - The Workplace Hazardous Materials Information System (WHMIS) is a three component system that was developed in conjunction with the government, labor and industry to protect workers against exposure to hazardous materials. All workers at Kiggavik will receive WHMIS training. Anyone working with or near chemicals will be provided training on using, handling, storage and disposal of these chemicals. Successful candidates who complete the course will be provided a certificate. Chemical safety training will include being aware of what chemicals hazards exist, planning the work to minimize exposure, what PPE to where, how to safely handle the chemical, how to respond to a chemical exposure.
- TDG (Transportation of Dangerous Goods)
    - Anyone who handles dangerous goods, including the person who loads or unloads, is responsible for making sure the goods are transported safely to their final destination. Successful candidates who successfully complete the course will be provided a certificate.

Some of the information that will be covered includes:

- An overview of the TDG requirements
- Responsibilities of shippers, handlers and drivers
- Classes of dangerous goods
- Shipping documents
- Safety marks
- Containers
- Special situations
- Emergency actions

3.9 Participatory Safety Management: 5 Point Safety System

The 5 Point Safety System is a method of promoting safety awareness and risk assessment in the workplace. The system will require workers and their supervisor to focus on safety in their workplace and work practices. It will require daily interaction between the worker and the supervisor regarding safety. It will be used to enforce the requirement that doing the job correctly also means doing it safely. The system has been used in the mining industry for many years and implementation is credited with improved safety culture and a functional internal responsibility system. It will overtly place responsibility on the workers and the supervisors.

The 5 point safety system will address the causes of accidents, which are primarily substandard conditions, substandard methods and substandard attitudes. The 5 points are as follows:

1. Check Entrance and Travelway to Workplace.
2. Are Workplace and Equipment in Good Working Order?
3. Are Employees Working Properly?
4. Do an Act of Safety.
5. Can and Will Employees Continue to Work Properly?

3.9.1 Workers:

- record their answers to the above questions on a 5 Point Safety Card on a daily basis.

3.9.2 Supervisors:

- contact each worker in their workplace at least once per day
- observe the person while working
- check to see if the first 3 points have been completed for the work being conducted
- do act of safety with the worker (e.g. safety discussion, demonstration or instruction involving interaction with the worker)
- check that workers can and will continue to work safely and properly
- if they are not satisfied with the employee's information, they will take corrective action
- collect and review the 5 point safety cards at the end of each day
- follow up and resolve any safety concerns noted on safety cards recording the actions taken. Communicate those actions to the worker, obtain the workers acknowledgement and sign off
- review and discuss issues that were identified on the 5-point cards at the next day's toolbox meeting

Contractors will submit their 5-point cards on a daily basis to their AREVA site contact who are required to review the cards as discussed above.

3.9.3 Safety Group:

- Perform regular reviews of completed safety cards
- Follow up on any unresolved safety concerns on cards

3.10 Safety Meetings

Safety meetings will be conducted to:

- communicate and share safety issues
- review any recent safety incidents
- provide safety education

Supervisors will conduct safety meetings with their employees on a weekly basis. Safety meeting minutes are documented.

Safety concerns will be identified and corrected as they arise, noted on 5 Point Safety Cards, and will be discussed at daily toolbox meetings. Issues can be reviewed at safety meetings to confirm actions are completed.

3.11 Communication and Safety Awareness Programs

Communication of safety principles and the performance of activities that promote and implement the principles of the safety program will be crucial to the success of the safety program. This will be accomplished in part through a series of elements and activities, as briefly described below:

- Toolbox meetings – Each department or group holds daily informal meetings to update employees on recent safety accidents or specific safety topics that may be pertinent to the day's tasks
- Safety huddles – weekly group and departmental meetings will be held with supervisors and employees to discuss a specific safety topic
- Posters, Pamphlets and Magazines – A collection of written and visual material will be posted to increase awareness and remind employees to work safely
- Incident Notifications (Traffic Light Program) - These lights provide a highly visible and easily recognizable correlation with the daily events. A red light will signify an injury, major damage or reportable release. A yellow light will indicate a minor incident with no injury or

a near miss incident. A green light will indicate no incident has occurred. At the crews' next morning tool box meeting, supervisors will disseminate any information that has been provided to them from the Safety Group

- Safety Award Program – Safety awards are distributed to employees based on their achievement of goals set by leading indicators of safety performance
- Safety Decal Program – A formal letter acknowledgement of personal achievement is given to employees who attain certain milestones in accident free years
- Performance Indicators – Graphs and charts will be created to keep employees informed about how the Kiggavik Project is performing based on safety statistics
- AREVA Flash Reports for internal communication between sites

3.12 Control of High-Hazard Work

All high hazard work will involve a risk assessment and safe work plans be written prior to conducting the work. There will be specific requirements and comprehensive programs and procedures to ensure the work is carried out in a safe manner and all risks controlled. There will be site specific training to those conducting the work. These activities include, but are not limited to those listed below.

- Confined Space Entry
- Lockout and Stored Energy
- Explosives
- Hot Work (e.g. welding, grinding, cutting)
- Working at Heights
- Working Alone
- Hot and Cold Environments
- Working with High Voltages
- Ground Control
- Powered Mobile Equipment Operation
- Transportation and Vehicle Safety

3.13 Hearing Conservation Program

A Hearing Conservation Program will be established for the Kiggavik Project to prevent employees from experiencing noise-induced hearing loss. The Hearing Conservation Program elements will address the assessment and control of noise exposures, as well as hearing protection and worker education requirements. The anticipated worker noise exposure is assessed further in Section 5: Assessment of Project Effects Worker Exposure to Hazardous Substances of Volume 8, Human Health.

- Audiometric Testing and Education - Audiometric testing will be provided to all AREVA Kiggavik site employees upon commencement of work and annually thereafter. All employees will also receive training on the effects of noise hazards and use of hearing protectors.
- Hearing Protection - Hearing protection will be used for the Kiggavik Project in conjunction with administrative and engineering controls. Hearing protectors are made available to employees who work in areas in excess of 80 dBA. Hearing protectors are provided and must be worn by employees whose daily average noise exposure is greater than 85 dBA. Hearing protective devices shall be used in accordance with the recommendations of Table A1 (Selection of Hearing Protectors) in the CAN/CSA Z.94.2-94 Standard, Hearing Protectors.
- Sound Level Monitoring - A routine schedule of sound level monitoring will be performed throughout the Kiggavik site.
- Program Review - The Hearing Conservation Program will be reviewed on a regular basis as required to ensure information is up to date and the OHC will be consulted upon this review.

3.14 Contractor Safety Management

Contractors will be expected to:

- be knowledgeable, trained, and experienced in the work they perform
- comply with the requirements of this Plan, the safety manual, and regulations,
- demonstrate safe work practices
- follow best practices for their industry
- describe the hazards associated with their work and controls in place to conduct their work safely
- contribute to the ongoing identification of hazards and mitigation of risk
- correct deficiencies in their workplace, their behaviours, and their attitudes
- report to AREVA on incidents in the workplace

Depending on such factors a scope of project, length of duration on site, number of employees on site, contractors may be required to:

- provide a Health and Safety program for their workers
- provide safe work plans or procedures for their work
- have an on-site Occupational Health and Safety Committee or representative
- provide a site safety officer

Safety Group will:

- Work with the contractor to identify workplace hazards and mitigate risk
- Review contractor training records and coordinate any site safety training
- Inspect contractor tools and equipment prior to the commencement of work
- Conduct joint contractor workplace inspections with the contractor supervisor
- Review contractor work procedures and practices

4 Performance Monitoring (Check)

4.1 Performance Indicators

The Kiggavik Project will use both trailing indicators and leading indicators of safety performance. Trailing indicators will include categorized measures of incident frequencies and severities; leading indicators will be developed based on annual objectives for improved performance resulting from reviews of program functionality and past performance.

4.1.1 Leading Indicators

Leading indicators of workplace health and safety are developed as part of the objective and target setting process conducted each year. Activities which will proactively contribute to improved health and safety performance and positive safety culture development are identified, described in terms of specific, measureable, achievable, and realistic and time-bound objectives. Progress towards these objectives is monitored and their achievement is rewarded.

The practice of developing targets and objectives as leading indicators of health and safety performance is an expected component of AREVA health and safety programs.

4.1.2 Trailing Indicators

Trailing indicators of workplace health and safety used by AREVA to monitor the performance of both AREVA and contractor personnel include measures of incident frequency and severity. Frequency measures may be applied to any category of incident, be they lost-time, medical aid, or first aid accidents, or incidents of equipment damage or near misses. Severity measures are applied where the impacts are measureable, as is the case for lost-time accidents or damages.

4.2 Workplace Monitoring and Control

4.2.1 Workplace Inspections

There was a question raised by a community member with respect to *whether and how often safety inspections are conducted* (EN -CI KIA Feb 2010[14]). All inspections are conducted on a scheduled basis; there are numerous types of inspections as described below. There will also be numerous automated monitors and alarms to ensure chemicals are maintained at safe levels for such issues as temperature, pressure, concentrations. Some examples of these include O2, H2S and SO2 monitors inside the mill. AREVA strives to measure performance in quantifiable, objective terms. Some of the anticipated inspections and monitoring activities include:

- physical conditions inspections (e.g. road monitoring, pit slope stability monitoring and underground control monitoring)
- critical parts and equipment inspections
- job observations
- 5 point safety cards
- planned maintenance inspections
- daily pre-use equipment checks
- safety audits
- external inspections by service providers, suppliers and regulatory bodies
- housekeeping inspections
- surveys of temperature extremes
- noise surveys
- monitoring of workplace contaminants
- management reviews

[14] EN-CI KIA Feb 2010: Do mining companies perform safety inspections to ensure all work is done appropriately? How often would inspections occur?

4.2.2 Industrial Hygiene Monitoring

The practice of industrial hygiene is devoted to recognizing, evaluating and controlling occupational health hazards. The Kiggavik Project health hazards may be classed as chemical, biological or physical stresses. There will be a process used for industrial hygiene monitoring of these occupational stresses and the objective will be to reduce or eliminate employee exposures.

Monitoring is accomplished using direct reading instruments and sample collection pumps. Chemical hazards take the form of dusts, mists, fumes, gases and vapours, while examples of physical hazards are noise, thermal extremes, and lighting. For a detailed risk assessment on specific chemicals, refer to Tier 2, Volume 8 – Human Health.

4.2.3 Radiation Protection Monitoring

Refer to Technical Appendix 2Q - Radiation Protection Plan for radiation protection management.

4.3 Incident Investigation and Reporting

By determining the causes of incidents and near misses, measures can be put into place to ensure they do not occur again.

DNV (Det Norske Veritas) is an independent foundation with the purpose of safeguarding life, property, and the environment. The foundation was established in 1864 in Norway to inspect and evaluate the technical condition of Norwegian merchant vessels. AREVA uses a modified form of the DNV method for the investigation of workplace incidents.

In addition to collecting data on the incident event, it will determine the root cause of incidents and will require that mitigative and preventative measures be put into place. It will also give line-management and the employee an opportunity to review and comment on the incident. More detail on how to conduct an investigation is provided in Attachment B.

4.4 Routine Reporting Requirements

The Kiggavik Project will routinely report on aspects of safety performance to many stakeholders, both internal and external. Some of these stakeholders will include:

- Kiggavik site personnel
- AREVA Resources Canada Inc.
- AREVA North American Business Platform

- AREVA Mining Business Unit
- Workers' Compensation Board, Northwest Territories and Nunavut
- Canadian Nuclear Safety Commission
- Local communities

5 Continuous Improvement and Corrective Actions (ACT)

5.1 Program Review

The program elements will be reviewed at least every two years to determine if revisions are necessary. Changes to the program elements may be made prior to the two year period if they are identified before the review date. The review of the program elements will be conducted by the Safety Group and audits will be routinely performed by the Quality Group. The occupational health and safety plan is a living document which is continually reviewed and revised throughout the life of the Project to ensure it meets health, safety, and environmental performance standards. This process of adaptive management and continual improvement (Tier 2, Volume 2, Section 17) demonstrates the Inuit Qaujimajatuqangit (IQ) principles of Pilimmaksarniq *maintaining and improving skills through experience and practice* and Qanuqtuurunnarniq *being resourceful and flexible to solve problems* (Nunavut 2008).

AREVA believes that if these procedures are followed, accidents & occupational illnesses will be prevented. Substandard health and safety performance at any level will not tolerated and is not acceptable. AREVA believes and is committed to continual improvement.

5.2 Objectives and Targets

Annual Health and Safety targets will be developed upon the review of the hazard registry, investigation reports, inspection reports, 5-point card concerns and feedback from employees. Objectives may also stem from broader AREVA policy or development initiatives. Targets will be initially drafted by the Safety Group after reviewing the concerns from the aforementioned list. In turn, they will consult each pertinent department to assess the feasibility of the target. The targets will be reviewed with the OHC and presented to all employees. Information will include the target, accountability and targeted date for completion. The status of the targets will be updated on a regular basis and reviewed by management.

6 Employee Health and Wellness

6.1 Kiggavik Site Health Centre

A nursing station, typically referred to as a "Health Centre", will exist at the Kiggavik Mine site. Community members have asked *if AREVA had considered hiring more nurses and physicians for the Kiggavik Project* (EN- RI KIA Jan 2010[15]). At AREVA's current operations in Northern Saskatchewan, AREVA has an efficient health centre at the mine site that is nearly self-sufficient. For significant illness or injury, there is a procedure on how to evacuate a person for medical reasons (medevac). AREVA employs a consulting physician to support the nurses who operate the Health Centre.

AREVA will maintain a Health Centre that is staffed by registered nurses. The Health Centre will be self-sufficient and capable of managing minor to moderate medical issues. The Health Centre will be comprised of appropriate facilities such as a bathroom, office, patient centre and infirmary with hospital beds and a backup power generator. An attached, heated garage will house the emergency vehicle for patient transport. Supplies and equipment will include a defibrillator, suction equipment, medical oxygen administration equipment, blood pressure monitor, telephone and radio communication, audiometry equipment, lung function testing equipment, medicines including antidote for barium chloride ingestion, stretcher and various first aid and emergency supplies.

The Health Centre will be regularly visited by an AREVA consulting physician to perform routine medical evaluations of all employees. The consulting physician supports nurses in diagnoses and treatments. AREVA anticipates the assistance of Nunavut health facilities such as the services offered by Rankin Inlet or Baker Lake to be minimal. Any anticipated service will be discussed with the GN HSS prior to the licensing stage; the requirement for such services is expected to be infrequent.

It is anticipated that the Health Centre at the Kiggavik mine site will be staffed by a registered nurse, and an AREVA-appointed physician will be available by phone for consultation. The nurse will be

[15] EN- RI KIA Jan 2010: *Have you considered getting more doctors and nurses?*

supported at the centre, as required, by safety personnel and emergency response team members who will be trained in first aid response. The exact number of health personnel will depend on the number of personnel working at the site.

6.2 Medical Transportation

AREVA will be prepared to manage day-to-day employees' wellness onsite as well as small to moderate medical emergencies or injuries. For significant onsite medical emergencies or injuries, health personnel will be prepared to stabilize the patient and arrange for off-site transport through an air ambulance to a larger hospital such as the Winnipeg Health Sciences Centre. It is anticipated that air ambulance services will be contracted to a company that will be capable of patient pick-up at or near the mine site. Refer to Technical Appendix 10C - Emergency Response Plan, Section 11.2.2 for more detail.

6.3 Health Monitoring and Promotion

Health monitoring and health programs will be provided on-site by the Health Centre. There will be an updated suite of procedures and work instructions that detail the treatment and assessment provided to patients as required. It is not expected that the GN will be required to assist with the programs listed above but if there is interest to participate, AREVA will work with the GN to enhance these programs.

Programs the healthcare worker may manage include:

- conducting kitchen inspections
- Worker's Compensation Board administration for injured employees;
- filing confidential employee information including recording personal injuries and illnesses;
- provide a certificate of fitness for Emergency Response Team members
- assisting employees with Return to Work program
- providing the influenza, tetanus, and Hepatitis A&B vaccination as required
- assisting with the fitness and exercise programs
- annual medical examination and testing including audiometry and lung function testing
- facilitating the Emergency Family Assistance Program with human resources
- conduct substance testing on employees as required
- education sessions on other healthy lifestyle programs such as smoking cessation, heart smart campaign, dental awareness, nutrition, breast cancer awareness.

6.4 Mental Health

AREVA recognizes that mental health issues are a serious concern in Nunavut. During the licensing phase, AREVA will perform a needs assessment to ensure AREVA health and human resources professionals are adequately trained and prepared to address and manage mental health issues at the workplace. Personnel will be trained to identify risk factors and unique behavior of those who may be affected by mental health issues. AREVA will work together with the community and site elders to understand mental health issues that may be unique to Nunavut and learn what solutions are most effective to address and manage these issues. They will also participate in cultural awareness training.

At AREVA's operational sites, health and human resources personnel are trained and kept current on mental health issues. They are trained to counsel and direct employees to professional services offered by a third party if required. Currently, all AREVA employees and their family members are eligible to obtain assistance for the Emergency Family Assistance Program. A similar type of program will be available to the Kiggavik Project employees and their families. Some services offered by the EFAP provider include:

- Counselling – supportive and confidential to provide employees during various life challenges including
    - marital and family topics
    - suicide prevention
    - anxiety
    - depression
    - addiction awareness
    - stress
    - life transitions
    - many other topics.
- Coaching
    - Life Balance – Child and Eldercare, Parenting, Legal, Financial
    - Health - Smoking Cessation, Weight Management, Nutrition
    - Career – planning, pre-retirement, workplace issues, shift work

Many resources are available through in person or telephone counselling, e-Learning and other interactive tools.

AREVA will strive to recognize, understand, address mental health risk factors and provide resources that are accessible to employees and their families to ensure all employees are safe and healthy.

6.5 Food Handling and Contamination Control

Health Centre personnel such as the occupational health nurse typically are in charge of monitoring food handling and storage practices, jointly with the catering staff. They will perform regular kitchen inspections, which may include monitoring the temperature of the refrigeration facilities, food handling, cooking, serving, disposal and cleaning practices. The catering staff will also be certified in food safety and proper handling procedures to ensure there is sufficient knowledge in food handling procedures and contamination control.

6.6 Occupational Medical Surveillance

There will be some medical surveillance monitoring provided by the Health Centre as a preventative measure and to ensure workers are fit for work. All information is kept confidential and some of the medical surveillance provided to employees includes:

Annual medical examination – Employees working at the site are given a medical upon hiring and yearly thereafter to ensure they are fit for their duties at work. All information is kept confidential and results are provided to each employee. These examinations will be completed by the company physician.

Annual audiometry (hearing) testing – For employees exposed to 80dbA or greater, they will be given a baseline audiogram upon hiring and yearly thereafter. This test will determine if the employee's hearing is within a normal or abnormal range. Audiometric testing is important to the success of a noise management program since it is the only way to actually determine if occupational hearing loss is being prevented by the noise management control measures. By comparing tests from year to year, early changes can be detected and appropriate protective measure implemented to prevent further damage.

Annual spirometry (lung function) testing - Spirometry is a breathing test that measures lung function. It tests how much and how fast the lungs can move air into and out of the respiratory system. A computer program analyzes factors such as age, weight, sex, race and smoking status to determine whether or not an employee's lung capacity fall within a normal range. All employees working in a *dust exposure occupation* are given a baseline spirometry test upon hiring and yearly thereafter.

Uranium in Urine (U/U) samples – U/U samples will be provided by Nuclear Energy Workers on a specified schedule. Workers may be potentially exposed to uranium compounds of varying solubilities. Within the applicable Codes of Practice, triggering Administrative Levels have been set conservatively, commensurate with the potential hazard from the uranium compounds. Particular consideration is paid to the workers who may be exposed to calcined yellowcake which has a low solubility. As an ALARA practice these workers will be required to use powered, air-purifying

respirators when conducting work within the packaging and calcining enclosures (i.e., the 2 locations of potential exposure to calcined yellowcake). Because of the potential chemical toxicity of uranium compounds, a test for albumin in urine is included for elevated urine results to quickly detect potential effects on the kidney.

6.7 Health Reporting

The Health Centre will provide reports to the GN Department of Health and Social Services as required to ensure adequate information is communicated. They will liaise with public health officials on a regular basis to keep well informed of current health issues.

7 Emergency Preparedness

Emergency preparedness will include planning for incidents of a safety, environmental and/or radiation nature, for both on-site and off-site emergencies. On-site emergencies will be the responsibility of departments of the Kiggavik Project. Off-site emergencies will be the responsibility of the AREVA Resources Canada Inc. office in Saskatoon. This is described further in Technical Appendix 10C - Emergency Response Plan. A set of detailed procedures will be developed to conduct planned, co-ordinated, controlled and integrated activities with respect to handling potential emergencies at the Kiggavik Project. A summary of responsibilities during an emergency is listed in the Emergency Response Plan.

8 Injury Management and Interaction with Nunavut's Medical System

Personnel will be required to be fit to perform their work.

When a worker is injured on or off the job and an absence from work results, workers are expected to identify that they have been injured.

When an injury has occurred at work which may result in lost time beyond the day of the accident, it must be reported to the Worker's compensation board. If the accident disables or is likely to disable the worker for more than the day of the accident, then AREVA will give notice of the accident to the Workers' Compensation Board within 72 hours of knowledge of the accident. A notice will also be provided to the injured worker.

A Return to Work Program will describes the program in place for employees who are unable to resume normal work duties as a consequence of an injury or illness. When an injured worker is able to return to work, a *Medical Certificate* form completed by an attending healthcare provider must be submitted prior to arrival on site. If modified work is required, a *Functional Abilities Form* must be completed by the attending healthcare provider so that a Return to Work Plan can be created and agreed upon prior to arrival on site.

8.1 Medical Treatment

There will be a Health Centre on site, situated in an appropriate location. The Centre will be managed by a site nurse. The Centre will conform to the requirements of the Nunavut Regulations.

First aid equipment and supplies will be monitored, maintained and be available for use if necessary. First aid kits will also be supplied at refuge stations and at various locations throughout the site; these will be regularly inspected and replenished as required.

First aid training will be provided to supervisors and employees as required by the regulations. Emergency responders will be trained in first aid and cardiopulmonary resuscitation (CPR) including use of the Automatic External Defibrillator (AED). A number of AEDs will be stored at strategic locations.

All employees will be trained on their first day on where the Health Centre and how to call for first aid assistance. There will be telephones and radios for maintaining contact between the health centre

and the work sites. In additional, there will also be additional methods of communication available at the Health Centre for external communication if required such as a satellite phone.

9 Workplace Specific Safety

The following are a sample list of procedures and work instructions that will be drafted upon commencement of the Kiggavik Project. There will be accompanying work instructions with procedures as required. All personnel will review and train in necessary procedures before commencement of the work. Additional procedures will be added upon as required.

Safe Work Procedures	Safety Management Procedures
General Safety Requirements	Training and Orientation Program
Barricade Tape Usage	Conducting Safety Huddles
Confined Space Entry Program	Medivac Procedures
Crane and Rigging	5 Point Safety System
Explosives	WHMIS Management and chemical handling
Electrical Safety	Safety Equipment
Fire Protection Program	Safety Reporting
Line Blowing and Clearing	Supervision and Safety
Lockout and Stored Energy	Industrial Hygiene Monitoring
Ground Disturbance Procedure	Safety Inspections
Hearing Conservation Program	Incident Investigation
Hot Work (welding, grinding, cutting)	Work Refusal
Materials Handling	Respiratory Protection
Personal Protective Equipment	Conducting an Emergency Equipment Check
Respiratory Protection Program	Workplace Inspections
Powered Mobile Equipment Operation	Authorized & Unauthorized Entries
Transportation and Vehicle Safety	Using and Understanding Signage
Vehicle Safety	
Working Alone or in an Isolated Environment	
Working at Heights and Fall Protection	
Working in Hot and Cold Environments	
Working with High Voltages	
Using Portable Ladders	

10 References

BL NIRB (Baker Lake - Nunavut Impact Review Board). April 2010. From “Public Scoping Meetings Summary Report, April 25-May 10, 2010, for the NIRB’s Review of AREVA Resources Canada Inc.’s Kiggavik Project (NIRB File No. 09MN003)”; in Appendix 3A: Public Engagement Documentation, Part 11.

BL OH (Baker Lake Open House). October 2012. From “Kivalliq Community Information Sessions 2012 Report.” May 2013; in Appendix 3A: Public Engagement Documentation, Part 6.

BL OH (Baker Lake Open House). November 2013. From “Kivalliq Community Information Sessions 2013 Report.” May 2014; in Appendix 3A: Public Engagement Documentation, Part 7.

BLRW (Baker Lake Rotational Workers). 2009. Excerpt from socio-economic focus group conducted by Susan Ross and Mitchell Goodjohn. March 4, 2009; in Appendix 3B: Inuit Qaujimajatuqangit Documentation, Attachment B.

CH KIA (Coral Harbour – Kivalliq Inuit Association). February 2010. From “Results of the 2010 KIA Community Engagement Tour for the Proposed Kiggavik Project, Kivalliq Inuit Association April 2010”; in Appendix 3A: Public Engagement Documentation, Part 12.

CI KIA Feb 2010 CI KIA (Chesterfield Inlet – Kivalliq Inuit Association). February 2010. From “Results of the 2010 KIA Community Engagement Tour for the Proposed Kiggavik Project, Kivalliq Inuit Association April 2010”; in Appendix 3A: Public Engagement Documentation, Part 12.

CI OH (Chesterfield Inlet House). November 2013. From “Kivalliq Community Information Sessions 2013 Report.” May 2014; in Appendix 3A: Public Engagement Documentation, Part 7.

CIYA (Chesterfield Inlet Young Adults). 2009. Excerpt from socio-economic focus group conducted by Linda Havers and Mitchell Goodjohn. May 8, 2009; in Appendix 3B: Inuit Qaujimajatuqangit Documentation, Attachment C.

KIV OH (Kivalliq Communities Open House). October 2009. From “Part 4 – Kivalliq Community Information Sessions (Round 1, 2009)” December 2011; in Appendix 3A: Public Engagement Documentation, Part 4.

RIHT (Rankin Inlet Hunters and Trappers Organization). 2009. Excerpt from socio-economic focus group conducted by Susan Ross and Linda Havers. April 2, 2009; in Appendix 3B: Inuit Qaujimajatuqangit Documentation, Attachment D.

RI KIA (Rankin Inlet – Kivalliq Inuit Association). January 2010. From "Results of the 2010 KIA Community Engagement Tour for the Proposed Kiggavik Project, Kivalliq Inuit Association April 2010"; in Appendix 3A: Public Engagement Documentation, Part 12.

RIW (Rankin Inlet Women). 2009. Excerpt from socio-economic focus group conducted by Susan Ross and Linda Havers. April 3, 2009; in Appendix 3B: Inuit Qaujimajatuqangit Documentation, Attachment D.

WCE (Whale Cove Elders). 2009. Excerpt from socio-economic focus group conducted by Linda Havers and Susan Ross. April 9, 2009; in Appendix 3B: Inuit Qaujimajatuqangit Documentation, Attachment F.

Attachment A Hazard Identification & Risk Assessment

A hazard assessment will be conducted for every job at the Kiggavik Project which includes identifying the hazards which exist for a particular task.

A variety of hazards will be considered including:

- **Physical** - noise, temperature extremes, stored energy, hand/power tools, moving equipment/parts, ground fall, physical characteristics
- **Chemical** - explosives, flammables, corrosives, toxics, oxidizers, hazardous waste
- **Biological** - bodily fluids, viruses/bacteria, fungi/mould.
- **Ergonomic** - workplace or equipment design resulting in stress, fatigue and discomfort to the human body, environment, psycho-social
- **Radiation** - dust, slurry, surface contamination, enclosure, restricted area

The following factors will also be considered when identifying health and safety hazards:

- Routine and non-routine activities,
- Activities of all personnel having access to the workplace including contractors and visitors.
- Human behavior, capabilities and other human factors.
- Identified hazards originating outside the workplace capable of adversely affecting the health and safety of persons under the control of the organization within the workplace, e.g. weather.
- Hazards created in the vicinity of the workplace by work related activities under the control of the organization.
- Infrastructure, equipment and materials at the workplace, whether provided by the organization or others.
- Changes or proposed changes in the organization, its activities or materials that may affect health and safety.
- Modifications to the OH&S management system, including temporary changes, and their impacts on operations, processes and activities.
- The design of work areas, processes, installations, machinery/equipment, operating procedures and work organization including their adaptation to human capabilities.
- Emergency Response Situations.

Risk Assessment

After identifying the hazard, the risk of each hazard will be assessed through a series of analyses including reviewing the frequency of task, probability of injury and potential consequence of an incident. In addition, there will be a discussion on the controls that will be implemented to control the risk. This assessment will be facilitated by the Safety Group with participation by workers and supervisors involved with the tasks.

The tables below are a sample of what may be used to conduct the risk assessment. As the project commences, it may be necessary to modify according to the scope of the project. Use the following tables to assign a value for frequency, probability and severity of an activity and incident occurring.

1. Frequency - This is the number of times a task or activity is carried out.

Value	Frequency
5	Once per hour or more
4	At least once per day
3	At least once per week
2	At least once per month
1	Quarterly or less often

2. Probability - Indicates what controls are in place and then estimate how likely it would be for an incident to occur taking into consideration the controls.

Safety: Likelihood of loss occurring each time the activity is done (or the probable chance of a loss).

Health: Likelihood of cumulative exposure to the health hazard each time the activity is performed. Note that due to the difficult nature of estimating health probability, the exposure time of activity is used.

Value	Safety Probability	Health Probability
5	Probable, (1 in 2 occasions)	Exposed more than 80% of shift
4	Possible (1 in 5 occasions)	Daily for longer than 4 hours
3	Unusual (1 in 50 occasions)	Daily for less than 4 hours
2	Rare (1 in 100 occasions)	Weekly for longer than 4 hours
1	Not likely (1 in 1000 occasions or less)	Weekly for less than 4 hours

3. Severity - Severity can include actual and/or probable losses. It is the consequence of the activity or improper facility and is influenced by how hazardous the activity is, the degree of difficulty and the complexity if the activity is improperly performed. These factors are evaluated as one. The key question to ask is **"If things go wrong, what is the probable degree of loss?"**

Value	Safety Severity	Health Severity
5	Fatality	Exposure to an IDLH (Immediately Dangerous to Life & Health) concentration.
4	LTA or long term modified work	Exposure resulting in immediate, permanent health effects.
3	Short term modified work	Exposure resulting in permanent health effects over time.
2	Medical Aid Injury	Exposure resulting in immediate, non-permanent health effects.
1	First Aid Injury – able to resume work in the same shift.	Health effects unlikely to occur.

4. Risk Factor - Once the values have been assigned, multiply the values together to determine a risk factor. Decide if the risk factor is acceptable or if additional controls need to be implemented to ensure the work is performed in a safe manner.

When determining the threshold for the designation of significant risk the following factors are taken into consideration:

- Yearly safety statistics
- Legal and regulatory requirements
- Corporate and divisional initiatives
- Technical or process changes
- Procedural or design changes
- Experience of staff complement

Discuss risk assessments and controls with workers prior to completing the tasks.

5. Review & Ongoing Identification of Hazards

Risk assessments must be reviewed at a specified frequency or:

- Prior to changes to facilities *(including construction, demolition & non-routine maintenance)*, equipment, product, process or function.
- Following high potential accidents / incidents occurring
- Following legislation / regulation changes
- Following required actions being identified in incident investigations, by regulators or inspections.

6. Risk Elimination or Reduction

Reducing risks will be done with consideration to the following hierarchy:

1. Elimination;
2. Substitution;
3. Engineering controls;
4. Signage/warnings and /or administrative controls;
5. Personal protective equipment.

Attachment B Incident Investigations

The following process provides an overview of how to conduct an incident investigation. There will be forms and training provides to supervisors to assist with investigations and ensure it is conducted in a thorough and consistent manner.

Employees are required to report all incidents to their supervisor.

The supervisor will investigate all accidents promptly with the Safety Group after an incident. If there has been a serious injury in which the individual cannot be moved, the Incident Commander & the Emergency Response Team (ERT) should be notified immediately.

The Occupational Health Committee (OHC) Co-chair will be notified of the incident if a serious potential for injury could have resulted. Unless there is an immediate hazard, the area will not be allowed to be disturbed until it has been cleared by the Safety Group. The area supervisor will assist the OHC employee and employer representative with the investigation if they decide to conduct a separate or joint investigation.

All investigations are conducted systematically and objectively. Investigation elements will include:

- Who
    - Identify who was involved in the incident.
    - Record their name, department, occupation and total length of experience.
    - Identify witnesses to the incident.
    - Record the change day of the employee(s) involved.
    - Indicate the shift of the employee(s) as Days, Nights or Other.
- What
    - Identify the type of injury, property damage, loss or near miss which occurred.
    - Estimate the cost of the loss in dollars and/or person hours.
    - Hours should include the amount of person hours spent as a result of the accident to properly investigate and correct the problem.
- When
    - Record the date and time of the incident.
    - Record the date and time that the incident was reported.
- Where & How
    - Describe where and how the incident occurred
    - Be factual
    - Include a drawing or photos
    - Avoid speculation
    - Do not assign fault
    - Indicate whether the supervisor visited the work site before and/or after the accident.
- Immediate Corrective Action

    - Identify what has been done immediately to mitigate the risk and prevent a re-occurrence.
- Why - Immediate Cause
    - Review the list of potential substandard conditions and substandard actions
    - Indicate which of the items apply to the incident. There may be more than one immediate cause. The lists are not comprehensive. Indicate if there are other immediate causes which apply.
    - For each of the immediate causes identify how the immediate cause contributed to the incident. For example:

SUBSTANDARD CONDITIONS

- Inadequate guards or barriers
- Inadequate ground support
- Congested/restricted area, restricted view
- Inadequate or excessive lighting
- Inadequate ventilation device
- Noise
- High or low temperature extremes
- Inadequate warning system
- Poor housekeeping
- Defective equipment/tools
- Gas/dust/smoke/fumes/vapours
- Inadequate PPE

SUBSTANDARD ACTIONS

- Operating equipment without authority
- Failure to warn
- Failure to secure
- Operating at improper speed
- Removing or disabling safety device
- Improper use of equipment
- Improper or no use of PPE
- Improper lifting
- Improper position for task
- Horseplay
- Working on moving parts
- Failure to follow procedure

Root Cause

1. Review the list of potential root causes.
2. Identify the reasons why the immediate causes chosen above existed. Immediate cause substandard conditions and immediate cause substandard actions should correspond with the root cause substandard conditions and substandard actions.
3. Dig deep to find the underlying causes that allowed substandard conditions and actions to exist. There may be more than one root cause. The lists are not comprehensive. Indicate if there are other root causes which apply.
4. Identify why the root causes may exist:

SUBSTANDARD CONDITIONS

- Inadequate engineering
- Inadequate purchasing
- Inadequate maintenance
- Inadequate tools/equipment
- Inadequate standard/procedure
- Wear and tear

SUBSTANDARD ACTIONS

- Inadequate physical/mental capability
- Lack of knowledge
- Lack of skill
- Physical stress
- Mental stress
- Improper motivation

Loss Potential

Imagine the worst case scenario. Ask yourself "How bad could this incident have been?"

1. Indicate the loss potential as minor, serious or major.
2. Indicate the probable recurrence rate as rare, occasional or frequent.

Preventive Action

Review the root causes to determine actions to be taken to eliminate each root cause. Focus on root causes rather than immediate causes.

1. Indicate the action to be taken.
2. Indicate who has been assigned the responsibility for ensuring each action is completed and the target date for completion.

Follow-up

It is the responsibility of the supervisor or whoever is listed on the "Responsibility" section to complete follow-up assessment of actions. A final verification will be conducted by the management upon final circulation of the report to ensure satisfactory corrective actions.

Modified Work

In the event of an injury, consultation is conducted with the site Occupational Health Nurse and the supervisor to determine if modified work is available and whether the injured worker is able to perform these duties.

Circulation

The Employee(s) involved in the incident and their Supervisor will review the report. Then, it will circulate to all applicable personnel for additional comments and recommendations. All completed reports will be reviewed by the Managers

The General Manager determines whether the investigation has been conducted satisfactorily or whether further corrective or preventive action is required.

3. If satisfied with the actions taken the General Manager will sign circulate it at the next management meeting for closure.
4. If unsatisfied with the actions taken the General Manager will assign the follow-up to an appropriate person(s).

Closure

1. When the General Manager is satisfied with the corrective and preventive action taken, the information will be shared at a management meeting.
2. Incident files are filed indefinitely.

Attachment C Existing Health and Safety Program for Kiggavik Project Field Program

Version: 05	AREVA Resources Canada Inc. Exploration Department PROCEDURE	Document No.: EXP-HSP
Date: October 25, 2013	**Exploration Health and Safety Program**	Page 1 of 15
Relevant ISO 14001 / OHSAS 18001 Element:		Relevant CNSC Clause:

Purpose:

The purpose of this program is to outline AREVA Resources Canada Inc. (ARC) Exploration Department's Health and Safety Program. The Health and Safety Program is part of the Exploration Department's Integrated Management System (IMS), including OHSAS 18001:2007.

Procedure:

The ARC Exploration Department Health and Safety program, which follows the Plan-Do-Check-Act (PDCA) for continual improvement, expands upon the procedure ARC-HSP Corporate Health and Safety Program. This ARC Exploration Department Health and Safety Program encompasses the following fundamentals:

- Health and Safety Policy
- Legal and Other Requirements
- Hazard Identification and Risk Assessment
- Objective Setting and Targets
- Orientation and Training
- Communication
- Documentation and Record Keeping
- Operational Controls
- Emergency Preparedness and Response
- Performance Measurement and Monitoring
- Incident Investigation
- Continual Improvement
- Regular Review

As this document reflects the specific demands and requirements of the Exploration department, the document ARC-HSP Corporate Health and Safety program should be used in conjunction.

PLAN- Health & Safety Planning

Health and Safety Policy

ARC's *Health and Safety Policy* will be provided to Exploration employees during orientation and contractors prior to the beginning of work. In cases where specific guidance is necessary, the policy will be reviewed during the pre-job meeting.

Note: Printed copy may not be the most current version of the document. Please refer to Q:\Exploration\IMS for most recent version.

Exploration Occupational Health Committee (OHC)

The Exploration OHC is comprised of employee and employer members of the Exploration Department. They may also participate in incident investigations as required by regulations. The OHC meets quarterly and performs workplace inspections on an annual basis. Minutes are forwarded to the appropriate regulatory agencies, in jurisdictions where the Exploration Department is actively operating.

An individual project where ARC or a contractor has 10 or more employees for greater than 90 days will be required to establish an OHC. When a contractor OHC is required, copies of the minutes of OHC meetings will be forwarded to the Coordinator, SHEQ Exploration via the Contract Administrator.

The OHC is integral in communication, participation and consultation and this role is defined in *EXP-204, Communication, Participation and Consultation.*

Internal Responsibility System

The Internal Responsibility System exists in the commitment by all persons (workers and management) to provide a healthy and safe workplace by proactively identifying and solving occupational health and safety problems that occur. The commitment is internal with both workers and supervisory management sharing direct responsibility for the safe and efficient performance of work.

Roles and responsibilities of management, supervisors and workers are described in the procedure *ARC-HSP, Corporate Health and Safety Program*

Legal and Other Requirements

The Exploration Health and Safety program must be compliant with applicable legislation and other requirements. Legal and other requirements will be identified utilizing *SHEQ-113, Legal and Other Requirements* or through the Working Group for Regulatory Change and Compliance.

Hazard Identification and Risk Assessment

A critical element in a health and safety program is the identification of workplace hazards, the assessment of risk associated with those hazards and the development of controls to mitigate risk where necessary. The process is documented and the risks catalogued. Refer to *SHEQ-900 Hazard Identification and Risk Assessment* and associated forms for the process involved. In the Exploration

Department, the Coordinator, SHEQ Exploration (or designate) is responsible for ensuring the process is completed.

The Exploration department will maintain an electronic file containing completed Hazard ID's and the Risk Register. Contract administrators shall verify that a hazard ID and Risk Assessment has been completed for the planned work. If applicable, the hazard ID's and associated risk assessment will be reviewed with project employees and contractors prior to or at the beginning of the project. Exploration employees will complete a Hazard ID and Risk Assessment for tasks which do not have an existing Hazard ID and Risk Assessment completed. Records created are forwarded to the Quality Assistant to be handled as per *EXP-106, Records Management*.

Objectives and Targets

ARC Exploration develops health and safety objectives following *EXP-702, Objectives, Targets and Management Programs*. ARC Exploration develops objectives based upon Hazard ID's, risk registry, investigation/inspection reports, audits, OHC recommendations and other general concerns.

Management of Change

The term "change" denotes a broad spectrum of activities that vary in importance, and may impact on health & safety. *EXP-770, Management of Change* describes the process for managing change with planned changes monitored and managed, so as not to introduce any new and unacceptable risks to the workplace.

Emergency Preparedness and Response

ARC Exploration Department develops plans to address predictable emergencies, such as fires, spills, transportation accidents, personal injuries, etc. *SHEQ-135, Emergency Preparedness & Response Procedure* provides guidance on the development, assessment and review requirements for an Emergency Response Manual (ERM).

The Coordinator, SHEQ Exploration (or designate), in conjunction with appropriate departmental employees, will consider significant risks and past incidents associated with Exploration work to determine the potential for emergency situations. The Exploration ERM should be reviewed by the Vice President, SHEQ (or designate). The Vice President, Exploration is the approver of the ERM and as such, will ensure that the resources required to respond to emergencies are made available.

Contract Administrators shall ensure that contractors have received and are capable of adhering to the ERM. The ERM should be reviewed with contractors prior to the start of field work, either at a pre job meeting or on site orientation.

DO- Safety Management

Operational Control

EXP-600, Operational Control and Monitoring & Measurement, describes the steps used by ARC Exploration for establishing the conditions under which activities / operations associated with its objectives and targets must be conducted / controlled (i.e. significant risks).

Following the process outlined in *SHEQ-900, Hazard ID and Risk Assessment* will identify activities associated with significant risk. These activities will be planned and carried out in accordance with the ARC Exploration department *Safety Code of Practice* (SCOP).

The Coordinator, SHEQ Exploration is to ensure that ARC Exploration employees and long term visitors to exploration projects are familiar with and capable of adhering to the SCOP.

Contract Administrators are to ensure that contractors receive a copy of the Health and Safety Policy and SCOP prior to beginning work.

Supervision

It is the expectation of ARC that all supervisors:

- are knowledgeable, trained and experienced in the areas they supervise,
- promote workplace health and safety,
- contribute to health and safety objectives,
- investigate incidents in their areas,
- proactively identify and correct deficiencies,
- have daily contact with their employees in the workplace,
- conduct daily toolbox meetings,
- if working in Nunavut, obtain a Supervisor Certificate from WSCC and
- conduct weekly safety meetings.

Training

Safety training is delivered as required to ensure employee competency in the performance of assigned tasks and duties. Training is also given to ensure a working knowledge of regulatory requirements. Employees must be knowledgeable in their responsibilities, and trained to conduct work safely.

IMS General Awareness

Who? All ARC Exploration employees.

This training may take the form of a PowerPoint presentation, or any other form deemed appropriate

Transportation of Dangerous Goods

Who? All ARC Exploration employees transporting radioactive materials.

Who? All ARC Exploration contractors transporting fuel in 45 gallon drums or large tanks (must submit evidence of compliance or exemption)

Fire Prevention / Response

Who? All ARC Exploration field employees

Who? Senior site employees of ARC Exploration contractors establishing temporary work camps in excess of one night during the fire season (must submit evidence of compliance); specifically, drill foreman, driller / runner, party / crew chief (ground geophysics & linecutting).

Spill Response

Who? All ARC Exploration field employees handling fuels and lubricants

Who? Senior site employees of ARC Exploration contractors handling fuels and lubricants (must submit evidence of compliance); specifically, drill foreman, driller / runner, party / crew chief (ground geophysics & linecutting).

WHMIS

Who? ARC Exploration field employees handling fuels, lubricants and other hazardous materials

Who? Senior site employees of ARC Exploration contractors handling fuels and lubricants (must submit evidence of compliance); specifically, drill foreman, driller / runner, party / crew chief (ground geophysics & linecutting).

Standard First Aid

Who? ARC Exploration field employees

Who? Senior site employees of ARC Exploration contractors

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Advanced First Aid Level II/Emergency Medical Responder

Who? Minimum of one person on site during operations, as required by the jurisdictional health and safety regulations.

Ongoing Awareness Training

Includes training on topical issues. Generally this training is provided at safety huddles or as issues arise which warrant training.

ARC strongly encourages all contractors to obtain Standard First Aid, Fire Response, Spill Response and WHMIS for their junior employees.

Nunavut Specific Training Requirements

Site Orientation

Who? ARC employees, contractors and long-term visitors.

Kiggavik Project Site Orientation will be dependent on the length of stay of the visitor. Orientation may take the form of a PowerPoint presentation, a general information pamphlet, or any other form deemed appropriate

Pre-Requisite Training

At a minimum, the following training is required before coming to site:

Supervisor Level II Certificate as required by Mine Health and Safety Act and Regulations

Who? ARC Project Geologist and designate

Who? ARC Facility Supervisor and designate

Who? Drilling Supervisor (Foreman)

Supervisor Level I Certificate or higher as required by Mine Health and Safety Act and Regulations

Who? Anyone responsible for supervising any number of workers. This includes but is not limited to:

- Driller
- SHEQ Supervisor

Possession and Acquisition Licence (PAL)

Who? Projects which have an ARC owned firearm will have a minimum of one ARC person on site who holds a valid PAL.

Who? Wildlife Monitors

Who? Contractors requiring a firearm at site

Safety Meetings

Safety meetings: Safety meetings are conducted to communicate safety issues, to review any recent safety incidents, review safety concerns, and to provide safety education. These meetings are held on a weekly basis and all site employees must attend. The Contract Administrator (or designate) must convene a safety meeting once per week while working in the field. All ARC Exploration employees on site must attend. Safety meetings may be held in conjunction with contractor weekly safety meetings. Minutes of safety meetings will be recorded on EXP-HSP-00-04 Safety Meeting Minutes and forwarded to the Coordinator, SHEQ Exploration (or designate) monthly.

Contractor Safety meetings: Contractors shall include weekly safety meetings in safety programs. At minimum, the Contract Administrator (or designate) should attend contractor safety meetings on a regular basis. In lieu of separate safety meetings, Contractor employees and AREVA employees on site may conduct joint safety meetings. Copies of the minutes from weekly contractor safety meetings shall be submitted to the Contract Administrator or designate, who will forward them to the Coordinator, SHEQ Exploration monthly.

Incident Investigation

By determining the causes of accidents and near misses, measures can be put into place to ensure they do not occur again. In addition to collecting data on the incident event, the process supports finding the root cause of incidents and requires that corrective and preventative measures be put into place. It also gives management an opportunity to review and comment on the incident. The Vice President, Exploration determines whether the investigation has been conducted satisfactorily and whether the resultant actions are adequate to prevent recurrence.

Employees must report all accidents and near misses to their supervisor. The incident investigation and review process is described by the form *EXP-HSP-00-02 Supervisor's Investigation Report*. The investigation report can be applied to incidents of any nature.

Supervisors will conduct investigations of incidents in their areas, with the support of the Coordinator, SHEQ Exploration (or designate).

The OHC will conduct investigations as required by regulations.

Near miss incidents are reported to supervisor and Coordinator, SHEQ Exploration on *EXP-HSP-00-03 Near Miss Report* or other method (i.e. email, verbal). The supervisor and Coordinator, SHEQ Exploration review near misses and determine whether additional investigation is required.

5 Point Safety System

The 5 Point Safety System is a simple method of promoting safety awareness and risk assessment in the workplace. The system focuses the attention of the workers and their supervisor on safety, their workplace and work practices. It requires an interaction between the worker and the supervisor regarding safety. It is used to enforce the requirement that doing the job correctly also means doing it safely. The system has been used in the mining industry for many years and the implementation at other facilities is credited with improved safety culture and a functional internal responsibility system. It overtly places responsibility on the workers and the supervisors.

The 5 point safety system addresses the causes of accidents, which are primarily substandard conditions, substandard methods and substandard attitudes.

The 5 points are as follows:

1. Check entrance & travelway to workplace
2. Are workplace & equipment in good working order?
3. Are employees working properly?
4. Do an act of safety.
5. CAN and WILL the employees continue to work properly?

The *5 Point Safety Card* will be made available on Exploration projects. Workers are encouraged to complete cards as they feel necessary. The Project Geologist or designate will identify a location for the collection of the cards and, as cards are received, will review the cards and take appropriate action. The cards are to be forwarded to the Coordinator, SHEQ Exploration each month for tabulation and filing.

Injury Management

Employees must be physically and mentally fit to perform their work.

Any injuries whether they occurred at work or off the job will be handled as per ARC-HSP, Corporate H & S Program.

Contractor Safety Management

Contractors are expected to:

- be knowledgeable, trained, and experienced in the work they perform;
- comply with the requirements of this Health and Safety Program, department/site specific standards, and regulations,
- follow best practices for their industry;
- describe the hazards associated with their work and controls in place to conduct their work safely;
- contribute to the ongoing identification of hazards and mitigation of risk; and
- correct deficiencies in their workplace, their behaviors, and their attitudes.

Contractors may be required to:

- provide a Health and Safety program for their workers;
- provide safe work plans or procedures for their work;
- demonstrate safe work practices;
- provide OHC representatives; and
- provide a site safety officer.

The ARC Exploration department is expected to:

- obtain a letter of good standing from the appropriate workers compensation authority;
- review contractor training records and coordinate department/site specific safety training;
- develop safe work plans or procedures for the work conducted;
- inspect contractors' tools and equipment prior to the commencement of work;
- conduct contractor workplace inspections jointly with the contractor supervisor;
- provide a summary of contractor man-hours on a monthly basis; and
- review contractor work procedures and practices.

CHECK-Monitoring Activities

Job Observation

Supervisors are expected to observe conditions and practices in the workplace in an organized and systematic manner in order to:

- determine how well employees are conducting the work;
- identify practices which could result in injury or damage;
- check the adequacy of the procedures and practices in conducting work safely;
- evaluate the effectiveness of training; and
- provide correction as necessary.

Supervisors must be able to demonstrate that job observation is a routine part of their practice.

Performance Indicators

Types of performance indicators are described in *ARC-HSP, Corporate Health and Safety Program*. The Exploration department develops objectives as part of annual planning. These objectives are monitored by the Coordinator, SHEQ Exploration (or designate) and the results are considered leading indicators of health and safety performance.

Trailing indicators (i.e. accidents-first aid, medical aid, or lost time accident) are reported to the Corporate SHEQ department on a monthly basis by the Coordinator, SHEQ Exploration.

Workplace Inspections

Workplace inspections are a joint effort between the Contract Administrators, Contractors, and workers in the area inspected.

Workers are expected to inspect their workplace and work conditions on an ongoing basis and correct deficiencies. Deficiencies are reported to the supervisor immediately.

A joint workplace inspection of a work area is conducted biweekly. Work areas may include, but is not limited to:

- drill site
- core logging and core storage area
- camp kitchen
- main camp residence
- fuel storage areas

Workplace inspections are documented on form *EXP-HSP-00-01, Workplace Inspections*. Corrective actions are identified and deadlines for follow-ups are set. Drilling contractor pre-operational checklists will be deemed a workplace inspection. The pre-operational check document must be submitted to the Project Geologist or designate and forwarded to the Coordinator, SHEQ Exploration monthly.

Reporting Requirements

Supervisors who have employees conducting field activities must establish a system of frequent personal safety contacts in the form of verbal communication

Daily Reporting

Field employees working from remote camps are requested to contact ARC Exploration at the head office every weekday to provide an update on safety, work results, environmental issues and any untoward occurrences. Those at head office receiving a phone call should also pass the information around (i.e. a hand written note or post on the white board near the Exploration Administrative Assistant's desk (stating the day of the contact).

For any safety issues, environmental issues or any untoward occurrences on weekends or after hours, refer to the Exploration Emergency Contact list for contact information.

Field staff must also inform ARC Exploration head office that travel to/from a site was okay and safe.

Monthly Reporting

- ARC Exploration and Contractor working hours must be reported at the end of each month.
- Procedure *EXP-600, Operational Control and Monitoring & Measurement* require that applicable forms be filled out by the Project Geologist or designate following completion of fieldwork.
- Radiation protection forms, the number is dependent on the success of the exploration program (if mineralization intersected).
- Minutes of weekly safety meetings (ARC and Contractor) and workplace inspection reports.

Accident/Incident Investigation Reporting

Incidents and significant events are investigated and reported by a supervisor using the *Form EXP-HSP-00-02, Supervisor Investigation Form*. Incidents of personal injury, property damage, production loss, violation of a legislative requirement and process interruption are investigated. Incidents and accidents are tracked and recorded to create a database of relevant information, upon which statistical trend analysis can be done.

Immediate reporting by telephone to the Exploration Department head (VP of Exploration) or designate in Saskatoon or department head at home in the off hours, in the following instances:

- fatal accidents or an accident requiring immediate hospitalization
- major environmental incident
- an event that will likely lead to adverse publicity
- property damage

External Reporting

Jurisdictions where the Exploration department operates may have requirements for reporting incidents and monthly reporting. When work is planned for a new jurisdiction, the legal requirements for Health and Safety reporting are reviewed as per *SHEQ-113, Legal and Other Requirements*. Jurisdictions currently operating have the following reporting requirements:

Nunavut

- required to provide an Exploration Safety Plan Application to the Workers Safety and Compensation Commission (WSCC) Mines Division prior to the commencement of work.
- required to register with the WSCC and submit to Mines Inspector:
  - OHC meeting minutes,
  - annual reports of OHC member training,
  - organizational charts,
  - records of appointments of acting managers,
  - emergency response procedures, and
  - notification of cessation of activities (end of field season).
- required to submit a Monthly Accident Report.
- submit a written report, within 30 days of receiving a WSCC inspection report, to the chief inspector outlining the remedial measures taken and a copy of the report shall be provided to the OHC.
- As per the *Mine Health and Safety Act* and *Regulations*, Section 16 requires a mine inspector and OHC co-chairpersons must be notified without delay of a reportable incident (serious

injury or death) and within 24 hours of a dangerous occurrence as defined in Section 16.01, and a written report must be submitted to the inspector and to the OHC co-chairpersons within 3 days.

Saskatchewan

- required to notify Ministry of Labour Relations and Workplace Safety-Mines Safety Unit (MSU) of mobilization and demobilization of projects
- required to submit a monthly Accident Statistic Form to MSU
- The *Occupational Health and Safety Regulations* requires:
  - notification of the Occupational Health and Safety (OHS) division as soon as is reasonably possible of any fatalities or injuries that require a worker to be hospitalized for a period of 72 hours or more.
  - notification of the OHS division as soon as is reasonably possible of any dangerous occurrence, whether or not a worker sustains injury (what constitutes a dangerous occurrence is available in the OHS Regulations section 9 (1)).

ACT-Continuous Improvement and Corrective Action

Unsafe Work

The right to refuse work grants any worker the ability to refuse to do work if they have reasonable grounds to believe that it is unusually dangerous to their health or safety, or the health or safety of another person.

Management/Program Review

ARC Exploration department management shall meet, at minimum, annually. A review of the Exploration H & S Program shall be done during the meeting. The requirements of the management review are described in *EXP-107, IMS Management Review*.

Health and safety programs are subject to internal & external audits established as part of the overall management system.

Minutes will be distributed as described in *EXP-105, IMS Management Review* and *SHEQ-750 H & S Management Review* and retained as per *EXP-106, Records Management*.

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Records:

Completed Form EXP-HSP-00-01, Workplace Inspections
Completed Form EXP-HSP-00-02, Supervisor Investigation
Completed Form EXP-HSP-00-03, Near Miss Report
Completed Form EXP-HSP-00-04, Safety Meeting Minutes

References:

ARC-HSP Corporate Health & Safety Program
Environmental Code of Practice
EXP-106, Records Management
EXP-107, IMS Management Review
EXP-204, Communication, Participation and Consultation
EXP-600, Operational Control and Monitoring & Measurement
EXP-702, Objectives, Targets and Management Programs
EXP-770, Management of Change
EXP-HSP-00-01, Workplace Inspections
EXP-HSP-00-02, Supervisor Investigation Form
EXP-HSP-00-03 Near Miss Report
EXP-HSP-00-04 Safety Meeting Minutes
Safety Code of Practice
SHEQ-113, Legal and Other Requirements
SHEQ-750, H & S Management Review
SHEQ-900 Hazard Identification and Risk Assessment
SHEQ-135, Emergency Preparedness & Response Procedure

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Date: October 25, 2013	**Exploration Health and Safety Program**	Page 15 of 15
Relevant ISO 14001 / OHSAS 18001 Element:		Relevant CNSC Clause:

Approval:

Author:		
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Attachment D Safety Code of Practice for Kiggavik Project Field Program

SAFETY CODE OF PRACTICE

AREVA Resources Canada Inc.

Exploration Department

TABLE OF CONTENTS

1 GENERAL

The Safety Code of Practice establishes a uniform standard of safety. It summarizes a set of rules, guidance and regulations designed to minimize the frequency and severity of accidents and to limit the development of situations that may be detrimental to the health and safety of employees, visitors and contractors.

The Code of Practice has been developed to reflect currently accepted safety practice and legal requirements.

Requests for interpretation or modification of existing standards or for the production of an additional standard should be directed to the Coordinator, SHEQ Exploration.

It should be noted that the standards do not cover every procedure or operation and that it will be necessary for supervisors to determine, with the assistance of the Coordinator, SHEQ Exploration, safe practices for unique situations.

Publication of a standard does not relieve the company, individual employees or contractors from the necessity of complying with all applicable federal and provincial legislation.

1.1 BEHAVIOUR BASED SAFETY

Field safety is a shared responsibility. AREVA Resources Canada (ARC) has a responsibility to take all reasonable care to provide for the safety of its exploration employees and contractors. Exploration employees and contractors have a responsibility to give careful attention to safety and to conduct themselves with due regard to safety while in the field.

Exploration employees and contractors working on Exploration projects have a responsibility to follow the Health and Safety rules as set out by ARC and regulatory agencies.

Employees (ARC and contractor) have a responsibility to report health and safety concerns to their supervisor and are required to report all safety incidents to their supervisor. Supervisors have a responsibility to provide oversight of ARC and contractor employees, and resolving their health and safety concerns.

1.2 RIGHT TO REFUSE

A worker (ARC employees and contractors) may refuse to perform any particular act or series of acts at a place of employment where the worker has reasonable grounds to believe that the act or series of acts is unusually dangerous to the worker's health or safety or the health or safety of any other person at the place of employment until sufficient steps have been taken to satisfy the worker otherwise; or the occupational health committee has investigated the matter and advised the worker otherwise.

1.3 TRAINING

Training is one method for the prevention of safety related incidents. Exploration field employees general safety training includes:

- Standard First Aid/CPR
- Transportation of Dangerous Goods (TDG)
- Workplace Hazardous Materials Information Systems (WHMIS)
- Radiation Protection
- Fire Response
- Spill Response

Other training, depending on the type and location of work, may include, but is not limited to:

- ATV Operation training
- Helicopter External Load Operation
- TDG Class 7
- TDG Class 7 by Air
- Emergency Medical Responder
- SMA Industrial Safety Supervisor Course

1.4 PERSONAL PROTECTIVE EQUIPMENT

It is the responsibility of field employees to be aware of the need for any equipment. The following may represent various types of personal protective equipment:

1. ***Eyewear***: use CSA approved eye protection (CSA 94.3.1-09) when there is an eye hazard (i.e., breaking rocks). Hazard categories common to eye injuries include:
    - Physical Hazards: flying particles, dust and sparks
    - Chemical Hazards: fumes, burns and splashes
    - Thermal and Radiation Hazards: heat, glare, ultraviolet, and infrared rays
    - Prescription safety glasses allowance is described in GSP Section 8.02-Safety Equipment
2. ***Footwear:*** steel-toed, or equivalent, safety footwear must meet the requirements of the Canadian Standards Association.
    - Safety footwear must be maintained in good condition such that it will continue to be effective for its intended purpose
    - Employees are responsible for providing their own safety footwear. The safety footwear allowance is described in the GSP Section 8.02 Safety Equipment
3. ***Ear protectors:*** hearing must be protected when sound levels in the workplace reach 80 decibels. A good rule of thumb is if the sound(s) in the work area is irritating, or you are required to raise your voice to be heard, then hearing protection is required. Types of hearing protectors available include:
    - Disposable ear plugs
    - Reusable ear plugs
    - Ear muffs, normally mounted on a hard hat
    - Examples of decibel (dB) levels (approximate):
        - 70 dB-vacuum cleaner
        - 80 dB-garbage disposal
        - 90 dB-gas mower

- 110 dB-chainsaw

4. ***Head Protection***

   4.1. ***Hard Hats:*** the use of hard hats is required around sites where there is an overhead hazard.

   - Safety hats must be at least ANSI Z89.1 approved, class B.
   - A safety hat that show signs of damage or that has received a severe blow must be replaced.
   - Safety hats are provided by ARC. A charge may be levied for replacement of a safety hat that is lost or damaged through negligence.

   4.2. ***Helmets:*** the use of helmets is required during the operation of ATVs and Snowmobiles

   - Helmets must be approved (generally DOT or CSA)
   - Helmets are provided by ARC. A charge may be levied for replacement of a safety hat that is lost or damaged through negligence.
   - A helmet that shows a sign of damage or that has received a severe blow must be replaced.

5. ***Clothing:*** field employees must be aware of potential extremes of climate and to have the adequate clothing to deal with this. The winter clothing allowance is described in the GSP Section 8.02 Safety Equipment.

   - Chainsaw pants or chaps that are worn over regular trousers are lined with ballistic nylon. This provides a degree of protection against accidental contact with a running chain saw in a kickback or similar situation. Chainsaw pants with padding that extend around the back of the leg provide the best protection. These will be provided by ARC Exploration for employee's use.

6. ***Hand protection:*** the hand generally speaking, is more exposed to danger than any other part of the body. Gloves are provided by ARC Exploration for employees.

   - Hand protection must protect against the hazards of the particular job.
   - Hand protectors should not be worn around moving parts that could catch the glove/mitt and pull the hand into the danger area.

1.5 SMOKING LEGISLATION

Smoking is not allowed in buildings or company vehicles. Smoking is allowed outdoors or in designated areas that meet the requirements of the SK Occupational Health and Safety Regulations (sec 77), Nunavut's Tobacco Control Act (sec 13), or the *Environmental Tobacco Smoke Worksite Regulations* under section 45 of the *Mine Health and Safety Act*. Smoking is not permitted while working outside.

2 EXPLORATION SAFETY

Exploration work is diverse, but the nature of the work has a similar set of hazards and risks. This work is generally completed in remote areas, and is subject to several hazards. The hazards discussed in this section are generally applicable to a wide range of work.

*Note: Off duty/recreation activities, while on site, are subject to the same requirements.

2.1 REMOTE LOCATION

2.1.1 Risks

- Distance to medical care
- Delayed response
- Lost or stranded employees
- Travel issues (weather, road conditions, etc.)

2.1.2 Prevention

- **If at all possible DO NOT** travel alone. If circumstances dictate travelling alone the Prevention rules listed below **must be followed**.
    - Carry communication device (satellite phone, SPOT, radio, etc.)
    - Ensure your plans are known
        - Where are you going
        - How are you travelling
        - When do you expect to return
    - Carry stocked survival kit
    - Ensure vehicle is full of fuel. If possible, carry extra. Prior to departing, perform a pre-operational check (i.e. check oil and other fluids)
    - Wear appropriate clothing for the weather

- Know your situation, this includes awareness of:
    - Time of day
    - Relative remoteness of your location
    - Terrain and topographic relief
    - Current and pending weather
    - Amount of work remaining to complete
    - Threats to well-being of you and your crew
    - Location of crew in relation to you
    - Number of people in your crew
    - Location of vehicle or camp relative to you
    - Equipment and consumables at hand (water, communication device(s), first aid kit, signalling devices, etc.)
    - Skill level and experience as it pertains to above

- If you have a known allergy, notify a co-worker about where to find your epipen and how to use it. Ensure you carry it at all times.
    - Notify catering employees of known food allergies.

2.1.3 Communications

Field operations must have a communication plan. This plan may include, but is not limited to, communication with contractor employees, communication with Saskatoon Exploration office, communication with ARC Exploration employees travelling away from the main areas (i.e. away from camp, off of main access trails, etc.).

- Types of communication necessary:
    - Travel (i.e. on access roads, awareness of other traffic)
    - Safety and health
    - Environment

- Work progress and expectations

- ARC Exploration field employees shall have satellite phones and/or radios and/or cellular phones (if service available) and/or other means of communication when travelling.
- Communication with head office:
- Field operations are to contact the Saskatoon Exploration office each weekday to inform of work progress, environmental issues and any untoward occurrences.
- Communication, including date, should be noted on the Exploration office white board.
- For any safety issues, environmental issues or any untoward occurrences on weekends or after hours, refer to the Exploration Emergency Contact list for contact information.
- Field staff must inform the Saskatoon Exploration office of travel to and from site by road. Employees travelling via vehicle between sites are to inform the direct supervisor and Saskatoon Exploration office of departure and arrival at destination. Supervisors are responsible for monitoring this communication and informing the Vice President, Exploration, District Geologist or Coordinator, SHEQ Exploration of a person's failure to report.
- Communication during field operation:
- Establish a work plan when travelling away from main areas. This work plan should include:
    - Name of all employees in work party
    - Time of departure
    - Expected time of return
    - Exact destination
    - Supplies taken (i.e. map, food, survival kit, etc.)
    - Communication method

2.2 ICE SAFETY

2.2.1 Risks

- Drilling on Ice
- Travelling on Ice via Passenger Vehicle, Snowmobile or ATV

2.2.2 Prevention of Ice Failure

- **Work/travel must be done in pairs, at a minimum, until ice thickness has been verified.**
- **A project working on ice will develop an Ice Safety Plan prior to mobilization. The Ice Safety Plan will identify project specific ice work plans and weight of equipment.**
- Contractors performing work on behalf of ARC Exploration who will be travelling on ice or drilling on ice must have an ice safety plan. The ice safety plan should be reviewed by ARC Exploration.
- **If at all possible DO NOT** travel alone. If circumstances dictate travelling alone Prevention rules as per Section 2.1.2 **must be followed**
- Ice thickness and quality will be monitored as conditions dictate and the information documented and forwarded to the Coordinator, SHEQ Exploration monthly.
- **Effective ice thickness** equals the thickness of blue ice + (thickness of white ice/2)
- The following table identify ice thickness with a low level of risk.

Minimum Ice Thickness for Lighter Loads	
Load/Situation (Slow Moving Loads)	**Minimum Effective Thickness (cm)**
Person walking (120 kg)	10
Snowmobiles (Max weight of machine + rider <500 kg)	18

Minimum Ice Thickness for Lighter Loads	
¾ tonne 4X4 vehicles (max GVW of 5000 kg)	38

2.3 STRESS AND FATIGUE

- Exploration fieldwork may involve;

  a) Periods of intensive or extensive hard physical work.

  b) Working in remote areas with significant climatic and terrain hazards.

  c) Being away from home, friends and family for long periods.

  d) Adapting to unfamiliar cultures and customs.

  e) Decision making without access to traditional support.

- Working under such conditions can lead to physical stress and fatigue, especially if you are unfit. Mental stress and fatigue may also result from these and other conditions.

- You should be able to recognize the symptoms of physical stress and fatigue such as muscular aches and pains, weariness and inability to perform physical tasks at normal physical levels, and take steps to manage/reduce these.

- The symptoms of mental stress/fatigue may be less easily recognized, but in the early stages often include insomnia, irritability, loss of appetite, reluctance to make decisions or poor decision making, and deterioration in personal relationships. You should know how to reduce mental stress and are encouraged to discuss the situation with the site supervisor, or applicable person, to assist your distress. Seek medical care if your condition does not improve.

- In advanced situations, depression, aggression, psychosomatic illness, increased risk taking and/or suicidal tendencies may result. If you recognize these advanced symptoms, in yourself or a co-worker, senior ARC employees need to be informed and professional medical assistance must be obtained and is available through ARC's EFAP program.

2.5 COLD CONDITIONS

Working for extended periods in cold environments can cause the body to decrease blood flow to the skin. The result can be cold stress. The immediate health effects of cold stress are decreased alertness and lack of concentration. If exposure is prolonged or extreme, frostbite or hypothermia may result.

- Frostbite is the freezing of tissue. The fingers, toes, ears and nose are particularly susceptible. Frostbite may also be caused by contact with cold objects.
- Hypothermia results when the body's core mechanism can no longer maintain internal body temperature above 35°. Medical attention must be sought immediately.
- Special attention should be given to good hand and footwear, and face and head protection.
- Overexertion can cause death as a result of sweating or a heart attack

2.5.1 Hypothermia

Hypothermia is a condition in which body temperature drops below that required for normal metabolism and bodily functions

2.5.1.1 Risks for hypothermia;

- Cold
- Wind
- Poor clothing
- Cold water immersion
- Fatigue

2.5.1.2 Signs of hypothermia;

- **Mild hypothermia;**
    a) Shivering
    b) Grogginess, poor judgment, muddled thinking and abnormal behaviour
    c) Breathing and pulse remain normal

2.4 HOT CONDITIONS

High temperature and humidity may produce heat cramps, heat exhaustion or heat stroke.

2.4.1 Heat Cramps

Heat cramps result from excessive sweating and loss of body salt. This may be prevented by an adequate intake of electrolytes in the diet and adequate hydration.

2.4.2 Heat Exhaustion

Heat exhaustion is a state of collapse and shock, as a result of physical work in a hot environment. The risk can be reduced by following a proper/comfortable work-to-rest ratio and consuming water at regular intervals.

2.4.3 Heat Stroke

Heat stroke is an extremely serious medical condition in which the ability to lose heat and control body heat is lost. As a result, very high body temperatures may develop, followed by collapse and death.

2.4.4 Dehydration

For "normal" activity, the recommended daily water intake is about 2 litres. When working strenuously or in a hot climate your body may require 4 litres or more in addition to what you drink at meals. Cold fluids are most beneficial.

2.4.5 UV Radiation

Ultraviolet (UV) light poses a real threat to the field employees in the form of serious long-term problems such as skin cancer, premature wrinkling, immune suppression, and cataracts.

- Particular attention to sun burn symptoms should be observed.
- Use sun block or sun screen with an SPF rating of at least 15, particularly on the nose, hands, ears and neck. This should be made available to employees exposed to this hazard.
- Use eye protection (either dark or clear) that block at least 99% of all UV rays.
- Wear a wide-brim hat to protect your head.

- **Moderate hypothermia**

  d) Violent shivering or shivering has stopped all together.

  e) Inability to think and pay attention

  f) Slow, shallow breathing, slurred speech or poor body coordination

  g) Slow weak pulse.

- **Severe hypothermia**

  h) Shivering stopped.

  i) Unconsciousness

  j) Little or no breathing

  k) Weak, or irregular, or non-existent pulse.

  l) Dilated, (wide open pupils), so the victim may appear dead but is still alive.

2.5.1.3 Prevention of hypothermia;

- Plan the work understanding the existing weather and potential future weather conditions
- Wear warm head clothing
- Wear layered clothing
- Protect your feet and hands.
- Carry emergency supplies.
- Drink plenty of non-alcoholic fluids.
- Pace yourself during vigorous activity.
- When possible heat the working environment.
- Refer to Ice Safety (2.3)

2.6 WINTER STORMS

Poor visibility, low temperatures and high winds combine to create a significant hazard.

- If a winter storm is forecast, you may want to string a lifeline between any outbuildings to which you may have to go during the storm.
- During a winter storm, stay indoors.
- In wide-open areas, visibility can be virtually zero during winter storms. You can easily lose your way. Do not try to walk to another building unless there is a rope to guide you or something you can follow.
- DO NOT TRAVEL. If you must travel during a winter storm, do so during the day and let someone know your route and arrival time.
- If your vehicle gets stuck in a winter storm, remain calm and stay in your car. Allow fresh air in your vehicle by opening the window slightly on the sheltered side – away from the wind.
- Attempt to contact help and keep watch for traffic or searchers.
- Use caution and be aware when carrying large objects in heavy winds (i.e. plywood)

2.7 WILDLIFE ENCOUNTERS

As stated in the Environmental Code of Practice (ECOP) feeding of wildlife is prohibited.

Working in remote areas involves the risk of encountering animals such as a bear or wolf. Although the actual potential for dangerous encounters is low, it is real. The best defence is a good knowledge of their habitat and behaviour. Consider bringing a can of bear spray or bear bangers and know how to use them.

As stated in the ECOP, harassment of wildlife is strictly forbidden by all individuals conducting business on behalf of ARC Exploration. Firearms may be carried for safety reasons, but only if persons carrying such firearms are properly licensed (to be verified by the Contract Administrator) and stored in accordance with applicable legislation and GSP 9.03. Any person (ARC or contractor) who is seeking to carry a firearm, for safety reasons, MUST obtain written permission from the Contract Administrator prior to mobilization. All such firearm discharges must be reported to ARC Exploration employees. Hunting is not permitted while conducting business on behalf of ARC Exploration.

If you see a bear:

- Keep your distance and allow the bear every opportunity to avoid you.
- If the bear continues to approach you, it is most likely trying to identify what you are. Remain calm. A standing bear is usually curious, not threatening.
- Identify yourself by talking in a normal voice.
- Try to back away slowly at a diagonal angle. If the bear follows, stop and stand your ground.
- Don't run, running may cause the bear to chase you.
- If the bear gets too close, wave your arms, raise your voice, and be more aggressive.
- If you're carrying bear spray, get it in your hand, point the nozzle away from you, and check the wind direction to make sure the spray doesn't blow back on you.

What to do if the bear makes contact:

- If you are attacked by a grizzly bear, fall to the ground and play dead. Typically a grizzly bear will break off its attack once the threat is removed. Remain motionless as long as possible. There are two recommended positions:

  1. Lie on your side, curled into a ball, legs drawn tightly to your chest, hands clasped behind your neck.

  2. Lie flat on the ground, face down, fingers intertwined behind your neck.

- If you are attacked by a black bear, fight back vigorously. Throw stones or other nearby objects.

2.8 INSECTS

The common insects encountered include mosquitoes, flies, bees, wasps, ants and ticks.

- If you have a known allergy, notify a co-worker about where to find your epipen and how to use it. Ensure you carry it at all times.
- Limit your exposure through the use of insect repellent and netting, repellents that contain 30% DEET are the most effective.

- For wasps and hornets, keep an eye out for gray paper nests hanging in trees or for wasps hovering near the ground.
- When in tick country make access to your skin as tough as possible, wear long pants and long sleeved shirts.

2.9 REPETITIVE WORK

Repetitive work can lead to injuries, such as tendonitis and carpal tunnel syndrome. These injuries can be caused by:

- Repetitive motions
- Forceful exertions
- Awkward or sustained postures
- Sustained pressure on hand, wrist, arm, leg, etc.
- Vibration
- Cold or wet working conditions

Symptoms of these injuries may include:

- Pain
- Numbness or burning feeling (including "pins and needles")
- Joint stiffness
- Muscle weakness
- Redness or swelling
- Difficulty grasping/holding objects

Prevention of repetitive work injuries may include, but is not limited to, the following:

- Good workplace design and practices
- Use of well maintained equipment
- Frequent breaks

- Training
- Assessment of tasks

2.10 BACK CARE

Lifting injuries can be prevented by

a) staying in shape

b) warming up muscles first by stretching

c) not lifting things that are too heavy

d) receiving proper lift training

e) asking for help and/or using mechanical devices

Steps to safe lifting

- Clear the work area. Survey your route; look for hazards such as spills or uneven areas or other obstacles.
- Check the load for sharp or jagged edges, the stability of the load and the load packaging.
- Size up the load. If it is too big, divide it up; get help if it is too big.
- Ensure you are well balanced and have a proper foot position. Make sure your mind is on the job.
- Move as close to the load as you can. With your feet shoulder width apart, put one foot in front of the other.
- Obtain proper hold of the package.
- Keep your back straight and your arms close to your body as you lift.
- Lift the load smoothly using your leg muscles.

3 JOB SPECIFIC SAFETY

3.1 GENERAL SAFETY REQUIREMENTS

- Employees must wear and use all protective devices or safety equipment as per training, as directed by their supervisor, these standards, or posted signs.
- Loose fitting clothing and jewellery (including rings, necklaces, bracelets, earrings) that may cause entanglement with machinery or may interfere with tasks is not permitted. Long hair must be adequately secured to prevent entanglement.
- When a hazard exists and the safety devices required for an operation are not available the work must not be performed unless an alternative method is identified and is deemed to satisfactorily control the hazard. (This does not apply in the case of rescue from immediate hazard to life.)
- Obey all warning signs.
- Housekeeping is required in all areas to prevent injuries and incidents.
- Horseplay, practical jokes and other actions that may lead to injury are prohibited.
- Report unsafe practices and conditions to your supervisor, the Exploration Occupation Health Committee (OHC) or the Coordinator, SHEQ Exploration
- Misuse of safety equipment or disabling of safety devices is prohibited.
- Safety guards may only be removed if adequate alternative protection against injury is provided. A hazard ID and risk analysis is to be performed for the alternative option prior to implementation.
- NEVER:
    - Work while intoxicated
    - Disable a safety device
    - Forget to wear a seatbelt
    - Ride an ATV/UTV or snowmobile without an approved helmet

- Overload an aircraft or watercraft
- Leave a fire unattended
- Dispose of hazardous materials in the wilderness
- Use a broken tool
- Ignore a distress call

3.2 DRILL RIG SAFETY

Hazards around advanced exploration sites can include diamond drill sites and heavy equipment. Employees and contractors working with diamond drills must have appropriate training and be proficient in their area of work. Safety measures for diamond drilling are provided in regulations.

Following are general safety guidelines when working around diamond drill rigs:

- **Personal protective equipment (PPE)**: hard hat, safety footwear and eye protection is mandatory. Hearing protection must be worn if the drill rig is in operation. Coveralls and gloves are to be worn when necessary or as directed by the crew supervisor.
- Do not handle any equipment for which you have not been trained.
- Keep all equipment in good operating condition.
- All reasonable accessible moving parts of a drill and its auxiliary equipment are to be guarded.
- Ensure proper illumination in work areas.
- Cracked or defective rods must be removed, clearly marked and taken out of service.
- Avoid loose clothing that could be caught in the drill head or machinery.
- Be aware of slippery floors.
- Keep work areas clean. Drill shacks are to be kept free of flammable garbage and refuse.

- Heavy equipment; be aware that the operator of heavy equipment may have reduced visibility. When approaching equipment ensure the operator is aware of your location and movements at all times.

3.3 VEHICLES AND MOBILE EQUIPMENT

Persons required to drive company vehicles (includes contractor vehicles and rented or leased vehicles) must have a valid driver's licence and at all times drive defensively and safely and operate vehicles in compliance with all driving laws.

Always inform your supervisor, co-worker or other responsible person of the estimated times of departure and arrival and the route to be taken.

3.3.1 Trucks and Probe Units

- Safety Equipment: spare tire, fire extinguisher, first aid kit and emergency kit.
- Operators should examine vehicles daily for deficiencies (i.e. tire condition, check oil and fluids, oil/fluid leaks, fuel level, etc.) Defects that affect safety are to be corrected immediately, or the vehicle removed from service.
- Vehicles are to be properly maintained and equipped for the terrain in which they are to be operated.
- Driver and passengers must wear seatbelts at all times. There shall be no more persons in a vehicle than the number of seatbelts
- Speed limits must be adhered to.
- Ensure the driver has adequately rested prior to driving long distances.
- Ensure that a method of communication is in the vehicle (i.e. radio, satellite phone, SPOT, cellular (if coverage).
- Pull to the side of the road to use communication devices. Cellular phones may be used for voice calls while driving, **ONLY** if a hands free device is utilized.
- While parking along roadways, drivers should make every reasonable effort to park in a safe location off of the road.
- Use sound judgement, exercise caution at all times, and adapt your driving to road and trail conditions.

3.3.2 All-Terrain Vehicles and Snowmobiles

Employees are to operate their equipment in a safe and cautious manner; excessive speeds are not to be tolerated.

- **Safety Equipment:** Approved helmet, goggles or face shield, emergency survival kit, proper clothing, extra drive belt, extra spark plugs, appropriate tool kit for repairs.
- **Work/travel must be done in pairs, at a minimum if crossing frozen water bodies, until ice thickness has been verified.**
- Pre-operational checks identify fuel and lubricant levels, damaged or inadequate parts and systems. This makes the equipment safer to operate and also saves time and prevents breakdowns on the trail.
- Employees are to be trained prior to operation of ATV's and snowmobiles. For ATV's employees must obtain the appropriate certification.
- Snowmobiles must be licensed.
- If at all possible, DO NOT travel alone when on snow machines and ATV'S, using previously defined trails or roadways. If new trail needs to be opened, ideally work in pairs, proceed with one machine at a time. If stuck, do not over exert or strain one self.
- If circumstances dictate travelling alone Prevention rules as per Section 2.1.2**must be followed**.
- If lakes, rivers or streams must be forded, ensure the ice is thick enough to support the weight of the driver and machine (minimum 18 cm). Weak iced areas may be identifiable by gray coloured snow. In the spring, ice conditions may change very quickly. Check the ice condition often to monitor its integrity.
- **Breaking through the ice, first priority is employee's safety**. Use applicable means to remove yourself and/or co-worker(s) from harm. Get help from co-worker. Use rope available in the survival kit and keep safe distance from the broken-up surface. Proceed to shore and if necessary start camp fire to dry clothes.

3.3.3 Watercraft

Watercraft must be in a safe and operable condition and vessels must be large enough to do the job safely.

- Safety Equipment: Approved flotation device for each occupant must be worn while on water, emergency kit, oars, bailing can, means of communication, appropriate tool kit for small engine repairs and a kill switch for the engine in the event that the operator is thrown from the boat.
- No watercraft shall be used by more occupants than the approved rating.
- Field employees must obtain the appropriate certification, prior to the operation of watercraft.
- Weather and water conditions must be such as to allow for safe travel.
- Remove portable fuel tanks from the watercraft when refueling. Clean up any spilled fuel.
- All equipment and watercraft must conform to Canadian Coast Guard Standards.

3.3.4 Aircraft

Only aircraft operated by pre-approved companies are acceptable for charter flights carrying ARC Exploration employees. The list of Approved Air Operators is available at Q:\Exploration\IQMS\003_Support Files.

Both Fixed Wing aircraft and Helicopters have similar requirements to prepare for safe flights.

3.3.4.1 Prior to Flight

- Meet with the Pilot
- Discuss plans and procedures, measures to reduce risks, and limitations of the aircraft.
- Safety briefing to include;
    a. Safe areas and danger areas around the helicopter
    b. Seat belts (use them and know how to fasten and unfasten)
    c. Brace positions
    d. Exits (location and use – including emergency exits)
    e. Operation of doors and cargo compartments

f. Approach and exit routines

g. Safe loading and unloading cargo

h. Use of communication equipment and hand signals

i. Emergency locator transmitter (location and use)

j. First Aid Kit

k. Fire Extinguisher(s) (location and use)

l. Smoking rules

m. Survival equipment (location)

n. Your responsibilities (be prepared, dress for the weather outside, pay attention, slow down and think before acting, support the pilot's decisions).

3.3.4.2 During Flight

1. Remain in your seat unless given permission to move.
2. Use helmet or headset if provided (fasten chin strap if available)
3. Use ear protection.
4. No smoking
5. Do not scrape or push windows.
6. Do not distract the pilot during takeoff, manoeuvring or landing.
7. Never throw anything out of the aircraft.
8. Read instructions on the operation of doors, emergency exits, ELT, and emergency equipment.

3.3.4.3 After an emergency landing

1. Wait for instructions to exit, or until the rotor stops.
2. Assist others to evacuate well clear of the aircraft.
3. Remove first aid kit and other emergency equipment after there is no threat of fire.

4. Administer first aid if required

5. Remove ELT, read instructions and activate.

As well, Fixed Wing Aircraft and Helicopters each have specific safety requirements.

3.3.4.4 Fixed Wing Safety

Approaching and Exiting the Aircraft

1. It is safest to approach and leave the aircraft after the propeller has stopped turning.
2. Board and exit the aircraft as per the pilot's instructions
3. The propeller is a significant hazard
4. Do not remove your seatbelt until instructed to do so. Bear bangers/bear spray are not allowed in the cockpit, they should be stored in the cargo hold.
5. Inform pilots of any bear bangers/bear spray being transported.

3.3.4.5 Helicopter Safety

Approaching and Exiting the Helicopter

1. It is safest to approach and leave the helicopter after the rotors have stopped turning.
2. Make sure the pilot signals you before approaching or leaving.
3. Approach the helicopter by moving toward the front and in full view of the pilot. Make eye contact with the pilot. Always approach and exit in a crouched position with head up.
4. Do not approach or exit when the rotors are moving slowly. Rotors dip as the engine slows or idles, especially when it is windy.
5. Hazards at the front include – low rotor, hot pitot tubes, radio antennae, search lights, and wire strike kits.
6. Never approach or leave the helicopter from the rear
7. Always approach from the downhill side (Never uphill).
8. Never duck under the tail boom (turbine engine exhaust, tail rotor, HF radio antennae).

9. Never go near the tail rotor. Turning tail rotors are often invisible.
10. Rule of thumb – "never move behind the cargo compartments of a helicopter that is running".
11. Do not remove your seatbelt until instructed to do so.
12. Slowly and carefully, exit the helicopter.
13. Remain in the pilot's range of vision.
14. Rotor downwash
    a) Stay well to the side of the landing area.
    b) Keep the helipad (landing area) clear.
    c) Secure clothing and headgear.
    d) Hang on to things that may move.
    e) Protect your eyes.
15. Always approach from the downhill side (Never uphill).

Loading and unloading

1. It is best to load and unload with the rotors stopped.
2. Load carefully and secure cargo against movement (proper balance is critical)
3. Ensure that baggage doors are properly closed and latched.
4. Flammable materials must not be carried inside the helicopter with passengers.
5. Never throw any object in the vicinity of the helicopter.
6. Never carry gear over your shoulder or above your head.
7. Bear bangers/bear spray are not allowed in the cockpit, they should be stored in the cargo hold. Inform pilots of any bear bangers/bear spray being transported.

Slinging

1. Employees must be trained by helicopter contractor personnel in proper slinging techniques prior to slinging loads with a helicopter.

2. Wear hard hat, chinstrap, eye protection, and high visibility clothing.

3. Stay clear of the area where the helicopter is landing sling loads (do not stand under the load).

4. Stay within the pilot's range of vision at all times.

5. Beware of static discharge from the hook or load.

Helipads

1. Must be large enough (at least twice the size of the rotor diameter).

2. Must be able to support the weight of the helicopter.

3. Area must be clear of obstacles.

4. Area must be clear of loose debris.

5. Trees and brush must be cut to ground level and removed from the area.

3.3.5 Electrical Safety

Employees are not permitted to repair or work on any electrical equipment, wiring unless properly trained for this type of work. Three-wire, heavy duty extension cords must be used with portable electric tools. Extension cords must be inspected before use and must be removed from service if the insulation is damaged. Portable electric tools that are not double insulated must be grounded. Equipment must not be used if the grounding pin on the plug is damaged or broken.

3.3.6 Propane and Liquefied Gas

- Only trained and qualified persons will work on propane or liquefied gas installations.
- Any evidence of a leak or spill of propane or liquefied gas must be reported to the Project Geologist or designate immediately.

4 FIRE PREPAREDNESS

While a project is active, emergency fire procedures will be discussed with employees on site. A muster point will be designated.]

Buildings must be equipped with smoke detectors and fire extinguishers.

Refer to Environmental Code of Practice for prevention of Fire.

5 REFERENCE MATERIALS

"Best Practice for Building and Working Safely on Ice Covers in Alberta" (Government of Alberta, 2009)