1 PURPOSE

The purpose of this procedure is to provide guidelines for working that protects people, equipment and the environment from the effects of a personal fall or objects falling from height.

2 SCOPE

This procedure is applicable to all work performed at IOC. It supports the implementation of the IOC Health, Safety and Environment (HSE) Management System.
DEFINITIONS

100% Tie Off: Personnel working at heights must ensure they are protected by means of a fall protection system at all times. This requires a person working at heights to be attached to an anchor point 100% of the time. An example of 100% tie off occurs when transitioning from an elevated work platform to another structure. The employee might use a double lanyard with the requirement of one snap hook being connected to a fixed anchorage point at any given time.

Elevated Work Platform (EWP): EWPs are mechanical slewing, boom lift platforms designed for elevating and safely positioning people to access locations where a fall hazard exists and fixed platform access is not practical.

Emergency Response Plan: A written and documented fall protection plan developed to rescue people when conducting work at heights in the event of an incident. The plan must be risk based and be developed in consultation with the employees conducting the work. The emergency response plan shall take into account the following items:
- The required equipment to carry out a rescue.
- The time required to respond and carry out a rescue.
- The availability of trained personnel to carry out the response plan.
An emergency response plan must include the details for the rescue plan.

Fall Protection: The use of a personal fall arrest system to protect against injury associated with a fall while working at heights. This system may include the use of a full body harness, net, rope, body belt, structure or other equipment which will either restrain a worker who is at risk of falling or arrest a worker who has fallen at a safe distance such to minimize injury.

Responsible Person: The person accountable for all work performed under the Working at Heights permit. This person must be trained for Fall Protection as defined in this procedure. The Responsible Person will direct all working at heights activities performed under the working at heights permit.

Scissor lifts: A powered work platform used for working at heights activities which can only be raised or lowered vertically by the operator. The Platform may also have an extending 'bridge' to allow closer access to the work area and can be propelled under its own power.

Response Person: The person responsible to initiate and execute the emergency response plan in the case of a fall incident. The response person must be in visual contact and be able to communicate at all times with employees working at heights. If the response person must operate equipment to invoke a rescue, the person must be deemed competent to do so (i.e. operate boom lift ground controls).

Fall Restraint: A system to prevent the user from falling from a work position or from travelling to an unguarded edge from which the user could fall. Fall restraint work may include devices such as a harness and lanyard, horizontal or vertical lifeline, self-retracting lifelines or similar PPE.

Static Line or Horizontal Life Line: A rope that is attached horizontally to which a fall arrest system is attached. The rope must meet CSA and local OH&S requirements.

Work at Height (WAH) Trained Personnel: Personnel which have been trained in fall protection by an IOC approved training provider. In IOC northern operations, this will require personnel to have completed a Workplace Health Safety Compensation Commission (WHSCC) approved Fall Protection Training course.
Work At Height: Any work that has the potential to cause harm as the result of people or equipment falling from one level to another. Consideration must be given to the PPE selection as described in section 4.4.3.

4 PROCESS

4.1 Risk Assessment

A risk assessment shall be conducted for all work at heights and must include controls to conduct the work safely and to prevent the occurrence of a fall.

4.2 Hierarchy of Control

The hierarchy of controls for fall protection shall be used when developing measures for controlling fall hazards identified during the risk assessment process. This will require employees implement controls in the following order:

1. Elimination
2. Isolation
3. Substitution
4. Fall prevention

4.3 Working at Heights Permit

4.3.1 A Working at Heights Permit must be completed for all work at heights which require fall protection. The form must be approved prior to the commencement of the work and signed by the responsible person, the response person, and all personnel working under the working at heights permit.

4.3.2 In situations where the work at height is performed on a routine basis, a permit may be approved for a 12 month period. The following conditions must be met to use a 12mth permit:

- The 12mth permit process will be managed by the Safety department
- The work must be performed only by the employees listed on the permit.
- A standardized procedure must be developed for the task.
- The work must covered by a level 2 risk assessment (new or existing).
- The permit must be posted at the job location during the execution of the work.
- Any changes to equipment or work procedure will automatically cancel the annual permit.

4.3.3 The working at heights permit is not required for work where fall restraint is used and the threat of a fall has been eliminated.

4.4 Working at Heights Personal Protective Equipment (PPE)

4.4.1 All personnel must be protected by a system that reduces the risk of fall to as low as reasonably practicable. Working at heights PPE shall only be used when the elimination of the fall hazard or engineering controls to prevent the fall are not practicable.

4.4.2 Before using any work at heights PPE or equipment, personnel shall be trained, assessed and deemed competent through a training program on fall protection prescribed by the commission.
4.4.3 All working at height PPE and systems must:

- Be designed and rated for fall arrest in compliance with local Occupational Health and Safety Regulations (CSA certified)
- Have a minimum of a Class A attachment point for a full body harness (located on the back between the shoulder blades)
- Have an approved anchor point for attaching fall arrest systems above the head where possible.
- Adjusted to personal fit and secured to the body as per WAH practical training.
- Prevent a free fall greater than 1.22 metres (4 feet) except where:
  - The fall arrest system is equipped with a shock absorption system that complies with CSA standard reducing the shock level of a fall to less than 4 kilo newton’s, or
  - The combined free fall and shock absorbed deceleration distance exceeds the distance between the work area and a safe surface directly below the path of the fall, in which case a shorter free fall is needed to ensure worker's safety.

- Be inspected before each use.
- Be kept clean and stored in a clean dry area when not in use.
4.4.4 Restrained fall systems are permitted for scenario’s where:

- A vertical fall over an edge is not possible.
- The fall occurs on a slope that is not steeper than 14 degrees.
- The work has undergone a documented risk assessment following the appropriate working at heights “hierarchy of controls”.

4.4.5 Restrained fall prevention systems shall include an approved full body harness or a safety belt designed for use in restraining systems.

4.4.6 Work at heights PPE must be inspected and tagged by a competent person annually as part of a periodic inspection program.

4.4.7 PPE identified as being defective must be removed from service, and not used until it has been inspected by a trained, competent person and deemed safe for use as per the manufacturers specifications.

4.4.8 Any work at heights PPE that has been subjected to a fall or found to be unfit for use following a formal inspection, shall be destroyed.

4.5 Anchor Points

4.5.1 Fixed or permanent anchor points to be used for the purpose of working at heights shall follow an engineering design and must be deemed to be capable of withstanding specific loads as described in CSA and local OH&H standards.

4.5.2 Wherever possible, anchor points shall be attached to a structural point above the head.

4.5.3 Permanently fixed anchor points shall be inspected annually and indicate the date of installation, the date of last inspection, the maximum safe working load, and the standard to which it was designed and inspected.

4.5.4 Anchor points must be inspected prior to use to verify an inspection has occurred as per the standard.

4.5.5 Hand rails and guard rails shall not be used as work at heights anchor points.

4.5.6 All permanent fall protection anchor points must be added to a anchor point register and made available to employees using working at heights fall protection PPE

4.6 Training

4.6.1 Personnel conducting Work at heights using fall protection PPE shall be trained in Fall Protection according to local OH&S requirements.

4.6.2 All IOC employees having direct responsibilities for working at heights tasks shall be trained in Fall Protection and be familiarized with the IOC Work at Heights procedure and permitting process.
4.7 Elevated Work Platforms (EWP)

4.7.1 All elevated work platforms used for working at height shall be certified by the Canadian Standard Association (CSA).

4.7.2 A pre-use inspection must be performed before using any elevated work platform at least once per work shift. The inspection must be documented on a checklist and developed based on a risk assessment.

4.7.3 Working with elevated work platforms:
- Fall arrest PPE shall be used whenever the machine is running and workers are occupying the basket.
- Self-retracting lanyards which permit the user to leave the basket are only to be used in exceptional circumstances where the hazards are controlled through a risk assessment.

4.7.4 Personnel working at heights from within the basket of a EWP shall attach to the lowest possible manufacturer’s approved anchor point located inside the basket.

4.7.5 The operator of an elevated work platform shall be trained, assessed and deemed competent to operate the equipment.

4.7.6 A response person shall be designated and remain in visual and verbal contact with the EWP operator for the purpose to invoke the emergency response plan in the case of an incident.

4.7.7 If part of the emergency response plan is to use the ground controls of the EWP, the person using the controls must be immediately available and deemed competent to use these controls in the case of an emergency.

4.7.8 An elevated work platform shall only be operated in accordance with the manufacturers recommendations.

4.7.9 Personnel shall not leave the basket of an elevated work platform while elevated above 1.8m, with the exception of the following circumstances:

- In an emergency situation to mitigate or prevent further injury to personnel.

OR

- To access a work platform under the following requirements. A risk assessment has determined the hazards can be controlled, there is no safer alternate means to access the work location, 100% tie off can be maintained and the risk assessment has been approved by the responsible person.

OR

- When the landing point is at least 2m from an open edge, the basket is secured and situated no greater than 100mm above the landing point.
- 100% tie off must be maintained when the landing point has a pitch greater than 3/12 or 14 degrees. If the landing point has a pitch less than 3/12 degrees, then 100% tie off is not required as long as the risk assessment deems there are no other risks increasing the threat of a fall hazard (i.e. slippery surfaces)

AND

- In all situations, the ground level controls are to be tagged “Equipment in use – Do not operate”.

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This document is uncontrolled if printed. Refer to document management system for most up to date version.
4.7.10 When transferring from one structure to another and employees are working with a risk of a fall greater than 1.8m, a worker must ensure they maintain 100% tie off at all times.

4.7.11 A work at heights permit is required when working from the basket of an EWP and the basket is elevated above 1.8M.

4.7.12 A work at heights permit is not required for the purpose of travelling an EWP with the boom in a lowered position.

4.8 Emergency Planning

4.8.1 Before any work at heights commences, an emergency response plan shall be developed by working at heights competent people. A site visit is required and the plan shall include:

- The immediate response after a fall has occurred
- The equipment required to initiate the emergency response
- The equipment required to carry out a rescue
- The time required to respond to and carry out a rescue
- The availability of emergency response trained personnel.
- The effects of suspension trauma.

4.8.2 Prior to commencing any work at heights task, a response plan must be in place. The details included in the plan shall be based on the level of risk.

4.8.3 Risk Levels:

Low Risk: A task performed between 6 and 15 feet and where the retrieval of an employee who has fallen is not complicated and there are no obstructions which could impede the rescue.

Intermediate Risk: A task performed at greater than 15 feet. Employee can be retrieved using an elevating work platform, ground controls on equipment, a personal rescue device or similar device.

High Risk: A task performed where there is a risk of a fall and the initial response and rescue is difficult due to obstacles or the employee being inaccessible or the work is being performed in a hazardous area (i.e. over water, over hazardous materials, in some confined spaces.) High risk tasks are defined in 4.8.5

4.8.4 Low and Intermediate Risk task will require an emergency response plan for which the site response person can execute the rescue plan.

4.8.5 For High Risk task, the Emergency response must be developed in consultation with site emergency services.

Examples of High risk tasks include:

- Work over operating plant or equipment
- Work within close proximity to energized power lines
- Work above water or other liquids
- Work in areas that are difficult to access
- Work in locations that may require specialised equipment to perform the rescue.
• As risk assessed as per the definition of “high risk work”

Refer to Appendix 2: Working at Heights Rescue Plan Flow Chart

4.9 Ladders

4.9.1 A written risk assessment shall be conducted prior to use of a ladder. The risk assessment must identify the controls to conduct work safely.

4.9.2 Design

Portable ladder design, construction and use shall meet the following requirements:

• CSA Standard CAN3-Z11 “Portable ladders”;
• ANSI Standard A14.1-1990 “Safety Requirements for Portable Wood Ladders”;  
• ANSI Standard A14.1-1990 “Safety Requirements for Portable Metal Ladders”; or
• Other standard approved by the minister

4.9.3 Manufacturing

A manufactured portable ladder shall be:

• Marked for grade and use; and
• Used in accordance with the manufacturer’s instructions.

4.9.4 Storage and Inspection

Portable ladders shall be stored safely and inspected before each use. Damaged ladders shall be immediately tagged and removed from service. Such damage can include such items as broken or missing rungs, split side rails or other hazardous defects preventing safe use.

4.9.5 Inclination and support

Where a portable single or extension ladders is in use

• The ladder shall be placed so that the horizontal distance from the base to the vertical plane of support is approximately one-quarter of the ladder length between supports; and
• The lower ends of the ladder side rails shall rest on a firm and level base and the upper support of the side rails shall be rested on a bearing surface strong enough to safely withstand the applied load.

4.9.6 Length

A ladder shall be of sufficient length to project approximately one metre above the level of the upper landing to which it provides access, except where there is limited clearance and the ladder is adequately secured.

4.9.7 Restrictions on use

• Except as otherwise permitted by a manufacturer, a worker shall not work from the top 2 rungs of a portable single or extension ladder or the top 2 steps of a stepladder.
- A ladder shall not be used as a scaffold component or as a horizontal walkway, ramp or work platform support except where the ladder is part of a manufactured or engineered system.

- Ladders may only be used according to manufacturer’s instructions. Modifications of use are not permitted.

- A worker shall maintain 3 points of contact when using a ladder.

4.9.8 Work from ladder without fall protection

A worker may work from a portable ladder without fall protection where:
- Task must be a light duty task with a duration less than 1hr.
- The worker’s centre of gravity can be maintained between the ladder side rails.
- The ladder’s distance from an open edge or floor opening must be at least the equivalent distance of the ladder’s length plus the height of the individual working from the ladder.
- When three points of contact are maintained. (i.e. two feet and one arm, two feet and a knee, two feet and hip etc.)

4.9.9 Only non-conductive ladders are to be used in situations where there is a possibility of coming in contact with exposed conductors for electrical equipment.

4.9.10 Permits:

- A work at heights permit must be used when a task is being performed while working from a ladder at a height greater than 1.8 meters.
- Only the Ladder section of the work at heights permit needs to be completed.
- A Permit is not required when a ladder is being used for access.

4.10 Work Platforms and Scaffold

4.10.1 Only competent qualified scaffolder’s shall erect scaffold for the purpose of working at heights in excess of 1.8m.

4.10.2 Safe access and egress shall be provided wherever a scaffold or work platform is used.

4.10.3 All scaffolds and work platforms shall have complete floors, guardrails and toe-boards.

4.10.4 The use of approved fall protection equipment is mandatory during scaffold installation when working at a height above 1.8m, until such time as proper handrails are installed.

4.10.5 Scaffold shall be inspected and tagged by a qualified scaffolder prior to initial use.

4.10.6 Scaffold shall be inspected daily by the user

4.10.7 All scaffolding and work platforms must conform to the CSA standards.

4.10.8 Scaffolding and work platforms erected in Newfoundland and Labrador must conform to "NL Occupational health and safety regulations". See applicable sections listed as supporting documents.
4.11 Barricading and Restricted Access

4.11.1 Control measures shall be used to control unrestricted access to areas directly below where working at height activities are taking place. Refer to IOC-S-E-WP Barricading.

4.11.2 Where there is the risk of harm or damage, as the result of objects falling from one level to another, barricading shall be installed around the fall zone as per IOC-S-E-WP Barricading. Debris nets and personal safety nets are to be used to protect workers from the hazards from falling objects in the case objects can fall and the area cannot be controlled.

4.11.3 Where there is a possibility of tools or equipment falling greater than 1.8m, controls shall be put in place to prevent tools and equipment from falling.

4.12 Work on Rooftops

4.12.1 Fall Protection must be used when:
- The rooftop has a pitch of greater than 3/12 (14 degrees)
- When working within two meters of an open edge
- There are no barricades indicating safe zones

4.12.2 In cases where fall protection must be used a work at heights permit is required.

4.12.3 Work can be performed on a flat roof without fall protection when barricades are in place to provide a working at heights exclusion zone at a minimum of 2 meters from all edges and openings where a fall of greater than 1.8m can occur.

5 ACCOUNTABILITIES

5.1 Accountability

The Vice President – Operations is accountable for ensuring that this work practice is managed with due diligence and in compliance with applicable legal requirements, corporate and management standards.

The Area Manager – is accountable to ensure that all employees are trained, competent and aware of working at heights requirements and that all measures are taken to ensure requirements are met.

Supervisor – is accountable for ensuring employees follow safe work practices in accordance with the IOC work at heights practice and legislation. Supervisor must also ensure all relevant permits, risk assessments, standard operating procedures and work at heights rescue plans are followed during work at heights activities.

Employee – is accountable for ensuring they comply with all safe work procedures, policies and legislation. Employees must ensure work is conducted in a safe manner by themselves and their co-workers and to report any work at heights breaches.
5.2 Responsibility

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Manager</td>
<td>Ensure this work practice is implemented, communicated and maintained throughout IOC’s operations.</td>
</tr>
<tr>
<td>All IOC Leaders</td>
<td>Ensure that all working at height tasks comply with and are communicated to workers in accordance to this work procedure. Ensure that workers have been sufficiently trained and have the necessary equipment to perform job duties safely. Ensure that all fall arrest/protection equipment provided is in accordance with all applicable NL, OHS and CSA or ANSI Standards. Ensure that all fall arrest/protection equipment provided is adequately tagged, tracked, distributed, cleaned and inspected annually at a minimum. All leaders must report any W@H issue or breaches immediately and a full investigation should be conducted.</td>
</tr>
<tr>
<td>All Employees and Contractors</td>
<td>Ensure that procedures are followed and understood. Complete the IOC-S-E-FRM Working at Heights Permit. Wear the required PPE and fall arrest/protection equipment when working at heights. Ensure to visually inspect fall arrest/protection equipment for defects before use. All defective equipment shall be removed from the sites/service. Maintain and store equipment properly after use. All IOC employees must report any W@H issue or breaches immediately and a full investigation should be conducted.</td>
</tr>
</tbody>
</table>

6 REFERENCES

- RT HSE Definitions
- Newfoundland Labrador Occupational Health and Safety Act and Regulations 2012

7 SUPPORTING DOCUMENTATION

- IOC-S-E-FRM Working at Heights Permit
- IOC-HSE-E-REG Working at Heights Permit FAQ's
- IOC-S-E-WP Barricading
- C4 Work at Heights Standard
- IOC Permanent Fall Arrest Anchor Datasheet
- NL Occupational Health and safety Regulations Part XXII (22)
  - Relevant Sections:
    - 458 Access, egress and movement
    - 459 Exits and doors
    - 460 Stairs
- NL Occupational Health and Safety Regulations Part XI (11)
  - Scaffolds, stages and work platforms
8 REVIEW

<table>
<thead>
<tr>
<th>Version</th>
<th>Version date</th>
<th>Reviewed by</th>
<th>Approved by</th>
<th>Changes</th>
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<tbody>
<tr>
<td>02</td>
<td>2016-06-16</td>
<td>C4 Team</td>
<td>Tim Fox</td>
<td>Changes made to permit requirements where WAH is a routine basis (section 4.3.2 and 4.3.3). Inspections of elevated work platforms shall be certified by CSA and at least once per work shift (section 4.7.1 and 4.7.2). A WAH permit is required when an EWP basket is above 1.8M (section 4.7.11 and 4.7.12)</td>
</tr>
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</table>

9 APPENDICES

- Working with Heights definitions
- Working at Heights Rescue Plan flow chart
## Working with Heights Definitions

<table>
<thead>
<tr>
<th>Priority</th>
<th>Category</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Restraint Technique – A fall is not possible</td>
<td>A control on a person’s movements by means of a combination of a belt or harness, a line and a line anchorage which will physically prevent the person from reaching a position at which there is a risk of a free or limited free fall.</td>
<td><img src="image1.png" alt="Example" /></td>
</tr>
<tr>
<td>2</td>
<td>Restrainted Fall</td>
<td>A fall or the arrest of a fall where the person suffering the fall is partially restrained by a restraining device or is sliding down a slope on which it is normally possible to walk without the assistance of a handrail or hand line.</td>
<td><img src="image2.png" alt="Example" /></td>
</tr>
<tr>
<td>3</td>
<td>Limited Free Fall</td>
<td>A fall or the arrest of a fall where the fall distance before the fall arrest system begins to take any loading does not exceed 600mm either vertically or on a slope on which it is not possible to walk without the assistance of a handrail or hand line.</td>
<td><img src="image3.png" alt="Example" /></td>
</tr>
<tr>
<td>4</td>
<td>Free Fall (NOT ACCEPTABLE TO RT STANDARDS)</td>
<td>A fall or the arrest of a fall where the fall distance before the fall arrest system begins to take any loading is in excess of 600mm either vertically or on a slope on which it is not possible to walk without the assistance of a handrail or hand line.</td>
<td><img src="image4.png" alt="Example" /></td>
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</tbody>
</table>
Iron Ore Company of Canada
Health, Safety & Environment

CR-S-E-PRO Working at Heights

Working At Heights Rescue Plan Flow Chart

Working at Heights Rescue Plan/Emergency Response Plan Flowchart

Do not commence Working at Heights task unless you are trained, competent & authorised.

Contact your SUPERVISOR

Raise a Working at Heights Permit

Is the task deemed high risk emergency services must be notified.

A JHA / Risk Assessment is to be completed including all hazards and controls.

Contact Emergency Services

Develop a Rescue Plan – to Consider:
- immediate response after a fall
- equipment required to initiate response
- time required to respond
- availability of ERT personnel
- effects of suspension trauma

YES Working at Heights task considered high risk

NO

Develop a ERP – by Emergency Response and Working at Heights personnel

The rescue plan and Working at Heights Assessment are to be kept in an accessible area in the ERT location where all ERT Members are able to check daily.

The rescue plan and Working at Heights Assessment are to be kept at task location for duration of task.

Team Leader / Contract Manager to authorise and sign Working at Heights Permit.

It is the responsibility of the Team Leader/Contract Manager to ensure ALL paperwork is correct and kept with the Working at Heights permit until Permit has been cancelled.

Emergency Services shall be notified when Working at Heights have been completed.

JHA/Risk Assessment

Working at Heights Permit

Rescue Plan

The Emergency Services is to be notified when High risk Working at Heights has been completed.