CNSC/ Industrial Radiography Working Group Meeting
February 24, 2015
220 4th Avenue Southeast, Calgary, AB
(Video conference link with QSA Global, Louisiana, NO)

Attendees

André Régimbald (CNSC)
Henry Rabski (CNSC)
Peter Fundarek (CNSC)
Karen Mayer (CNSC)
Lucie Simoneau (CNSC)
Peter Larkin (CNSC)
Alan Brady (TISI)
Tom Levey (Acuren)
Patricia MacNeil (A-tech)
Leo Novak (guest CEDO from A-tech)
Ben Bizzarri (GB Contract Inspection)
Doug Hanna (SGS)
Curt Auzenne (QSA Global) (videoconference)

Chair of the Meeting	**Co-Chair**
Karen Mayer	Alan Brady

A. Régimbald delivered a welcome message to all to open the meeting. The agenda was adopted as is.

1) Review of Minutes from Previous Meeting

The minutes of last meeting (September 25, 2014) were reviewed and a discussion was held around item 7 of previous minutes on REGDOC-2.5.5 (related to Fixed Radiography Installations). An action will be added to today's minutes for K. Mayer to follow up with staff within the CNSC Regulatory Policy Directorate on the status of the document and communicate back to the working group. It is also to be noted that the document will focus on safety performance based on the regulatory requirements and the onus will be on the licensees or applicants to comply with the requirements. The intent is to help radiographers work safely and not to hinder workers or companies.

More discussion is needed on developing CNSC outreach for licensees and clients around CNSC regulatory expectations for Fixed Radiography Installations.

The Action List produced from the previous meeting was also reviewed. Item 15(WGM) 1.0 can now be closed. T. Levey informed the group that he sent information to several trainers to let them know of the new requirements for PCP-09.

It was also noted to bring a voice recorder to future meetings (K. Mayer will bring one) to help capture salient points of discussion during the meetings.

All working group members were in attendance at the meeting. The meeting was also attended by a guest CEDO from A-tech – Mr. Leo Novak.

The September (Fall 2014) minutes have been accepted and can now be adopted. A motion was put forward by B. Bizzarri to accept the minutes and seconded by D. Hanna.

Actions: K. Mayer to bring a voice recorder to future meetings.
K. Mayer to follow up with the CNSC Regulatory Policy Directorate for an updated on the status of the REGDOC 2.5.5 and communicate status to the working group.

2) Committee Membership – Terms of Reference Discussion

Review of terms of reference; this was the first meeting that a CEDO was in attendance, all industry members are encouraged to make an effort to bring a CEDO to the meetings on a rotational basis. It was also suggested that CEDOs be included in the invitation to the annual CNSC IR meeting.

A discussion was held to reflect back on the work done so far by the working group since its inception in 2009. Kudos to members on both sides of the table (CNSC and Industry), who all recognized that this group has produced a very positive outcome towards its mission objectives.

There was consensus (Fist of five voting) by the group to amend the logistics section of the terms of reference (ToR) so that it can be assumed that if no comments are made on the circulated minutes within 15 days, the minutes can be finalized and circulated by email to the group for approval within 10 days.

It was also suggested to seek out industry representation at the annual meeting since some members are on their second term to see if anyone is interested and not just when someone steps down or leaves the working group.

The yearly review of the ToR for 2015 can be considered complete.

Action: K. Mayer to amend the Terms of Reference (ToR) and include in the minutes for review.

3) What's new at the CNSC?
A. Régimbald provided an update on the new CNSC Financial Guarantee (FG) program for nuclear substances, prescribed equipment and Class II nuclear facilities, and an update on the implementation of

REGDOC 2.12.3 regarding security requirements for radioactive sealed sources.. Licensees should have received their amended licence with 2 new licence conditions for financial guarantees and security of sealed sources.

Payment of the yearly licensee contribution for financial guarantees must be made by no later than April 1, 2015, through the CNSC web portal set up specifically for that purpose. The licensee liabilities for the financial guarantees are based on licensee inventory of the past year, and their yearly financial contribution has been calculated in accordance with the formula explained on the CNSC web site.

The new security requirements as outlined in the REGDOC 2.12.3 presented at a Commission public meeting in February 2013 are being implemented through the new licence condition. The new requirements will be in effect as of May 2015 for Category 1 and 2 sealed sources and May 2018 for Category 3, 4 and 5 sealed sources. CNSC inspectors in the Operations Inspection Division (OID) are very familiar with the process and will continue with compliance verification of the security requirements on an ongoing basis.

It was noted that a communication should be sent to licensees that their security plan has been received and is being reviewed. Otherwise, there is no real way of knowing if it was received or not. The Nuclear Security Division (NSD) is still involved in the review of changes and new security plans. An internal CNSC working group has been formed to streamline the process.

Drafting of the 2014 Industry Report has begun and there has been a change in the process. The report will be published in draft form around June 2015 for consultation with licensees (likely 30 day comment period - good opportunity for feedback). The final report will be presented at the Sept 30/Oct 1 Commission public meeting.

There was some discussion on how the security requirements for transport apply to common carriers.

Carriers seem to be the weakest link in the security chain and at a minimum they should be required to do background checks on their workers. Carriers are not required to have a CNSC licence; however they must comply with the CNSC *Packaging and Transport of Nuclear Substance Regulations* which include RP requirements. Therefore, the onus is on the licensees to ensure that the carriers they hire are qualified and have an appropriate radiation protection (RP) program, and have measures in place to satisfy requirements in REGDOC 2.12.3. Clarification will be provided by R. Duguay (NSD) and F. Dagenais (TLSSD) on what exactly the requirements are for carriers in terms of security.

C. Auzenne explained that the situation is very similar in the U.S. and that Dr. Roy Parker from FedEx had indicated that it is impossible for common carriers to comply with the security requirements, it would be very costly and the transport of radioactive material is such a small part of their overall business that it would be counterintuitive to even try to comply. Similar to Canada, carriers are not licensed in the US.

There is a request to have CNSC security staff present an update on this topic at the annual CNSC/Industrial Radiography meetings.

The CNSC has undertaken a large project with respect to events and more specifically to the management of reportable events. The goal is to determine what information is required and what will be done with this information. The risk significance of the information will be determined and a decision as to whether it is reportable or not. The plan is to adopt the International Nuclear Event System (INES) for rating and reporting on events. This important project is in the initial phase of development. Regular progress updates will be provided to the working group in future meetings.

Industry members mentioned that an event form was developed as an initiative through the Working Group. It was reviewed and circulated by CIRSA and is currently available on the CIRSA website. It was submitted to the working group in the past. There was a lot of discussion on the form; the main issue raised by the CNSC representatives is that use of this form cannot be prescribed by the CNSC. However, parts of it could be used as part of the CNSC project. A copy of the form is included in the minutes

A discussion resulted on the importance of reporting events to the CNSC and what can be learned from those events, lessons learned for other licensees who can use the information as part of their safety meetings or toolbox meetings.

Action: T. Levey to circulate a copy of the form to the working group for their consideration.

4) PCP-09 & Certification Update

The process was presented at a public meeting of the Commission in August 2014 and implementation is underway.

H. Rabski delivered an update on the status of PCP-09 and CEDO certification. It is a very important topic for both Industry and the regulator. H. Rabski recognized that there have been some issues within the CNSC in the last few months, including changes in personnel, which resulted in a delayed implementation of PCP-09. The CNSC will provide further information to the working group and the industry at large when a revised strategy for full information will be rolled out. However, the CNSC is able to confirm that as of April 1, 2015, the new application and exam under PCP-09 will be available. The current permissions that have been issued to write the exam are only valid till March 31, 2015.

The industry representatives raised some issues around delays in obtaining CNSC certification for their new EDOs. CNSC has set a service standard to deliver certification within 60 days from acknowledgement. H. Rabski will bring the industry concerns to the attention of staff within the CNSC Personnel Certification Division (PCD).

Cost of renewal and replacement of CEDO cards was brought up, for now there is no fee.

A discussion ensued on the transition from the old system to the new PCP-09 standard and there are many questions that are still under consideration, for example how someone demonstrates training over the past 5 years. It is the CEDOs responsibility to keep track of their training and employment history and to have it available.

The CNSC gave notice for the changeover of CEDO cards, with new cards showing and expiry date, and enforcement action will now be taken against those that have not obtained their new CEDO cards.

There are no more Qualified Operators (QOs), the terminology should now all be around Certified Exposure Device Operators (CEDOs).

Action: H. Rabski to verify turnaround time (current delays) for certification, as well as for acknowledgement and permission to write the exam. Henry will also follow up on what the transition is between the new and the old process for issuing CEDO certification.

5) 2015 Annual Spring Meeting Planning

- The CNSC western meeting will take place on Tuesday, May 5th, 2015 at the Royal Executive Inn in Leduc, AB
- The CNSC eastern meeting will take place on Wednesday, May 20th, 2015 at the CNSC Headquarters – 280 Slater St (14th floor) in Ottawa, ON

Proposed Agenda items:

- NR Can and CNSC - PCD to provide an update on PCP-09 implementation– presentation to be made and they will be available for Q&As
- QSA Global to present on new initiatives (Curt Auzenne – AB and Bob Kelly – ON)
- CNSC to make a presentation on security requirements for sealed sources (CNSC staff from the Nuclear Security Division to be invited
- Case Study – East and West
- Compliance News
- Other CNSC updates
- Presentation on communication/safety culture – P. MacNeil - to speak about "Maintaining safety awareness in a competitive environment" (to demonstrate benefits of compliance and having good safety culture, small company's approach, lessons learned, $$)
- Brainstorming – client safety expectations

P. MacNeil suggested that CNSC invitations for annual meeting to be sent to all CEDOs. K. Mayer will make necessary arrangements to get a list from PCD and include them in the invitation.

It was proposed to invite a CNSC person at company meetings as well as at CIRSA meeting. CNSC staff is willing to go to meetings as time and resources allow.

6) QSA Equipment Updates

C. Auzenne provided an update on what QSA Global is currently working on pertaining to the guide tube adaptor. They are currently testing a quick disconnect new guide tube connector. It will be more crush resistant as it is being made of thicker material (thicker core). There will be less chance of breaking and

it will do away with threading to the conduit. The units may be sent out to Canada for field trials.

He also provided an update on the GPS charger projector unit – trials have been fairly good with minimal issues. The development is moving forward (still a long way to go). The system will fit in the bottom of the jacket (on the 880 model) and will be shielded in the housing. It charges while on board the truck. The transmitter is linked to the truck. The monitoring process will require a fee for security monitoring; there is good development in this area with a possible goal for end of this year. It has not yet been determined how radiation will affect it.

The unit has to be continually charged (even when out of commission); a problem being looked into.

7) Update on follow-up regulatory actions

Members of the working group asked if the records of proceeding from the Commission reviews of AMPs can be accessed. A. Régimbald and H. Rabski informed the group that the records of proceeding are available as they are public records.

AMPs are based on determining factors for penalty – in some cases they have been reviewed by the Commission and the amount of the AMP reduced.

There have been fewer orders issued by the CNSC in 2014 in comparison to previous years. There were 5 orders issued to radiography companies, of which 3 included AMPs.

There were 3 recommendations for de-certification of CEDOs presented to CNSC designated officer (DO) in PCD. These are pending reviews by the DO.

The CNSC received many calls from whistleblowers, each of these calls are taken very seriously and followed up appropriately by the CNSC.

8) New initiatives 2015

There was a good discussion introduced by the industry representatives on the challenges of working safely at client sites. It was thought that it would be interesting to brainstorm and draw information from the group on where exactly the problems exist. The idea is to gather information from the Industry and move forward with a sub-group of the core working group to build a strategy for outreach and how to improve communications between industry, the clients and the regulator. Another topic of interest is how to improve communications with CEDOs.

A sub-group from the core working group was formed, consisting of K. Mayer, L. Simoneau, P. MacNeil and T. Levey, to develop a strategy for brainstorming client expectations (involving participants at the annual meeting) to look at educating the client on the importance of ensuring safe radiography operations at their site and proper communication in order to draw information from the Industry. The sub-group will report back to the core working group in the fall with a full proposed action plan and to update the working group on the development of a strategy for annual refresher training for CEDOs to encourage

and increase participation at the annual meetings.

The CNSC licence application guide is being updated and will be published soon.

Action: K. Mayer to set up initial sub-group meeting with L. Simoneau, P. MacNeil and T. Levey.

9) Other business

- CNSC is working to implement fillable pdf versions of Annual Compliance Reports (ACRs) which will be available on line very soon.
- H. Rabski updated the working group on the details of the radiography events for 2014. There were a total of 25 reported radiography events including:
  - 5 barrier breaches
  - 5 non-events
  - 2 transport events
  - 1 exposure device stolen – since recovered
  - 7 damaged exposure devices
  - 4 exposure device malfunctions
  - 1 potential overexposure

T. Levey brought up the issue with SSTS – there are too many click to get to the screen to manage the inventory. There was an initiative undertaken by the CNSC to try and put a direct link on Industrial Radiography page on the CNSC website to facilitate access to the SSTS

Action: H. Rabski to discuss with other CNSC staff to see if a direct web link to SSTS can be placed on the Industrial Radiography page.

Next meeting: week of October 5th, 2015 (tentative for Wednesday, October 7th, 2015 in Mississauga).

The meeting concluded at 4:00 PM.

Radiography Working Group - ACTION LIST			
RWG Item #	**Description**	**Assigned Person(s)**	**Status or Due Date**
14WGM2.1	**Notify the educators of the new requirements of PCP-09 and provide dates of implementation.**	**T. Levey**	**Closed**
15WGM1.1	**Bring a recorder to future meetings.**	**K. Mayer**	**Ongoing**
15WGM1.2	**Follow up with Regulatory Docs division for an update on the status of REGDOC 2.5.5 and communicate the status to the working group**	**K. Mayer**	**April 2015**
15WGM1.3	**Amend Terms of Reference (ToR) and include in minutes for review**	**K. Mayer**	**March 2015**
15WGM1.4	**Verify turnaround time (current delays) for certification and acknowledgement and permissions to write the exam. Follow up on transition between old and new process.**	**H. Rabski**	
15WGM1.5	**Arrange initial sub-group meeting for client education task with L. Simoneau, P. MacNeil and T. Levey**	**K. Mayer**	**April 2015**
15WGM1.6	**Put a direct web link to SSTS on the Industrial Radiography page**	**H. Rabski**	

CNSC/Industrial Radiography Working Group

Proposed TERMS OF REFERENCE

Background

At the December 11, 2008 meeting of the Commission, a proposal from CNSC staff to establish an industry working group was endorsed for the purposes of advancing the regulatory strategy for radiography. During the first meeting of the working group held in May 2009, the following mission statement was developed and supported unanimously.

"The mission of the radiography working group is to collaborate on implementing solutions in order to promote a strong radiation safety culture in the industrial radiography Community while respecting and understanding the interest and expectation of stakeholders."

Guiding Principles

1) Scope of the Working Group

The following objectives provide the overall guidance for the group to fulfill it's mandate which is:

1. To improve the radiation safety culture
2. To improve Industry-CNSC communication on key issues and deficiencies
3. To provide leadership by example-setting precedence
4. To initiate change
5. To maintain open communication
6. To demonstrate cooperation
7. To resolve issues and provide output to stakeholders
8. To contribute to a safer work environment
9. To provide smart input into writing license application guide for industrial radiography and regulatory practices in general-Form of pre-consultation (doing our homework first)

Membership

The radiography working group is comprised of representatives from the Canadian Nuclear Safety Commission (CNSC) and representatives from Industry. CNSC representatives include the Director General of the Directorate of Nuclear Substance Regulation (DNSR) and representative(s) from the Operations Inspection Division, Nuclear Substances and Radiation Devices Licensing Division, and Transport Licensing and Strategic Support Division.

Representatives from the Radiography Industry are limited to a maximum of seven persons. The objective is to have persons on the working group from both western and eastern Canada, a representative from the manufacturing sector, and a representative from the operators of radiography devices (CEDO). Membership is restricted to individuals who are in the employment of any Company regulated by the CNSC**.** Substitution of members is not permitted except for the CEDO representative**.**

Selection of an Industry Representative is for a term of three years with the possibility of a renewal. Nominations for membership to the radiography working group can be submitted at any time and selection will be made by the committee on an as needed basis.

After missing two consecutive meetings, the co-chair will discuss whether the member remains committed to the working group. The co-chair can recommend that membership be revoked. Decisions regarding membership and revocation must be endorsed by the Director General of the Nuclear Substance Regulation Directorate.

Chairperson and Co-Chair

A chairperson is selected from the CNSC representatives. The role of the chairperson is to prepare the agenda for working group meetings, chair meetings of the working group and to take responsibility for all organizational and communication issues.

A co-chair is selected by the Industry representatives to serve as the primary contact for organization issues and communication purposes. The chairperson can delegate his duties to the co-chair at any time.

The chairperson and co-chair are responsible for inviting any person(s) to participate or observe at meetings of the working group.

Secretary

A representative of the CNSC serves as secretary for the working group. The secretary is responsible for the recording and distribution of the minutes of all meetings, distribution of all documents related to working group meetings, and any communication required to be performed in support of the working group.

Procedures

A quorum of the working group for decision making purposes is defined as three representatives from the CNSC and three representatives from Industry plus one. The committee can hold a meeting even though quorum is not achieved.

Meetings

The working group shall meet a minimum of two times per year. Additional meeting(s) can be held based on consensus of the working group. The preferred method for meetings of the group is face to face but video or teleconferencing is an option to be considered.

Since quorum is necessary for the committee to make decisions, attendance is critical. Baring any unforeseen circumstances, committee members who are unable to attend are to contact the chair or the co-chair, a minimum of three working days before the meeting. Video or teleconferencing is an option for members to participate.

The chairperson is responsible for identifying the time and place of the meetings. All members of the working group are responsible for their personal costs to attend.

The CNSC is responsible for the costs associated with the meeting such as the room rental and any associated hospitality. The cost for lunches or dinners is the responsibility of working group members. Sponsorship of a meeting by Industry representative(s) is at the discretion of the chairperson.

Logistics

The objective is to send the agenda to committee members, two weeks before every meeting. With respect to any documents distribution shall take place at the latest five days before the meeting. The secretary of the working group shall distribute a draft set of minutes no later than two weeks after each meeting. Members have 15 working days to provide comments to the secretary so that the minutes can be finalized and circulated by email for approval within 10 days. The minutes shall be translated and published by the CNSC and posted on the CIRSA website.

To speak during a meeting, the participant must raise their hand and be acknowledged by the chairman prior to addressing the working group. All members agree to respect the right of all members to address the working group and abide by this principle.

Decisions of the Working Group

All decisions made by the group require consensus. The “Fist of Five voting” is to be used to reach consensus. Consensus is reached if all members can raise three fingers regarding any decision before the working group.

Review of the Terms of Reference

A minimum of once per year, the committee should review the terms of reference to confirm or make any necessary changes. The "Fist of Five Voting" applies to any changes suggested during the review.

Working Group Expectations

- To agree on having discussions that will result in a win-win situation for both the Industry and the CSNC
- That CNSC becomes more accessible by looking at issues of reducing paperwork without compromising on safety
- That goals and expectations are developed and met
- To identify common goals by the end of the meeting
- Identify priority topics for all involved
- To identify a clear and direct path forward, goals, clear results and identification of action items completed at each of these meetings
- To agree to bring others to meetings to present or explain why something is how it is.
- Identify issues that the working group must address, and schedule those issues. Also, determine when to report conclusions
- To establish a good road map; to improve communication; to acquire better tools for Industry – incident awareness, equipment problems and dose statistics
- A positive outcome leading to further collaboration
- CNSC staff and Industry need to clarify what can and cannot be done with respect to policy and regulation changes
- Open lines of communication
- Establish some realistic ground rules to stick to
- Work together, have fun, and develop trust
- Sharing of ideas; compromises
- Open and honest communication
- Set realistic expectations for meeting planning – availability of the group- team consideration
- Identify roadblocks so that we can know what is allowed or not allowed up-front to save time from being wasted
- Establish meeting process that includes minutes/record/process and scope
- Receive the agenda 2 weeks prior to every meeting and meeting proceedings

☐ **Preliminary Report** ☐ **Final Report**

EVENT DESCRIPTION:		**EVENT DATE:**	(YYYY/MM/DD)
REPORT DATE:	(YYYY/MM/DD)	**EVENT TIME:**	(24 hour)
CNSC LICENSEE NAME		**CNSC LICENCE#**	
EVENT LOCATION	(City, Prov)	**SPECIFIC LOCATION:**	(Site, Plant, ditch, boiler, etc)
CONTACT INFORMATION:	(name, phone #, email, address)		

MAIN CLASSIFICATION:	☐ **ACTUAL** ☐ **NEAR MISS**	**SUB CLASSIFICATION:**	☐ Equipment damage ☐ Equipment Malfunction ☐ Personal Exposure ☐ Barrier Crossing ☐ Transport Incident ☐ Stolen ☐Lost ☐ Fire ☐ Source involved in Fire ☐ DRD off scale ☐ Security Breach ☐ Leaking Source ☐ Non-personal TLD exposure ☐ Loss of Dosimeter ☐ Fire or Explosion ☐ Contamination ☐ Other:

SEVERITY	**PROBABILITY**	**FREQUENCY**	**SPF NUMBER**	**CLASSIFICATION**
☐ 4 CATASTROPHIC ☐ 3 CRITICAL ☐ 2 MARGINAL ☐ 1 NEGLIGIBLE	☐ 4 PROBABLE ☐ 3 REASONABLY PROBABLE ☐ 2 REMOTE ☐ 1 EXTREMELY REMOTE	☐ 4 DAILY ☐ 3 WEEKLY ☐ 2 MONTHLY ☐ 1 ANNUALLY		☐ MAJOR ☐ SERIOUS ☐ MINOR

PERSON(S) INVOLVED

Name	Qualifications	DAD S/N	Cal Due	DRD S/N	Cal Due	TLD S/N	Estimated Dose

Witness Name(s)	Occupation /Title	Phone Number

Radiation Safety Officer Notified:		Date:		Time:	

EQUIPMENT IDENTIFICATION								
Exposure Device ID	Manufacturer		Model #		Serial #			
Source ID	Manufacturer		Model #		Serial #			
Activity	Curies		Gbq.		Isotope:			
Survey Meters	Manufacturer		Model #		Serial #		Cal Due	
	Manufacturer		Model #		Serial #		Cal Due	
Control Cables	Manufacturer		Model #		Serial #			
Control Cables	Manufacturer		Model #		Serial #			
Guide Tubes	Manufacturer		Model #		Serial #			

DESCRIPTION OF PROBLEM OR OCCURRENCE (ATTACH ADDITIONAL PAGES IF NECESSARY)

SEQUENCE OF EVENTS THAT OCCURRED DURING INCIDENT

DIAGRAM OF THE INCIDENT SCENE (PLAN VIEW MANDATORY)

(Include dimensions, barriers, shielding, positions of persons and distances from source of radiation) Additional Photographs are acceptable.

INVESTIGATION TEAM:		PRESENT AT THE SCENE
NAME	POSITION	(YES/NO)

INVESTIGATION –

ROOT CAUSE (PROBABLE CAUSE IF PRELIMINARY REPORT)

UNDERLYING CAUSE, CONTRIBUTORY CAUSES, UNSAFE ACTS OR CONDITIONS. (LIST ALL THAT MAY APPLY)

ACTIONS TAKEN TO RE-ESTABLISH NORMAL OPERATIONS

CORRECTIVE ACTIONS TAKEN TO PREVENT REOCCURRENCE			
ACTION	**BY WHOM**	**DATE DUE**	**DATE COMPLETE**
LESSONS LEARNED FROM THIS EVENT:			

	PRINT NAME	**SIGNATURE**	**DATE**
INVESTIGATED BY:			
MANAGEMENT REVIEW:			

TABLE #1 - ROOT CAUSE ANALYSIS Reference CSA Z796-98

IMMEDIATE CAUSES

SUBSTANDARD ACTIONS

- ☐ Operating without authority
- ☐ Tampering or unauthorized
- ☐ Unsafe position
- ☐ Trying to gain or save time
- ☐ Working unsafely on moving or dangerous equipment
- ☐ Failure to warn or secure
- ☐ Unsafe lifting or carrying
- ☐ Inattentive to job hazards
- ☐ Procedural deviation
- ☐ Other (specify) _____

SUBSTANDARD CONDITIONS

- ☐ Inadequately guarded
- ☐ Inadequate ventilation
- ☐ Congested or restricted area
- ☐ Defective equipment, materials, tools
- ☐ Radiation Exposure
- ☐ Inadequate illumination
- ☐ Substandard housekeeping
- ☐ Inadequate warning system
- ☐ Temperature Extremes
- ☐ Other (specify) _____

CONTRIBUTING FACTORS

- ☐ Tried to avoid extra effort
- ☐ Insufficient line-up/follow-up by supervision
- ☐ Inadequate capability – Physical / Mental
- ☐ Exposed to extreme temperature
- ☐ Other (specify) _____

BASIC CAUSES

- ☐ Inadequate design or construction
- ☐ Inadequate maintenance
- ☐ Inadequate work standard
- ☐ Lack of knowledge or skill
- ☐ Improper motivation
- ☐ Stress / Physical or mental
- ☐ Inadequate tools, equipment or materials
- ☐ Worn out from normal use
- ☐ Low purchasing standards
- ☐ Overlooked by inspection
- ☐ Physical problems
- ☐ Insufficient planning or work standard
- ☐ Abuse or misuse
- ☐ Other (specify) _____

LACK OF CONTROL

- ☐ Leadership or Administration
- ☐ Employee or Management Training
- ☐ Planned Inspections / Program evaluation
- ☐ Job / Task Analysis / Procedures
- ☐ Accident / Incident Investigations
- ☐ Emergency Preparedness
- ☐ Rules
- ☐ Personal Protective Equipment
- ☐ Purchasing controls
- ☐ Personal communications
- ☐ Meetings / Promotions / Health control
- ☐ Hiring and Placement
- ☐ Records and Reports
- ☐ Off the job safety
- ☐ Other (specify) _____

Review Table 2 below for seriousness matrix

TABLE # 2

CLASSIFICATION
Incidents are categorized into a seriousness matrix.
SPF - The SPF rating is based on the cost of damage and the sum of the severity, probability and frequency of the incident. Numerical values are obtained by adding the assigned values from the table below.
Class 1 - Major Incidents (Immediate Reporting)
Equipment - > $25,000 damage
Injury - Lost Time and Fatality cases
Range - SPF 10 to 12
Environmental - confirmed major impact, likely to exceed $25K in clean- up/reclamation costs.
Class 2 - Serious Incidents (Immediate Reporting)
Equipment - $2,001 to 24,999 damage
Injury - Medical Aid and Restricted Duty cases
Range - SPF 7 to 9
Environmental - causes or likely to cause an adverse impact, includes all incidents reportable under Provincial or Federal regulations.
Class 3 - Minor Incidents (Same Day Reporting)
Equipment - < $2,000 damage
Injury - First Aid cases
Range - SPF 3 to 6
Environmental - no significant adverse impact

SEVERITY - (potential for loss**)**

4.	Catastrophic	Could cause death, widespread occupational illness, loss of facilities
3.	Critical	Severe injury, serious illness, property and equipment damage
2.	Marginal	Non-serious injury, illness or damage
1.	Negligible	Minor injury, requiring first aid or less

PROBABILITY - (likelihood of recurrence)

4.	Probable	likely to occur immediately or soon
3.	Reasonably probable	likely to occur eventually
2.	Remote	could occur at some point
1.	Extremely remote	unlikely to occur

FREQUENCY - (potential rate of recurrence)

4.	Daily	2.	Monthly
3.	Weekly	1.	Annually