

Rabbit Lake Education Development Project

PHASE 1 FINAL REPORT

September 1996

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Thanks to all the CAMECO staff at Rabbit Lake Uranium Mine who had the time and patience to participate in the organizational needs assessment. We greatly appreciate their taking part. We would also like to thank the Program Committee and the on-site Project Teams who oversaw the process. Special thanks to the administration staff at Rabbit Lake Mine, North West Regional College and Northlands College for providing their technical expertise.

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1. EXECUTIVE SUMMARY

1.1 Definitions and Abbreviations

There are a few terms that are particular to adult education, workplace education or the uranium mining industry specifically. Here is a list of terms and their meanings as used in this report.

ABE

Adult Basic Education.

Organizational Needs Assessment (ONA)

a process prior to workplace training whereby the literacy needs of various jobs within an organization and the basic skills of the employees are determined. This process includes readability testing of workplace written material.

Project Committee

the group of people representing the major stakeholder groups who oversaw the project and directed the consultants.

Project Team

the group of people working at the mine who were the on-site organizing committee.

Tagging

the act of shadowing or following along with an employee while at work to determine literacy needs and work flow.

WECS

The Workplace Education Consortium in Saskatchewan.

WHMIS

Workplace Hazardous Materials Information System.

Workplace Education

Focuses on the need for basic skills in the areas of reading, writing, math, problem solving, critical thinking and communication. These skills enable an employee to function more effectively at work.

1.2 Overview

Rabbit Lake Uranium Mine is the longest operating uranium mine in Saskatchewan. It is a remotely located mine site 1120 kilometres north of LaRonge. Cameco employees work for seven days in and seven days out and while on-site work twelve hour shifts that are reversed (a.m. or p.m.) each time they arrive.

It was the uniqueness of the Rabbit Lake Mine that made it perfect for this pilot project. Those involved with the development of this project felt that if workplace education could be delivered successfully at Rabbit Lake it could be delivered anywhere.

The pilot project was developed in two phases, the first phase - the Organizational Needs Assessment (ONA) - is the subject of this Executive Summary and lays the foundation for Phase II, the on-site education program.

For the purpose of the Organizational Needs Assessment, the consultants attempted to look at workplace education needs from the vantage point of the employees, the employer and the job positions. The consultants used 15 information sessions, 160 general surveys, 65 individual surveys, three focus group sessions and tagged with 10 employees to collect demographics and information at Rabbit Lake Mine. The most specific information was gathered from individual surveys of which 22% of the staff completed.

1.3 Objectives and Major findings

There were four objectives set out for the ONA. The major findings are related to these objectives.

1. Determine literacy and basic skills levels

The Rabbit Lake Staff had a basic level of Grades 10/12 with some post-secondary training.

2. Identify areas of concern:

Upgrading and training to enable staff to complete a technical diploma or certificate and/or trades certification were the content areas most identified. Of 146 surveyed, 34.25% had not achieved a Grade 12 or GED diploma. In addition, only 19.9% currently have a journeymen certificate. One-third (35%) of those surveyed wanted to pursue a high school diploma and/or apprenticeship. The trades areas most desired were power or electrical engineering. Technical trades most desired were geological or chemical laboratory technicians. There was a great demand for science training (chemistry, physics) and computer training.

3. Identify specific job areas requiring a greater need for education:

The mine maintenance, mine service and the mill (in order) were most in need of workplace education. There were two reasons for this: (1) the academic entry level for these areas was not high (grade 12 or below); and (2) these were the longer term employees who were unable to access outside training requiring regular attendance due

to shift demands of the mine. 48% of mine services were over 43 years of age with 39% of them desiring either upgrading or trades training.

4. Lay the foundation for Phase II.

The consultants attended general meetings and accompanied the trainer on her first mine visit to enable smooth transition from Phase I to Phase II.

1.4 Recommendations

The following recommendations are based on information gathered from the various steps of the ONA process:

Location. At least two classroom locations should be provided--one at the mill and one at the residence building. At the mill site staff could come right in without having to change out of work clothes. There is a large training or meeting room available in the administration area of the mill. This room is already outfitted with whiteboards and a large table, and is convenient to a majority of the Rabbit Lake staff. In addition, other mine staff utilize the room for staff meetings, safety meetings. etc. It would not be seen as any one department's territory, therefore neutral ground.

The residence building is large and has several locations that could be adapted to a resource room or office for the Phase II trainer. However, staff are not allowed to wear or store work clothes inside the residence. Staff will have to be allowed time to change clothes in the scheduling of training.

Trainer's schedule. The project as originally planned called for two part-time trainers, one for each shift. They would work every other week. After discussions in information sessions, project team meetings and through observation, the consultants recommend a 14-day in 14-day out schedule. The trainer would work with both shifts. and then miss both shifts. As this is a pilot project, the consultants advise one trainer instead of two. That way comparisons could be better made between shifts and over time. This 14-day schedule was supported by the project team and the project committee.

Hourly schedule. The 24-hour work schedule will necessitate a schedule other than what would normally occur in other types of workplaces. The most opportune time for group classes would be from 5 - 8 a.m. in the morning and from 5 - 8 p.m. in the evenings. During the day, office hours would need to be scheduled for others who might want to take advantage of the trainer as a resource person.

Format for training. The consultants began the ONA envisioning regular workplace education classes arranged at a convenient time. Workplace education class offered in other locations have tended to adopt a two hour session (one-hour paid time/one-hour own time), meeting once a week. The classes are usually held at the end of the work day. As the consultants progressed through the ONA, it became clear that they would have to adapt this format.

The consultants recommend that the format of the workplace education at Rabbit Lake occur in the "learning centre" style. The trainer will act as a facilitator for up to 30 people who will register for particular subject areas. The trainer will perform assessments and create individualized learning objectives for each person to meet their job needs. Lessons on common topics, i.e., basic reading or writing, could be taught in groups. In addition, the trainer would act as a resource person to the remaining staff.

Subjects to Offer. There are many subjects that could be offered for a workplace training program. From knowledge gained through the ONA process, it is recommended that the instructor offer face to face classes between the hours of 5:00 a.m. - 8:00 a.m. and 5:00 p.m. - 8:00 p.m. in:

- Communication
- Basic mathematics
- General Science
- Basic Chemistry
- Introductory Physics

At the completion of these courses students may choose to write their General Education Development (GED) examination or, if applicable, complete the Cameco screening process for application to the apprenticeship programs.

Secondly, the instructor would act as a facilitator for those individuals who wish to pursue or prepare for:

- Computer Skills Training
- Technical/Certificate Training
- Personal Development Programs.

Finally, the instructor will research and, if possible implement, training opportunities using distance education technologies. The project team should explore the possibility of Saskatchewan Communications Network (SCN) and the Internet as delivery methods for additional training for those requiring subject specific training.

1.5 Conclusions

The beaming opportunities afforded to the Cameco employees at the Rabbit Lake Mine Site are being driven by the "Cameco Looks Ahead" strategic plan. From the beginning of the ONA, it was recognized by the consultants that Cameco places significant value in lifelong learning.

Findings from the ONA show a significant need and demand from all levels of Rabbit Lake employees for on-site education. The consultants believe that Phase II can and will provide these opportunities within the existing training environment. The success of this venture will be somewhat dependant upon the instructor's ability to work in cooperation with existing trainers and education programs at Rabbit Lake. It is for this reason that the consultants envision her role to involve elements of both research and facilitation. The trainer needs to coordinate activities with existing on-site training to avoid duplication and maximize the benefits from all sources of training.

2. BACKGROUND INFORMATION

2.1 Project Goals and Objective

The objective of Phase I of the Rabbit Lake Education Development project was to identify the literacy and basic skill needs of the labour market in Northern Saskatchewan by focusing research on employees of the Rabbit Lake Mine Site. The goals of the consultants hired for phase I were:

1. determine the literacy and basic skill levels of a sample of the labour market at Rabbit Lake Mine Site;
2. identify areas of particular concerns (e.g. basic math skills, basic reading and writing skills);
3. identify specific job areas which have a greater need for a workplace education program; and
4. lay the foundation for Phase II (the delivery of the workplace education program).

2.2 The Workplace Education Consortium in Saskatchewan

The Workplace Education Consortium in Saskatchewan (WECS) is a project funded by the National Literacy Secretariat. It is composed of people who are interested in promoting workplace education.

The Mandate of WECS

The Workplace Education Consortium in Saskatchewan's mandate is to further develop workplace education in Saskatchewan. Representatives from education, business, labour and literacy work together to determine the need for workplace education. In addition, the Workplace Education Consortium in Saskatchewan will implement a collective provincial strategy for delivery of information about workplace education.

WECS will achieve its mandate by being a liaison between business and Workplace Education Consultants. The project is administered by the Regina Public Library in Regina, Saskatchewan. This Rabbit Lake Project, along with others in development, will help fulfill the WECS mandate.

The Roles of WECS

Clearinghouse: To be the source of information for workplace education.

Promotion: To promote the idea and services of workplace education.

Synergy: To link all parties involved with workplace education.

Facilitation: To facilitate workplace education activities.

Specific goals of WECS are:

- to make business aware of potential or existing skill-level problems within the workplace and the benefits of implementing workplace education programs;
- to create awareness of the various workplace education services available;
- to create awareness of the Consortium's brokering service: matching organizations with workplace educators;
- to increase the level of qualified workplace education trainers available in Saskatchewan; and
- to maintain a cohesive image among Consortium members.

The Workplace Education Consortium in Saskatchewan founding members

Regina Public Library's Business Literacy Project
Saskatchewan Education, Training and Employment
Saskatchewan Federation of Labour
Saskatchewan Institute of Applied Science and Technology
Saskatchewan Labour Force Development Board
Saskatchewan Literacy Network
Saskatchewan Tourism Education Council
Saskatchewan Wheat Pool

2.3 Cameco

Cameco Corporation, with its head office in Saskatoon, Saskatchewan, is the world's largest publicly traded uranium company and a growing gold producer. It has uranium and gold mining operations in Saskatchewan, uranium processing facilities in Ontario and a gold mine under construction in Kyrgysstan in Central Asia. Cameco's uranium products are used to generate electricity in nuclear power plants around the world (Cameco Annual Report, 1995).

2.4 Rabbit Lake Uranium Mine

Rabbit Lake Uranium Mine began operation in June 1975 and is the longest-operating uranium mine in Saskatchewan. It is also the second largest uranium mine in the western world (Cameco, 1996). Rabbit Lake Mine is located 700 kilometres north of La Ronge, Saskatchewan. The mine is co-owned by Cameco Corporation and Uranerz Exploration and Mining Limited and employs about 400 people including on-site contractors.

Rabbit Lake Uranium mine was the first mine site to initiate the seven-days-in/seven-days-out commuter system of staffing and operates 24 hours a day. In the air commuter system, workers are flown in to the remote site and housed in a permanent camp site. They work twelve hour shifts that are reversed (a.m. or p.m.) each time they arrive. While on-site, meals and housing are provided by the company. The Rabbit Lake mining camp includes cafeteria and recreational facilities.

3. RESULTS

3.1 Demographics from General Survey

Rabbit Lake has a diverse work staff. The average worker (Cameco statistics) is a 41 year old married man with two children. According to the ONA general survey of 25% of the staff, the average education was a grade 10 with some postsecondary technical training. 29.3% of the individual survey has a university education.

One hundred sixty surveys were completed by the staff. There were 146 male and 14 female respondents. The table below shows respondents by department:

Table 1

General Survey by Department N=160

Department	M		F		Department	M		F	
	#	%	#	%		#	%	#	%
Mine Operations	33	20.6	0	0	Administration	2	1.25	3	1.88
Mill Operations	40	25.0	2	1.25	Geology	9	5.63	0	0.0
Mine Engineering	7	4.38	1	0.63	Warehouse/ Safety	5	3.1	3	1.88
Environment	3	1.88	1	0.63	Chemical Lab	8	5.0	3	1.88
Maintenance	39	24.4	1	0.63					

There were 15 men over the age of 51, but no women of that age group. Half of the men over 51 worked in *mine services*. Of the 37 men in the 43-50 year old age group, 17 were in *maintenance*, with *mine operations* (7) and *mill operations* (8) showing the next highest representation.

There were eight male (5%) and three female (1.8%) respondents who indicated that their first language was Dene and three (1.8%) male respondents who indicated that Cree was their first language. For length of employment, over half of males (56.8%) worked at least 11 years. Thirteen men (but no women) had worked at Rabbit Lake at least 20 years, with 9 of these 13 men in *mine operations*. When men were asked about their favorite subjects in school, two subjects were just about equally chosen: science (38) and mathematics (37) representing over 50%. Only one subject, mathematics (8) was predominantly favored by the female staff. The least favorite subject of males and females, respectively, were English or language arts (40 out of 146) and science (4 out of 14)

The majority of jobs are in *maintenance* (33 %), the *mill* (31 %) and *mine operations* (21%). These three areas (apart from mine engineers) do not require high school level education.

Education Preferences. The following responses from the general survey were quantified in regard to what type of education participants most wanted to pursue next. The *engineering and environmental departments* wanted training in professional and technical areas equally. *Mine service, mill operations and mine maintenance* most frequently requested training in GED/Grade 12/upgrading, computers and then technical or trades topics. The *administration unit* requested certificate or diploma training in the human resource area. *Geology* cited professional (university) training and then

computers. *Warehouse and safety* requested professional training, computer training and technical/trades almost equally

3.2 Results from Individual Survey

The individual survey was completed by 65 respondents, 22% of total staff. Departments were represented in proportion to their percentage of the total staff. Names were chosen randomly (every fourth name) from a list divided by department. The project teams ensured that the lists were not weighted too heavily towards any particular gender or language group. The breakdown of respondents was:

Table 2
Individual Surveys by Department

Department	Total	Surveyed
Mine Operations	57	12
Mill Operations	85	21
Mine Engineering	13	2
Environment	4	1
Maintenance	90	15
Administration	7	2
Geology	13	3
Warehouse & Safety	10	6
Chemistry Laboratory	15	3

The basic skills area survey was important to the ONA to achieve goals one and two. In the reading section, a list of documents was provided. Each respondent was asked to indicate if, and how often, they had to read each item. The items most frequently read, in order, were:

1. Safety signs & posters
2. Symbols
3. Check lists
4. Time sheets
5. Computers

The items least read were, again in order:

1. Incident reports (read mainly by supervisors)
2. Technical reports (read mainly by professionals)
3. Technical literature (as previous item)
4. Company regulations (most read by new employees, most employees surveyed were long-term)
5. Requisitions, purchase orders, permits (supervisors & administration)

Reading was then analyzed by the two largest departments: mine and mill. For mine operations, it was most important to be able to read and understand the technical and content labels or hazardous warnings of the materials they worked with. It was also important for *mine operations* to be able to read equipment specifications and operating instructions to maintain the equipment and maintain safety at the proper levels. The *mill operation* differed only slightly from the general list, however, the consultants found that it was very important to understand charts, tables, graphs, drawings and sketches as mill workers moved around the ten circuits they had to operate. It was also important for mill workers to understand hazardous material labels, as they worked directly with mixing and monitoring solutions.

A reading and writing sample was included in the individual survey. Collecting this information during the ONA process was unique, and not normally recommended. However, the consultants strived to be sensitive to employees and the data collection added valuable information to the ONA. Before completing the survey, each respondent signed a waiver form (see appendix 7.3) agreeing that no one but the consultant would see their responses and short essays. There were only two respondents who chose not to complete this section of the survey. Generally there was some anxiety expressed by all respondents regardless of their education levels. The writing sample was the last item, and was written without name or identifier on a separate sheet of paper and stapled to the survey. These samples were scored last, after statistical data had been compiled.

The reading and writing sample was also analyzed by department. A scoring form was devised (see appendix 7.3) with one point each for the three reading comprehension questions and six points (one each for: sentence structure, usage, mechanics, spelling, punctuation and capitalization) for the writing sample. A total of nine points was the perfect score. *The mine department* was average in both reading and writing. The *mill* was slightly below average in writing ability. The *engineering* department was slightly above average in both reading and writing. *Maintenance* was equal in reading but slightly lower than average in writing. *Geology, warehouse and safety and the chemistry laboratory* were all higher in both reading and writing.

Department averages are provided below:

Table 3

Reading and Writing Results by Department

Department	Reading	Writing
1. Mine Operations	2.8	4.7
2. Mill Operations	2.8	4.3
3. Mine Engineering	3.0	4.5
4. Environment	*	*
5. Maintenance	2.8	4.2
6. Administration	*	*
7. Geology	3.0	4.6
8. Warehouse & Safety	3.0	5.0
9. Chemistry Laboratory	3.0	6.0

* The number of respondents in these departments were too small to be a representative sampling.

After the testing, it became obvious that three departments at Rabbit Lake Mine, would require a focus on upgrading skills in reading and writing. The chart that follows shows difficulties in sentence structure, usage, mechanic spelling, punctuation and capitalization. It also became obvious that three departments (*mine engineering, environment and chemistry laboratory*), had higher education entry levels, and would, therefore, require little focus in this area.

The following chart indicates the breakdown of writing difficulty by department. Of the 65 people who were tested, 27, for example, had difficulties in sentence structure. The departments exhibiting the greatest area of difficulty with sentence structure were: *mine operations* and service, *mill operations*, and *mine maintenance* departments.

Table 4**Difficulties in Writing by Department (N=65)**

<i>Department</i>	<i>Sentence</i>	<i>Usage</i>	<i>Mechanics</i>	<i>Spelling</i>	<i>Punctuation</i>	<i>Capitalization</i>	<i>Percent showing difficulty</i>	
							Number	Percent
1. Mine Operations	8	8	1	3	7	1	8/12	67.0%
2. Mill Operations	9	11	5	7	10	7	11/21	52.0%
3. Mine Engineering	-	-	-	-	-	-	0	-
4. Environment	-	-	-	-	-	-	0	-
5. Maintenance	7	6	1	-	3	-	6/15	40.0%
6. Administration	1	1	-	1	1	-	1/2	50.0%
7. Geology	1	1	-	1	2	1	1/3	33.3%
8. Warehouse & Safety	1	1	-	-	2	1	1/6	16.6%
9. Chemistry Laboratory	-	-	-	-	-	-	0	-
TOTAL	27	28	7	12	25	10		

Mathematics skills

Respondents were asked to rate 54 mathematics related skills as to frequency of use. When analyzed by department, the following usage profiles were determined. The *mine operation and service* department used basic math skills to keep track of items, estimate time and materials necessary to do a job. The only technical mathematical skills used, generally, were scale drawings, lines and angles, problem solving and specifications. Measuring skills were not generally used in *mine operations and services*. For the *mill operation*, a different mix of skills was necessary. Most basic mathematics skills were used including: counting, adding/subtracting, using decimals and time estimation. Only two technical mathematics skills--percentages and problem solving-- were important. Knowledge of graphs, charts and tables was very important for the mill workers. Measuring skills were highly used in this department, specifically the metric system, temperature, pressure and volume measurements.

The mine engineering department required all basic skills and most technical mathematical abilities, with the exclusion of trigonometry skills. *Mine engineering* used nearly half of the measurement skills. The sole respondent in the *environment department* required seven of ten basic mathematics skills. Percentages, ratio and proportion, algebra and trigonometry were all listed as used frequently. In addition, all measuring skills were indicated to be important. Although the *maintenance department* used all basic mathematics skills, tracking items and estimating time and materials were the only three items seen as important. Few technical mathematics skills were necessary, mainly those involving practical problem solving. Measuring ability is used but not frequently.

Administration does not require extensive mathematics skills. The *geology department* used all basic mathematics skills, but little technical mathematics other than those used to create and interpret scale drawings and models. The *warehouse and safety department* did not show strong use of mathematics skills, although many were occasionally used. The *chemistry laboratory* indicated high usage of mathematics from basic to high technical usage. Most mathematics was seen as essential to their day-to-day job.

Writing Skills Thirty written communication items were included in the survey. Results of usage by department varied greatly in some cases with a clear indication that supervisors generally were the only ones who wrote incident and shift reports.

Writing was most necessary to the warehouse and safety department and least important in the chemistry lab, which requires greater technical and mathematical ability. The mine operation wrote time sheets and shift reports, communicating mainly among themselves using a two-way radio and telephone. The mill operation wrote time sheets and filled out forms most frequently. Oral communication skills were shown as important in most categories, although the communication tools were limited to the, telephone and two-way radio. Mine engineering required writing skills were time sheets; creating drawings and sketches; and computer input. The oral skills necessary were to receive directions, make inquiries and take messages. Communications tools used by mine engineering were telephones, photocopiers, the two-way radio and computers.

The environmental workers filled out forms, kept track of time, wrote shift reports and instructions. All oral communication skills were important except large group presentations and off-site communication. In the maintenance area, only filling in forms, time sheets and tracking time were frequently written. Frequent verbal skills used by maintenance were following directions and answering questions. Communication tools were widely used, specifically the AS 400, telephone and two-way radio. The administration staff indicated a strong need for a range of writing skills (frequently used 9 of 12 areas). The clerical staff are not called upon to speak before large groups, but they do communicate with a great number of other mine areas including people off-site. Geology did not require frequent writing in their normal duties. All writing skills were used by the warehouse and safety department. Only one of eight oral skills (public speaking) was not needed by this department. Communication tools were needed, but not the typewriter, Provox system or remote control equipment. The chemistry area is more technical based, and writing necessities were restricted to record keeping.

Critical Thinking Skills *Mine services* most often used problem solving, of all the critical thinking skills. *Mill operators* required scanning for details, looking up information and needed to be able to provide explanations to others. They also required good logic and good judgement skills, and an understanding of cause and effect. In the *mine engineering department*, solving and explaining problems were essential skills with a heavy reliance on good judgment. The *environmental* area required system design and classification skills in addition to logic and good problem solving ability. *Maintenance* frequently uses written information and required problem solving skills. The *administration department* needed to be able to quickly scan for details and be able to solve problems. Critical thinking and the use of sound logic were essential to their daily jobs. *Geology* did not indicate high usage of critical thinking skills among their general duties. *Warehouse and safety* needed all but one of the thinking skills, therefore, critical thinking is important in this area. Finally, *the chemistry laboratory* frequently used most of the critical thinking skills to carry out their everyday duties.

Education Preferences The 65 individual surveys were examined with regard to education preferences. There were clear indications for the following training areas: computer skills (37%), interpersonal skills including communication and team building (29%), drafting and print reading skills (21%) and general mathematics (18%).

4. RECOMMENDATIONS

The following recommendations are based on information gathered from the various steps of the ONA process.

Location

The consultants recommend at least two sites--one at the mill and one at the residence building. At the mill site staff could come right in without having to change out of work clothes. There is a large training or meeting room available in the administration area of the mill. This room is already outfitted with boards and a large table and is convenient to a majority of the Rabbit Lake staff. In addition, other mine staff utilize the room for staff meetings, safety meetings, etc. It would not be seen as any one department's territory, therefore neutral ground.

The residence building is large and has several locations that could be adapted to a resource room or office for the trainer. However, staff are not allowed to wear or store work clothes in the residence. Time must be allowed for staff to change clothes in the scheduling of training.

Trainer's schedule

The project as originally planned called for two part-time trainers, one for each shift. They would work every other week. After discussions in information sessions, project team meetings and through observation, the consultants recommend a 14-day in 14-day out schedule. The trainer would work with both shifts, and then miss both shifts. As this is a pilot project, the consultants advise one trainer instead of two. Comparisons could be better made between shifts and over time. This 14-day schedule was supported by the project team and the project committee.

Hourly schedule

The 24-hour work schedule will necessitate a different schedule than would normally occur in other types of workplaces. The most opportune time for group classes would be from 5 - 8 a.m. in the morning and from 5 - 8 p.m. in the evenings. During the day, office hours would need to be scheduled for others who might want to take advantage of the trainer as a resource person.

Format for training

The consultants began the ONA envisioning regular workplace education classes arranged at a convenient time. Workplace education class offered in other locations (the Manitoba model) have tended to adopt a two hour session (one-hour paid time/one-hour own time), meeting once a week. The classes are usually held at the end of the work day. As the ONA progressed, it became clear that the consultants would have to adapt this format.

It is recommended that the format of the workplace education at Rabbit Lake occur in the "learning centre" style. The trainer will act as a facilitator for up to 30 people who will register for particular subject areas. The trainer will perform assessments and create individualized learning objectives for each person to meet their job needs. Lessons on common topics, i.e., basic reading or writing, could be taught in groups. In addition, the trainer would act as a resource person to the remaining staff.

Subjects to Offer

There are many subjects that could be offered for a workplace training program. From knowledge gained through the ONA process, it is recommended that the instructor offer face to face classes between the hours of 5:00 a.m. - 8:00 a.m. and 5:00 p.m. - 8:00 p.m. in:

- Communication
- Basic mathematics
- General Science
- Basic Chemistry
- Introductory Physics

At the completion of these courses (minimum 80 hours) students may choose to write their GED 12 or, if applicable, complete the Cameco screening process for application to the apprenticeship programs.

Secondly, the instructor would be available to act as a resource person for those individuals who wish to pursue:

- Computer Skills Training
- Technical/Certificate Training
- Personal Development Programs.

Finally, the instructor will research and, if possible implement, training opportunities using distance education technologies; specifically Saskatchewan Communications Network (SCN) and the Internet.

5. THE ORGANIZATIONAL NEEDS ASSESSMENT PROCESS

5.1 Start up Activities

This section will include: background information about the project; a listing of stakeholders; initial meetings and the plan of action. Thereafter, details about the organizational needs assessment itself are provided.

Ginny Carpenter and later Phyllis Ramsden of WECS and the consortium members developed the proposal and secured funding from the National Literacy Secretariat for a workplace education pilot project. Jamie McIntyre (consortium member) arranged, through his employment at CAMECO, for a uranium mine in northern Saskatchewan to be the location of the pilot project. Bebe Ivanochko of Northlands College (consortium member) and Karen Kjargaard of Northwest Regional College (literacy coordinator) were designated as the consultants to conduct the organizational needs assessment (ONA) in Phase I of the year long project. Both Bebe and Karen attended the WECS training session held in February 1996.

1st On-site visit The Rabbit Lake Education Development Project, Phase I, began officially on May 28, 1996. Bebe and Karen accompanied the project committee--representing WECS, CAMECO, Saskatchewan Education, Training and Employment (SETE) and Northlands College--to Rabbit Lake to meet with mine staff on-site to determine the working agreement. The two-day visit included a tour of the mill, camp site and underground mine in addition to an information meeting. Peter Townsend (Rabbit Lake General Manager), Cliff Lusby (Chief Engineer) and several managers along with the two human resource officers Darrell Bast and Bill Buchanan attended the information meeting. Donna Woloshyn (SETE) presented the background and rationale for the workplace project and outlined four incentives for Rabbit Lake to take part in the WECS workplace education pilot project:

- to develop a literate, highly skilled workforce;
- to ensure sustained employability of current staff;
- to promote partnerships and joint ventures; and
- to increase company productivity and effectiveness.

The consultants explained the organizational needs assessment (ONA) process of Phase I and the training component of Phase II. It was established at this initial meeting that the project would involve only CAMECO permanent employees who could participate on a voluntary basis.

Issues that arose through discussion at this initial meeting were:

- recognition of participation in training;
- apprenticeship, how this would fit into established training;
- time allotted (whether 1 hour company/1 hour personal time);
- logistics involving 7 day in/7 day out shifts, 24 hour work schedules; and
- content of workplace literacy training.

A follow-up meeting took place on June 4th at CAMECO's headquarters in Saskatoon to finalize the objectives and procedures. The project committee members present at that meeting were Phyllis Ramsden (WECS), Jamie McIntyre, John Clarke and Bill Buchanan (CAMECO), Donna Woloshyn (SETE), Bebe Ivanochko and Karen Kjargaard (Consultants). Peter Mayotte and Linda Cowan (Northlands College) joined in by conference call.

Plan of action The consultants met in Prince Albert (Woodlands Campus) on June 11 to establish their procedures and individual responsibilities. A schedule was developed along with logistics and procedures for the second trip to Rabbit Lake. ONA tasks were to:

1. Develop project teams on-site;
2. Conduct information sessions for all staff;
3. Conduct focus group sessions with supervisory & management staff;
4. Develop instrument and conduct individual surveys of 25% of staff;
5. Tagging employees to familiarize ourselves with work at minesite;
6. Develop instrument and conduct a general demographic survey for all staff; and
7. Prepare report and present to WECS, CAMECO and Rabbit Lake Mine

It would be imperative to duplicate activities with both shift 1 and shift 2. Although shifts overlap because of flight schedules, the staff do not overlap and some mine functions occurred on either one or the other shift exclusively. For example, shift 1 did mill maintenance (mill down week) while shift 2 was a mill operating week (mill up week).

5.2 Methodology

The second visit occurred from June 21 - 25, 1996. The mine contact person was Bill Buchanan. The consultants had to quickly adjust to an 11 hour work day. Space was allocated for the project consultants and a schedule of activities worked out. Karen and Bebe attended an Orientation Safety meeting required of all employees including consultants. Each step was documented because it would have to be duplicated for the Shift 2.

The Project Team. A project team was developed for each of the two shifts. The members were suggested by Rabbit Lake. There were no upper management on the teams, all were superintendents, supervisors, trainers or line workers, both male and female. Rabbit Lake is a non-unionized minesite.

Shift 1's team had to critique and help develop both the general and individual survey instruments, along with providing logistical support for information sessions and focus groups. Both project teams completed individual evaluations (Appendix 7.4) at the final meeting. For Shift 2, again, the project team met three times and set up information sessions. They also approved the survey instruments that had been previously approved by Shift 1.

There were four (4) project team meetings during the five-day stay. The project team members were initially both curious and cautious about the role they were expected to play. The Shift 1 Project team initial meeting was held June 21 in the mill meeting room. Requirements for inclusion on the project team were enthusiasm and willingness to act as a sounding board for the consultants and to serve as a liaison to the workforce. The initial (hour long) meeting had the following agenda, with Shift 2 occurring in much the same way:

1. Introductions
2. Overview of the Organizational Needs Assessment (ONA) purpose and process
3. A description of the role of the project team, their purpose and goals:
 - Define process, logistics on site,
 - Help plan information sessions, times and locations,
 - Determine focus group members, questions, logistics,
 - Preview and critique the individual survey to be conducted,
 - Have input into the readability assessment process,
 - Preview, critique and approve a one-page general survey.

As before, the consultants introduced themselves and the project. They explained the ONA procedure, then discussed logistics of information sessions. Shift 2 was also given an evaluation form at the third (final) meeting.

The consultants discussed on-going participation with each of the project teams during phase II. There was agreement by the teams to continue in an advisory capacity for the trainer.

Information sessions

Information sessions were small group meetings whereby the two consultants would introduce themselves to all staff and explain the project. This process was proved successful (WECS, 1996) for ensuring that all employees were given equal information and time to voice questions and concerns in a non-threatening manner. In addition, as these sessions occurred throughout the mine and mill site the consultants took note of the bulletin boards, postings, etc. as part of the literacy task analysis.

Information sessions were held for both Shift 1 and Shift 2, on day and evening shifts between June 21 and July 27, 1996. In total, 15 information sessions were presented reaching 164 employees. The two consultants switched duties between facilitating and recording issues each session. Attendance was taken for future reference.

The consultants met with both day and evening shifts to ensure all staff had an opportunity to sit in on information sessions. The information sessions occurred, mainly, in coffee rooms throughout the mill and mine site and were generally scheduled for 15 minutes. Each had the same agenda: introduction of consultants and project, questions and answers. Some groups were more responsive than others.

Focus groups

Focus groups were included in the phase I process. Focus groups were used to give all the first and second line supervisors and managers a chance to respond to preset questions. They were asked to discuss the current state of skill training and basic educational needs at Rabbit Lake.

Three focus groups sessions were conducted during Phase I. Dates of the focus groups were:

June 23	Shift 1	16 participants	Bebe, Moderator
July 27	Shift 2	21 participants	Karen, Moderator
July 28	Shift 2	5 participants	Bebe, Moderator

Ten questions were developed by the consultants. All participants were given the questions prior to the meeting and asked to come prepared to discuss them as a group. The questions and responses are provided later in the report.

Only one focus group session occurred during the Shift 1 visit. This was a large group that included the general manager, managers, supervisors and foremen. There was some discussion before and after about whether having all levels present at once would hamper free speech. There was the distinct possibility of strained discussion at first, but afterwards, the group warmed up to the task and many good points were raised.

During Shift 2 the consultants decided to hold two focus group sessions instead of just one. This decision was made to avoid intimidation of supervisors who might not feel free to critique decisions made by their managers sitting around the same table. They felt the need to be sensitive to this issue. The second focus group were all foremen and supervisors, without managers. This group was still large and the discussion lively. The third (and final) focus group was for first line managers. This was the smallest focus group, with only a superintendent, two general foremen, the chief chemist and the supervisor of employee relations.

Instrument Development

General Survey. During the June 21-25 visit, in consultation with the project team, a general survey of the entire staff was proposed. This survey would provide basic demographic information against which to compare the in depth survey. Page one of the individual survey instrument was utilized as a general survey--a 19 item, one-page survey. The general survey was handed out to supervisors for distribution to their staff and collected them in two days time. 160 general surveys were returned from the staff. A readability assessment was performed using Microsoft Word 6.0 to ensure a general readability level.

Individual Survey. A 51-item, eight-page survey was developed based on a previous study in Manitoba of the mining industry (McKeag, 1993). The project teams had great input in getting the terminology correct and in keeping the readability level reasonable. Twenty-two percent of the staff (65 respondents) were interviewed between July 29 and August 21, 1996. Interviews ranged between 30 - 60 minutes each.

Employee Tagging

As a part of the ONA process, the consultants tagged along, with 10 employees in various departments of the mine and mill to get a better idea of how the Rabbit Lake Mine worked. In addition, impressions gathered from tours and from discussions with individuals were verified or dismissed as irrelevant. The consultants looked for written material, work flow, mathematics skills needed and communications with other work areas.

5.3 Findings

Employee Tagging

Tagging along with employees while they performed their regular duties was a valuable experience for the consultants. Information gathering about the nature of uranium mining and the basic skills needed began with a tour of the minesite. At that time, attention was paid to the reading, writing, and mathematics skills used at the various work stations.

Tagging individuals was a way to verify ideas and to correct misconceptions the consultants might have about the literacy needs of the workforce. In addition, tagging along provided a better understanding of the pace of work and the flow of communication between departments. A major issue in the pilot project, was the logistics, including: best location, most opportune time, shift accessibility. The consultants did not want to create a system that would pose problems for the mine system or curtail involvement by employees needing basic skill training.

Through observation logistical issues were solved. It was determined the primary classroom location would be the camp, where all of the staff had access. As well, the best time for the program seemed to be either at the beginning or the end of a shift. While talking to staff, care was taken not to be seen to be looking for workplace problems. Complaints were not encouraged nor were negative comments made by staff about work defended. The "observer" role was carefully maintained.

Focus Groups

The three focus groups held (see dates above) were given 10 questions to discuss. Minutes were taken and distributed to participants and mine managers. There was lively discussion about some of the issues raised. It was generally agreed that Cameco should provide foundation skills training so that on-the-job learning is more effective. However, some type of commitment on the part of employees is necessary such as continuation of training during off-site time. A suggestion

was offered that training occur at the beginning of their 7 day shift rather than at the end when energy levels are at a minimum. Formal trainers were requested with time provided after hours, on-site.

There should be recognition of completion of training, even if it is just a notice on bulletin boards. Professional trainers should be utilized when required and training scheduled regularly, so that supervisors can plan ahead for workloads.

Training should be beneficial in their work and for future advancement. Training should be portable, certified, recognized and contain a common core of information necessary for mining. Cash or advancement are also good incentives for participation. Role models in the workforce to demonstrate benefits of increased knowledge would encourage others to consider improving their skills. Finally, training must be seen to be valued by Cameco.

Focus Group Questions (10)

Question 1: What type of-training is currently available on site?

Question 2: Who has access to training?

Question 3: How is training accessed?

Question 4: What are your perceptions of the need for training at Rabbit Lake?

Question 5: Are present levels of basic skills appropriate for present operations?

Question 6: Will future development require higher levels of basic skills?

Question 7: Are there concerns regarding the present system of on site delivered training? Give Suggestion for improvements.

Question 8: What suggestions do you have that would make on site delivered training easier for employees and their departments?

Question 9: What would encourage employees to participate in workplace education?

Question 10: Do you have any other ideas, points or concerns regarding training at Rabbit Lake?

5.4 Readability Assessments of Workplace Material

Data Collection. Fourteen items, representing both the mine and mill operations, were provided for readability analysis by the human resource officers of Rabbit Lake. Readability is determining the grade equivalent reading level for written material. While the consultants were on site, Staff provided eight additional items for analysis. In all, 22 different workplace documents were analyzed.

Data Analysis. The document samples (one or two paragraphs with a minimum of 200 words) were entered in Microsoft Word 6.0 and were analyzed for readability using the grammar checking utility of the program. The measures used in this readability assessment are: percentage of passive sentences, Flesch Reading Ease Index, Flesch-Kincaid Grade Level, Coleman-Liau Grade Level and Bormuth Grade Level. Following are meanings for interpretation of each utility. At the end is a chart providing the ratings for each document.

Passive Sentences

Writing experts commonly advise writers to avoid passive sentences unless the person or thing performing the action is unimportant or unknown.

Flesch Reading Ease

Computes the readability based on the average number of syllables per word and the average number of words per sentence. Scores range from 0 (zero) to 100. Standard writing averages approximately 60 to 70. The higher the score, the greater the number of people who can readily understand the document.

Flesch-Kincaid Grade Level

Computes readability based on the average number of syllables per word and the average number of words per sentence. The score in this case indicates a grade-school level. For example, a score of 8.0 means that an eighth grader would understand the document. Standard writing approximately equates to the seventh-to-eighth grade level.

Coleman-Liau Grade Level

Uses word length in characters and sentence length in words to determine a grade level.

Bormuth Grade Level

Uses word length in characters and sentence length in words to determine grade level.

The table below includes the titles of the 21 items tested for readability. Only eight of the 21 were written at a standard English level, generally accepted to be at a grade eight reading level. The remaining items varied from slightly difficult to extremely difficult. Explanation and interpretation of these items, if needed by workers, should be included when they are presented to them.

The ONA concluded on August 31, 1996. Phase II is to continue until May 1997. At that time, a report of the pilot project will be completed by the Workplace Education Consortium in Saskatchewan (WECS) and made available to the public.

Workplace Readability Assessment						
Document	% Passive Sentence	Flesch Reading Ease	Flesch-Kincaid Grade	Coleman-Liau Grade	Bormuth Grade Level	Level of Difficulty
Acid Plant Evaluation Questions	15%	62.7	9.4	9.9	9.7	Standard
Camp Regulations	50%	58.4	8.7	10.3	9.5	Standard
Checks & Operations	47%	72.6	71	10.1	10.1	Standard
Drier Evaluation Questions	50%	70.1	6.6	8.3	9.2	Standard
Emergency Fire Procedures	54%	54.7	10.2	11.9	10.3	Slightly Difficult
ET Patrol Operator Evaluation	25%	57.5	11.0	9.9	10.0	Slightly Difficult
Environment Policies & Procedures	36%	28.4	14.9	15.1	11.5	Very Difficult
Environment Worker Safety Policy	25%	34.4	12.8	35.3	11.6	Very Difficult
Extended Hours of Work Permit	100%	41.4	11.0	11.0	10.3	Very Difficult
Grinding & Leaching Protection	31%	57.5	9.0	12.3	10.6	Slightly Difficult
Mechanical Reference Handbook	50%	42.1	12.9	13.7	10.9	Difficult
Mechanical Trades Pocket Manual	64%	63.9	9.6	9.3	9.7	Standard
Mine Water Treatment Procedures	28%	64.9	8.1	10.3	10.1	Standard
Operation of the Neutralization	44%	58.2	8.9	11.2	10.3	Difficult
Precipitation Safety & Radiation	20%	53.9	9.6	11.4	10.3	Difficult
Safety & Radiation Safeguards	33%	67.9	8.0	9.3	9.7	Standard
Sick Leave Reporting Procedures	33%	45.8	11.9	12.3	10.6	Difficult
Truck Service Manual	13%	45.5	10.4	13.2	10.2	Difficult
Warehouse Manual Section 4	43%	52.5	9.1	12.3	10.2	Difficult
Warehouse Manual Section 6	13%	67.0	7.8	9.1	9.2	Standard
WHMIS	100%	0.2	23.2	17.3	10.7	Extremely Difficult

6. REFERENCES

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Folinsbee, Sue & Jurmo, Paul. (1994). Collaboration needs assessment: a handbook for workplace development planners. Toronto, ON: [ABC Canada](#).

Jurmo, Paul & Folinsbee, Sue. (1994). Collaboration evaluation: a handbook for workplace development planners. Toronto, ON: [ABC Canada](#).

McKeag, Janis. (1993). Organizational needs assessment of workplace literacy skills and Dominion Bridge and Development of training manuals for the Paint department. Final report. Winnipeg, MB: Manitoba Basic Education in the Workplace Steering Committee.

McKeag, Janis. (1993). Carpenter membership survey report. Winnipeg, MB: Manitoba Basic Education in the Workplace Steering Committee.

Waugh, Sue. (1990). Work-place literacy and basic skills. Ottawa, ON: [National Literacy Secretariat](#).

7. APPENDICES

Rabbit Lake Educational Development Project

7.1 General Survey

PART A - BACKGROUND INFORMATION

1. Gender	<input type="checkbox"/> Male	<input type="checkbox"/> Female	
2. Age	<input type="checkbox"/> 16-25	<input type="checkbox"/> 25-33	<input type="checkbox"/> 34-42
	<input type="checkbox"/> 43-50	<input type="checkbox"/> 50 +	
3. First Language	<input type="checkbox"/> English	<input type="checkbox"/> Dene	<input type="checkbox"/> Other
	<input type="checkbox"/> French	<input type="checkbox"/> Cree	
4. Do you read	<input type="checkbox"/> English	<input type="checkbox"/> Dene	<input type="checkbox"/> Other
	<input type="checkbox"/> French	<input type="checkbox"/> Cree	
5. Do you write	<input type="checkbox"/> English	<input type="checkbox"/> Dene	<input type="checkbox"/> Other
	<input type="checkbox"/> French	<input type="checkbox"/> Cree	
6. Do you speak any other language at home?			
7. What is the main area of the mining industry you work in?			
Mine Operations	Environment	Geology	
Mill Operations	Maintenance	W.H. & Safety	
Mine Engineering	Administration	Chem Lab	
8. What is your job title?			

9. How long have you had this position?	<input type="checkbox"/>						
	<1	1-3	3-5	5-10	10-15	15-20	20 +
10. What was your previous job?							
11. How long did you have that position?							
12. How long have you worked in the mining industry?	<input type="checkbox"/>						
	<1	1-3	3-5	5-10	10-15	15-20	20 +

PART B - EDUCATION

13. What is the highest level of schooling you have finished?		
less than grade 10	Pre-apprenticeship	2 year certificate or diploma
grade 10	Apprenticeship	3 year certificate or diploma
grade 11	Non-ticketed Journeyman	4 year degree (bachelors)
grade 12	Journeyman	more than 4 years of university
GED 12	1 year certificate	Other

14. What was your favorite subject in elementary or high school?

15. What was your least favorite subject in elementary or high school?

16. Where did you complete your highest level of training?

17. What was the name of the school?

18. If you hold a degree, a diploma, or a certificate which one?

19. What educational activity would you most like to pursue next?

Rabbit Lake Educational Development Project

7.2 Individual Interview - Final Version

PART A - BACKGROUND INFORMATION

1. Gender	<input type="checkbox"/> Male	<input type="checkbox"/> Female	
2. Age	<input type="checkbox"/> 16-25	<input type="checkbox"/> 25-33	<input type="checkbox"/> 34-42
	<input type="checkbox"/> 43-50	<input type="checkbox"/> 50 +	
3. First Language	<input type="checkbox"/> English	<input type="checkbox"/> French	<input type="checkbox"/> Dene
	<input type="checkbox"/> Cree	<input type="checkbox"/> Other	
4. Do you use any other language at home			
<input type="checkbox"/>			
5. Do you read	<input type="checkbox"/> English	<input type="checkbox"/> French	<input type="checkbox"/> Dene
	<input type="checkbox"/> Cree	<input type="checkbox"/> Other	
6. Do you write	<input type="checkbox"/> English	<input type="checkbox"/> French	<input type="checkbox"/> Dene
	<input type="checkbox"/> Cree	<input type="checkbox"/> Other	
7. What is the main area of the mining industry you work in?			
Mine Operations	Environment	Geology	
Mill Operations	Maintenance	W.H. & Safety	
Mine Engineering	Administration	Chem Lab	
8. What is your job title?			
9. How long have you had this position?		<input type="checkbox"/> <1	<input type="checkbox"/> 1-3
		<input type="checkbox"/> 3-5	<input type="checkbox"/> 5-10
		<input type="checkbox"/> 10-15	<input type="checkbox"/> 15-20
		<input type="checkbox"/> 20 +	
10. What was your previous job?			

11. How long did you have that position?							
12. How long have you worked in the mining industry?	<input type="checkbox"/> <1	<input type="checkbox"/> 1-3	<input type="checkbox"/> 3-5	<input type="checkbox"/> 5-10	<input type="checkbox"/> 10-15	<input type="checkbox"/> 15-20	<input type="checkbox"/> 20 +

PART B - EDUCATION

13. What is the highest level of schooling you have finished?		
less than grade 10	Pre-apprenticeship	2 year certificate or diploma
grade 10	Apprenticeship	3 year certificate or diploma
grade 11	Non-ticketed Journeyman	4 year degree (bachelors)
grade 12	Journeyman	more than 4 years of university
GED 12	1 year certificate	Other

14. What was your favorite subject in elementary or high school?

15. What was your least favorite subject in elementary or high school?

16. Where did you complete your highest level of training?

17. What was the name of the school?

18. If you hold a degree, a diploma, or a certificate which one?

19. Including high school and beyond, which courses have you completed in the following subject areas?		
General Math	Drafting and Print Reading	Co-op Work Experience
Algebra	Metalworking	Business
Geometry	Electricity	Typing
Trigonometry	Electronics	Computers

Calculus	Power (hydraulics or pneumatics)	Writing Skills
Statistics	CAD/CAM	Personal Communications
General Science	Shop Math	English as a Second Language
Chemistry	Technical Writing	Reading Improvement
Physics	Problem Solving	English
Technology	Pre-Apprenticeship	Other

20. Which courses would you like to take or review again if you had the chance based on your work experience?

Algebra	Chemistry	Computer Data Management
General Math	Physics	Computer Numerical Control
Geometry	Drafting and Print Reading	Computer Programming
Shop Math	Technical Writing	Problem Solving
Trigonometry	Metalworking	Keyboarding
Calculus	Electricity	Interpersonal Communications
Statistics	Electronics	Others:
General Science	Power (auto/hydraulics/pneumatics)	

21. Have you taken any courses offered by Cameco?	<input type="checkbox"/> Yes, what kind? <input type="checkbox"/> No
22. Have you received any training offered by a previous employer?	<input type="checkbox"/> Yes, what kind? <input type="checkbox"/> No
23. Have you taken any course on your own, evening courses, independent study, etc?	<input type="checkbox"/> Yes, what kind? <input type="checkbox"/> No
24. Do you have any trade papers or tickets?	<input type="checkbox"/> Yes, what kind? <input type="checkbox"/> No

25. Would you like to take a course to upgrade your basic:

<input type="checkbox"/> Reading Skills	<input type="checkbox"/> Writing Skills	<input type="checkbox"/> Math Skills	<input type="checkbox"/> Speaking Skills
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26. What specific training would benefit you in your present position?

27. What specific training would help you move into a new position within the mining industry?

PART C - BASIC JOB SITE SKILLS

READING SKILLS

28. Present Position

<i>Do you read?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Time Sheets						
Check Lists						
Production Schedules						
Requisitions, Purchase Orders, Permits						
Memos						
Incident and/or Inspection Reports						
Operating Instructions (Tool or Equipment)						
Manuals (Training, Reference)						
Computer Screen						
Computer Printouts						
Charts, Tables or Graphs						
Company Regulations						
Hazard Labels/WHIMIS/MSDS (Workplace Hazardous Materials Information Systems, Material Safety Data Sheets.)						

A.E.C.B. Regulations (Atomic Energy Control Board)						
Safety Signs and/or Posters						
Symbols						
Drawings and/or Sketches						
Technical Journals						
Technical Literature						
Assays						
Equipment Specifications						

29. CAMECO MATERIAL

<i>Do you read?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Employee Handbook						
Safety and Health Minutes						
Pension Information						
Constitution and Bylaws						
Training Material						
Mines Act						
Workplace Safety and Health Act						

Shareholders Report						
Monthly Reports from Other Areas						
Background on Other Areas						
Annual Report						

30. Please list any other kinds of reading you do on the job.

31. Are you comfortable with what you read on the job?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Sometimes
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32. PERSONAL READING SKILLS

<i>Do you read?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Newspapers						
Magazines						
Professional Journals						
light books (i.e., novels, self help, how to)						
Non fiction titles						
Textbooks						
Children's school materials						
Comic books						

32. As a reader, do you consider yourself to be:

<input type="checkbox"/> Poor	<input type="checkbox"/> Below Average	<input type="checkbox"/> Average	<input type="checkbox"/> Above Average	<input type="checkbox"/> Excellent
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33. BASIC MATH

<i>On the job do you?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Count How Many						
Add or Subtract Numbers						
Add or Subtract Fractions						
Add or Subtract Decimals						
Multiply or Divide Numbers						
Multiply or Divide Fractions						
Multiply or Divide Decimals						
Convert Fractions and Decimals						
Estimate Time						
Estimate Materials						

34. TECHNICAL MATH

<i>On the job do you use?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Percentage (%)						
Ratios or Proportions						
Graphs, Charts, Tables						
Statistics						
Probabilities						
Trigonometric Functions						
Right Triangle Relationships						
Applied Linear Equations						
Applied Non-Linear Equations						
Uses of Powers and Roots						
Scientific Notations						
Signed Numbers and Vectors						
Scale Drawings						
Lines and Angles						
2 Dimensional Shapes						
3 Dimensional Shapes						
Estimating Solutions						
Problem Solving						
Specifications						
Calculate Weightometer readings (%)						
Use Concentration Data (p.p.m., g.p.l., etc.)						

35. MEASUREMENT SKILLS

<i>Do you?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Measure in Imperial						
Measure in Metric						
Convert Imperial & Metric Measures						
Measure precision, accuracy, tolerance						
Measure temperature						
Measure pressure						
Measure volume						
Measure flow						
Measure mass and/or weight						
Measure acceleration						
Measure density						
Measure pH						
Measure current and/or voltage						
Measure Millivolts						

36. TOOL SKILLS

<i>For your job do you use?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Hand Tools						
Tape Measure						
Scales on Equipment						
Gauges or Dials on Equipment						
Mobile Equipment						
Stationary Equipment						
Calculator						
Computer						
Advance Instruments and/or Instrumentation						

37. Please list any other kinds of math skills you use on the job.

38. Are you comfortable doing the math skills needed for your job?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
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39. PERSONAL MATHEMATICS SKILLS

<i>Do you?</i>	Yes	No	Sometimes
Handle the household finances			
Check your own bank statements			
File your own tax returns			
Help your children with math homework			
Calculate sales tax (PST, GST)			

COMMUNICATION SKILLS

40. WRITING SKILLS

<i>On the job do you?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Fill in forms						
Fill in Time Sheets						
Keep Track of Hours (in relation to specific tasks)						
Input Data on Computer						
Write Shift Reports						
Write Safety Reports						
Write Incident Reports						
Write Work Orders						
Write Letters						
Write Memos						
Write Instructions						
Make Drawings and/or Sketches						

41. ORAL SKILLS

<i>On the job do you?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Follow Verbal Directions						
Give Verbal Directions						
Ask Questions						
Take Messages						
Speak in Large Groups						
Speak in Small Groups						
Speak with Outside People (i.e. suppliers)						
Participate in Meetings						

42. COMMUNICATION TOOL USE SKILLS

<i>On the job do you?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Use the Telephone						
Use the Typewriter						
Use the Fax Machine						
Use the Photocopier						
Use Hand Signals						
Use two-way Radio						
Use AS 400 (Shaw Ware)						
Use Process Control Computer						
Use a Personal Computer						
Use Remote Control Radio Equipment						

43. SOCIAL SKILLS

<i>On the job do you?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Work by yourself						
Work with a partner or helper						
Work as a member of a crew						

44. Please list any other kinds of communication skills you use on the job.

45. PERSONAL COMMUNICATION SKILLS

<i>Are you?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Involved in community groups						
Involved in school associations						
Involved in recreational groups						
Involved in children's groups						
Others						

CRITICAL THINKING SKILLS

46. INFORMATION PROCESSING SKILLS

<i>On the job do you?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Look up information (training manuals)						
Use information (i.e., work order, read outs, Provox)						
Scan written materials to recognize main ideas						
Solve problems						
Classify facts						
Design systems						

47. PROBLEM SOLVING SKILLS

<i>On the job you:</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Solve problems as a member of a crew						
Identify general problems						
Explain the problem for others						
Decide on a solution as an individual						
Decide on a solution as a member of a team						

48. LOGIC SKILLS

<i>On the job you:</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Determine the meaning of terms						
Identify and sort things into groups						
Judge the reliability of sources						
Identify important from unimportant data						
Identify fact from opinion						
Connect causes and effects						

49. CREATIVE THINKING SKILLS

<i>Can you?</i>	No	Yes
Break down your job into steps		
Think up new ideas		

50. DECISION MAKING SKILLS (Supervisors Only)

<i>On the job do you?</i>	No	Yes	Daily	Weekly	Monthly	On Occasion
Make decisions that affect others						
Resolve conflicts						
Evaluate others' judgements						

51. READING FOR UNDERSTANDING

Please read the following statement, taken from the "Environmental and Workers' Safety Policy" and then answer the questions that follow:

Cameco believes that the health and safety of its employees and the public are a primary concern and responsibility. We believe that the protection of the environment is a primary concern and responsibility.

It is Cameco policy to protect the health of employees and of residents near its operations. It is Cameco policy to protect the atural environment.

Cameco will make every effort to provide employees with a working environment free of hazards. We will eliminate or control all potential risks to health and safety. We will make every effort to protect residents near Cameco operations from adverse effects arising from those operations. We will make every effort to prevent adverse impacts on the physical environment within which Cameco operates. We will make every effort to promote the physical and mental well-being of all employees and residents in the communities in which Cameco operates.

- a. What is the main idea?

b. What are the primary concerns and responsibilities that Cameco has?

c. Which groups of people does Cameco feel responsible for?

52. WRITING SAMPLE

Would you please respond to one of the following statements using a paragraph format on the attached sheet of lined paper.

Describe the parts of your job that you find most enjoyable.

OR

Describe something you have accomplished that you are especially proud of.

7.3 INDIVIDUAL SURVEY READING/WRITING SCORING SHEET & WAIVER FORM

TEST _____ INDIVIDUAL SURVEY
#51 READING/ #52 WRITING SCORE SHEET

51. Reading for understanding (1 point each) Total score _____

a. _____ b. _____ c. _____

52. Writing Sample
(6 points - one in each of the following areas)

a. sentence structure	_____	d. spelling	_____
b. Usage	_____	e. punctuation	_____
c. mechanics	_____	f. capitalization	_____

WAIVER FORM

I have voluntarily provided this information with the understanding that this will be kept confidential and shall not be used for any purpose other than the Rabbit Lake Educational Development Project.

Participant Signature

Consultant Signature

7.4 EVALUATION FORMS

EVALUATION SHEET FOR THE PROJECT TEAM

Bill Buchanan, Don Emms, Jeanne Lepine

Would you please take a few minutes to respond to the following questions. We would like feedback on these issues or any other concerns you might have.

1. Were you comfortable with the way the Project Team Meetings were ran?

2. In your opinion did the consultants achieve the tasks they were set out to do?

The tasks needed to be completed during the visit were:

- Brainstorm an appropriate name for ONA
- Review and revise needs assessment tools
- Arrange for and implement Information Sessions
- Arrange for and complete tags on positions that are representative and appropriate
- Arrange for and implement Supervisor Focus Group Sessions

3. In your opinion did the consultants approach their tasks in a professional manner?

4. Do you have any suggestions that would improve the process for Shift Two?

EVALUATION SHEET FOR PROJECT COMMITTEE
Jamie McIntyre, John Clarke, Phyllis Ramsden

Would you please take a few minutes to respond to the following questions. We would like feedback on these issues or any other concerns you might have. Please return by fax (425-2696) to Bebe Ivanochko by Thursday, September 5, 1996.

1. Were you comfortable with the way the Project Committee was ran?

2. In your opinion did the consultants approach their tasks in a professional manner?

3. Do you have any suggestions that would improve the process?