Vancouver Airport Authority
CONSTRUCTION SAFETY / SECURITY MANUAL

2010

OPI: Don Ehrenholz, Vice President Airport Operations & Engineering

VANCOUVER INTERNATIONAL AIRPORT, RICHMOND BC V7B 1Y7

TELEPHONE 604.276.6657

VANCOUVER
AIRPORT
AUTHORITY

Statement of Commitment

The processes and procedures outlined in the Vancouver Airport Authority *Construction Safety / Security Manual* version 6.0 have been developed in good faith in accordance with applicable legislation and regulations.

The contents of the manual are meant to reflect and exemplify the high priority placed on health and safety, environmental consciousness, and operational effectiveness by the Airport Authority.

Larry Berg
President and Chief Executive Officer

Vancouver Airport Authority

VANCOUVER AIRPORT AUTHORITY

Contents

APPENDIX

A-1 Construction Safety Checklist

A-2 Forms and Permits

CSSM10 NOPA/Construction Impact Assessment
CSSM20 Request for Lockout
CSSM40 Coring, Saw-Cutting Permit
CSSM50 Excavation, Trenching Permit
CSSM100 Hot Work Permit
CSSM110 Crane Operating Permit
CSSM130 Investigation Report
CSSM150 Witness Statement
CSSM170 Safety Orientation Signature Sheet
CSSM190 Contractor Monthly Safety Report
CSSM220 Site Inspection Report
CSSM230 Request for Asbestos Clearance
CSSM250 CSO Daily Report
CSSM260 STOP WORK ORDER

A-3 Airport Terms and Definitions

A-4 Canadian Aviation Security Regulations for Restricted Area Identity Card Holders

A-5 Conditions of Issue of a Restricted Area Identity Card

A-6 Safety Pre-Qualification Application

Introduction

The Vancouver Airport Authority *Construction Safety / Security Manual* has been developed in accordance with provincial *Occupational Health and Safety Regulation* and Transport Canada *Aerodrome Security Measures* to promote health and safety and to maintain security in the workplace.

The manual will be updated as needed to reflect changes in Airport Authority requirements and applicable legislation. However, if there are discrepancies between this manual and the minimum standards under legislation, the legislation will prevail.

Chapter

1

Construction Safety

1.1 Purpose and Scope

Vancouver Airport Authority recognizes that effective safety management is essential to minimize the potential for personal injury, property or environmental damage, and daily operational impacts relating to construction activities. Accordingly, the Airport Authority has developed compulsory work standards as detailed in this *Construction Safety / Security Manual* [CSSM].

These standards represent the minimum requirements implemented throughout our projects and will meet or exceed general industry standards and regulatory requirements. Copies of the *Construction Safety / Security Manual* are available to all persons for reference during the planning, engineering, and construction phases of projects.

The Airport Authority and all relevant contractor personnel will promote, assist, and participate in safety meetings, audits, and reporting to project a high safety profile that reinforces the importance of safety amongst construction personnel. The overall success of each project will depend on understanding and compliance by all parties during the planning, design, construction, implementation, and commissioning stage.

1.1.1 Goals

The goals of the Airport Authority CSSM are to ensure that:

- Visitors, passengers, tenants, and workers are protected against personal injury resulting from construction work, with the objective of having zero injuries
- Buildings, properties, and the environment are protected against damage
- A uniform safety standard is applied to all construction projects
- The airport's operational integrity is maintained throughout construction activities

1.1.2 Jurisdiction

The Airport Authority and airlines come under federal jurisdiction for occupational health and safety [OH&S] standards. With differences between the Canada Labour Code Part II and provincial occupational safety regulations, some uncertainty may exist about which legislation applies to the contractors who do business at the airport. For purposes of clarification, the following information, approved by Human Resources and Skills Development Canada's Labour Program, and WorkSafeBC, is provided:

All construction of facilities, including renovations and repair, falls under provincial jurisdiction. The only exception to this ruling is when work is being performed by employees of a federally regulated employer. This is based on the Canada Labour Code, which indicates that "activities essential to the operation of an airline or aerodrome" come under federal jurisdiction.

Therefore, all contractors working on Airport Authority property, whether contracted by a federally or provincially regulated body, are required to comply with applicable provincial legislation.

1.1.3 Compliance with Standards

The Airport Authority reserves the right to suspend any work that is in non-compliance with the CSSM and *WorkSafeBC Occupational Health and Safety Regulations*, where the non-compliance may cause harm to persons, property, or the environment, or may adversely affect the operational integrity or security of the airport.

The Airport Authority reserves the right to take any actions, at the Airport Authority's sole discretion, to correct any situation resulting from non-compliant behaviour.

In addition to projects initiated by the Airport Authority, this manual also applies, without limitation to:

- All second or other party contracts executed from a contract originating with the Airport Authority
- Any contracted work performed on behalf of the Airport Authority where safety issues are not specifically addressed yet are inherent in the work

- All tenants, lessees, their designated representatives, or other parties performing work under the following criteria:
  - Within the established airside areas of the airport
  - Inside any terminal, structure, or property owned or operated by the Airport Authority
  - Any work performed on or across a public road surface on Airport Authority property (essentially all of Sea Island)
  - Any ground, road, or other surface penetration on Airport Authority property (essentially all of Sea Island)

1.1.4 Airport Restrictions

Certain airport restrictions may apply that could affect the cost, scheduling, and duration of the project. The material in this manual should be reviewed thoroughly to ensure that these restrictions are known and accounted for during the planning and implementation stages of the project or work.

Restricted Areas	Many areas inside the terminal buildings are restricted from public access. Contractors working beyond the primary security line of the airport require security passes (Restricted Area Identity Cards), escorts, and instruction prior to entering. Security and safety requirements are identified in Chapter 3, *Airside Construction Safety*, and Chapter 4, *Security – Restricted Area Access*. Contractors should consult with the Airport Authority Project Manager, Construction Safety personnel, or Airport Operations for full details on post-security work. Access Control can provide information on passes, escorts, and restrictions.
Fire Safety	Fire safety requirements are stipulated for any hot work performed on airside, groundside, or inside the terminals. See section 1.6, *Fire Safety*, for more details.

Height Restrictions	Depending on the height and location where equipment (such as cranes, derricks, masts, etc.) is to be erected, special documentation and obstruction lighting may be required to advise aircraft that conditions have changed at the airport. Contractors are requested to contact the Airport Authority Project Manager for Airport Authority projects or Engineering Services – Permits for tenant projects.
Indoor Environmental Quality	The Airport Authority has established indoor environmental quality levels that must be maintained throughout any work inside the terminals. Depending on the nature of the work, containments, negative airflow systems, air quality testing, and noise mitigation strategies may be necessary. See section 1.7, *Indoor Environmental Quality*, for more details.
Lockouts	Lockouts to airport systems require a written request to be submitted five working days prior to the work being performed, and are subject to approval by the Airport Authority. See section 1.9, *Lockouts*, for more details.
Noise, Disruptive Work	Work inside the terminals or on airside, where the work could adversely affect normal operations due to noise, area closures, system shutdowns, or similar situations, will generally have to be done during periods of low occupancy, usually between the hours of 2200 to 0600. Contractors should consult with the Airport Authority Project Manager for Airport Authority projects or Airport Authority Construction Safety personnel for tenant projects to determine appropriate hours of work. See section 1.7, *Indoor Environmental Quality*, for more details.
Traffic Management	Work on public road surfaces or airside must be approved by the Airport Authority prior to any lane closures or operational impacts taking effect. See section 1.10, *Traffic Management*, for more details.

1.2 General Safety Requirements

The Airport Authority expects contractors to be knowledgeable of the applicable *Occupational Health and Safety Regulation*, and to ensure compliance with the regulation for all aspects of the work performed on behalf of the Airport Authority and tenants.

1.2.1 Safety Pre-Qualification Process

The Airport Authority is the functioning body that oversees the safe and efficient operation of the airport. To meet the needs associated with passenger and cargo growth, the Airport Authority is continuing with a significant program of expansion and renovation. Contractors will have a key role in ensuring the work is performed in a safe, secure, and environmentally conscious manner.

To confirm that the work is performed in accordance with Airport Authority safety requirements, applicable legislation, and good industry practices, contractors are required to meet the established levels of safety competence and compliance by successfully completing the *Application for Safety Pre-Qualification*, which will be administered during the tendering process for construction contracts. Through this process, contractors will be expected to provide evidence of an acceptable construction safety record along with a corporate commitment that ensures safe establishment and maintenance of work sites and practices.

Subsequent to successful completion of the *Application for Safety Pre-Qualification*, construction work will not begin until contractors have completed their site-specific safety program based on the unique hazards and related risks associated with their airport project, and have submitted this material to the Airport Authority for review.

Safety pre-qualification will apply to all construction contracts undertaken by or on behalf of the Airport Authority, and, at the discretion of the Airport Authority, may be applied to any airline, tenant, or other contracts where the work is deemed to have the potential to impact sensitive operational areas.

For more information on the safety pre-qualification application process and the application form, see Appendix 6.

1.2.2 Facility Permit

Before work can start, the contractor must have an approved *Facility Permit* [FAP] for the work. This permit is issued after the FAP application has been made by the Project Manager and reviewed and approved by Airport Authority Engineering Services – Permits. For more information, contact the Permits Section at 604-276-6391 or 604-276-6527.

1.2.3 Notification of Project

Before mobilizing at the workplace, the contractor will complete and forward the *NOP/ Construction Impact Assessment* [CSSM10] and WorkSafeBC *Notice of Project*. Copies of both notices will be faxed to the Airport Authority Superintendent Construction Safety at 604-232-6238.

1.2.4 Coordination of Safety Activities

According to *Occupational Health and Safety [OH&S] Regulation* 20.3, the prime contractor will ensure that requirements under regulation are complied with where conditions or activities affect the workers of more than one employer. Prime contractors will be provided with authority under contract to take all necessary measures to ensure that all contractors working on the project site, regardless of contract origin, are in compliance with applicable legislation, regulation, and the Airport Authority Construction Safety / Security Manual.

Prime contractors may stop work on their site if subcontractors fail to comply with site safety requirements. Prime contractors will immediately notify the Airport Authority Construction Safety representative (email: construction_safety@yvr.ca phone: 604-276-6040) of any work stoppages, at which time the Airport Authority will assist with resolution of the safety issue. Subcontractors will meet the requirements established by the prime contractor as well as complying with applicable *OH&S Regulation* and the *Construction Safety / Security Manual*. All other contractors working on a site assigned to a prime contractor are required to comply with requirements of the prime contractor as well as applicable legislation, regulation, and the CSSM requirements as amended from time to time.

1.2.5 Roles and Responsibilities

Effective safety management of construction projects requires responsibility and participation through all levels of the organization. All contractors will ensure that their roles and responsibilities are defined in their OH&S programs, and that these responsibilities are maintained throughout the course of each project. Without limiting the specific responsibilities in each contractor's OH&S program, the following general requirements will be applied on all projects done on behalf of the Airport Authority.

Airport Authority Construction Safety

Airport Authority Construction Safety personnel have the authority to inspect sites at any time and take whatever action is necessary to maintain all construction sites at the airport in a safe, clean, and orderly fashion.

Airport Authority Construction Safety personnel are the primary liaison between Airport Authority Engineering, external stakeholders, contractors, and Airport Authority Operations. All projects must be communicated through the Construction Safety Department before work begins.

The duties of Airport Authority Construction Safety personnel include:

- Supervise the pre-qualification process (see section 1.2.1) to verify that all companies contracting work comply with the minimum standards.
- Maintain the CSSM to reflect current regulations and minimum standards.
- Approve the scope of work, assess operational impacts, and assist with mitigation planning.
- Audit contractor safety programs to verify that they meet the standards of the CSSM.
- Compile reports and maintain relevant data.
- Attend site meetings and orientations.
- Chair the weekly CSO/Site Safety Coordinator meeting.
- Inspect the sites to verify that site conditions are acceptable.
- Coordinate construction activities with all affected stakeholders on behalf of the Airport Authority Engineering Departments.

Prime Contractor Project Manager

The prime contractor Project Manager assumes overall responsibility for the safety of the project, and will exercise the same aggressive, proactive leadership in safety that is exercised in other responsibilities. Responsibilities include but are not limited to:

- Ensure that all aspects of the company OH&S program and Airport Authority *Construction Safety / Security Manual* are implemented and maintained throughout the course of the project.
- Ensure coordination of construction activities through Airport Authority Construction Safety personnel.
- Forward any identified deficiencies, omissions, or corrections to the company OH&S program to the appropriate party for correction and updating, and properly disseminate all changes to company OH&S programs to all concerned parties.
- Implement any inspections and actions deemed necessary to comply with relevant rules and regulations. Hold meetings, orientations, and safety talks as required to promote safety consciousness among construction personnel.
- Ensure that work is being executed in a safe manner in compliance with the safety rules and regulations of governmental regulatory agencies and the company OH&S program. If any deficiencies in safety matters are discovered, inform company Superintendents to take immediate corrective actions.
- Ensure that subcontractors are aware of and in compliance with the company OH&S program, the CSSM, and the prime contractor's site-specific safety program and requirements.
- Visibly promote safety on the work site through actions, example, and attitude.

Site Superintendents

The site Superintendent assumes overall responsibility for day-to-day on-site safety for all workers and visitors, and reports directly to the Project Manager. The Superintendent will exercise the same aggressive, proactive leadership in safety that is exercised in other responsibilities. Responsibilities include are but are not limited to:

- Be knowledgeable in the site-specific safety requirements, company and owner safety programs, applicable legislation, and good industry practices.
- Ensure that the safety program, including the site risk assessment and inspection program, is being followed. The Superintendent may appoint qualified personnel to assist with these duties.
- Ensure that subcontractors are in compliance with site-specific safety requirements, and where required, initiate any work suspensions or discipline necessary to correct non-compliance.
- Ensure that all changes to company OS&H programs, Airport Authority *Construction Safety / Security Manual*, and applicable legislation are implemented, and that all relevant information is communicated to site personnel.
- Promptly correct any identified safety issues, and in conjunction with site Supervisors and Construction Safety Officer, monitor the site for compliance with site-specific requirements, applicable legislation, and good industry practices.
- Ensure that incident/accident investigations are initiated immediately upon notification. Assume overall control of the scene and ensure that:
  - Workers, property, and equipment are protected from further injury or damage
  - Proper notifications are made to the appropriate parties
  - The scene is properly documented
  - Reports are produced in a timely fashion and forwarded to concerned parties
- Ensure that all reports, inspections, and statistics are maintained and copies forwarded to the appropriate parties.

- Ensure that all equipment, processes, and work activities are in accordance with applicable safety requirements, and that supporting documentation from consultants, subcontractors, inspections, and regulatory agencies are on site prior to use or implementation.
- Visibly promote safety on the work site through actions, example, and attitude.

Construction Supervisor / Foreman

Construction Supervisors are responsible to their Superintendent to ensure that provisions are in place to provide workers with a safe and healthy environment, and to promote safety awareness among workers at every opportunity. Responsibilities include but are not limited to:

- Ensure that all workers on site have undergone the Airport Authority safety orientation and the contractor's site-specific orientation programs.
- Coordinate construction activities through the Construction Safety Department in the safest manner based on the work schedules.
- Monitor work areas to ensure that all operations are conducted safely, and that the site risk assessment protocols are being followed and recommendations implemented.
- Take immediate corrective action to rectify any safety issues.
- Conduct required accident/incident investigations.
- Ensure compliance with the required safety meetings for employees.
- Report serious accidents and incidents.
- Ensure proper training, including training on risk assessment.
- Ensure personal protective equipment is available and appropriate.
- Support safety activities.
- Provide instruction to workers on safe work practices.
- Ensure that workers are qualified.
- Visibly promote safety on the work site through actions, example, and attitude.

Individual Workers

Each worker is responsible for observing and becoming knowledgeable about all safety precautions applicable to his or her work areas and assignments. Each worker will:

- Inform the immediate supervisor if he or she has not undergone the Airport Authority safety orientation and the contractor's site-specific orientation programs.
- Report for duties in an acceptable condition and attire to perform the duties.
- Properly use all personal protective equipment.
- Be familiar with all relevant safe work procedures.
- Comply with regulations and rules and use safe work practices.
- Report unsafe acts or conditions immediately.
- Report any work-related injury or illness.
- Make safety suggestions and participate in hazard identification and risk assessments.
- Contribute to maintaining a clean and orderly site.
- Visibly promote safety on the work site through actions, example, and attitude.

1.2.6 Occupational Health and Safety Programs

All prime contractors will have a current and appropriate manual detailing their occupational health and safety [OH&S] program, copies of which will be provided to the Airport Authority for review as a condition of safety pre-qualification. A site-specific safety program will also be produced and will demonstrate an understanding of the unique safety issues and safe work practices [SWP] relevant to the work being done, including a formal risk assessment program and appropriate directions for all subcontracts executed as part of the original contract.

Subcontractors will also be required to have a current OH&S program and risk assessment program, including safe work procedures for all aspects of work being done. Safe work procedures based on the site-wide risk assessment will be subject to review and acceptance by both the prime contractor and the Airport Authority.

1.3 Formal Risk Assessment Program

The Airport Authority requires that all contractors develop and maintain a formal hazard identification and risk assessment program. Conducting hazard identification and risk assessments before construction activities start will minimize the potential impact of the activities on the health and safety of visitors, passengers, tenants, and workers, the environment, the construction site, and Airport Authority operations. Contractors are responsible to develop and design their own hazard identification and risk assessment program that meets the minimum standards set out in the *Construction Safety / Security Manua*l.

A formal job hazard analysis and risk assessment should be documented whenever:

- The work assignment and associated hazards and risks are new and unknown
- There is a significant risk of harm or environmental/operational impact not already covered by existing procedures
- There exists an unusual combination of two or three areas of harm or environmental/operational impact not covered by existing procedures
- There is a risk to public safety

1.3.1 Definitions

Hazard: Anything that could harm people (e.g., chemicals, electricity, confined spaces, working on ladders) or negatively impact the environment or Airport Authority operation (e.g., sewage or fuel spill, power outage, crane operation).

Risk: The chance (whether high or low) that someone will be harmed by the hazard or that the hazard will negatively impact the environment or airport operations.

Dynamic risk assessment: A verbal review of hazards and associated risks related to construction activities and workplace that could cause harm to people, the environment, the work site, or Airport Authority operations.

Formal risk assessment: A formal documented examination of hazards and risks related to construction activities and workplace that could cause harm to people, the environment, or Airport Authority operations. The assessment takes into account the *likelihood* that the hazard will cause harm or a negative impact, and the *severity* of impact or *consequences* if the hazard is left uncontrolled.

1.3.2 Contractor Roles and Responsibilities

The site Superintendent will ensure that:

- All supervisory personnel are fully trained and knowledgeable in hazard identification and risk assessment
- All employees are trained to identify hazards on a construction site
- A responsible person is designated to conduct a job hazard analysis and risk assessment before high-risk construction activities start
- All formal job hazard analysis files and risk assessments are reviewed and kept on site for the duration of the construction activities

Site supervisors will ensure that:

- A dynamic risk assessment is conducted by employees before all construction activities that pose a hazard to people, the construction site, or Airport Authority operations
- The outcomes of formal risk assessments are communicated to all stakeholders as well as to others who are working on the construction site
- The established safe work practices for each construction activity are adequate with regards to the findings of the hazard analysis and subsequent risk assessment for the site
- All new workers under their supervision receive instruction in the risk assessment program

Workers will ensure that:

- They report all hazard or risk concerns to their supervisor
- They conduct a dynamic risk assessment before performing any construction activity
- They are trained and knowledgeable in the use of the risk assessment program

1.3.3 Components of Hazard Identification and Risk Assessment

The first three steps listed in the table below also serve as the components of a dynamic risk assessment, which will be incorporated into the daily routine of all construction personnel working at the Airport Authority no matter how many times a particular task has been completed.

The Five Steps of Risk Assessment

FORMAL RISK ASSESSMENT	*DYNAMIC RISK ASSESSMENT*	**1. IDENTIFY HAZARDS:** Look for the *hazards*. Walk around the job site and identify elements or situations that might cause harm or have a negative impact on people, the environment, the site, or airport operations.
		2. DETERMINE THE IMPACT OF THE HAZARD: Decide who or what might be harmed. Consider whether the hazard will affect employees, the environment, the construction site, or airport operations.
		3. EVALUATE THE RISKS: Consider the *likelihood* that the hazard will cause harm or a negative impact, and the *severity* of impact or *consequences* if the hazard is left uncontrolled. Next, decide whether the existing precautions are adequate or whether more should be done. If there are better solutions to control the residual risk, move to the formal method of risk assessment and document the findings.
		4. RECORD FINDINGS: Be sure to document your formal risk assessment. The document will assist with developing and implementing action plans to mitigate or minimize the residual risk and will communicate the team's findings to co-workers.
		5. EVALUATION – CONTINUAL IMPROVEMENT: When changes have been made to reduce the impact of the hazards identified, review the original hazard analysis and risk assessment with your Supervisor and revise it if necessary.

Step 1: Identify Hazards

Assuming it is safe to do so, walk around the job site alone or with your work team. Identify elements or situations that might reasonably be expected to cause harm or have a negative environmental or operational impact.

Be on the lookout for hazards in the following three areas:

- Hazards that could harm you, your co-workers, trainees or young workers, cleaners, visitors, other contractors, maintenance workers, tenants, or members of the public
- Hazards that could negatively impact the environment. What could happen and how could it happen?
- Hazards that could have a negative operational impact. Consider the big picture—how could your actions or lack of actions impact overall airport operations?

Examples of common hazard categories:

Contact with:

- Electricity
- Chemicals
- Heat or cold
- Ionizing/non-ionizing radiation
- Gases and/or fumes
- Oxygen deficiency

Strike against:

- Stationary or moving objects
- Protruding objects
- Sharp or jagged edges

Fall to:

- Same level
- Lower level

Adverse environmental impact:

- Chemicals
- Fire
- Spills
- Releases

Struck by:

- Moving or flying objects
- Falling material

Caught in, on, or between:

- Pinch points
- Protruding objects
- Moving/stationary objects

Overexertion:

- Lifting
- Pulling
- Pushing

Security:

- Unknown/ unauthorized people in area
- Missing/damaged materials
- Equipment at work site

Step 2: Determine the Impact

This step involves clearly identifying who or what might be harmed or negatively impacted by the hazards identified in step 1. Is the hazard harmful to people, does it pose an environmental threat, or could it negatively impact the site or the airport's operation? This information allows you to tailor your action plan in step 4 to clearly address the hazardous condition.

Step 3: Evaluate the Risks

Evaluate the risks posed by each hazard by considering the most likely scenario if the actual hazard is left uncontrolled and the worst-case impact if the potential hazard is left uncontrolled.

Consider the probability or how likely it is that each hazard could cause harm or negative impacts to you or your co-workers, the environment, or the operation of the airport or the construction site. Finally, identify what precautions or control measures currently exist to prevent harm or negative impact as a result of the hazard.

Ask yourself whether the severity and probability of the identified risks are high or low. Decide whether the existing precautions are sufficient or whether more should be done. If the overall risk is low, you may decide that existing or standard precautions are adequate and that you can carry on with the job task assigned to you and your team.

If there is room for improvement of the existing countermeasures, continue with a formal documented risk assessment.

Step 4: Record Findings

As part of the formal risk assessment, an action plan will be been created for each identified hazard. The group reviews the action plans to ensure that the job can be safely completed. The job can only proceed if the assembled team is satisfied that the hazards and their associated risks have adequate control measures in place.

Hierarchy of control measures: The hierarchy of control is a sequence of options that offers a number of ways to approach the hazard control process in decreasing order of effectiveness.

1. **Eliminate the hazard**
2. **Substitute the hazard with a lesser risk**
3. **Isolate the hazard** (e.g., place out-of-service tags on system)

4. **Use engineering controls**

5. **Use administrative controls** (e.g., perform regular inspection and tests or implement safe work practices, instruction, and training)

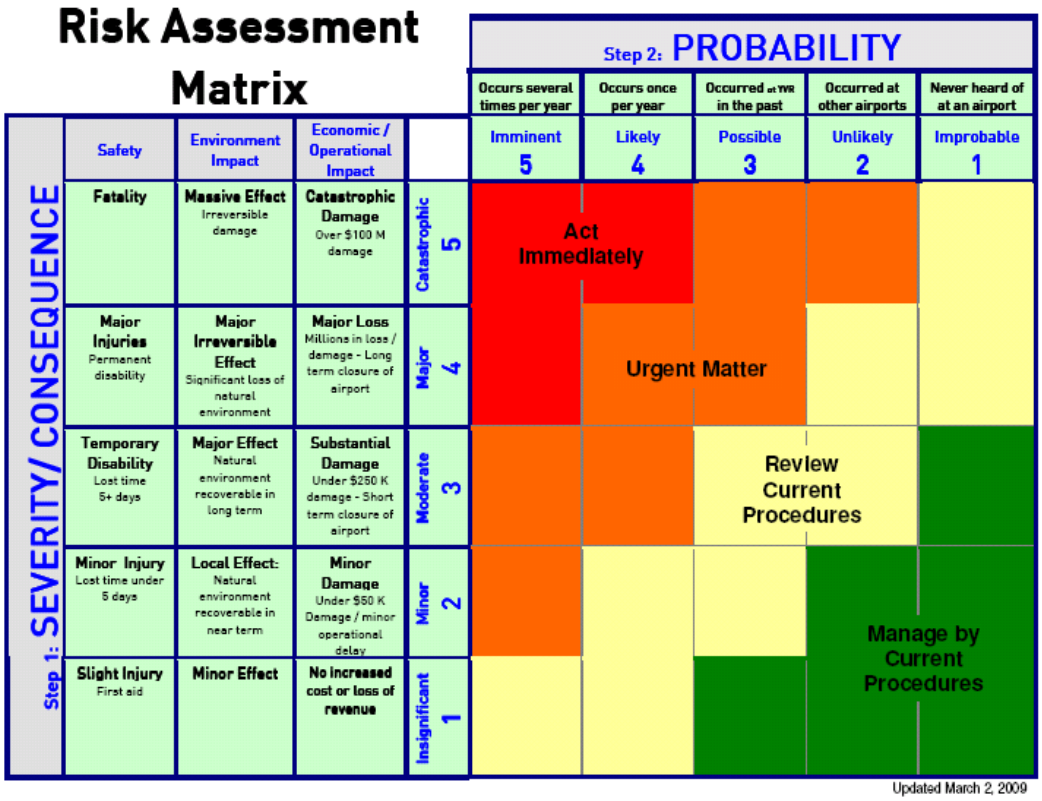
6. **Use personal protective equipment** (e.g., insulated gloves, eye protection, boots, and hard hats)

Step 5: Evaluate for Continual Improvement

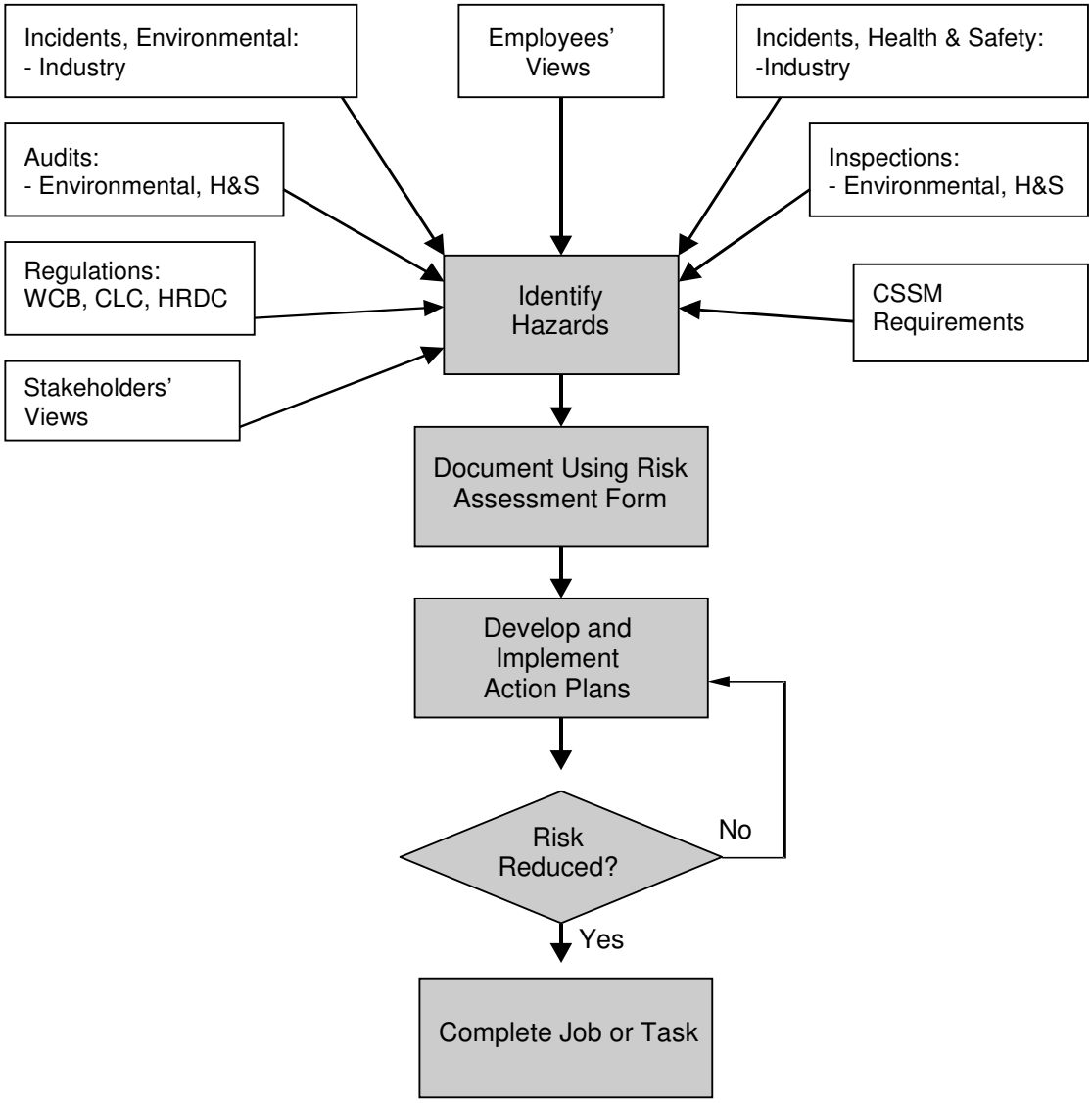
The group takes a step back to review the risks that have been identified and the course of action that has been agreed upon. Revisions to the plan can be made if necessary.

If the control measures seem inadequate or in need of improvement, the group will consider whether a long-term solution or job-specific plan would be appropriate for this task or activity.

Example of a Risk Assessment Matrix



1.3.4 Factors Used to Identify Hazards



1.3.5 Workplace Hazardous Materials Information System

As required by the Workplace Hazardous Materials Information System [WHMIS], each project will implement a program to identify, control, and train workers in the appropriate use of all materials identified under the *Hazardous Products Act* and the *Hazardous Materials Information Review Act* as amended from time to time.

Copies of current Material Safety Data Sheets [MSDS] are required at the workplace before products may be stored and used at the workplace. MSDS will be made available to the Airport Authority, regulatory agencies, or other concerned parties as required.

Storage areas for hazardous materials will be identified and included on site-specific Emergency Response Plans, Fire Safety Plans, and Environmental Management Plans.

All employers will ensure that their workers have received appropriate training and instruction on the use of controlled products, and will take all necessary measures to ensure that use of these products does not create harmful exposure to any other person inside or outside of the workplace.

The Airport Authority reserves the right to recommend alternate products that meet the needs of the specific usage yet are deemed to be more environmentally friendly.

1.3.6 Safety Committee Meetings, Toolbox Talks

Safety Committee and toolbox meetings will be held as required to ensure compliance with *OH&S Regulation* and effective safety management of the project. Copies of meeting minutes will be maintained and posted at the work site, and made available upon request by Airport Authority or other concerned parties. Prompt corrective actions will be taken for any recorded safety issues.

1.3.7 Safety Orientations

All workers and site visitors must view the Airport Authority Construction Safety Orientation video before entering the active work area. They will acknowledge having received this orientation by signing the *Safety Orientation Signature Sheets* [CSSM170]. The Airport Authority will issue orientation cards upon receiving the signed signature sheet.

Each project will develop and provide pre-work site-specific safety orientations for all persons working on or visiting the project. This orientation will provide specific information about site hazards, emergency procedures, safe work practices, and other site-specific or contractor requirements. Workers and visitors will acknowledge receipt of the orientation by signing a *Safety Orientation Signature Sheet* provided by the responsible contractor. Copies of signature sheets will be retained on site for the duration of the project, and will be made available upon request.

1.3.8 Site Safety Inspections

Each project will include inspections as necessary to ensure that site hazards are promptly identified and rectified, and that the CSSM and WorkSafeBC requirements are maintained. Copies of site inspection reports will be maintained on site for inspection by the Airport Authority upon request.

1.3.9 Incident and Accident Investigations

All incidents involving injury requiring medical attention, property damage, or environmental damage will be immediately investigated. All necessary actions will be taken to minimize further injury or loss, with proper notifications made to appropriate parties and regulatory agencies. Airport Authority Construction Safety personnel must be immediately notified of any accident requiring emergency medical response or involving non–construction site personnel.

All accidents will be investigated and documented in a timely fashion. For accidents on Airport Authority Project Management sites, copies of the *Incident Report* will be forwarded to Airport Authority Construction Safety and Airport Authority Project Management within 24 hours of occurrence.

1.3.10 Project Information Board

Each site will establish and maintain a Project Information Board [PIB] at the outside of the main entry route into the project site. The prime contractor will ensure the following information is posted onto the PIB:

- Name and telephone number of prime contractor
- Name of site Superintendent along with regular and emergency contact telephone numbers
- Name of Construction Safety Officer along with regular and emergency contact telephone numbers
- Facility Permit

- Airport Authority *NOP/ Construction Impact Assessment* [CSSM10]
- Construction emergency response program
- Emergency Contact List
- Site-specific risk assessments (formal and ongoing)
- Site-specific Fire Safety Plan
- *Hot Work Permit* [CSSM100], both current and expired
- *Requests for Lockout* [CSSM20], both current and expired
- Notice of requirement for site safety orientations
- Asbestos clearance letters for Domestic Terminal Building [DTB] projects
- Asbestos labelling information for DTB projects
- Notification for visitors to report to site office
- General site precautions—e.g., hard hats, work boots, hearing protection
- Other safety information necessary to provide warnings or understanding to persons entering the site

1.3.11 Reporting Unsafe Conditions, Equipment, and Tools

Every individual has the duty to report unsafe or hazardous conditions, equipment, tools, and work procedures immediately to the Supervisor so that remedial action can be taken to prevent accidents. In addition, the Airport Authority encourages the reporting of any unsafe conditions outside the boundaries of the project, where these conditions may adversely affect the project or normal airport operations.

1.3.12 Housekeeping

Each project will take all necessary actions to ensure that work areas are maintained in a clean and orderly fashion. Contractors are responsible to immediately clean up any public areas impacted by activities originating on the work site.

Airside will be cleaned up immediately and continuously to ensure that debris will not pose a risk to aircraft, ground support services, or personnel. Before leaving the work area, final inspections will be conducted to ensure that no debris or materials are left that could pose a hazard. At the discretion of Airport Operations, final inspections by the Airside Safety Officer may be required before the contractor leaves the work area. The contractor is liable for all costs associated with injury, damage, or operational impacts due to failure to control debris or loose materials from the contractor work area.

Airport Authority reserves the right to suspend any work or activity until terminal or airside areas have been properly cleaned up to the satisfaction of the Airport Authority. All costs incurred resulting from clean-up will be charged to the contractor.

1.3.13 Alcohol and Drugs

No person will sell, possess, consume, or be under the influence of any alcohol or illegal drugs while on the construction site or while en route to the site. Non-compliance will be considered grounds for immediate removal from Airport Authority projects.

1.3.14 Inappropriate or Unacceptable Behaviour

Rowdiness, horseplay, practical jokes, gambling, stealing, sleeping, or fighting have absolutely no place on airport projects and will be considered grounds for surrender of security passes and immediate removal from Airport Authority projects.

1.3.15 Firearms

Conveyance or use of firearms on construction sites is strictly prohibited for any persons except for officials who are lawfully licensed to carry and discharge firearms in performing their duties. All persons carrying firearms onto an aerodrome will be subject to *Aerodrome Security Measures* in this matter.

1.3.16 Smoking

Smoking is strictly prohibited in Airport Authority buildings. Smoking is restricted to designated groundside areas and at least 3 m from any opening, heating, ventilation, and air conditioning [HVAC] intake, or entrance to Airport Authority buildings. Non-compliance will be considered grounds for surrender of security passes and immediate removal from Airport Authority projects.

1.3.17 Explosion and Gas Hazards

No work involving a source of ignition will be attempted near any pipe pit, manhole, open sewer or drain, sewer or drain vents, pipe trenches, enclosed space, gas or combustible fuel line, or any other source of explosive hazards, where there is reason to believe that flammable vapour may be present, until the contractor has submitted a safe work procedure and has received approval from Airport Authority.

1.3.18 Compressed Air

Compressed air will only be used for its intended purpose, and not used for blowing dust or other substances from clothing being worn by workers.

1.3.19 Gas Cylinders

If transported by crane, hoist, or derrick, gas cylinders must be handled in suitable cradle, nets, or skip boxes—never by rope or chain slings. Valve guards will be installed when cylinders are transported or not in use. Under the WorkSafeBC *OH&S Regulation*, gas cylinders must be stored in the upright position and secured against falling, and minimum distances must be maintained between each type of gas.

1.3.20 Explosives

Aerodrome Security Measures prohibit the use, storage, or transportation of explosives into an aerodrome without specific written permission. Contractors must seek approval through the Airport Authority prior to any contemplated use of explosives.

Powder-actuated fastening devices are exempt from this requirement.

1.3.21 Personal Protective Equipment

The Airport Authority will require personal protective equipment to be employed as a last resort to ensure the safety of workers and visitors. Based on the hazards and associated risks that apply to a worksite, the following personal protective measures are required:

Protective Headgear

Protective headgear (approved safety hard hats) is mandatory on the work site.

Protective Footwear

Footwear approved by the Canadian Standards Association is mandatory and must be worn by all persons working on or visiting construction projects.

Eye Protection

All workers and visitors are required to wear industry-approved safety glasses while on the construction site. Face shields must be worn by all workers who are engaged in activities that include grinding, buffing, chipping, torch cutting, cutting concrete, or other activities that may cause facial injury.

Hearing Protection

Employers will develop and implement hearing conservation programs as required to ensure that workers are not exposed to excessive noise levels, and will ensure that all workers receive and maintain hearing tests in accordance with applicable legislation. The use of hearing protection is recommended in any area where, at a short distance, a conversation in a normal voice cannot be heard due to the surrounding noise level (i.e., above 85 dB).

High-Visibility Vests

All personnel working on a construction site, airside, or around mobile equipment are required to wear high-visibility apparel.

1.3.22 Hazardous Materials Management

Hazardous materials such as lead, mercury, PCBs, ozone depleting substances, vermiculite (with asbestos content) are known to have been used in constructing the original Domestic Terminal Building and some of the older outbuildings. If there is reason to believe that construction work on Sea Island will disrupt these hazardous materials, a hazard assessment and exposure control plan is required. Depending on the scope and complexity of the project, full abatement may not be necessary but is a preferred method of management.

All questions related to the location of these materials should be directed to the Project Manager. The Project Manager will arrange through Airport Authority Construction Safety to have an assessment of the area completed using an approved hazardous materials consultant.

If construction activities produce dust containing respirable crystalline silica (silica), including abrasive blasting, masonry, bricklaying, block laying, stone setting, demolition and repair of concrete or masonry structures, and concrete finishing, the work must be conducted in such a way as to eliminate the emissions of dust at the source or reduce the airborne levels of dust so as to ensure worker exposure to silica is eliminated.

1.4 Asbestos Identification and Management

The requirements in this section are waived for all work in the International Terminal Building [ITB], as that building is known to be asbestos free. The Airport Authority has established guidelines, protocols and standards for managing Asbestos as outlined in the *Airport Authority Asbestos Management Program Version 3.*

The Domestic Terminal Building [DTB], South Terminal Building [STB], and other non-public facility support buildings were constructed during a period when asbestos-containing materials [ACMs] were used in numerous construction materials. Since that time, a great deal has been learned about the potential consequences of exposure to airborne asbestos fibres. It is now unacceptable to use such products, and in those buildings that contain asbestos materials, strict management of the asbestos is required. Asbestos-containing materials found in these buildings may include:

- Pipe insulations
- Spray-applied insulations and fireproofing
- Texture coating (especially ceilings)
- Asbestos cement board and pipe
- Drywall filling compounds
- Floor tiles and grouts
- Linoleum
- Patching compounds
- Roofing felts
- Paper jacketing

To ensure that ACMs are properly identified and controlled, all projects undertaken within the DTB, STB, or other identified buildings will be reviewed and approved by the Airport Authority Construction Safety representative before any construction activities start. In general terms, the applicant or designated representative will be required to meet the criteria established in this section.

For the purposes of this section of the manual, *applicant* means any of the following:

- Person or organization requesting a *Facility Permit*
- Designated representative of the *Facility Permit* applicant
- Contractor retained by the applicant or designated representative

1.4.1 Request for Asbestos Clearance

The applicant will complete and forward the *Request for Asbestos Clearance* [CSSM230] to the Airport Authority Construction Safety representative a minimum of five working days prior to the anticipated start of the project. Asbestos clearance letters [ACLs] will be granted based on the scope of work as provided on the request form. Additional ACLs will be required for any change, addition, or alteration to specified scope of work or location.

The following information and documentation will be included:

- Anticipated start date of project
- Estimated duration of project, including phasing schedule as required to show access to additional project areas
- Architectural drawing indicating boundaries of project area
- Mechanical, electrical, or other such drawings as required to identify service chases within the scope of the project work
- Scope of project work—e.g., demolition, renovation, installation of new base building systems such as HVAC, sprinkler, electrical, lighting

1.4.2 Asbestos Information Request

A request for more information about the possible ACM present will be sent to the requestor whenever additional information is needed to complete the asbestos clearance letter. The review process will start upon receipt of all requested information.

1.4.3 Asbestos Management Program Review

Upon receipt of this information, the Airport Authority Construction Safety representative will review Airport Authority records and provide the applicant with a written report on identification and control of ACMs.

Asbestos clearance letters will be provided within five working days after receipt of the *Request for Asbestos Clearance*. Based on the findings of the review, one or more of the following actions may be taken:

1. Administrator Review

If the project areas have **not** been fully inspected the contractor is required to initiate a Hazardous Materials Assessment, conducted by a qualified Environmental Consultant.

2. Remediation of Asbestos-Containing Materials

If ACMs are identified within the project area, and the Airport Authority Construction Safety representative deems that the ACMs may be disturbed during the course of construction, remedial action by the Contractor will be required prior to Clearance. All remediation needs to be conducted by a qualified Abatement Contractor and the work must be monitored by a qualified Environmental Consultant.

3. Control of Asbestos-Containing Materials

ACMs may be present in the work area; however, the scope of work may not require removal. Examples of this are:

- Pipe insulations or elbows on mechanical systems that will not be affected or touched within the scope of the work
- Suspect ACMs contained within structures that will not be disturbed—e.g., pre-cast column covers, building parapets
- Floor tiles and grouts that will not be removed or disturbed during the work

To ensure that ACMs are not inadvertently disturbed by the applicant, the Airport Authority requires that all persons working within the project influence receive asbestos awareness training. (For more information, see *Education and Training* and *Labelling* in this section.)

1.4.4 Asbestos Clearance Letters

Upon completion of the Airport Authority Construction Safety representative review, and subsequent to any remedial actions taken, a Asbestos Clearance Letter will be provided to the applicant.

The asbestos clearance letter will indicate all appropriate restrictions to ensure that existing ACMs are not disturbed. The Airport Authority Construction Safety representative will provide information indicating the location and nature of all ACMs. For each asbestos-containing material listed, the applicant is required to ensure that a formal risk assessment is performed for the scheduled work activities with respect to the ACM hazard.

Some examples of restrictions that an asbestos clearance letter may stipulate include:

- A section of the project area must be cordoned off and protected until ACM inspection or removal has been completed.
- The applicant may proceed with work subject to properly labelling all ACMs within the project area (see *Labelling* in this section).
- That work may proceed until the work could expose or disturb ACMs that are encapsulated, sealed, or otherwise inaccessible. At this point the area will be restricted, and the asbestos abatement contractor will be retained to ensure that proper containment protocols were established prior to accessing suspect areas.

Note: After each area has been cleaned of ACMs, the applicant will ensure that an asbestos clearance letter is obtained from the Administrator before the area is released back to normal construction activities.

Upon receipt of the asbestos clearance letter, the applicant is required to ensure that each worker assigned to the work area has been informed of the restrictions of the asbestos clearance letter and has signed the acknowledgement of information form attached to the clearance letter. Once the applicant has communicated the restrictions of the asbestos clearance letter and all workers have signed the acknowledgement of information form, the applicant may proceed with construction activities, subject to restrictions described above.

1.4.5 Construction Site Labelling Requirements

The Airport Authority is labelling all ACMs within the buildings. However, in some circumstances the applicant may need to affix further labelling to ensure that ACMs are not inadvertently disturbed during the course of construction. Several examples of this are:

- **Floor tiles and grouts.** Some public areas still contain floor tiles and grouts that are identified as ACMs. Under normal operating conditions these materials remain undisturbed. If these areas are within the influence of a construction project, labelling must be affixed to ensure that materials are not disturbed.
- **Pre-cast columns, parapets, and facades.** ACMs may be present behind these structures; however, under normal operating conditions these materials remain undisturbed. If these areas are within the influence of a construction project, labelling must be affixed to ensure that materials are not disturbed.

- **Mechanical systems.** Pipe elbows and insulations, and HVAC joint mastics, are several areas where ACMs may be present. Due to tenant occupancy, enclosure above plaster ceilings, etc., Airport Authority may not have had the opportunity to affix proper labels. If these areas are within the influence of a construction project, labelling must be affixed to ensure that materials are not disturbed.

Applicants are required to label all identified ACMs within the influence of the project using the Airport Authority labelling system.

1.4.6 Labelling

The Airport Authority Construction Safety representative will provide drawings identifying all ACMs within the influence of the project. The applicant will mark ACM locations using the following system:

- **Spot labelling.** The applicant may use sprays, paints, or coloured labels to identify small areas of known or suspect asbestos-containing materials. Generally speaking, spot labelling will be used as a means of advising workers of potential hazards where demolition or access to encapsulated areas are scheduled. (See *Colour-Coding System* in this section for details.)

- **Barrier labelling.** Areas of the project identified in the provisional asbestos clearance letter as restricted will be cordoned off using “Hazard – Asbestos” barrier tape.

  – Pre-cast columns, parapets, or other facades will have “Hazard – Asbestos” barrier tape or labels affixed on all visible sides.

  – Pipe elbows, insulations, and HVAC joint mastics will have “Hazard – Asbestos” labels affixed to each ACM location.

1.4.7 Colour-Coding System

This system will be the standard for all construction activities performed within the building. As many contractors work on multiple projects throughout the airport, consistency of this system is designed to reduce confusion.

Note: Some individuals with colour-blindness may have difficulty distinguishing this colour system. Under these circumstances, contractors may request a variance on this system through the Airport Authority Construction Safety representative

RED: Known location of ACMs. **Do not disturb.**

YELLOW: Caution, ACMs may be present. **Do not disturb.**

GREEN: Area is known to be cleared of ACMs, and work may proceed, or

ACMs have been remediated, and area is now safe for work to proceed.

1.4.8 Education and Training

All persons accessing the construction area must have an understanding of the colour-coding system and its restrictions. Contractors are responsible for ensuring that all workers view the Asbestos Awareness video and acknowledge their understanding by signing the *Safety Orientation Signature Sheet* [CSSM170].

1.4.9 Labelling Information Posting

Each project will post the colour-coding system and applicable restrictions on the Project Information Board, along with copies of *Asbestos Clearance Reports*. A copy of the colour-coding system is available from the Airport Authority Construction Safety representative

1.4.10 Asbestos Abatement

All Asbestos abatement must be coordinated through the Airport Authority Superintendent of Construction Safety (or designate). All abatement work requires that a designated Environmental Consultant (third party) complete:

- A Scope of work,
- Monitoring of the abatement project and
- A Final Visual Assessment

The contractor performing the work will be a recognized, reputable abatement contractor who has attained safety pre-qualification status by the Airport Authority.

- The contractor will provide the Airport Authority Construction Safety representative with written asbestos abatement procedures outlining:
  - Hours and days when the work will be performed

  - Risk factor associated with the removal, and corresponding abatement procedures
  - All other necessary safety precautions associated with the work—e.g., lockout of equipment, confined space, fall protection
  - Detailed list of equipment to be used, including records of DOP testing for High Efficiency Particulate Aerosol [HEPA] devices
  - Instruction to workers on safety procedures, HEPA mask fit-testing, reporting procedures
  - Disposal methods and locations

- Procedures must be submitted five working days prior to the anticipated start of work.
- The contractor must file the WorkSafeBC *Notice of Project – Asbestos*.
- The Airport Authority will verify all necessary pre-contamination visual clearances, ongoing air sampling and analysis, and final inspection and clearances before tear-down of containment areas. The Airport Authority reserves the right to request and require any further actions deemed necessary to ensure abatement is completed to Airport Authority standards.
- The contractor will ensure that all waste manifests are copied to the Airport Authority Construction Safety representative.
- The Airport Authority reserves the right to prohibit the start of any ACM removal until the applicant's abatement contractor has met all aspects of the Airport Authority asbestos management program.

1.5 Construction Emergency Response Plan

1.5.1 Purpose and Scope

Proper planning and preparation will provide effective management of any accident, spill, or disaster, with the objective of ensuring the personal safety of all individuals within the influence of the project and reducing damage to property and the environment.

To accomplish these objectives, **the Airport Authority requires that the prime contractor develop a Construction Emergency Response Plan [CERP] based on the hazards and associated risks identified in a formal site risk assessment for each construction site/area before construction activities start**. A copy of the CERP should be forwarded to the Superintendent of Construction Safety (or designate) and a copy posted on the PIB.

Note: The procedures, standards, or requirements detailed in this section in no way relieve or remove the contractor's obligation under WorkSafeBC Occupational Health and Safety Regulation to have written safe work procedures for the activity addressed herein. The Airport Authority reserves the right to request and require written safe work procedures

The CERP will detail specific responses to the following occurrences:

- Serious injury or fatality
- Fire or explosion
- Hazardous material release or spill
- Threat of insurrection

The CERP will also address risks associated with the project due to:

- Working in remote locations on airside, where response times of emergency services personnel may be increased
- Working inside the terminals, where minor events could have adverse effects on tenants and the general public
- Working in proximity to airside and aircraft, where minor events could have the potential for creating substantially larger events, such as fire, aircraft damage, or flight delays
- Where site access and exit routes change frequently as areas are added to the project or turned over to the Airport Authority or tenant

At the discretion of the Airport Authority Environment Department, a detailed Contractor Environmental Response Plan may be required. See Chapter 4 for more information.

1.5.2 Waivers

At the discretion of the Airport Authority, the requirement for a CERP may be waived if the nature or duration of the project is deemed not to warrant this level

of program. This waiver does not relieve contractors of their responsibilities under existing *Occupational Health and Safety Regulation* respecting emergency procedure requirements in their own occupational health and safety programs, nor relieve them of any other aspects of this manual or any other Airport Authority requirements pertaining to construction. Waivers will be provided in writing, and may be sought from Airport Authority Construction Safety.

1.5.3 Roles and Responsibilities

The **Contractor Project Manager** will ensure that:

- The CERP has been properly developed, documented, and posted conspicuously on the site
- A command structure has been established that identifies the prime contractor “person-in-charge,” and as many alternates as deemed necessary
- The person named as the contractor person-in-charge is knowledgeable about the requirements of the role and is capable of undertaking the CERP duties
- A responsible person is designated to manage the CERP
- Supervisory personnel are aware of their respective roles and responsibilities, and these personnel have received appropriate instruction and training
- All workers receive appropriate instruction in emergency response measures
- All site visitors receive instruction in site emergency procedures
- Workers have appropriate training on emergency equipment
- The CERP is regularly reviewed and updated to reflect any changes in area, environment, or risk factors
- Changes to the CERP are disseminated to all subcontractors, workers, visitors, and the Airport Authority
- On-site drills are conducted as required to ensure that the program is operating effectively

The contractor’s supervisors will ensure that:

- When an event is reported, the situation is immediately assessed and the appropriate response measures are initiated

- The appropriate calls are made to emergency agencies, contractor management, and Airport Authority Operations
- All personnel under their authority are accounted for, and reports are made to the contractor person-in-charge when any of their personnel are not accounted for
- All changes to areas, exit routes, or emergency equipment that could affect the CERP are reported
- All new workers under their supervision receive instruction in the CERP
- All visitors under their area of responsibility receive instruction in the CERP
- All upcoming shutdowns to emergency equipment, egress routes, etc. are reported to the CERP manager
- Emergency equipment is maintained in proper functioning order
- Workers who violate CERP requirements are disciplined

The contractor's workers will ensure that:

- They immediately report any situation or incident that comes under the CERP to the person-in-charge
- If they are unable to report directly, they initiate a response by sounding a site warning device, or asking another worker to initiate the response
- They immediately report the use of any emergency equipment to their supervisor
- They report to the muster area when an evacuation has sounded, and advise their supervisor on the location of any colleagues who have been accounted for
- They abide by the conditions of the CERP

The contractor's Emergency Response Coordinator will:

- Upon notification of an event, immediately assess the scene and initiate the appropriate level of response
- Secure the scene, evacuate personnel as required
- Determine the extent and number of injured persons
- Initiate the notification process as per the CERP

- Liaise with responding agencies
- Coordinate rescue, injury management, firefighting, spill containment efforts until the incident has been resolved, or until relieved by a higher command authority
- Determine whether any persons are unaccounted for, and report this information to rescue personnel
- Document the scene and coordinate the investigation
- Provide written reports to management and other concerned parties

1.5.4 Classification of Emergency

For the purpose of the CERP, three stages, or tiers, of severity are defined:

Level 1: No immediate danger to project, public, property, environment, aircraft. This level includes:

- Single minor injuries
- Small contained fire that can be controlled by site personnel
- Small petroleum or hazardous material spills that would have no immediate adverse effect on persons or property

Level 2: Potential hazard to the project, public, property, environment, aircraft. This level includes:

- Multiple injuries
- Any fire that could spread beyond the immediate vicinity, or beyond the capacity to be immediately controlled by site personnel
- Toxic gas leak, large petroleum spill, or hazardous material spill

Level 3: Definite hazard to project, public, property, environment, aircraft. This level includes:

- Large explosion
- Situation that could create a chain reaction
- Multiple injuries or fatalities
- Structural collapse, cave-in, or property damage

1.5.5 Escalation of Response

An incident may occur where the initial response actions have been unsuccessful in controlling or containing the scene. At this point the contractor must assess the situation and initiate the next level of response. It is generally better to overestimate the severity of a situation at the onset, rather than underestimating the severity or attempting to control a situation that may be beyond the capability of on-site resources. Accordingly, emergency response actions should be initiated based on the highest expected level of severity that each incident could attain.

Upon notification of an event, the contractor person-in-charge will immediately assess the scene and initiate the appropriate response level. If a higher level is initiated, the senior official for that level will have overall command of the scene.

The following page summarizes the different levels of emergency, response, and command structure.

Escalation of Response

Incident Severity	Response Team	Incident Command
Level 3 – Major Event • Catastrophic or potentially catastrophic incident • Employees or public at risk • Fatality • Potential for serious damage to facilities, equipment, or the environment • Flight operations compromised • Substantial outside emergency response agencies required—Richmond Fire-Rescue [RFR], BC Ambulance Service [BCAS], Royal Canadian Mounted Police [RCMP] • Government agency response • Need to establish unified command structure • Media interest is high • Contractor and Airport Authority reputation may be at risk	**CONTRACTOR EMERGENCY RESPONSE TEAM** and **AIRPORT AUTHORITY RESPONSE PERSONNEL** and **EMERGENCY RESPONSE AGENCIES** **OUTSIDE CONTRACTORS** **KEY GOVERNMENT AGENCIES**	**LEAD AGENCY INCIDENT COMMANDER (Unified Command)** and **SENIOR FIRE OFFICIAL** and **AIRPORT AUTHORITY ON-SCENE PERSONNEL,** plus **CONTRACTOR PERSON-IN-CHARGE**
Level 2 – Moderate to Serious • Moderate to serious accident • Multiple injuries, uncontrolled fire, toxic release, or large hydrocarbon release • Beyond the capability of contractor emergency response forces • Outside agencies required to respond—RFR, BCAS, RCMP • May place operational areas or aircraft at risk • Media attention	**CONTRACTOR ERT** and **AIRPORT AUTHORITY RESPONSE PERSONNEL** plus **OTHER OUTSIDE AGENCIES OR CONTRACTORS**	**AIRPORT AUTHORITY INCIDENT COMMANDER** and **SENIOR OUTSIDE AGENCY OFFICIAL** and **CONTRACTOR PERSON-IN-CHARGE**
Level 1 – Minor • Minor injury, small contained fire • Small or minor hazardous material leak/spill • No risk to employees, public, facilities operational areas, or the environment • Easily contained/recovered • Minimal or no government or outside agency involvement • No media interest	**CONTRACTOR PERSONNEL** (On-site personnel)	**CONTRACTOR PERSON-IN-CHARGE**

1.5.6 Identification of Emergency

A situation that has the potential to be classified and treated as an emergency may become apparent in a number of different ways, including the following:

- An accident has occurred in which workers have sustained injuries or died
- An accident has occurred involving structural collapse or significant property damage
- Automated warning systems have been activated in the existing facilities as a result of fire, smoke, heat, or gas detection
- A release/spill of hazardous materials has occurred that may be harmful to persons or cause serious environmental damage
- A verbal warning has been given by an individual who is aware of a major safety problem
- An evacuation signal has been initiated within the construction area by a person who is aware of a major safety concern
- The contractor has been advised by responsible Airport Authority personnel that an event has or will occur that could affect the safety of individuals on the construction project

1.5.7 Notification (Emergency Contacts List)

Each CERP will have an Emergency Contacts List [ECL] that will include a list of all persons and agencies that may require notification of an event. This information will be prominently displayed on the site Project Information Board and near site telephones. The ECL will be updated as required to reflect current command structures and corresponding telephone numbers.

The following page demonstrates a sample of the minimum requirements for an Emergency Contacts List.

EMERGENCY CONTACTS LIST

EMERGENCY AGENCIES	
Richmond Fire-Rescue (24-hour response)	**911**
BC Ambulance Service (24-hour response)	**911**
RCMP (24-hour response)	**911**
Airport Authority Operations and Maintenance (24-hour response)	**604-207-7022**
Poison Control Centre	**604-682-5050**
Terasen Gas	**1-800-663-9911**
BC Hydro (emergencies in Richmond)	**1-888-769-3766**
AIRPORT AUTHORITY PERSONNEL	
Project Manager	
Manager Health & Safety	**604-303-4844**
Superintendent Construction Safety	**604-276-6040**
Asbestos Management Program Administrator	**604-276-6040**
Environment Emergency Spill Reporting Pager	**604-844-4095**
Airside Construction Coordinator	**604-828-0589**
REGULATORY AGENCIES	
Environment Canada (24-hour response)	**604-666-6100**
Canadian Coast Guard (24-hour response)	**604-666-6011**
Metro Vancouver (24-hour response)	**604-444-8401**
WorkSafeBC (Emergency & Accident) Monday–Friday 8:30–4:30	**1-888-621-7233**
WorkSafeBC (Emergency & Accident) After Hours (Richmond)	**1-866-922-4357**
INDUSTRIAL AND SUPPORT	
Richmond General Hospital – Emergency	**604-244-5151**
KEY CONTRACTOR PERSONNEL (specific to each project)	
Project Manager	
Site Superintendent	
Emergency Response Coordinator	
Site Safety Coordinator	

1.5.8 General Evacuation Plan

A general evacuation plan will be developed and posted for each site. The objectives of the plan are to:

- Provide for a quick, safe evacuation of all employees in the event of an emergency
- Establish the necessary teams and equipment required to respond to the emergency
- Account for all personnel at the assembly points

All workers will, when notified, immediately shut down equipment and proceed in an orderly manner to the designated evacuation point or assembly area, where head counts will be taken by the supervisors. Workers will not return to the site until proper authorization has been received.

The evacuation plan will include:

- A checklist for securing any equipment or work in progress at the time of the evacuation
- A list of assembly areas, including alternates, to which employees are to go in the event of an evacuation signal
- Maps showing assembly areas and routes
- A system of accounting for all employees at assembly areas
- Criteria for confirming the safety of the area before allowing workers to return to work
- A system of signals for “evacuation,” “test,” and “all-clear”
- A plan for practicing evacuations and testing the suitability of the accounting system
- A plan for frequently checking the availability of emergency equipment

The evacuation plan will be discussed at the site safety orientation sessions and the site evacuation plans will be posted in conspicuous places around the site and on the Project Information Board.

1.5.9 Emergency Equipment

An itemized list of equipment—including equipment locations—that could be used in the event of an emergency will be prepared, updated, and posted on the Project Information Board and will be made available to:

- Airport Authority Operations
- Richmond Fire-Rescue Hall No. 1
- BC Ambulance Service
- Other Airport Authority departments or external agencies as requested

The following categories will be included:

- First aid equipment and attendants
- Firefighting equipment
- Equipment available for rescue, evacuation, or spill response
- Radio equipment

1.6 Fire Safety

The Airport Authority expects that every reasonable and prudent effort will be taken to prevent or minimize the risk of fire. The safety of all persons, property, environment, and equipment will have the highest priority.

This program encompasses hot work performed inside the terminal buildings on groundside and airside. At the discretion of the Airport Authority, fire safety requirements may be imposed on tenant leasehold space, including aprons, where the risk of fire is deemed to be detrimental to the normal functioning of the airport.

Requirements under the program will vary depending on the location, duration, and potential hazards identified during the site risk assessment based on the work being conducted. Hot work may only be done with the express written consent of Airport Authority Construction Safety personnel and will be subject to compliance with components of the program.

1.6.1 Hot Work Definition

Carrying out any of the following activities with any of the following equipment constitutes *hot work*:

- Welding, cutting, or soldering employing open flame
- Arc welding or similar processes creating hot byproducts
- Equipment or processes that create spark or flame
- Any equipment that uses combustible fuels and has an open flame, and that is not tied into the building fire systems; several examples are propane heaters, hot water tanks, and barbeques
- Any other activity or equipment that could generate a heat source sufficient to cause combustion

1.6.2 Fire Safety Hazard Assessment

Prior to any hot work proceeding, the contractor must complete and submit a *Hot Work Permit* [CSSM100] (which includes a *Fire Safety Hazard Assessment*) to Airport Authority Construction Safety personnel (fax 604-232-6258) for review and approval. A *Hot Work Permit* must be submitted a minimum of five working days in advance of the start of hot work activities. A formal risk assessment may also be required by the Airport Authority.

Construction Safety personnel will review the submissions and provide written instructions on the fire protection measures required for the intended work.

1.6.3 Fire Safety Airside

Airside areas are vital to the movement of aircraft and equipment, and as such hot work will be restricted so as not to unduly influence normal airside operations. Specific time frames may be stipulated in which the work must be initiated and completed, and the area restored for use by aircraft. Contractors should contact the Airport Authority Project Manager for Airport Authority projects, or the Airport Authority Superintendent Construction Safety for tenant projects, a minimum of five working days prior to the anticipated start of hot work to determine approved work times.

Contractors are advised that weather conditions may impact hot work, even after the necessary approvals have been granted by the Airport Authority. High winds or low-visibility conditions may necessitate the temporary suspension of hot work until weather conditions improve.

Hot Work Restrictions – Airside

Contractors are cautioned to pay careful attention to aircraft fuelling. In some cases, both wings of the aircraft will receive fuel, either from a tanker truck or the underground fuelling system. Ensure that the fuel delivery vehicle has completed both wings before starting hot work.

The following restrictions apply for hot work on airside:

- No hot work may be done when an aircraft is at an adjacent gate, or within 300 ft of the work area, and is being fuelled.
- No hot work may be done within 100 ft of a parked, unattended aircraft.
- No hot work may be done within 100 ft of a fuel truck. Fuel trucks have priority when waiting to fuel an aircraft.
- No hot work may be done in proximity to airport workers or equipment until sufficient safeguards are in place to ensure that hot work will not adversely affect the ability of others to perform their duties.
- At the discretion of the Airport Authority, safe working distances may be increased if high winds are deemed to be a factor.

1.6.4 Fire Safety in Terminals

Upon review of the *Hot Work Permit* hazard assessment, the Airport Authority may require that specific conditions be met before authorizing shutdowns. Cost and coordination of stipulated conditions will be the responsibility of the contractor requesting the shutdown. Conditions *may* include:

- Temporary installation of fire warning and suppression systems will be installed to mitigate any potential risks associated with the shutdowns
- Fire watch services will be retained to monitor the building, area, or structure for the duration of the system shutdowns
- The work will be performed during periods of low occupancy of the buildings, generally between 2300 to 0600 hours

Contractors will be advised in writing of the relevant requirements and authorizations. Contractors are responsible for submitting all necessary *Requests for Lockout* [CSSM20] required to facilitate shutdowns.

Watch Monitor – Terminal Occupied Areas

Where circumstances require the shutdown of fire safety systems in occupied portions of the terminal buildings, the Airport Authority will require the contractor to retain and pay for the services of a Fire Watch Monitor for the express purpose of conducting regular inspections of the areas of the terminals affected by the shutdown. The Fire Watch Monitor must have appropriate training and instruction to properly carry out the specified duties. The Airport Authority reserves the right to stipulate the personnel contracted to perform this work. The Airport Authority approved airside escort is currently authorized to perform fire watch services in the terminal buildings.

1.6.5 Occupied Areas

Where a portion of the building that is undergoing construction, demolition, or renovation is continuing to be occupied, measures must be taken to protect the occupied areas from the construction areas.

Where fire suppression and notification systems are to remain operational, fire separations are maintained, and hot work procedures are followed, National Fire Code sentence 5.6.1.14.(1) requiring the construction or demolition area to be separated from the occupied areas by a one-hour fire separation does not apply. Alternatively, a construction Fire Safety Plan must address the approach and be reviewed as part of the Facility Permit process.

Fire Separations

The existing floor-to-floor fire separations, as well as the separations around exit stairs, must be maintained at all times during construction. Where there is coring or other penetrations through the fire separations, these must not be left open for more than 8 hours. They will be either filled with mineral wool or have a temporary drywall patch applied.

Doors forming part of a fire separation must be maintained in place and latched closed during construction.

Larger openings to the fire separations where it is not feasible to maintain the fire separation as outlined above must be addressed as part of the Facility Permit application and design documents.

Exiting

The exit system serving the occupied area must be maintained.

Where exits will be blocked or decommissioned for extended periods, these must be addressed as part of the Facility Permit stage and design documents.

Fire Watch

Where a fire watch is established, it must extend throughout the construction or demolition site as well as the areas outside the construction or demotion area affected by any shutdowns, with tour intervals not longer than one hour. Facilities must be provided for the watcher to communicate with the fire department. A log of the fire watch tours must be maintained and available for inspection.

1.6.6 Fire Safety Plans

According to the hazard assessment and risk assessment review, the contractor is required to develop, post, and update Fire Safety Plans, which will include:

- Designation and organization of site personnel to carry out fire safety duties, including a fire watch service if applicable
- Architectural drawing (or equivalent) defining the boundaries of the project area
- Location of active fire hydrants and hose cabinets within the project
- Location of active hydrants and hose cabinets within 100 m of the perimeter of the project
- Primary and secondary exit routes from any hoarded area, buildings, or structures, along with the primary and secondary rally points
- Location of first aid facilities, telephones, and portable fire extinguishers within the project area
- Location of the fire department access point for the construction area
- Location of any flammable or hazardous material storage areas, along with locations of Material Safety Data Sheets for the materials
- Emergency procedures to be followed in the event of a fire, including:
  - Sounding the alarm
  - Notifying the fire department
  - Instructing site personnel on the procedures to follow when the alarm sounds
  - Firefighting procedures

- Any measures required by section 1.5, *Construction Emergency Response Plan*, of this manual to address fire safety of the occupied areas
- Maintenance procedures for firefighting facilities

Updating Plans

Fire Safety Plans will be updated as required to reflect changes to the following:

- Locations of portable fire extinguishers, flammable material storage areas, telephones, or rally points
- Changes to active fire hydrants or hose cabinets
- Changes to building layout where exit routes are altered
- The addition of floors, areas, or other structures that become part of the overall project site

1.6.7 Firefighting Equipment

The amount and types of firefighting equipment will vary from one construction site to another. In all cases, the minimum equipment will be as follows:

- Adequate fire extinguishers will be located inside entrances to every building
- Adequate fire extinguishers will be located in tanks or buildings under construction
- Adequate fire extinguishers will be located at welding and cutting areas, tar pot operation areas, or other areas specified by the Airport Authority
- Any firefighting equipment specified on work permits
- Sand or water pails where available

In all cases, the fire equipment will only be used for its manufactured purpose and will not be moved without authorization except in an emergency.

1.6.8 Permits and Authorizations

Hot Work Permit [CSSM100]

Authorization may be obtained through Airport Authority Construction Safety personnel. Hot work requests must be submitted a minimum of five working days prior to the anticipated start of the work. Copies of permits must be visibly displayed at the hot work location or on the Project Information Board.

Authorization for Shutdown of Fire Safety Systems

Contractors will be required to provide written requests before shutting down building fire safety systems.

All fire safety system shutdowns are subject to the requirements detailed in section 1.9, Lockouts. Contractors should contact Airport Authority Project Managers for Airport Authority projects, or the Airport Authority Engineering Services Department for tenant projects.

Projects that do not have a fire separation between an occupied portion of the building and the construction area and that will require the sprinkler system to be shut down for more than 8 hours must address this at the Facility Permit stage.

1.6.9 Hot Work Procedures and Monitoring

The following requirements apply to all hot work:

- Persons performing work are properly trained and qualified.
- Work area is clear of flammable materials.
- Combustible walls are adequately protected by fire blankets, metal, or other protective materials.
- Combustible materials that cannot be moved are adequately protected.
- Fire extinguishers are present at work area.
- Appropriate personal protective equipment is worn and used by all workers.
- Fire Watch Monitor is present at the work area, and not engaged in any activities other than fire watch duties.
- Where required, flash shields or other adequate protective devices are used to prevent harmful exposure to persons within the influence of the work.

- Once hot work is completed, the area will be inspected to ensure no lingering embers or hot spots remain.
- Between 15 and 30 minutes after hot work is completed, the area will be re-inspected to ensure that no hot zones remain.
- For all airside work, Airport Authority Operations will be notified prior to starting, and upon completion of, all hot work.

1.6.10 Fire Prevention and Training

All workers must receive instruction on the relevant fire prevention rules and regulations for each area where hot work will occur. Locations of firefighting equipment must be identified, well marked, and maintained to provide easy and quick access. Procedures to follow in the event of a fire will be posted on the Project Information Board.

Persons performing fire watch must receive proper instruction on the use of portable fire extinguishers, and will be trained in the operation of hydrants, hose cabinets, and stations if this equipment constitutes part of the firefighting methods employed on the construction site.

1.6.11 General Precautions and Requirements

The following general precautions and requirements apply to hot work:

- All projects inside the terminals that are in excess of 2,000 ft^2 must have both a primary and secondary fire exit door and route.
- Each construction site will implement required smoking restrictions.
- Halogen lights will not be placed within 2 m of any combustible material, and will be turned off at the end of each shift.
- Open flame space heaters are prohibited inside the terminal building. Electric space heaters will be equipped with, or plugged into, a GFCI outlet.
- All construction and office areas will be kept clean.
- All rubbish and papers will be cleared daily.
- All rags, waste, etc. soiled by paint, oil, or cleaning agents will be placed in tightly closed containers and will be disposed of daily.
- Any leakage or spillage of hydrocarbons will be immediately cleaned and the cause corrected.

- All electrical devices will be maintained in proper working order.

1.6.12 Reporting of Incidents

All fires, regardless of size, will be promptly reported to 911 and Operations. An investigation will be conducted to determine the cause of the fire, along with recommendations for adequate measures to prevent a reoccurrence. The CSSM *Investigation Report [CSSM130]* will be completed and forwarded to Airport Authority Construction Safety personnel within 24 hours of occurrence.

1.6.13 Waivers

At the discretion of the Airport Authority, some components of this program may be waived if the risk of fire resulting from the hot work is such that the implementation of the component is unwarranted. Contractors should consult with the Airport Authority Project Manager or Construction Safety personnel for confirmation of required components.

Waivers may be granted in circumstances where the hazard assessment and subsequent protective measures have previously been determined through the Facility Permit process. Waivers may also be granted when an existing fire safety program is already in place through a base building contractor, in which case all other contractors will follow this program.

Waivers will be provided in writing, itemizing which components of the program may be waived. Under no circumstance will the granting of a waiver negate the contractor's responsibility to follow all other aspects of the program.

1.7 Indoor Environmental Quality

1.7.1 Purpose and Scope

To ensure that construction activities do not have an adverse effect on tenants, passengers, or the general public, the Airport Authority has established the following indoor environmental quality [IEQ] requirements as the minimum requirements for all work performed inside the terminals. Applicants, their designated representatives, or contractors will meet these requirements to prevent the release of potentially harmful emissions or substances into occupied or public environments.

1.7.2 Indoor Environmental Quality Permissible Concentrations

Permissible concentrations for indoor environmental quality are as follows:

- Total particulate concentrations: 150 µg/m3
- Respirable particulate concentrations: 100 µg/m3
- Fibre in air concentrations: 0.02 f/cc, regardless of fibre type
- Total volatile organic compounds [VOC]: 5 ppm
- Specific VOC (determined by charcoal tube sampling): 10% of the American Conference of Governmental Industrial Hygienists Threshold Limit Values (ACGIH TLV) booklet as amended from time to time

Occupational air quality maximum allowable limits will not exceed the parameters established by the ACGIH TLV booklet as amended from time to time.

If the specified numbers are exceeded, additional investigation and corrective action will be required before work can continue.

1.8 Containment and Hoarding Requirements

Applicants, designated representatives, or contractors must complete the Airport Authority *CSSM10 NOP/ Construction Impact Assessment* for review and approval prior to the start of any construction activities. Airport Authority Construction Safety personnel will review the assessment and provide written instructions on the appropriate containment requirements.

The *CSSM10 NOP/ Construction Impact Assessment* must be submitted to Airport Authority Construction Safety a minimum of five working days prior to the start of site activities.

1.8.1 Projects Requiring Full Containment

Projects require full containment as follows:

- Any demolition of existing walls, ceilings, flooring, building support systems, or operational equipment
- When the following processes are employed: finishing gypsum wallboard, concrete cutting or placement, applying firesprays, installing insulation, or when structural welding or soil penetration is required
- Where materials used contain toxins or carcinogens at levels where uncontrolled exposure could result in harmful effects
- Where there is the potential for disturbing existing fire retardant sprayed-on materials
- Where, at the discretion of the Airport Authority, full containment is deemed necessary to prevent the unwarranted escape of potentially hazardous substances, emissions, or processes

Full Containment Requirements

Requirements for full containment include:

- Construction will be permitted only after establishment of physical containment of the construction site, blanking, rerouting, or locking out of building HVAC systems from the construction area, and installation of negative airflow systems to exhaust contaminated air from the construction area. Contractors should contact the Airport Authority Project Manager for Airport Authority projects, or Engineering Services for tenant projects, to obtain details and specifications for HVAC requirements.
- Wooden hoarding will be sealed at each joint. Openings between hoarding and the underside of ceilings will be sealed with white plastic and taped to ceilings and hoarding.
- All exit points from the construction site to public or occupied interior areas will have barrier vestibules installed to block migration of pollutants. All exterior doors from barrier vestibules will be equipped with self-closing devices and appropriate signage indicating “Construction Area, Authorized Access Only.” All entry/exit points are required to open into the construction site.
- When the work requires openings through the suspended ceilings, containment barriers will be established as required to prevent migration of pollutants within the ceiling spaces or plenums.

- All mechanical, HVAC, electrical, and electronic access routes (chases), building systems, and subsystems (baglines, elevator shafts, etc.) will be sealed to prevent migration of pollutants.

- Negative airflow systems will incorporate a HEPA filtering system on all air being discharged from the construction site. Negative airflow systems will provide at least four complete air changes per hour differential between the supply and exhaust air. At the discretion of the Airport Authority, HEPA filters on the negative airflow systems may be waived when air is discharged directly to outdoors and other effective means of controlling particulate emissions are in place.

- At the discretion of the Airport Authority, charcoal filtering of negative airflow emissions may be stipulated in circumstances where odours from construction products or processes could migrate into occupied areas.

- The Airport Authority reserves the right to stipulate specific contractors for the purpose of establishing site containment.

- Daily inspections of the containment barriers are to be performed by the contractor or designated representative to ensure barriers remain intact. Any deficiencies in the barriers will be immediately rectified.

- Air quality testing may be requested by the Airport Authority after initial establishment of the containment area, and as required throughout the construction process to demonstrate the ongoing effectiveness of containment procedures.

- Air quality testing will be performed by an accredited individual or an independent consultant retained by the applicant or designated representative. Records of test results will be maintained at the construction site for the duration of the project. These records must be available for inspection by the Airport Authority, provincial and federal regulatory agencies, or other concerned parties.

- At the discretion of the Airport Authority, the applicant may be required to install dust-filtering media on all air diffusers supplied by the ventilation systems within the influence of the construction project.

- Contractors working inside of containment areas are expected to perform regular and ongoing housekeeping to reduce the build-up of pollutants.

- MSDS will be maintained at the construction site for all Workplace Hazardous Materials Information System [WHMIS]-controlled products. Wherever possible, consideration should be given to the use of environmentally friendly products.

- MSDS will be available for reference by the Airport Authority, provincial and federal regulatory agencies, or other concerned parties. The Airport Authority reserves the right to request the use of acceptable alternate products that contain less harmful materials or human toxins or carcinogens.
- At the discretion of the Airport Authority, charcoal filtering of exhaust air may be stipulated to reduce odours.
- Prior to the removal of any containment barriers, air clearance testing may be stipulated to demonstrate that the occupational environmental levels are within the Airport Authority acceptable established levels for occupied or public environments.

1.8.2 Projects Requiring Local Containment

Projects require local containment as follows:

- Short-duration projects, where the work does not require demolition or other dust- and fibre-generating processes
- When the work is in public areas or corridors that must remain operational
- Where establishment of containment barriers is physically impossible due to location
- Where the work is cosmetic, with little or no potential for using products containing human toxins or carcinogens at levels where ambient exposure could result in harmful health effects
- Where the work is limited to modifications of mechanical, electrical, electronic, or building systems where the potential for exposure from harmful materials is minimal
- When a project is undertaken in a location where exterior roll-up doors are part of the project site and are required to be maintained to provide access to other tenants
- Where local mechanical ventilation is deemed adequate to capture or dissipate fugitive emissions
- Where hot work is being performed in areas that are not fully contained
- Where, at the discretion of the Airport Authority, full containment procedures are deemed unnecessary

Local Containment Requirements

Requirements for local containment include:

- Work involving removal of ceiling tiles from public or occupied areas will be subject to approval by the Airport Authority. All ceiling tiles will be replaced, and the surrounding area satisfactorily cleaned, prior to leaving the work area. Any ceiling tiles that are cut or damaged will be over-sealed with plastic and taped to the surrounding T-bar grid. Local mechanical ventilation will be used to remove or dissipate any fugitive fumes from the construction processes.
- Local HEPA filtering and exhaust devices will be used to remove any potentially harmful substances or emissions from the work area and adjacent occupied or public spaces.
- MSDS will be maintained at the area for all WHMIS-controlled products. Wherever possible, consideration should be given to the use of environmentally friendly products.
- MSDS will be available for reference by the Airport Authority, provincial or federal regulatory agencies, or other concerned parties. The Airport Authority reserves the right to request the use of acceptable alternate products that contain less harmful materials, human toxins, or carcinogens.
- When WHMIS-controlled substances are being used, air quality testing will be performed to ensure that the work is not generating any harmful emissions or byproducts above established levels.
- The work area will be thoroughly cleaned to the satisfaction of the Airport Authority, during and after each work period or day, before being deemed safe for occupancy.
- The Airport Authority reserves the right to restrict work in public areas to certain time periods when the areas can be closed or vacated during the work.

1.9 Lockouts

The Airport Authority expects that:

- All precautions will be taken to ensure that workers are not exposed to hazards resulting from work on equipment or energy sources
- Equipment is adequately protected against damage

- Normal operations of the airport are not unduly influenced as a result of equipment or system shutdowns

Note: The procedures, standards, or requirements detailed in this section in no way relieve or remove the contractor's obligation under WorkSafeBC *Occupational Health and Safety Regulation* to have written safe work procedures for the activity addressed herein. The Airport Authority reserves the right to request and require written safe work procedures from the contractor that confirm compliance with applicable regulations.

1.9.1 Lockout Types and Definitions

The Airport Authority defines two distinct lockout categories: *contractor lockout* and *construction lockout*. Contractors are responsible to ensure that the applicable procedures are understood and followed. For purposes of clarification, the following definitions are provided.

Contractor Lockout (Under Control of General/Site Contractor)

Contractor lockout procedures will be in effect for all systems and equipment installed during the course of construction or renovation. These procedures will be in effect until the systems and equipment have been green-tagged and accepted by the owner (see section 1.9.3, *Contractor Lockout Procedures*.)

Green Tagging and Owner Acceptance

Green-tagging is the process used to turn over completed systems and equipment to the owner as described in the *Turnover Procedures Manual*. At completion of installation, the Turnover Package will be reviewed and if accepted, the green (acceptance) tags will be signed and attached to all equipment or strategically located in the area.

Construction Lockout (Under Control of Owner)

All systems and equipment under the control of the owner will be subject to *construction lockout* requirements. Once a piece of equipment has been green-tagged [owner accepted], the contractor lockout procedure will no longer be employed. The owner's construction lockout procedure must then be followed. The only exception is when the owner removes the green tag and places the equipment back into the contractor's control for further work and repairs. When this occurs, the contractor lockout procedure will again be implemented (see sections 1.9.4, *Coordination of Construction Lockout*, and 1.9.5, *Construction Lockout Requirements*).

Note: Construction lockouts require submission of all mandatory documentation a minimum of five working days prior to the requested start date for the lockout.

1.9.2 General Lockout Requirements

Lockout requirements come into effect when a system or piece of equipment represents a potential hazard to life and property, and apply to **all energy sources**—i.e., compressed air, hydraulics, steam, gravity, electricity, pipelines, and vessels.

The following procedure sets out the necessary action to be taken to perform a lockout in a safe manner. These requirements are intended to supplement but not replace contractor requirements set out by the WorkSafeBC *Occupational Health and Safety Regulation* or Canada Labour Code Part II, *Occupational Health and Safety.*

When circumstances require the application of lockout procedures, the isolation device will be secured in the inoperative position using of scissors and locks. The locks will be marked to identify the person applying them.

Each lock must be accompanied by a lockout tag indicating the following:

- Name of the worker
- Worker's employer
- Worker supervisor's name and contact information
- Date the lockout was established
- Contact information for the worker

Tags must be removed and the lock removed when the lockout is completed.

Locks issued to an individual worker will be operable only by that worker's key and by a master key for emergency use, which will be securely kept by a contractor management delegate. Combination locks may not be used under any circumstances.

It is imperative that all workers using the lockout system have locks suitably identified to indicate the individual's name and the employer. The contractor must maintain contact arrangements if the need arises to have the lock removed. A log

book must be maintained showing the lock number and the worker to whom it was issued.

Each worker protected by a lockout of equipment will ensure that the equipment will not start before work begins on the unit or its associated parts.

Lock Removal by Others

Contractors will have written procedures detailing the steps that will be taken if the need arises to remove a person's lock. The following information will not replace contractor requirements for written procedures.

- The personal lock has been positively identified
- All responsible efforts have been made to contact the worker who placed the lock and have the worker return and remove the lock
- If the worker cannot be contacted or is incapable of removing the lock, the management delegate must ensure that no other workers will be endangered if the lock is removed and that no process or machinery will be damaged
- Lock removal should be done with the master key, cutting the lock as a last resort

1.9.3 Contractor Lockout Procedures

Contractor lockout procedures include:

- No construction personnel may work on any equipment that represents a safety hazard unless that equipment is properly locked out.
- Based on risk assessment of the activity, the contractor supervisors will determine which equipment needs to be locked out before proceeding with the work.
- On complex installations, the electrical or mechanical contractor in each area will designate a responsible employee to assist all other trades in locating the necessary switches, drives, or valves to be locked out. The designated employee of the electrical or mechanical contractor in each area will physically isolate the equipment before others install their locks and tags.
- The supervisor responsible for personnel working on the equipment will install a scissor and lock on the isolating device after ensuring that the equipment is isolated by whatever means necessary—e.g., local jog button, tell-tales, etc.

- All construction personnel who will be working on equipment are required to place their own lock and tag on the isolation device or scissor.
- When the work is completed and after all personal locks have been removed, the supervisor will do a final check of the equipment to ensure it is safe to operate before proceeding with clearing of the lockout.
- Employees must remove their personal locks and tags when they leave the work site or are no longer working on the equipment. Equipment locks and tags will be used when the equipment must remain locked out; however, no workers may work on equipment without first applying their own personal lock.
- If the worker has left the site (quit, fired, or injured), the worker's personal lock must be removed from service until the keys are recovered.
- No personnel will remove a personal lock other than their own. *Certain circumstances may require that a lock be removed by another person, see Lock removal by Others procedure above.*
- A master key for all personal locks will be kept in a secure location and will only be used by a responsible management designate.

1.9.4 Coordination of Construction Lockout

To ensure that the equipment being locked out will not adversely affect operational systems or equipment, contractors must complete and submit the *Request for Lockout* package of forms to the Airport Authority Project Manager for Airport Authority projects, or Engineering Services for tenant projects. In many cases, coordination with operating personnel will be necessary (e.g., to lock out an HVAC system that services many areas, including some that are the owner's and some areas that are still under construction). See sections *Request for Lockout* and *Multiple Lockout Points* for more details.

A *Request for Lockout* will be given scheduling approval when the application has been reviewed and conditionally approved. On the day of the lockout (a minimum of 72 hours later), approval to proceed with the lockout will be given by the On-Duty Maintenance Manager subject to all (day-of) operational requirements having been met and when any mitigating measures required by the conditional approval have been implemented.

1.9.5 Construction Lockout Requirements

Systems or equipment under the control of the Airport Authority will be locked out according to these construction lockout procedures. In circumstances where construction projects require lockout of operational systems, the Airport Authority

Project Manager will ensure coordination between and compliance with construction lockout and owner lockout procedures.

Penalties

Non-compliance with these lockout procedures can result in penalties being applied to either the on-site contractor representative or the company involved.

General Construction Lockout Requirements

Lockout requirements come into effect when a system, process, or piece of equipment represents a potential hazard to life and property, and apply to all energy sources—e.g., compressed air, hydraulics, steam, suspended (stored), electricity, pipelines, and vessels.

> Note: The information in this section does not replace the contractor's requirements under WorkSafeBC *Occupational Health and Safety Regulation* or Canada Labour Code Part II, *Occupational Health and Safety*.

The following general lockout requirements apply for all lockouts:

- No personnel may work on any equipment that represents a safety hazard unless that equipment is properly locked out.

- Each contractor performing lockout will have properly documented lockout procedures available for reference by workers and the Airport Authority. Workers performing lockout will have received appropriate training in contractor lockout procedures.

- When circumstances require the application of lockout procedures, the isolation device will be secured in the inoperative position using scissors and locks. Accompanying the locks will be tags identifying the following:

  - Worker applying the lock
  - Name of the worker's employer
  - Contact phone number
  - Date of the lockout
  - Employer supervisor's name and contact number

- Locks issued to an individual worker will be operable by that worker's key and by a master key for emergency use, which will be securely kept by a contractor management delegate. Combination locks will not be used under any circumstances.

- The contractor must maintain contact arrangements if the need arises to have the lock removed. A log book will be maintained showing the lock number and the person to whom it is issued.

- Each worker protected by a lockout on equipment will ensure that the equipment will not start up before work begins on the unit or its associated parts.

- Airport Authority personnel may be required to provide access to the lockout location. These persons are only responsible to ensure that other equipment is not affected during the lockout process. Airport Authority personnel will not establish a lockout on behalf of a contractor, place their locks on any equipment, or accept any responsibility for the subsequent actions or quality of workmanship of the requestor.

- Airport Authority personnel may be required to initiate the lockout on certain pieces of equipment such as fire safety systems, HVAC systems, sewage pumps stations, and water systems. Under these circumstances, Airport Authority personnel will prepare the system for shutdown, at which time the contractor will place the contractor's own locks on the equipment. The process will be reversed when the lockout is taken off the system. Under no circumstances will a contractor lock out or re-energize the system under these conditions without a qualified member of the Airport Authority in attendance.

Lockout Restrictions

To assist contractors in evaluating when lockouts may be performed, the following information is provided as a guideline for restrictions that may apply. Contractors are advised that some particular lockouts may only be granted conditional scheduling approval subject to doing the work in off hours, generally between 2200 hours and 0600 hours. In some cases the work may have to be split over several days to meet the limited time available for lockout of operational or safety systems or equipment. The applicant is required to contact the Superintendent of Construction Safety (or designate) for coordination of work.

- **Electrical circuits:** Generally, electrical lockout of individual circuits that have no adverse effect on normal operations may be granted without restriction.

- **Emergency panels:** Some electrical panels are tied into building emergency generators, and in most circumstances cannot be shut down during normal operations. This work should be scheduled for off hours.

- **Fire safety systems and general alarm systems:** It is strongly recommended that work on these systems be stipulated for off hours, when building occupancy levels are low. Additionally, the Airport Authority may

require that systems are re-energized within a certain time limit. Larger jobs may have to be split for the system to be re-instated by the stipulated time. Lockout of fire safety systems must also comply with section 1.6, *Fire Safety*.

- **HVAC systems:** Lockouts may be granted without restriction, subject to maintaining acceptable air quality. In most other cases, work will be restricted to off hours.

- **Potable water systems:** Lockouts of potable water systems are subject to life safety review. In most cases, work will be restricted to off hours.

- **Operational equipment:** Work on baggage systems, carousels, jet bridges, or any other equipment deemed necessary to the normal functioning of the airport will generally be restricted to off hours. In most cases, the work must be completed and the equipment returned to operational readiness by the time stipulated in the approved lockout request or, if no time is given, by no later than 0600.

- **Airfield lighting and equipment:** Work on taxiways, runways, and field electrical rooms requires special coordination. Consult with the Airport Authority Project Manager for restrictions.

- **Gas lines:** Will be subject to operational impact. Generally, this work will be restricted to off hours, and approval for work is also subject to fire safety requirements.

Request for Lockout

Lockout to owner equipment or systems requires the express written consent of the Airport Authority. Application for lockout will be in the form of the *Request for Lockout* [CSSM20]. Contractors must complete and forward the *Request for Lockout* package of forms and all required supporting documentation to the Airport Authority Project Manager for Airport Authority projects or Engineering Services for tenant projects, **a minimum of five working days in advance of the anticipated lockout.**

Construction Lockout: Request for Lockout Process

- The contractor submits the completed *Request for Lockout* to the Airport Authority Project Manager a minimum of five working days in advance of the anticipated lockout.

- The Project Manager reviews the request for completeness and accuracy.

- The Project Manager either returns the request to the contractor for additional information or, if satisfied, forwards the request to the Airport Authority MTE

Transition Team, who once again reviews the request for completeness and accuracy.

- For a **non–life safety lockout**, the Transition Team either returns the request to the Project Manager for additional information or, if satisfied, forwards the completed, signed request to Operations and the Day of MTE Duty Manager for their review and ultimately the manager's day-of approval. Both the manager and Operations must receive the signed request a minimum of 72 hours before the lockout starts. At the same time, if satisfied, the Transition Team returns the request signed by the reviewer to the Project Manager giving conditional scheduling approval.

- For a **life safety lockout**, the Transition Team reviewer either returns the request to the Project Manager for additional information or, if satisfied, forwards the completed request to Technical Services for an Impairment Review. The Impairment Review Team will examine the Life Safety Impairment Mitigation Plan for completeness and compliance with Airport Authority MTE standards. The Technical Services reviewer will either return the request to the Project Manager for additional information or, if satisfied, forward the signed request to Operations and the Day of MTE Duty Manager. Both the manager and Operations must receive the signed request a minimum of 72 hours before the lockout starts. At the same time, if satisfied, the Technical Services team returns the request signed by the reviewer to the Project Manager giving conditional scheduling approval.

- During this 72-hour period, the Operations reviewer will notify the Project Manager if there is a known scheduling conflict or if the request has insufficient information on the project's impact on airport operations.

- On the day or night of the lockout, the MTE Duty Manager will review the *Request for Lockout* and discuss its impact on the shift's operations during the pre-shift Operational Briefing chaired by Airport Authority Operations.

- If no conflicts are apparent, the *Request for Lockout* will be signed by the MTE Duty Manager or designate, and the lockout procedure can begin with the call from the contractor to Operations asking the MTE to attend the lockout site. If a conflict does arise, the MTE Duty Manager or designate will attempt to contact and advise the contractor of the situation. Otherwise, the contractor will be notified when the contractor contacts Operations.

Generally the Airport Authority review teams will examine the following:

- That sufficient information has been provided on the *Request for Lockout* to accurately identify the systems or equipment that will be locked out, including all lockout points and equipment or systems affected by the lockout

- Operational impact of the equipment or building systems being locked out and any operational impact of downstream equipment or systems affected by the lockout
- Timeframe and duration requested for the lockout
- Whether alternate equipment or systems may be employed to reduce the impact of the lockout
- Risk assessment and mitigation plan
- Complete list of lockout points required to establish the lockout (entered on page 4 of the *Request for Lockout*)
- *Life Safety Impairment Mitigation Plan* in the case of a life safety lockout
- All other attached forms such as *Confined Space*, *Hot Work*, or *Trenching Permits*

Risk Assessment

Contractors must complete and submit a risk assessment for every *Request for Lockout*. The risk assessment must include:

- Identification of the hazards to persons, facilities, operations, and the environment
- Safe work procedures to be employed to protect the contractor workers from the risks associated with the lockout hazards
- Safeguards to be employed to protect the occupants, facilities, operations, and the environment from the effects of the lockout

Note: *Requests for Lockout* will not be accepted for review without a completed risk assessment.

Life Safety System Lockout Request

Contractors must complete and submit a *Request for Lockout* whenever a life safety system will be affected. Life safety systems are:

- Fire warning systems
- Fire suppression systems
- Potable water systems

- Emergency power systems
- Airfield lighting systems
- Fuel systems, including natural gas
- General alarm systems
- Any other system so designated by the Airport Authority before or during the lockout review

The *Request for Lockout Life Safety Impairment Mitigation Plan* must clearly identify the extent of the impairment to the life safety system along with the actions that will be taken to mitigate the risk to personnel, public, and facilities resulting from the impairment.

All lockouts to life safety systems must be reviewed and approved by Maintenance Technical Services and Airport Authority Construction Safety. Contractors should contact their Airport Authority Project Manager to identify all specific requirements pertaining to life safety system lockouts.

Mitigation plans may include the requirement for the contractor to employ one or more persons for Safety Watch, Fire Watch, or the continuous monitoring of alarm points. The determination for this requirement will be at the discretion of the Lockout Review Team and Airport Authority Construction Safety. Generally, trained staff employed by the current Airport Security contractor will be selected for watch duties, and Simplex for monitoring alarm points.

Lockout of Fire Protection Systems

In completing the *Request for Lockout* [CSSM 20], page 4 of the package of lockout request forms must list all affected systems being locked out. The list must include all devices and their addresses in order to facilitate any requested bypass. The contractor is responsible for re-verification of system functionality testing and any documentation required.

As in all construction lockouts, the contractor will contact MTE prior to starting work on the system in order to receive lockout approval. Only the duty technician can bypass a fire detecting or annunciation device. (This applies even when the lockout mitigation plan requires Simplex to continuously monitor the system.)

The bagging of detection devices or defeating them electronically is not an acceptable lockout method and is prohibited.

As in all lockouts, the contractor is required to contact MTE after the work has been completed or the contractor is finished for the day to complete the verification requirement of the request for lockout procedures.

Before accepting the contractor's sign-off on the verification requirement of a fire protection lockout, the duty technician or Technical Services representative can request system testing to assure that work has been completed and system functionality has been restored.

Lockout of Fire Warning Devices and Systems

In addition to all of the requirements in *Lockout of Fire Protection Systems*, the following apply to lockout of fire warning devices and systems:

- Page 4 of the package of lockout request forms must list a description of any address revisions to take place.
- The contractor will contact the Duty Technician before starting work on the system in order to sign on.
- The contractor is responsible for re-verification of system functionality testing and documentation required to the CAN/ULC-S537-04 standard for *Verification of Fire Alarm Systems*.
- All work conducted on the fire detection system must comply with the CAN/ULC-S536-04 standard for *Inspection and Testing of Fire Alarm Systems* and/or CAN/ULC-S524-01 standard for the *Installation of Fire Alarm Systems*. The minimum requirements for any installation or system modification must meet or exceed the above standards in conjunction with National Fire Protection Association standards.

Construction: Pre-Lockout Procedures

The following material will not replace contractor requirements for written lockout procedures.

Before starting any work identified on the lockout request or otherwise, the contractor will:

- Call Operations and request MTE to attend the lockout site to receive written approval to lock out equipment or system.
- Sign the approvals page of the *Request for Lockout* forms signifying an understanding of and future compliance with the requirements of the *Lockout Points Removal Verification Procedures*.
- Correctly identify and turn off equipment or control device.
- On individual lockouts, place the contractor's personal lock and tag on the isolation device. Do not place locks on control device.

- Where multiple locks are required, first place scissors, then locks on isolation device. (Last hole is reserved for additional scissors.)
- Test equipment to ensure that lockout is in place.
- Remember: stop it, lock it, test it!

Construction: Lockout Points Removal Verification Procedures

After completing the work as set out in the lockout request, the contractor will:

- Before leaving the job site or re-initiating the system or equipment, the contractor supervisor must review the system or equipment to confirm that the work is completed and the system or equipment is safe for restoration.
- Ensure that all contractor workers have completed their work and verified that the work is complete.
- Call Operations and request an Airport Authority MTE representative to attend the lockout site and witness the restoration of all lockout points to their pre-lockout position.
- Inspect each lockout point to ensure that the worker's scissors, locks, and tags have been removed.
- Inspect each lockout point and verify that the control device (valve, switch, etc.) has been restored to its proper position.
- Provide written verification to the Airport Authority (page 4, *Verification*, of the application) that all lockout points have been restored and that the system or equipment is ready to be returned to the Airport Authority.
- Once Airport Authority personnel have received written verification that the work is complete and the system or equipment is ready for return to normal operation, only then will the contractor or Airport Authority personnel be authorized to leave the work site or re-initiate the system or equipment.
- The Airport Authority reserves the right to request and require the contractor to take any actions or measures necessary to ensure that the system or equipment has been properly returned to pre-lockout conditions.

1.9.6 Specific Construction Lockout Requirements

Guarantee of Isolation

Under special circumstances, a guarantee of isolation may be permitted in lieu of a physical lockout by each person working on the equipment. Use of this procedure will only be permitted with the express consent of Airport Authority Construction Safety personnel.

Guarantee of isolation provides a means of ensuring that proper lockouts have been established without the need for each individual to physically place a lock and tag on the equipment or system. Several examples where this process may be used are:

- **Providing lockout for non-electrical trades:** In some circumstances, trades such as demolition crews, asbestos personnel, finishing trades, or ground crews working in proximity to underground electrical lines may require equipment or system lockout to safely perform their work. As these workers may not be familiar with lockout procedures, a guarantee of isolation performed by qualified persons provides a safe means for ensuring that proper lockouts have been established.

- **High-voltage rooms:** To ensure that untrained workers are not endangering themselves in high-voltage rooms, guarantee of isolation procedures may be deemed an appropriate method of ensuring that proper lockout has been established.

Guarantee of Isolation Requirements

The following material will constitute the minimum requirements for employing a guarantee of isolation. Contractors are required to submit guarantee of isolation procedures and a detailed risk assessment to the Airport Authority for review and approval prior to doing the work:

- Under no circumstances will a guarantee of isolation be permitted without proper written documentation of procedures and orientation of all workers involved in the lockout or subsequent work.

- No person will give or receive a guarantee of isolation unless the person is authorized by his or her employer to give or receive the guarantee.

- Not more than one person will give a guarantee of isolation for a piece of equipment or system for the same period of time.

- Before starting work on locked-out equipment or systems, the person-in-charge will receive from the guarantor either of the following:
  - A written guarantee of isolation
  - Where it is not practical to receive a written guarantee of isolation, an oral guarantee of isolation
- A written guarantee of isolation will be signed by the guarantor and by the person-in-charge, and will contain the following information:
  - Date and hour when the guarantee of isolation is given to the person-in-charge
  - Date and hour when the equipment or system will become isolated
  - Date and hour when the isolation will be terminated, if known
  - Procedures by which isolation is assured
  - Name of the guarantor and the person-in-charge
  - Statement on whether live tests are to be performed
- Where an oral guarantee of isolation is given, a written record will be made by the guarantor, and made and signed by the person-in-charge.
- Every written guarantee of isolation and every written record will be:
  - Kept by the person-in-charge, readily available for examination by the workers performing the work until the work is completed
  - Given to the employer when the work is completed
  - Kept by the employer for a period of one year after the work is completed
- Where a written guarantee of isolation or a written record of an oral guarantee of isolation is given to a person-in-charge and the person-in-charge is replaced at the workplace by another person-in-charge before the guarantee has terminated, the other person-in-charge will sign the written guarantee of isolation or written record of the oral guarantee of isolation.
- Before employees give a guarantee of isolation for electrical equipment that obtains all or any portion of its energy from a source that is not under their direct control, they will obtain a guarantee of isolation for the source from the person who is in direct control of it and is authorized to give the guarantee for it.

Multiple Lockout Points

Circumstances may require that more than one lockout point needs to be established to facilitate the contractor request to isolate a system or equipment. The following details some, but not all, of the cases where multiple lockouts are required. Contractors should consult with the Airport Authority Project Manager for airport projects or Engineering Services for tenant projects to ensure requirements are met for multiple lockouts.

> Note: The requirements detailed in this section apply to both the construction lockout and owner lockout protocols.

Sprinkler systems: To facilitate a sprinkler system shutdown, the affected flow switch devices must be placed in bypass mode to ensure that the fire alarm is not activated during the shutdown. Sprinkler system alarm bypass protocols may only be undertaken by Airport Authority personnel or qualified companies under contract to the Airport Authority specifically for that purpose.

Once the system is in bypass, and verified through Airport Operations, the sprinkler water systems can be isolated and the system drained. When more than one valve or a valve and electrical shutdown are required for the work, all points to be locked out must be identified in the *Request for Lockout* [CSSM20]. The Airport Authority reserves the right to stipulate specific timeframes in which the work must be completed and the system restored to operational readiness.

Water systems: To facilitate the shutdown of water systems, a number of valves may need to be isolated. The contractor must identify all valves requiring shutdown and identify on a *Request for Lockout* [CSSM20]. Airport Authority personnel may be required to oversee the lockouts to ensure that the contractor is placing the locks on the correct valves. See *Multiple Lockout Procedures* in this section for more details. An *Authorization for Work on Potable Water Systems Request* will be required for all shutdowns to potable water systems.

HVAC systems: A number of control and isolation devices may have to be locked out to facilitate the contractor request to shut down the HVAC systems. As with other multiple point shutdowns, the contractor must identify all lockout points on the *Request for Lockout* [CSSM20] forms to verify that all lockout points have been identified.

Sanitary systems: Multiple lockouts may be required to isolate pump stations and ensure that valves are closed prior to work on sanitary systems. The *Request for Lockout* form will be required. Contractors should consult with Airport Authority Project Manager for Airport Authority projects or Engineering Services for tenant projects to ensure that requirements are met for multiple lockouts.

Electrical or other unspecified systems: Multiple lockouts may be required on electrical or other unspecified systems to facilitate the contractor request for lockout, and a *Request for Lockout* [CSSM20] will be required. Contractors should consult with the Airport Authority Project Manager for Authority projects or Engineering Services for tenant projects to ensure that requirements are met for multiple lockouts.

Multiple Lockout Points Requirements

The following requirements will be in place before initiating multiple lockouts:

- The contractor will have written safe work procedures detailing the lockout procedures to be employed during the lockout.
- The contractor will ensure that the contractor's workers have sufficient locks and tags to install on all the lockout points.
- The contractor will ensure that all other *Construction Safety / Security Manual* requirements are met for the work—e.g., Fire Watch Monitor for sprinkler shutdowns.

Multiple Lockout Points Procedures

The following material will not replace contractor requirements for written lockout procedures:

- Request and receive approval to lock out equipment or system as per the *Request for Lockout* procedure.
- Correctly identify and turn off equipment or control device.
- Place personal lock and tag on each isolation device. Do not place locks on control device.
- Where multiple locks are required, first place scissors, then locks on isolation device.
- Test equipment to ensure that lockout is in place.
- Remember: stop it, lock it, test it!
- Follow the verification process set out in the *Request for Lockout* procedure.

1.10 Traffic Management

Effective operation of the airport depends on maintaining surface travel routes to and from Sea Island. Accordingly, all work on public roadways must be done in a fashion that minimizes any negative impact on normal traffic flow.

The Airport Authority requires that all traffic management work adhere to the BC Ministry of Transportation *Traffic Control Manual for Work on Roadways*.

Note: The procedures, standards, or requirements detailed in this section in no way relieve or remove the contractor's obligation under WorkSafeBC *Occupational Health and Safety Regulation* to have written safe work procedures for the activity addressed herein. The Airport Authority reserves the right to request and require written safe work procedures from the contractor that confirm compliance with applicable regulations.

1.10.1 Lane and Road Closures

During peak times in the day, the closure of one or more lanes on the approach or exit from the main terminal buildings may cause unacceptable delays for motorists. Prior to any lane closures on Grant McConachie Drive, contractors must contact the Airport Authority Project Manager for Airport Authority projects or Superintendent Construction Safety for tenant projects to confirm the lane closure.

For all roadways on Sea Island, one open lane in either direction must be maintained between the hours of 6:00 a.m. and 11:00 p.m. This is essential for the movement of motorists and emergency services equipment. Contractors requiring a full road closure should anticipate doing this work at night, when traffic is at a minimum. Full road closures may only proceed after approval has been received from the Airport Authority.

1.10.2 General Requirements

In addition to contract documents and WorkSafeBC *Occupational Health and Safety Regulation* respecting traffic management, the Airport Authority requires the following:

- The contractor is required to submit a detailed traffic control program for review and approval by the Airport Authority prior to any lane closures extending beyond one calendar day.
- All persons involved in traffic control must have completed the Certified Traffic Control Person training program and have all necessary equipment to carry out their duties.

- Appropriate personal protective equipment, including hard hats, work boots, and high-visibility vests, must be worn.
- Where more than one traffic control person is working, and distances prohibit direct communication, they will be in contact with each other by radio communication.
- All appropriate traffic warning devices and controls must be in place before work begins, including flashing arrow boards, traffic delineators, and signage.
- Work zones that are in place for more than one day, or at night, must be sufficiently illuminated to warn motorists.
- Detour routes must be approved by the Airport Authority before taking effect.
- Traffic delineators must be 36-inch–high tubular markers complete with reflector tape.
- Where equipment encroaches on a traffic surface, the encroachment area will be safely delineated.
- All traffic control devices must be removed immediately after the work is completed.

1.10.3 Airside Operating Areas

Any rerouting, obstruction, or closure of airside aprons, vehicle corridors, roads, or access routes must be approved by the Airport Authority Operations Shift Manager before taking effect.

1.10.4 Sidewalk Closures

Before closing any sidewalk, alternate routing for pedestrians must be approved by the Airport Authority. Contractors are responsible for installing appropriate signage or tubular cones connected with reflective caution tape to direct pedestrians through the work area.

1.10.5 Area Closures Inside Terminal Buildings

Short duration work: Work performed in public areas inside the terminal buildings that may disrupt the normal operation of the airport may be restricted to certain times when the work will not adversely affect passengers or tenants. Contractors must consult with the Airport Authority Project Manager or the Superintendent Construction Safety to receive approval before closing any public area.

For work during the day, after approval has been granted, the contractor may proceed with closing an area by cordoning off the work area with tubular markers connected with caution tape. Work areas inside the building must be removed at the end of every shift and the area restored.

Indoor environmental quality containment requirements will take precedence in circumstances where the work may cause exposure to harmful materials.

Long duration work: For Airport Authority projects, the Project Manager will provide specifications for hoarding requirements. Tenant contractors are requested to contact Airport Authority Engineering Services for specifications.

1.11 Excavations, Trenching, Coring, and Saw-Cutting

The Airport Authority expects that all excavations, trenching, and coring will be done in accordance with applicable WorkSafeBC *Occupational Health and Safety Regulation* and Airport Authority *Construction Safety / Security Manual* requirements. Protection of workers, utilities, and the environment must be considered during all aspects of planning and work.

Note: The procedures, standards, or requirements detailed in this section in no way relieve or remove the contractor's obligation under WorkSafeBC *Occupational Health and Safety Regulation* to have written safe work procedures for the activity addressed herein. The Airport Authority reserves the right to request and require written safe work procedures from the contractor that confirm compliance with applicable regulations

1.11.1 Excavation and Trenching Requirements

The information in this section is intended to augment, but not replace, requirements under *OH&S Regulation* or other applicable legislation.

- Contractors will complete and submit an Airport Authority *Excavation, Trenching Permit* [CSSM50] 48 hours before starting any excavations or trenching. A copy of the approved excavation permit must be kept in excavation equipment at all times for inspection by Airport Authority personnel.

- For all excavations or trenches of a depth of 4 ft or greater, the contractor is required to submit written safe work procedures to the Airport Authority for review and approval before starting the work.

- The contractor is required to complete a hazard assessment and risk assessment of the intended work and develop site-specific safe work procedures addressing the hazards and risks, including site-specific protective measures to be implemented at the work location.

- Where the excavation or trench passes within 10 ft of an active roadway, the contractor is required to develop and submit a site-specific Traffic Management Plan to the Airport Authority for review and approval before starting the work.

- All excavations or trenches of a depth of 4 ft or greater will be sloped or shored in accordance with WorkSafeBC *Occupational Health and Safety Regulation*.

- All shoring employed in excavations or trenches over a depth of 8 ft will be engineered, designed, and approved by the Airport Authority prior to use. Signed copies of engineered drawings will be submitted along with safe work procedures.

- Contractors may request a variance to *OH&S Regulation* and Airport Authority *Construction Safety / Security Manual* requirements by providing a signed statement by a Geotechnical Engineer verifying that soil conditions merit a relaxation of regulation. Copies of the variance must be submitted to WorkSafeBC and the Airport Authority for approval before entering the excavation or trench.

- All spoils pile will be kept at least 1 m back from the edges of the excavation or trench.

- In circumstances where the contractor wants to undermine and shore a structure, roadway, walkway, or other such area, the contractor is required to submit procedures approved by a Geotechnical or Structural Engineer for the work.

- All work near high-voltage underground or aboveground utilities will be done in accordance with BC Hydro protocols in addition to WorkSafeBC *OH&S Regulation* and Airport Authority requirements.

- At the discretion of the Airport Authority, and as directed on the Airport Authority *Excavation, and Trenching Permit*, contractors are required to m-scope [wand] and/or hydro-vac the proposed excavation area to identify the location of underground utilities.

- All excavation equipment operators will be provided with copies of drawings showing the location of any underground utilities.

- All underground utilities will be visibly marked and flagged to ensure that excavation equipment operators are aware of underground utilities.
- Contractors will hand-dig to expose any underground utilities, but may remove the majority of material by conventional means.
- Wherever possible, the contractor will seek and obtain a lockout of any underground utilities that are within the proposed excavation or trenching areas. Contractors will complete and submit a *Request for Lockout* a minimum of five working days before the anticipated lockout. See section 1.9, *Lockouts*, in this manual for more details.
- According to conditions stipulated during the environmental review of *Facility Permit* documents, contractors will ensure that silt fences are in place to ensure that adjacent areas are not contaminated as a result of the work.
- According to conditions stipulated during the environmental review of *Facility Permit* documents, contractors will ensure that adequate spill response programs and equipment are available on site to deal with any spills resulting from the work.
- All work affecting potable water must abide by the Airport Authority potable water program. Airport Authority Operations must be advised of any broken or damaged potable water lines and the Airport Authority will arrange for the required repairs at the contractor's expense. For more information, contact the Airport Authority Maintenance Department.
- At the discretion of the Airport Authority, additional requirements may be requested and required to ensure that the work is performed in a safe manner.

1.11.2 Coring or Saw-Cutting Requirements

Coring or saw-cutting inside terminal buildings, on roadways, or other areas where underground or buried utilities may be present will be done in accordance with the general requirements detailed in this section. For the purpose of this section, *coring* means any hole penetrating more than 3 in. into a horizontal or vertical surface, and *saw-cutting* means any saw cut to a depth greater than 3 in.

Note: The requirements for saw-cutting are waived in cases where control joints are being installed into concrete subsequent to a concrete pour.

- Contractors will complete and submit the Airport Authority *Coring, Saw-Cutting Permit* [CSSM40] 72 hours before the start of anticipated coring or saw-cutting.

- Contractors will request and obtain drawings from Engineering Services identifying the location of all underground or buried utilities at the work location.
- At the discretion of the Airport Authority, X-raying of the proposed coring or saw-cutting area will be required before the work starts.
- In circumstances where X-raying is stipulated, the contractor will ensure that all necessary protective measures are implemented to protect persons from exposure to X-rays.
- Where the location below the proposed core is a tenant-occupied area, contractors will retain, at their expense, an airside escort person to verify that the tenant area is not unduly disturbed as a result of the work.
- All necessary measures must be taken to capture any water or debris that may fall though the opening at completion of the core or saw-cut.
- At the discretion of the Airport Authority, additional protocols may be requested and required to ensure the safety of persons and property.

1.12 Crane Operations

Numerous automated navigational systems are in operation around Sea Island to assist in aircraft movement. Many factors can affect these systems, including cranes. As the airport is an unique environment, all cranes, lifts, hiabs, pumpers, elevated devices, and any other equipment that operate at heights on Sea Island require permits.

The *Crane Operating Permit* [CSSM110] is required by Construction Safety to ensure the safe operation of equipment operating at heights in accordance with WorkSafeBC Regulations.

Airside Operations must be notified of all crane operations to ensure the safe operation of equipment at heights in accordance with NAV CANADA requirements. Information is to be provided at the start of construction projects through the Project Manager at the Facility Permit [FAP] stage.

General requirements:

- The *Crane Operating Permit* must be submitted and approved by the Airport Authority before any equipment is elevated.
- All cranes must be certified within the previous 12 months. Test records and inspection forms must be with the crane.

- The contractor confirms that operators are trained and that all WorkSafeBC safety requirements are met. The operator is required to carry proof of certification in the form of a certificate or certified letter of registration from the BC Association of Crane Safety, or any certificate acceptable by WorkSafeBC.

- Contractors are to ensure that the lift will not affect normal airport operations. All lifts airside must be coordinated through Airport Operations.

Crane permits must be submitted 72 hours prior to work proceeding. Permits can be approved for a maximum of 30 days. Some factors that may affect the time for approval are:

- **Location:** Proximity to runways requires approval from NAV CANADA.

- **Duration:** Land use regulations come into effect if the crane is in place for an extended period of time (30 days).

- **Height:** All cranes over 30 m require the approval of NAV CANADA and completion of a *Notice to Airmen* [NOTAM]. All anticipated operations at or above this height are requested to submit a permit at least 10 working days in advance.

At the discretion of the Airport Authority, additional protocols may be requested and required to ensure the safety of people, property, and the operation.

1.13 Construction Safety Officer

The project Construction Safety Officer [CSO] provides guidance, oversight, and direction on all matters relating to workplace health and safety. The following section outlines the specific expectations and duties required by the Airport Authority in fulfilling this role.

1.13.1 Qualifications

The individual must have the following combination of training or experience to be assigned the role of site CSO on Airport Authority projects.

- Completion of the BC Safety Council Construction Safety Officer program or equivalent, plus three years industry experience as a Construction Safety Officer

- BCIT Occupational Health and Safety certificate or diploma graduate, plus a minimum of two years of general construction experience

- Occupational First Aid Level 2 certificate, plus five years of industry experience as a first aid attendant

- Building trades qualified with a minimum of five years of experience in construction safety

Contractors must submit documentation confirming the qualifications of the designated individual. The Airport Authority will consider other combinations of training and experience subject to prior review and approval.

1.13.2 CSO Duties and Responsibilities

CSO duties and responsibilities include:

- The CSO has the ongoing duty to monitor the site and work to ensure compliance with WorkSafeBC regulation, the Airport Authority *Construction Safety / Security Manual*, and the contractor safety program. The CSO must be capable and available to perform these duties throughout the course of the shift. While non-safety duties may be assigned as time permits, the first responsibility of the CSO is towards safety and security.

- The contractor must ensure that the CSO has the authority to take **immediate and effective actions** against all potential safety issues. The CSO must be able to stop any and all work that **could** pose a risk to persons, property, airport operational and security requirements, or the environment.

- The CSO must take **immediate and effective actions** to resolve all potential safety risks. Any safety issue that is immediately dangerous to life or health [IDLH], or that may result in breaches in airside security, cause operational impacts, or result in environmental damage, must be stopped without delay. Where a potential safety issue is not likely to cause an IDLH situation, the CSO will work to resolve the issue in a timely fashion.

- The CSO is responsible for ensuring that all aspects of site safety are identified and addressed throughout the course of the work. The CSO will liaise as necessary with subcontractors to ensure that:

  – Uniform safety standards are maintained

  – Subcontractor work is not creating risk either inside or outside the site

  – Airport-specific safety and security requirements are communicated to all contractors

  – Work is performed in accordance with WorkSafeBC regulation, Airport Authority *Construction Safety / Security Manual*, and good industry practices

1.13.3 Subcontractor Trades Safety Coordinator

Each subcontractor or stand-alone contractor will nominate an individual who will be the Trades Safety Coordinator [TSC]. The TSC is responsible for monitoring the contractor's workforce for compliance with WorkSafeBC regulation, Airport Authority *Construction Safety / Security Manual*, the prime contractor's safety program, and the subcontractor's safety program.

1.13.4 Assignment of Duties

At the discretion of the CSO, some of the safety duties may be assigned to the subcontractor TSC. For example, the CSO may request that the TSC conduct a hazard and risk assessment of the subcontractor work activity and provide the CSO with a documented copy of the hazard and risk assessment and action plan, or the CSO may have a TSC conduct the safety orientation if all workers are part of the TSC workforce.

No matter who performs the safety action, the Airport Authority expects and requires the CSO to review all actions to ensure compliance with specified safety requirements. The CSO is responsible for ensuring the adequacy of all safety actions taken on the site, no matter who takes the actions.

General Safety Duties

The following are some of the general safety duties the CSO will perform during the course of the work.

- Ensure that safety, security, and environmental requirements are maintained on the project, including:
  - Indoor environmental quality standards
  - Fire safety
  - Asbestos management [Domestic Terminal Building]
  - Restricted area security
  - Prevent disruptively loud work inside the terminals unless the noisy work has been specifically approved by the Airport Authority
  - Housekeeping and foreign object debris prevention standards
- Monitor workers and activities for compliance with safe work practices and personal protective equipment requirements.

- Stop any activity that poses risk to persons, property, environment, or operations.
- Maintain WHMIS station and update WHMIS manuals to include revised information.
- Review MSDS for all controlled products entering the work site.
- Ensure that proper safety measures are in place for storing, decanting, using, and disposing of controlled products.
- Ensure that permits are valid and work processes are being performed in accordance with CSSM requirements.
- Complete and submit records and documents as required by the Airport Authority.
- Identify and resolve safety issues in a proactive manner.
- Assist workers in developing proper safe work procedures and practices.
- Ensure that workers are wearing and using appropriate personal protective equipment.
- Ensure that management is regularly informed of safety activities, initiatives, injuries, and incidents.
- Provide safety leadership to site workers.
- Coordinate safety activities between the various subcontractors, including:
  - Protecting site workers from harmful processes, activities, or materials
  - Coordinating Occupational Health & Safety Committee meetings
  - Disseminating safety information to site personnel
  - Communicating specific Airport Authority safety requirements, restrictions, and standards

Worker Safety Orientations

Before workers enter the active work areas, the CSO will ensure that each individual receives a proper site-specific orientation program before entering the construction site and acknowledges his or her understanding of the subject material by signing the appropriate safety orientation signature sheets.

Topics to cover during the orientation include:

- Worker rights and responsibilities
- Locations and means of summoning first aid; injury reporting procedures
- Site layout, access, exit, and emergency procedures
- Personal protective equipment requirements
- General (e.g., ladder safety) and specific (e.g., fire safety) safe work practices
- Airport-specific safety and security requirements
- Incident reporting and investigation
- Housekeeping
- Reporting of unsafe conditions
- Non-compliance and disciplinary actions
- Other information deemed pertinent by the contractor

Visitor Safety Orientation

Visitors and consultants will require either a site-specific orientation program before entering the construction site, or will be escorted by a qualified person at all times while on the site.

Orientation topics for visitors and consultants should include:

- Personal protective equipment requirements
- Site layout, access, exit, and emergency procedures
- Airport security requirements (when working in secure areas)
- Reporting of unsafe conditions
- Other information deemed pertinent by the contractor

Risk Assessment Program

Identifying risks and hazards is the primary means to correct potential safety issues in a proactive manner. The CSO must conduct risk and hazard assessments for:

- General layout and conditions of the site
- Work activities to be performed on the project, including all subcontractors
- Equipment, materials, and processes used on the site
- Operational and environmental impacts imposed on the airport and related to the project
- All specific hazard assessments detailed in the CSSM, including:
  - Fire safety
  - Indoor environmental quality
  - First aid
  - Excavation and trenching
  - Lockout

On completion of each risk assessment, the CSO will develop a written action plan to eliminate or minimize the risks associated with the hazards. Copies of all hazard and risk assessments and action plans must be kept on site and forwarded to Airport Authority Safety upon request.

Site Inspections

The CSO will perform twice-daily inspections of the project area. Items for inspection include:

- Perimeter containment fencing or hoarding
- Site cleanliness conditions, particularly on airside projects
- All temporary guardrails, floor coverings, barricades, barrier tapes, or other safety devices are properly installed and identified
- Workers are using appropriate personal protective equipment
- Workers are following appropriate safe work procedures
- Hazardous materials are being stored, handled, labelled, and used in the prescribed manner

- Hazardous processes, such as fall protection, fire safety, confined space entry, etc. are being performed in the correct manner
- Work is not progressing beyond the boundaries of the project area without prior review and approval by the site CSO, contractor management, and the Airport Authority
- All safeguards intended to protect airport passengers, tenants, facilities, and environment are in place and functioning properly
- Project Information Board displays the current information about site supervisory and safety personnel and contains valid permits for each activity requiring a *Construction Safety / Security Manual* permit

The CSO will document the twice-daily inspections and maintain copies on site for review by the Airport Authority.

1.13.5 Site-Specific Safety Activities

The CSO must review each of the following, before the start of the specific activity, for compliance with WorkSafeBC regulation and CSSM requirements.

Fire Safety

The CSO will ensure that:

- Risk assessments for hot work are always completed
- *Hot Work Permits* have been submitted and approved by the Airport Authority
- All hot work locations are inspected to ensure that flammable materials are moved or properly protected with non-combustible coverings
- Fire extinguishers are inspected to ensure that they are charged and adequate for the fire risk
- Workers are trained in the use and limitations of fire extinguishers
- Workers understand what to do in case of a fire
- Arc flash shields are installed to effectively prevent arc flash to both site workers and persons outside the construction area
- When required, smoke eaters or other fumes containment or dissipation devices are at the hot work location and are close enough to the hot work source to function properly

- Workers are wearing required personal protective equipment relating to hot work and the location of the work (e.g., fall protection)
- Effective fire watch monitoring of the hot work is in place, whether by a co-worker in the area or designated fire watch
- An individual has been specifically identified and assigned to the task of inspecting the area when the hot work is completed for signs of lingering embers or hot spots; inspection must be carried out no more than 30 minutes after hot work is completed (note: this inspection must also be conducted before workers leave the area for lunch or rest breaks)
- Where required, fire warning and suppression devices have been protected against accidental alarm resulting from the hot work or fumes
- All other safety measures identified during the risk assessment, or as prescribed by the Airport Authority, are in place before the hot work starts

Asbestos Management

The Domestic Terminal Building [DTB], South Terminal Building, and other non-public facility support buildings have asbestos-containing materials [ACM] that must be protected from damage during construction activities. Contractors working in the DTB are required to obtain asbestos clearance letters before starting any demolition or renovation work. See section 1.4 for more details.

The CSO will ensure that:

- A risk assessment based on the hazards and work being done is completed
- An asbestos clearance letter has been issued for each specific area of work
- All workers have viewed the Airport Authority Asbestos Awareness video
- All asbestos-containing materials that may be impacted by the work have been identified and labelled (see section 1.4 for details on site labelling)
- All restrictions stipulated in the asbestos clearance letter, including the risk assessment piece, are communicated to workers
- All areas that are restricted from worker access—e.g., an active abatement area—are placarded and barricaded to prevent inadvertent access
- No work activities will be performed that may impact ACM

Lockouts

The CSO will ensure that:

- Workers attend a pre-work meeting to discuss the findings of the risk assessment and the safeguards employed as set out in the safety action plan
- All lockout forms and permits have been submitted and approved by the Airport Authority
- All specific safety requirements identified in the lockout documents are in place prior to the lockout
- Persons working on the lockout have the proper locks, scissors, and tags
- All persons have the required personal protective equipment

Excavations and Trenching

The CSO will ensure that:

- Workers attend a pre-work meeting to discuss the findings of the risk assessment and the safeguards employed as set out in the safety action plan
- *Excavation and Trenching Permit* has been submitted and approved by the Airport Authority
- All drawings are available to identify underground utilities
- Where practical, all underground utilities are staked, flagged, or otherwise identified
- Equipment operators have copies of the permits and drawings available in their equipment
- Sloping and shoring requirements are known and understood by all persons involved in the work
- Shoring materials, cages, etc. are available at the work location and properly installed prior to worker entry
- Workers entering the excavation or trench understand the limitations, safeguards, and exiting procedures for the space
- All persons have the required personal protective equipment

Confined Space Entry

The CSO will ensure that:

- Workers attend a pre-work meeting to discuss the findings of the risk assessment and the safeguards employed as set out in the safety action plan
- *Confined Space Entry Permit* is completed
- Gas detection and monitoring equipment is calibrated and functioning properly
- All rescue equipment is checked to confirm good working order
- All persons engaged in the confined space entry have completed a risk assessment and are aware of the risks, hazards, and safety measures required for entry
- A properly documented procedure is in place specifically addressing the particular confined space
- Proper testing and ventilation is conducted and recorded prior to any entry into the confined space
- Proper emergency rescue procedures are identified and communicated to workers
- Where respiratory protection is required for entry, all persons are properly fit-tested
- All persons have the required personal protective equipment

Cranes and Lifting Equipment

The CSO will ensure that:

- *Crane Operating Permit* is submitted and approved by the Airport Authority
- Work areas for mobile cranes, lifting equipment, and loads are inspected and confirmed adequate for the intended loads
- Crane erection, movement, loading, rigging, and signaling procedures are known and understood by all persons involved in the crane work
- Crane inspection records are on site and current, including log books
- Crane owner confirms the qualifications and competency of the operator

- All chains and slings are checked and verified safe for the intended loads
- All persons have the required personal protective equipment
- Workers attend a pre-work meeting to discuss the findings of the risk assessment and the safeguards employed as set out in the safety action plan

Permits: All *Crane Operating Permits* [CSSM110] are faxed or emailed to the Superintendent Construction Safety, where the hazard section of the permit is verified and signed. If this section is not completed to the satisfaction of the Airport Authority, the permit is rejected and the contractor has to prove that all proper precautions have been taken to ensure safe operating procedures.

Note: all crane operators must have the permit with them for verification. Those without their permit will be subject to immediate work stoppage.

Fall Protection

The CSO will ensure that:

- All leading-edge areas that pose a fall hazard are identified and protected
- All persons entering within the safe working distance of a leading edge are using the proper fall protection equipment
- Proper fall protection plans specific to the area and hazards are documented and understood by all workers
- All fall protection equipment is inspected and verified as safe for use
- Workers attend a pre-work meeting to discuss the findings of the risk assessment and the safeguards employed as set out in the safety action plan

Security

The CSO will ensure that:

- Persons entering a restricted area are aware of the security requirements for entry
- Persons have the required block passes and photo identification before arriving at the security checkpoint
- Vehicle operators are aware of airside driving and escorting procedures

- Persons are aware not to leave tools and equipment unattended in public portions of the restricted areas
- Workers have the required personal protective equipment
- Workers understand the limitations and restrictions for the airside work areas
- Workers understand the emergency procedures specific to the airside work area

1.13.6 Injuries, Incidents, Emergency Procedures

Although the objective is to complete projects without injury or incident, regulation requires that procedures and protocols be in place to deal with injuries and incidents.

The CSO will conduct a risk assessment based on WorkSafeBC requirements to determine that adequate equipment, facilities, first aid attendants, and services are readily available to:

- Promptly render first aid treatment to workers when they suffer an injury at work
- Transport injured workers to additional medical treatment when required

The CSO will then ensure that:

- Proper first aid supplies and attendants are available and ready to treat any injured workers
- Effective means of identifying and summoning First Aid Attendants is available and understood by all site personnel (this may include airhorns, radios, placards, etc.)
- Workers understand the requirement to report all injuries regardless of severity
- Effective means are established to transfer injured workers to medical aid for both emergency and non-emergency treatments (note: emergency medical aid will be via the 911 system, with BCAS making the transfer); contractor must also have procedures in place to drive workers to medical aid for non-emergency evaluation or treatments
- Workers understand the requirement to report all incidents and accidents regardless of severity

- Proper incident and accident investigations are conducted and documented, with copies forwarded to WorkSafeBC as necessary and always copied to the Airport Authority; the CSO is encouraged to require subcontractors to complete their own incident and accident reports rather than the CSO completing them on behalf of others

- Site emergency procedures are developed and posted on site, including:

  – Emergency evacuation procedures
  – Rally point locations, both primary and secondary
  – Head count procedures
  – Fire safety plans
  – All-clear signals

1.13.7 Occupational Health and Safety Meetings, Toolbox Talks

Where multiple contractors are working on the same project, the CSO will establish an Occupational Health & Safety Committee for the purpose of coordinating safety between the various contractors. Minutes will be recorded at meetings and copies made available for review by WorkSafeBC and the Airport Authority. The CSO will ensure that designates from all subcontractors are attending the meeting.

The CSO will require each subcontractor to hold ***weekly toolbox talks*** for the purpose of identifying, discussing, and resolving safety issues relating to the project and the subcontractor's work. The CSO will retain copies of the toolbox talks and provide to Airport Authority Safety a monthly summary of the talks held by each subcontractor.

1.13.8 Resolution of Safety Issues

Where a safety issue arises that can not be immediately resolved, the CSO will take appropriate actions to ensure the safety of persons and property until a proper resolution can be determined. Where the safety concern is an internal issue to the project, it should be raised at the Occupational Health & Safety Committee meeting for discussion and resolution. The CSO is encouraged to consult with Airport Authority Safety to assist in the resolution.

Where the safety issue results from actions or inactions beyond the control of the CSO—i.e., airport personnel or other contractors are causing the safety issue—the CSO will immediately contact the Superintendent Construction Safety and request assistance to resolve the issue. The CSO should take all reasonable measures to ensure that workers and others are protected from harm, and should record the nature of the safety issue and the impact to site operations.

The CSO should have the authority to stop any work occurring on the project site that may be harmful to persons, property, or environment. However, the CSO does not have the authority to suspend the work of contactors not engaged in the project, or tenants, outside the project. Under these circumstances, the CSO will immediately contact Airport Operations, advise them of the situation, and request immediate attendance by an Airport Response Coordinator, or Airport Authority Safety personnel.

A risk assessment will be conducted for all significant issues and the outcome communicated to all stakeholders.

1.13.9 Reporting

The CSO will be responsible to provide all reports and documents pertaining to safety as requested and required by the Airport Authority. These will include:

- Daily inspection reports
- Hazard and risk assessments and action plans
- Safe work procedures for any site activity
- OH&S Committee meeting minutes, toolbox talks, summary of toolbox talks
- Contractor Monthly Safety Report
- Incident and accident reports
- Completed site-specific safety orientations

Chapter

2

Environmental Construction Standards

2.1 Introduction

2.1.1 Geographical Setting

Sea Island is an environmentally sensitive area, and environmental protection is a priority of the Vancouver Airport Authority [Airport Authority]. Located within the Fraser River Delta, which is on the Pacific Flyway, Sea Island and the surrounding area outside of the dikes constitute one of the few remaining estuaries on the British Columbia coast to support internationally and regionally significant natural resources.

2.1.2 Intent of the Environmental Construction Standards

The regulatory basis for these Environmental Construction Standards is the Airport Authority's Land Development and Construction Bylaw [the bylaw]. *Environmental standards*, as defined in the bylaw, means the standards published by the Executive Committee from time to time, to be used in construction and operations on airport lands.

These Environmental Construction Standards are some of the "environmental standards" that will apply to construction activities, including facility alterations performed on behalf of the Airport Authority, tenants, or others.

Archaeological resources include all Native Indian artifacts, remains of Native Indian camps, villages, and resource procurement sites, all historic artifacts, remains of post-1859 settlements, building cornerstones and contents, commemorative plaques, inscribed tablets, and similar objects found on site or in buildings to be demolished or renovated.

Environmental protection means the protection of, and the minimization of disturbance to, land, water, and air quality, and the minimization and, where necessary, mitigation of all potential environmental and archaeological impacts.

Applicant as defined in the bylaw means the third party or the Airport Authority group applying for or receiving a *Development Permit* or a *Facility Permit*, and includes an agent representing the applicant by written consent. The term *applicant* applies equally to both the Airport Authority itself and the Airport Authority's tenants, and is consistent with the term *applicant* as defined in the bylaw.

Contractor means the person, firm, or corporation identified in a *Form of Agreement*, and referred to throughout a contract as if singular in number. The term includes the contractor's permitted assigns, successors, and legal representatives.

The applicant is responsible for carrying out the construction of a structure in accordance with the requirements of the bylaw, including the applicable codes and standards, the environmental standards, and these Environmental Construction Standards. The applicant may delegate responsibility to contractors to ensure compliance with these Environmental Construction Standards.

In doing work on behalf of an applicant, the contractor will ensure that neither it nor any of its agents, employees, or subcontractors do, omit, or permit any act or thing that contravenes these Environmental Construction Standards and applicable legislation, regulations, guidelines, standards, and codes of practice.

In undertaking construction activities, the applicant is responsible for the actions of its agents, employees, contractors, or subcontractors, including any contravention of these Environmental Construction Standards or applicable legislation. Accordingly, the applicant will take reasonable actions to ensure that environmental protection measures are in place and working effectively throughout all areas affected by the project.

If an activity or event that contravenes these Environmental Construction Standards occurs, the Engineering Services Department of the Airport Authority may issue a *Stop Work Order* directing the immediate suspension of all or a portion of the activities causing the environmental impact, and may take or order remedial measures to be conducted as deemed necessary. The costs of any work stoppages or remedial works necessary are the responsibility of the applicant/contractor.

Immediately upon discovery, the applicant/contractor will notify the Airport Authority in writing of the existence of any hazardous conditions, property, or equipment within or immediately adjacent to the construction project site. The applicant/contractor will be responsible for taking all necessary precautions against injury to the environment and to persons, or damage to the property of

the applicant, contractors, subcontractors, and suppliers, or to other persons, from the hazards until corrected by the responsible party.

In the event of an environmental emergency, the applicant will immediately notify Richmond Fire-Rescue [RFR] at 911 and the Airport Operations Centre at 604-207-7022.

The applicant/contractor must notify the Airport Authority Environment Department of the construction schedule at the same time the Engineering Services and Health and Safety Departments are notified, before work starts on the site. A risk assessment will also be conducted by the applicant/contractor and the results communicated to all stakeholders including those listed above before work resumes.

2.2 Air Quality and Dust Control

The applicant/contractor will control fugitive dust and other airborne emissions from activities such as the following:

- Vehicular and machinery movement
- Demolition or decommissioning of existing structures
- Operation of concrete batch plants
- Stockpiling of soils or other construction materials

The use and application of chemical dust suppressants by the applicant/ contractor to control fugitive dust and other airborne emissions must be approved by the Airport Authority.

Burning of refuse or other material on Sea Island is prohibited.

Before starting construction and operation of any facilities with point-source emissions (such as exhaust vents, chimneys, and stacks), the applicant/contractor will obtain, and retain for inspection if requested by the Airport Authority, all necessary regulatory permits.

The applicant/contractor will have in place appropriate indoor environmental quality control measures to ensure that construction and public areas are not adversely affected by uncomfortable temperatures, fugitive dust, and other unacceptable air emissions.

The applicant/contractor will have in place an anti-idling policy that all construction vehicles must not idle for more than three consecutive minutes.

The applicant/contractor will retain all required air quality monitoring and compliance reports.

2.3 Archaeological Protection

All Native Indian artifacts and remains of Native Indian settlements are protected, whether found on the ground surface or buried beneath the surface. All such remains and deposits are not to be disturbed until their significance has been assessed by an archaeologist to the satisfaction of the Airport Authority.

All historic remains are protected, whether found on the ground surface or buried beneath the surface. All such remains and deposits are not to be disturbed until their significance has been assessed by an archaeologist or historian to the satisfaction of the Airport Authority.

Relics and antiquities and items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets, and similar objects found on site or in buildings to be demolished or renovated will remain the property of the Airport Authority. All such items are protected and directives are to be requested from the Airport Authority.

The Airport Authority will issue specific standards, referred to as *Archaeological Resource Protection Standards*, for protecting archaeological areas and artifacts. If work is in an archaeologically sensitive area, the applicant/contractor will comply with the requirements specified in the Archaeological Resource Protection Standards, as well as with other written instructions that the Airport Authority deems necessary during the course of the project.

2.4 Water Quality Protection

2.4.1 Surface Water Quality Guidelines and Monitoring

Discharges from the applicant/contractor's construction site and related work areas (including access roads, soil fill areas) will comply with the Airport Authority's *Surface Water Quality Guidelines*. If the quality of the discharge exceeds the *Surface Water Quality Guidelines* on any of the measured parameters, the source of the discharge will be treated prior to release into a ditch or storm water system, discharged to the sanitary system, or removed from Sea Island for subsequent disposal to an approved facility.

The applicant/contractor will monitor the quality of water discharges from the construction site, and maintain records of water quality monitoring results.

2.4.2 Sedimentation Control

The standards for sediment and erosion control outlined in the jointly published Ministry of Environment, Lands and Parks/Fisheries and Oceans Canada *Land Development Guidelines for the Protection of Aquatic Habitat* will be adhered to.

Care will be exercised during all phases of the work to minimize siltation of local drainage ditches and storm water systems in the vicinity of the project area, and to eliminate the release of raw concrete, concrete leachate, and any other debris or deleterious substances to prevent it from entering into the drainage system.

A sediment control plan must be developed and implemented by the applicant/contractor prior to site preparation and construction for projects involving excavation and fill placement. These facilities must be maintained by the applicant/contractor and be working effectively to control discharges from the site.

Construction and excavation wastes, overburden, soil, or other substances deleterious to aquatic life must be disposed of or placed in such a manner by the applicant/contractor to prevent their entry into any ditch, trench, watercourse, or storm sewer system.

All excavated material is to be sidecast as far as possible from ditches, trenches, or storm water systems to prevent its re-entry into the watercourse. Further, the spoil must be removed offsite or spread out, levelled, and seeded to promote re-vegetation and reduce surface erosion.

No fill is to be stockpiled on marsh or marsh fringe areas outside of the dike, or within the Sea Island Conservation Area.

Preventive measures must be in place to minimize the potential for release of elevated levels of total suspended solids into drainage ditches and the Fraser River during construction to ensure that the Airport Authority's *Surface Water Quality Guidelines* are met. These preventive measures may include sedimentation ponds, silt fences, hay bales, and filter fabric.

Sediment control measures will be required, but not be limited to the following applications: the perimeter of pre-load and excavated areas, along temporary access roads, next to surface drainage ditches, and at catchbasins leading into storm sewer systems.

The applicant/contractor is responsible to monitor, repair, and replace silt fences, filter fabric, hay bales, or other sediment control measures as needed to ensure that they work effectively. These facilities must be maintained until the affected areas are sufficiently stabilized and until there is no longer a risk of sedimentation from the project site.

Storm water may also have to be treated through constructed wetlands or biofiltration ponds. The design and location of any biofiltration ponds will be reviewed by the Airport Authority.

2.4.3 Erosion Protection

The applicant/contractor will protect the bottom and slopes of ditches, trenches, and watercourses from erosion and deterioration. New ditches will be configured and landscaped to minimize erosion.

All ditches, trenches, and watercourses affected during construction must be maintained and returned to their original condition or to a condition acceptable to the Airport Authority.

Ditches and newly constructed diversion channels are to be seeded and planted with grasses or native vegetation to reduce surface erosion.

All exposed soils must be graded and seeded with grass as quickly as possible to minimize the potential for soil erosion and to prevent unwanted weeds and invasive plants from becoming established.

2.4.4 Culverts

Culvert design and installation must be in accordance with the *Land Development Guidelines for the Protection of Aquatic Habitat* criteria to maintain flows and water quality for downstream fish habitat in the Fraser River.

2.4.5 Isolation of Flowing Water

Where appropriate, work will be performed and completed in isolation of flowing water to maintain downstream water quality.

Temporary diversion works must be constructed in a manner that prevents siltation or channel erosion.

2.4.6 Machinery / Access

Machinery is to work from the bank of the ditch, trench, or other watercourse and not within the wetted channel, unless approved by the Airport Authority Environment Department.

2.4.7 Oil / Water Separators

Appropriately sized oil/water separators will be installed in new facility construction where there is a source of oils, greases, fuels, or other hydrocarbons in discharges to the storm water system. The applicant/contractor is responsible to provide adequate ongoing maintenance of these facilities, including the measurement and removal of fuel and oil at regular, frequent intervals.

2.4.8 Storm Water Outfalls

Storm water outfall structures must be installed to prevent encroachment within the channel and oriented to the direction of flow in the ditch or watercourse to prevent channel scour and erosion.

2.5 Hazardous Materials Handling and Storage

Hazardous materials, including fuels, bitumen, cement, paints, solvents, cleaners, dust suppressants, used fuel and oil filters, and other construction materials, will be stored and handled to minimize loss and to allow containment and recovery in the event of a spill.

Maintenance operations will be confined to specific areas so that spills can be contained and collected before contaminants reach ditches, watercourses, and storm water systems.

Wood preservatives, paints or stains, or other chemicals must be applied upland in the dry for a sufficient time period prior to installation to allow complete absorption or drying, thus preventing leaching into the watercourse, ditch, wetland, or storm sewer.

The applicant/contractor will designate areas required for the transfer and limited, temporary storage of hazardous materials and wastes. The designated areas will be used by the applicant/contractor as a control transfer and temporary storage area for potentially hazardous materials and wastes. The areas will be clearly labelled and appropriately controlled.

Hazardous materials not in active use or hazardous wastes will be removed promptly by the applicant/contractor. The Airport Authority may inspect the designated areas at any time and may require the prompt removal of any material not in active use.

The applicant/contractor will be responsible for maintaining proper WHMIS labels and MSDS for all hazardous materials used and stored on site.

There will be no discharge of wash water to the ground or surface watercourses on Sea Island from trucks and equipment related to concrete supply, pumping, or placing equipment. This includes concrete truck chutes and hoppers, and pump line hoses. The applicant/contractor will clean up and dispose of any excess concrete.

All machinery used on site must be in good repair and free of excess oil and grease.

2.6 Underground and Aboveground Storage Tanks

Design, construction, operation, and decommissioning of all underground and aboveground storage tanks systems will comply with all of the following:

- National Fire Code
- British Columbia Fire Code
- Federal Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations
- City of Richmond bylaws
- Canadian Council of Ministers of the Environment [CCME] Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products (2003)

Tank decommissioning procedures must be submitted to the Airport Authority Environment Department for review and approval.

Secondary containment will be capable of holding at least 110% of the volume of the applicant/contractor's largest storage tank, or 25% of the total volume of all containers in the same area, whichever is larger. Storage tank areas must be fully bermed, lined, and have in place appropriate drainage systems for removing accumulated rainwater.

2.7 Noise

The applicant/contractor will act reasonably to minimize noise through the use of Best Available Control Technology noise control on construction equipment, and comply with standards on noise established by WorkSafeBC.

The applicant/contractor will comply with any restrictions on hours of work for the site set by the Airport Authority.

2.8 Revegetation / Site Restoration

The applicant/contractor will use phased construction and rapid replanting of disturbed areas to minimize impacts of erosion on water quality in drainage ditches, watercourses, standing water, and areas leading to storm water systems.

Ground cover will be maintained wherever possible and buffer strips will be left around drainage ditches by the applicant/contractor.

Disturbed areas adjacent to ditches, watercourses, and storm water systems will be reseeded with a grass seed mixture, or other vegetation species specified by the Airport Authority, to prevent surface erosion and downstream water quality impacts on the Fraser River. See section 2.4.2, *Sedimentation Control*, and 2.4.3, *Erosion Protection*.

Hydroseeding in the vicinity of the project site must be successful. Any areas determined to be unsatisfactory (i.e., unsuccessful germination or inadequate rate of seeding) must be redone to the Airport Authority's satisfaction.

Sand and soil stockpiles will be bermed, sloped, and seeded when abandoned to minimize runoff. If stockpiles are not seeded immediately after abandonment, then temporary erosion or sediment control devices will be installed and regularly maintained by the applicant/contractor.

2.9 Fill and Soil Importing and Exporting

The importation of fill onto airport lands or the movement of fill between locations on airport lands must conform to the Airport Authority's Fill Quality and Fill Placement Standards. Further, fill will be placed so that it will not gain entry into the ditches, watercourses, or storm water systems leading to the Fraser River.

2.10 Hazardous and General Waste, Rubbish, and Garbage

The applicant/contractor will adhere to the Airport Authority's waste reduction, reuse, and recycling program, and is responsible for disposing of demolition, land clearing, and construction [DLC] waste in accordance with the intent of the provincial *Waste Management Act*, and with Metro Vancouver code of practice guidelines.

Hazardous waste generated by the applicant/contractor in the course of the construction activities will be disposed of in compliance with the BC *Hazardous Waste Regulation*. As defined by these regulations, *hazardous wastes* include the following:

- Waste asbestos
- Oils
- Greases
- Lubricants
- Solvents
- Batteries
- Polychlorinated biphenyls [PCBs]
- Paints
- Used spill clean-up materials

Where projects involve the handling, storage, and removal of special wastes, the applicant/contractor will maintain the following records:

- Inventories of types and quantities of hazardous wastes generated, stored, or removed
- Manifests identifying hazardous waste haulers and disposal destinations
- Disposal certification documents

Non-hazardous solid wastes, such as waste wood, asphalt, concrete, and metals, will be disposed of off site at an approved disposal facility in compliance with the BC *Waste Management Act* and Metro Vancouver bylaws. Where possible, the applicant/contractor will make every effort to reduce the amount of material disposed of by reduction, reuse, and recycling.

The applicant/contractor will not dump, burn, or allow others under its control to dump or burn garbage, including DLC waste, on Sea Island. If garbage or DLC waste related to the project is dumped on airport-owned or airport-leased lands, the applicant/contractor will immediately act to clean up and remove the waste material.

The applicant/contractor will be responsible for the costs of clean-up and removal of garbage, including DLC waste.

The applicant/contractor will establish regular clean-up and disposal programs to prevent the unnecessary accumulation of excessive solid waste.

The applicant/contractor's work area will have a recycling and waste management program in place. Garbage bins with lids and recycling containers must be made available for lunchroom food waste and recyclable office waste.

The applicant/contractor will contain all garbage related to the project.

2.11 Spill Prevention and Emergency Response Planning

The applicant/contractor will complete a daily visual inspection of all hazardous material equipment for signs of leakage. Daily visual inspections will include ensuring that all personal protective equipment and other emergency response equipment are in place.

Proper inventory reconciliation, as required under the National and British Columbia Fire Codes, will be performed daily for underground storage tanks, and at least weekly for aboveground storage tanks.

Before construction activities start, the applicant/contractor will prepare a written site-specific Emergency Response Plan appropriate to the scale of the project, as set out in the Airport Authority's Response Plan Guidelines and the resultant site-wide risk assessment.

Typical requirements of an Emergency Response Plan include:

- General measure of the probability and severity of an adverse effect to health, property, or the environment on the basis of fuel, oil, and other hazardous materials consumed, handled, and stored
- Spill/release notification and alerting procedures
- Containment, recovery, and clean-up procedures
- On-site spill/release clean-up materials, equipment, and locations
- Names and telephone numbers of persons and organizations that may be contacted in the event of a potential environmental incident at Vancouver International Airport

The Emergency Response Plan should be available for inspection by the Airport Authority and posted at conspicuous locations on the project site.

The Airport Authority reserves the right to require the applicant/contractor to submit, revise, and resubmit the Emergency Response Plan before construction activities start if, in the opinion of the Airport Authority, the plan as submitted is inadequate to ensure compliance with the legislative and regulatory requirements in the event of an incident involving a hazardous material spill, leakage, or discharge from the site.

By reviewing the Emergency Response Plan submitted or resubmitted by the applicant/contractor, the Airport Authority will in no way assume responsibility or liability for the plan. Further, the Airport Authority will in no way assume responsibility or liability for the applicant/contractor's compliance with the requirements of applicable legislation and regulations, or with the requirements of the Airport Authority *Construction Safety / Security Manual* during implementation of the Emergency Response Plan.

The applicant/contractor will maintain a readily available supply of spill emergency response material and equipment on site at all times. The material and equipment must be in effective working condition and appropriate to the scale of the project.

The applicant/contractor will submit written incident reports to the Airport Authority within 24 hours of any environmental incident or spill/release. The incident report will identify and describe the following:

- Reporting organization
- Date, time, and location of incident
- Hazardous materials involved
- Source of materials
- Persons or organizations notified
- How the spill or release occurred
- Remedial action taken or planned
- Actions necessary to prevent recurrence

2.12 Contractor Environmental Response Plans

The primary purpose of this section is to provide limited general guidance to contractors working for the Airport Authority or tenants on how to quickly, safely, and effectively respond to a hazardous material spill incident. It is a site-specific plan for a specific project. For detailed information on preparing a plan, refer to standard CAN/CSA-Z731-03, *Emergency Preparedness and Response*.

Of all the possible airport environmental emergencies, oil or fuel spills probably present the greatest overall risk. Not only does fuel represent the greatest spill volume; once released, it presents hazards such as fire and explosion, hazards to human health, and environmental contamination.

All contractors, before starting a project, are required to:

- Access the nature and risk of potential hazardous material spills
- Develop a site-specific response contingency plan for the project
- Provide appropriate spill response training to their employees
- Provide a list of spill response equipment

2.12.1 Initial Response Actions

The circumstances of individual spill incidents vary widely depending on specific factors such as location, type of product, source and rate of discharge, time of day or week, and weather. Fit the following initial generic response actions to the conditions of each incident.

Initial generic/overall response actions:

- Ensure the safety of all personnel (i.e., workers, passengers, and tenants).
- Stop the product flow (only if safe to do so).
- Isolate / secure the area.
- Assess the situation (refer to product-specific Material Safety Data Sheets).
- Conduct a formal risk assessment of the situation.
- Notify Richmond Fire-Rescue (911) and Airport Operations Centre (207-7022).

  and

  appropriate government authorities
- Contain / recover / clean up (will require trained responders).

2.12.2 Notification Procedures

All spills, regardless of size, are to be reported by the spill observer or person-in-charge immediately, to Richmond Fire-Rescue [RFR], and then to Airport Authority Operations Centre:

RICHMOND FIRE-RESCUE: 911

AIRPORT OPERATIONS CENTRE: 604-207-7022

In addition, the following Airport Authority personnel should be contacted at first opportunity:

AIRPORT AUTHORITY PROJECT MANAGER

PHONE NO. _____

FAX NO. _____

2.12.3 Regulatory Agency Notification

Following a spill, regulatory agencies may need to be notified. In addition to their regulatory functions, these agencies may provide additional response personnel, equipment, supplies, and technical expertise to support the contractor response. As soon as it is safely possible to do so, the contractor person-in-charge will make the following calls or designate a contractor employee to notify those regulatory agencies that, by law, must be advised of a spill.

Land Spills on Federal Airport Property

Regulation: Under the *Spill Reporting Regulation* of the *Fisheries Act*, all spills involving hazardous materials that have the potential to enter the Fraser River, such as a land spill that overflows existing containment devices, or enters the Sea Island drainage ditch water system on airport property, must be reported to Environmental Protection Operations of Environment Canada.

Environment Canada
604-666-6100 (24 hours)

Spills into Sanitary Sewer System

Regulation: Greater Vancouver Regional District Sewage Bylaw Section 4.4 states: “the spiller at first opportunity will verbally report the accidental release and shall forthwith undertake all remedial action that may be possible to minimize, counteract, mitigate and remedy the effect of such a discharge.”

Metro Vancouver
604-444-8401 (24 hours)

Spills into Fraser River

Regulation: All spills or potential spills into the Fraser River must be reported to the Canadian Coast Guard’s Marine Communications and Traffic Services [MCTS] Centre in Vancouver. MCTS will notify the North Fraser Harbour Commission [NFHC], which is the lead agency for marine spills in the north and middle arms of the Fraser River.

Canadian Coast Guard [CCG]
604-666-6011

Information on a Specific Product

If information for a specific product is required and not readily available, or more detailed information is required, contact the Transport Canada Information and Emergency Centre.

CANUTEC
604-996-6666

2.12.4 Initial Spill Reporting Guidelines

As information about a spill is passed through the notification process to various personnel and agencies, it must be clear, concise, accurate, and timely.

The minimum information that should be communicated in any report includes:

- Name and telephone number of caller
- Date and time of call
- Estimated time of spill / release
- Location of spill / release
- Hazardous material spilled / released
- Estimated quantity spilled
- Actions taken so far
- Evacuation required
- Assistance required
- Contained / uncontained
- Cause of spill
- Responsible party

If time and circumstances permit, additional information can be provided such as weather conditions (e.g., wind and precipitation), persons notified to date, and likely consequences of the spill. The Airport Authority *Report of Hazardous Substances Release* can serve as a guide to the spill reporter in gathering the necessary information.

2.12.5 General Safety and Environmental Hazards

The volatility and flammability of petroleum products present a safety hazard in the event of any spill. Volatility is a measure of a liquid's tendency to vapourize. Flammability refers to the ease with which vapours will ignite and is measured by its flash point. All fuels readily give off vapours that can form ignitable mixtures at ambient temperatures. Diesel fuel, stove oil, and other distillates do not normally give off these vapours, but may do so under certain temperature and air pressure conditions. The combination of flammable vapours, air (oxygen), and a source of ignition (such as heat or spark) can result in ignition of vapours. Since gasoline will give off vapours more readily than distillates, it is easier to ignite.

Toxicity is also a concern, and refers to the potential harmful effects that exposure to fuel can have on animals, fish, or humans. A product release can pose a significant threat to birds that may result in acute or chronic toxicity.

Human exposure by skin contact, inhalation, or accidental swallowing can lead to effects ranging from skin irritation to central nervous system effects such as headaches, dizziness, loss of coordination, or loss of appetite. When released into the natural environment, a product has the potential to affect all the organisms that it contacts, and in situations of persistent contact, may harm or eliminate both organisms and their habitat.

Potential hazards associated with light density fuel spills include:

- Fire can start from a spark, hot exhaust, communication equipment, static electricity, and many other sources
- Explosions can occur if the vapour or mixture is critical
- Fuel vapours are toxic and can cause asphyxiation if sufficiently concentrated
- Light-density fuels are extremely poisonous to most animal life (both aquatic and terrestrial) when ingested or absorbed through the skin; plant life living in the spill area or along shores and banks of ditches may also be destroyed due to the fuel's toxicity

2.12.6 General Spill Characteristics

Water Spills

General characteristics of light-density fuels when spilled on water include:

- The product will spread quickly across the surface of the water in a thin film or sheen.
- The product may cover a wide area, if uncontained.
- A fairly strong odour may be present even at non-toxic levels.
- The product will tend to evaporate fairly rapidly compared to thicker or more viscous oils.
- In a sheltered environment, evaporation of the product may be slow. Evaporation and wave action is effective on small spills in a relatively high-energy environment.
- Distillate releases may form water-in-oil or oil-in-water emulsions or mousse.

Land Spills

General characteristics of light-density fuels when spilled on land include:

- The product will usually migrate to a waterway, either on the surface or underground.
- Soil penetration will depend on the permeability of the soil (i.e., gravel, sand, clay, etc.) and on the moisture content of the ground. If the ground is sufficiently wet (i.e., after a heavy rainfall), the product will float on the water and soil penetration will be limited but surface migration will be more rapid. If the ground is dry, the product will be able to penetrate the ground more easily resulting in contaminated soil.
- Product that seeps into the ground may settle at the top of the water table and can reappear months later, some distance away, on the surface or in a water well.
- Product released onto pavement or concrete will spread rapidly across the surface and evaporate quickly. Penetration into the concrete or pavement should be minimal if the spill is cleaned up quickly.
- The behaviour of these products determines the most appropriate and effective response tactics to be taken by responders to contain and recover the spilled product, to protect sensitive environmental resources, and to clean up the spill site and other affected areas.

2.12.7 Response Equipment List

Contractors handling hazardous materials on Airport Authority property are required to have in place a site-specific contingency plan and to be capable of providing an initial first response to a spill or release of hazardous materials. Additional response equipment belonging to the Airport Authority can and will be made available to contractors on a replacement or cost-recovery basis.

The Project Manager and the contractor will jointly determine the type and quantities of spill response equipment required for each project based on the project-specific environmental risk assessment. The following equipment list is an example of response equipment that may be required for a small project with minimal risk.

Location	Quantity	Description
Job site	1 spill kit	**Containing:** • 100 sorbent “white” pads – polypropylene (fuels and lubes) • 25 sorbent “general purpose” gray pads – cellulose (glycol) • 6 sorbent socks – polypropylene 3” x 48” • 1 drain cover – neoprene 36” x 36” • 1 roll of barrier tape – 300’ • 4 refuse bags (6 mil) • Personal protective equipment [PPE] for two: nitrile gloves, splash goggles, poly-coated Tyvek suit and boots • 1 spill kit container • List detailing contents of kit and where to obtain replacement items • Set of instructions on how to use each item in the kit
Individual equipment	Small kit	Nylon spill kit containing 20 pads, 2 sorbent socks, refuse bag, goggles, and gloves

Chapter

3

Airside Construction Safety

This chapter describes legislative requirements that apply to parties working airside, as well as the roles and responsibilities of these parties and standards that must be followed in completing airside construction projects.

3.1 Objective and Goals

The objective of this chapter is to communicate airport operational requirements applicable to airside projects.

The goals are to:

- Maintain compliance with Airport Authority Aerodrome Certification
- Maintain the lowest degree of impact on airside operations
- Maintain the Airport Authority first priority of “safe production” mandate

The Airport Operations Department is dedicated to the safe movement of people, baggage, and aircraft at Vancouver International Airport. We do this by making safety our first priority.

We expect and require that all employees, contractors, and tenants follow our safety principles when entering our workspace.

All parties involved with airside construction projects are required to comply with the standards detailed in this chapter. Non-compliance will result in disciplinary action or fines.

3.2 Operating Certificate Compliance

The Vancouver Airport Authority is certified in accordance with Standards and Recommended Practices as defined by Transport Canada. Ensuring compliance with these certification requirements, the Airport Authority maintains operating procedures for all aspects of airport operations.

Any changes to an airside facility or operating procedures can directly impact operating certification. Therefore, any deviations to airport certification are subject to review and approval by Airport Operations and Transport Canada.

The Vancouver Airport Authority expects all airside construction projects to be undertaken in a manner that complies with *Construction Safety Security Manual [CSSM]* requirements, and applicable airside safety and security standards, while ensuring that construction activities disrupt aircraft operations as little as possible.

3.3 Legislative Requirements

Federally mandated aviation safety and security standards apply to all parties working airside. The Airport Authority stipulates standards of performance to ensure the safety and security of the airfield, aircraft, employees, tenants, and contractors.

The following is partial list of the applicable standards:

- Airport Authority *Construction Safety / Security Manual*
- *Aeronautics Act*
- *Canadian Aviation Regulations*
- *Canadian Aviation Security Regulations*
- *Aerodrome Security Measures*
- Transport Canada TP 312 *Aerodrome Standards and Recommended Practices*
- Transport Canada TP 322 *Helicopter Standards*
- Transport Canada TP 382 *Standard Obstruction Markings*

3.4 Roles and Responsibilities

The Airport Authority, Airside Escorts, NAV CANADA, Transport Canada, and individual contractors each have roles and responsibilities towards the successful completion of airside projects. All parties must understand their respective roles and responsibilities before entering the airside environment.

3.4.1 Vancouver Airport Authority

Various departments within the Airport Authority have roles with airside projects.

Most of the responsibility for ensuring safe and efficient management of airside operations lies with the Airport Operations Department.

3.4.2 Airside Safety Officer

The Airside Safety Officer [ASO] has overall control and responsibility for daily airside operations. Instructions set by the ASO must be followed at all times. The ASO reviews and approves changes to the scheduled work plan, and investigates all incidents/accidents, and damage reported.

At the end of a work shift the ASO inspects the work areas for cleanliness and identifies any deficiencies.

3.4.3 Airside Project Coordinator

The Airside Project Coordinator is the primary liaison between Airport Authority Engineering, external stakeholders, contractors, and Airport Authority Operations. All airside projects must be communicated through the Airside Project Coordinator before work begins.

The Airside Project Coordinator reviews and approves the following information provided by the Airport Authority Project Manager (or contractor management):

- Scope of work
- Weekly outlook
- Daily activities
- Hours of operation

The Airside Project Coordinator chairs the daily construction meetings that are held Monday through Friday. The Airside Project Coordinator can reject work activity if sufficient information is not provided in a timely manner.

3.4.4 Airside Escort

The Airside Escort has overall control and responsibility for maintaining airside safety and security requirements. A brief orientation of airside safety and airside escorting requirements will be provided by the assigned Airside Escort prior to entering the restricted areas. All personnel must remain in visual contact with the Airside Escort at all times while airside and follow all instructions given by the Airside Escort. Personnel must be able to present their block pass and photo identification on demand by any Airside Escort. Vehicles under escort must follow closely behind the escort vehicle and not stop or detour.

Before workers can proceed to a work site, the Airside Escort will establish the safe work areas. All crossing locations, closed taxiways, and Airside Escort positioning will be reviewed before entering airside. Personnel wanting to leave designated work areas must return groundside via the established route or under escort by the Airside Escort.

At no time may personnel cross grass areas to other paved surfaces without the permission of the Airside Escort.

Note: For more information on Airside Escorts and Airside Security, see Chapter 5, *Airside Escort Service* and Chapter 4, *Security – Restricted Area Access*.

3.4.5 Contractor Management

Contractor management (contractor Project Manager, Project Superintendent, or designate) is responsible for communicating work plans before work begins.

Contractor management is required to provide the following information for all airside work to the Airport Authority Project Manager (or Airside Project Coordinator if this communication route is established for the project):

- Scope of work
- Weekly outlook
- Daily activities
- Hours of operation

Contractor management must attend and present all work plans at the daily construction meeting held Monday through Friday and chaired by the Airside Project Coordinator.

Contractor management must notify the Airport Safety Officer at least 30 minutes in advance of the end of the work shift for an inspection of all work areas.

3.4.6 Worker Responsibilities

Personnel will follow the work plans as instructed by their management. Any changes to work plans must be approved by the contractor Project Manager, Project Superintendent, or designate and Airport Operations before the work plan is changed. All personnel must follow the direction of the Airside Escort at all times when airside.

Personnel working airside are issued a temporary security pass to wear. All temporary passes must be worn on the chest and visible at all times. A charge will be levied against the contractor for each lost temporary security pass.

> Note: For more information on security requirements, see Chapter 4, *Security – Restricted Area Access*.

3.5 Emergency Procedures

If the Airside Escort must get the attention of personnel in a noisy environment, the Airside Escort will give two long blasts of the car horn or air horn to signal an emergency. Personnel must proceed calmly to the Airside Escort and await further instruction.

In case of a serious injury, call 911 immediately. Report the work location as “Airside – Vancouver Airport.” The 911 operator will automatically connect to the Airport Operations Centre.

3.6 Foreign Object Debris / Site Cleanliness

Foreign object debris [FOD] is a very significant danger to aircraft and must be controlled. All personnel must keep their work area clear of FOD at all times. Control of FOD and site cleanliness are the responsibilities of everyone who works airside. All debris must be cleaned up as the work proceeds. It is not acceptable to leave debris lying around at any time.

The following are some examples of FOD:

- Paper
- Metal
- Sand
- Tools
- Plastic
- Mud
- Gravel
- Garbage

Ensure that any loose materials cannot blow away or fall off vehicles. If FOD is blown away from the work area, **do not chase after it**. Immediately report any transient FOD to the Airside Escort. Always keep track of all hand tools, parts, and equipment, and ensure vehicle tires are clean from loose dirt or gravel. Never leave any items unattended.

Birds pose a hazard to aircraft. Personnel are responsible for not leaving attractants such as food unattended or for discarding any garbage airside.

At the end of a work shift, all areas must be thoroughly cleaned and inspected before leaving the work area. The Airport Safety Officer must be notified at least 30 minutes in advance of any requested inspection.

3.7 Environment

All personnel must carry spill containment kits with vehicles and equipment. Any spill must be reported to the Airside Escort and the Airport Response Coordinator. Never dispose of chemicals or solvents on the airfield. All contaminated soils must be taken groundside for treatment.

Note: For more information on the environment, see Chapter 2, *Environmental Construction Standards*.

3.8 Notice to Airmen

Notices to Airmen [NOTAMs] are advisory documents broadcast to pilots that contain information on the establishment, condition, or change in any aeronautical facility, service, procedure, or hazard, the timely knowledge of which is essential to flight operations. A *Request for NOTAM* must be submitted to the Airside Project Coordinator a minimum of seven days prior to the anticipated date that the NOTAM is scheduled to take effect. This must be taken into consideration for project commencement and any work plan changes.

3.9 Work Plan Changes

If any changes are required to a scheduled work plan or the project is delayed, all information must be reported to Airport Operations before the work may proceed. Changes to a scheduled work plan are not permitted without prior approval from Airport Operations.

3.10 Incidents, Accidents, Damage

All incidents, accidents, or property or environmental damage along with equipment, machinery, or vehicle breakdowns must be reported to Airport Operations.

3.11 Inspection at End of Work Shift

At the end of a work shift, Airport Operations personnel inspect the work area for cleanliness. Personnel must notify Airport Operations at least 30 minutes in advance of any requested inspection. All deficiencies must be immediately corrected to the satisfaction of Airport Operations.

3.12 Contractor Internal Communication

The contractor Project Manager or designate communicates work plans to all company personnel so workers understand their duties and work areas before entering airside.

3.13 Permits

Contractors must have approved construction/safety permits, as per the *Construction Safety Security Manual* [CSSM], for all hot work, lockouts, saw-cutting/coring, and trenching/excavations. Excavation and trenching permits must be kept in the excavation equipment. Contractors must have electrical as-built drawings at every work area. Contractors must have drawings showing locations of underground utilities at work areas.

Note: For more information on the environment, see Chapter 1, *Construction Safety*.

3.14 Underground Systems

All personnel are responsible for reporting any contact with underground facilities, lighting, or other airside systems. All electrical systems will be treated as energized until notified otherwise. If any airside system has been damaged, repairs must be inspected by Airport Authority personnel.

3.15 Lightning

Vancouver International Airport is equipped with the **THOR GUARD** Lightning Prediction System. If lightening is detected by the system, the Airport Authority will advise supervisory staff of the threat. Removal of personnel from airside is at the discretion of the supervisors.

3.16 Wind

Strong winds do occur at the airport, so personnel should ensure appropriate clothing and eyewear is worn at all times. Jet blast can also impact construction sites adjacent to operating areas, so precautions are required to protect both personnel and materials.

3.17 Wildlife

Birds and any wildlife pose a significant hazard to aircraft. Personnel are not to leave food or garbage unattended. Coyotes are regularly sighted on the airfield and can pose a hazard to aircraft. They have been known to seek food from open truck doors at work sites.

3.18 Airside Traffic Directives

Persons driving on the airside must have successfully completed an airside driver training and certification course to drive unescorted. A valid Restricted Area Identity Card and BC driver's license are required prior to being considered for an Airside Vehicle Operator's Permit [AVOP]. A contractor must show valid reasons why an AVOP application should be considered.

Note: For more information, see the *Airside Traffic Directive*.

3.19 Situational Awareness

Airport Authority airfield personnel and wildlife control officers may be working in proximity to work areas. Never assume that these workers can see you. Use situational awareness at all times.

Always be aware of your surroundings. Aircraft may be maneuvering in proximity to the work area.

3.20 General Requirements

- No smoking.
- No sleeping.
- Urinating/defecating is not permitted unless proper facilities have been provided.
- Inappropriate behaviour will not be tolerated.

3.21 Violations

Violations to any of the safety, security, and environmental requirements will not be tolerated. Persons in violation may be permanently removed from airport projects.

Failure to report incidents, accidents, or damage to airport systems may also result in permanent removal from airport projects.

Violations to contractor safe work procedures or WorkSafeBC regulations will be reviewed case by case.

Chapter

4

Security – Restricted Area Access

Regulations require that all personnel entering onto the restricted areas have the appropriate security arrangements and adhere to procedures in place to prevent or reduce unlawful interference with civil aviation and applicable Transport Canada security regulations.

4.1 General Requirements

The contractor is responsible to:

- Apply for, control, and return any passes, keys, or electronic access control devices.
- Ensure that all personnel carry and display the proper identification at all times. Failure to produce a valid pass and identification will result in denial to, or removal from, restricted areas and the possible issuance of an *Airport Violation Notice* [AVN].
- Ensure gates and doorways providing access to restricted areas are locked or guarded, and that access is restricted to authorized persons only.
- Ensure that hoarding, fences, and gates are not damaged. Any broken or damaged hoarding, fencing or gates should be reported to the Airport Authority Operations Centre immediately for proper repairs.
- Ensure that a 3-m clear zone is maintained along the exterior of any fence line displaying “Restricted Area” signage, and a 1-m clear zone along the interior of any such fence.
- Provide security escorts and temporary passes for all workers required to work in restricted areas.

- Pay for all necessary security escort services.
- Report immediately to Airport Authority Operations any suspicious activity related to unauthorized access to restricted areas.
- Challenge any person suspected of unauthorized entry into the restricted areas.
- Report immediately any security violations to Airport Authority Operations or Security.

4.2 Access to Restricted Areas

Access into terminal restricted areas or airside area requires that each individual entering the area has fulfilled all Transport Canada and Airport Authority stipulated security requirements and checks, and possesses an approved document of entitlement.

4.2.1 Restricted Area Identity Card [RAIC]

This is a permanent pass that permits the holder to proceed unescorted into the restricted area *while performing* work-related activities.

Contractor Request for Restricted Area Identity Card

Select contractor personnel may be eligible to apply for a Restricted Area Identity Card subject to the conditions listed below.

Criteria for Contractor Application

The following criteria must be met before a contractor application for a Restricted Area Identity Card is considered:

- A contract has been awarded, or a Letter of Intent has been issued, between the contractor and the Airport Authority for a specific construction project.
- The contractor has been or will be working on multiple projects for the Airport Authority and the Airport Authority expects that the contractor will continue working on future projects.

- The anticipated duration of the project warrants application for a Restricted Area Identity Card. RAIC applications can take three months or more for processing and acceptance. Therefore, a general guideline is the project must last at least six months.

- The location of the project warrants contractor application for a Restricted Area Identity Card.

  – On airside projects where Airside Escorts are stipulated for guarding and escort, contractors may not have a valid reason for requiring a Restricted Area Identity Card and therefore may not be eligible to apply for a Restricted Area Identity Card.

  – On airside projects that can be accessed and worked by contractors with Restricted Area Identity Cards, contractor personnel may be eligible to apply for a RAIC.

Eligible Contractor Personnel

The following personnel are eligible for consideration for a Restricted Area Identity Card:

- Project Managers and site supervisory personnel

- Site First Aid Attendants, site Construction Safety Officers

- Independent consultants who are or are likely to be engaged in ongoing work for the Airport Authority

The Airport Authority will not consider other contractor personnel applications unless the contractor can demonstrate valid reasons for such personnel to have a Restricted Area Identity Card.

Contractor Application

Subject to meeting the above requirements, contractor personnel may proceed with seeking a Restricted Area Identity Card by completing the necessary documents and processes as prescribed by Airport Authority Access Control. Access Control Offices are located in the Domestic Terminal Building. Office hours are 0700–1600 hours from Monday to Friday; 0800–1300 hours on Saturday and Sunday, including statutory holidays. Appointments must be made in advance for all applications.

4.3 Restricted Area Identity Card Sponsorship

Contractor personnel must have Restricted Area Identity Card applications signed by an approved Airport Authority sponsor before submitting them to Access Control. The contractor may request sponsorship from:

- Airport Authority Project Manager responsible for the project, if the Project Manager has Restricted Area Identity Card signing authority
- Airport Authority Director of Engineering or Director of Maintenance
- Airport Authority Safety Coordinator for contractor First Aid Attendant or Construction Safety Officer applications

Note: Sponsorship for a Restricted Area Identity Card does not constitute any guarantee that the applicant will receive the RAIC.

4.4 Proximity Card

Most security points from non-secure to secure areas of the terminal buildings and airside require a proximity card to pass through the Primary Security Line [PSL]. The proximity card contains information and access restrictions for the particular RAIC holder to whom the proximity card has been issued, and is used to verify that the RAIC holder is eligible to access the particular post-security or airside area. The proximity card must be swiped across the card reader at each Primary Security Line access point to which the RAIC holder is seeking access. In some cases the proximity card must be swiped across another card reader to exit a secure area. Each person possessing a Restricted Area Identity Card must have a valid proximity card to gain access to restricted areas.

Issuance of a proximity card does not provide access to all post-security or airside areas. Rather, the proximity card is issued specifically for the locations to which the particular RAIC holder requires access in performance of work.

If a RAIC holder attempts access through a secure point to which the individual has not been granted access, the card reader will reject the proximity card and deny access through the security door. Additionally, the Security Guard at the access point will deny the RAIC holder access, even though the individual holds a valid Restricted Area Identity Card.

A RAIC holder who does not have proximity card access through a particular Primary Security Line point may not be escorted by another RAIC holder with proximity card access through the particular Primary Security Line point. Each individual who holds a Restricted Area Identity Card must pass through any

particular Primary Security Line using his or her own Restricted Area Identity Card and proximity card.

4.4.1 Proximity Card Sponsorship

As with the application for a Restricted Area Identity Card, the contractor must receive approval from the Airport Authority sponsor to obtain the proximity card. The Airport Authority sponsor must provide written notification to Access Control requesting a proximity card on behalf of the RAIC holder. The notification must include the terminal building and airside areas to which the RAIC holder is seeking access *in performing* the work.

4.4.2 Proximity Card Access Areas

The following are general guidelines for areas that may be approved for contractor RAIC holders.

> Note: Contractors seeking to drive airside must meet Airside Operator's Vehicle Permit [AVOP] requirements before being granted permission to drive on airside. See AVOP for details.

Domestic Terminal Building

- Primary Security Line points leading from non-secure to secure and/or airside ramp areas
- North and south security bypass points
- Airside access points [guardhouses] leading from non-secure to airside ramp areas

International Terminal Building

- Primary Security Line doors leading from non-secure to secure and/or airside ramp areas
- Airside access points [guardhouses] leading from non-secure to airside ramp areas
- Bypass doors between International Departures and U.S. pre-board screening

South Terminal Building

- Primary Security Line doors leading from non-secure to airside ramp areas
- Airside access points [guardhouses] leading from non-secure to airside ramp areas

Restricted Access

Contractors are typically restricted from accessing the following areas, and permission must be granted by the individuals' names listed in this chapter before contractor personnel are granted access.

United States Customs and Border Protection [USCBP] Area of the International Terminal Building [Transborder]
Access to the operational spaces in this area may be granted by the Airport Authority sponsor if the work is occurring inside the Federal Immigration Services [FIS] area. Access to FIS administration and security offices will not be granted to contractor personnel. Access to the FIS area will only be granted for the duration of the contracted work.

Canada Border Services Agency [CBSA] Areas of the International Terminal Building [International Departures and Arrivals Areas]
Access to the operational spaces in this area may be granted by the Airport Authority sponsor if the work is occurring inside the Canada Immigration Services [CIS] area. Access to CIS administration and security offices will not be granted to contractor personnel. Access to the CIS area will only be granted for the duration of the contracted work.

Airport Authority Communication Equipment Rooms [CER] and Terminal Equipment Rooms [TER]
Access to CER and TER rooms requires proximity card signing sponsorship from the Manager of Information Technologies or designate.

Airport Authority Mechanical Equipment Rooms [MER]
Access to MER rooms requires proximity card signing sponsorship by the Director of Maintenance.

NAV CANADA Control Tower
Access will not be granted to contractor Restricted Area Identity Card holders.

Airport Authority, Transport Canada, or Police-Designated Security Areas
Access will not be granted to contractor personnel for any of these areas.

4.5 Canadian Aviation Security Regulations for Restricted Area Identity Card Holders

Issuance of a Restricted Area Identity Card carries obligations to the holder to ensure that *Canadian Aviation Security Regulations* are maintained. For more information, see Appendix 4 or the *Canadian Aviation Security Regulations*.

4.5.1 Violations

Restricted Area Identity Card holders who violate the RAIC Conditions of Issue or the *Canadian Aviation Security Regulations* face a penalty ranging from a warning on their record to suspension of their RAIC pass privileges at Vancouver International Airport. Suspensions vary in length from 3 to 10 days and a penalty point system is used to determine the length of a suspension. The types of RAIC violations include:

- Gross Misconduct
- Class A
- Class B

Each type carries a different penalty in the form of violation points.

Penalty points are assigned for all violations and are cumulative. Multiple points are given for violating more than one Condition of Issue.

4.6 Conditions of Issue of a Restricted Area Identity Card

Canadian Aviation Regulations and the Airport Authority stipulate conditions and limitations on the use of a Restricted Area Identity Card. For more information, see Appendix 5.

4.7 Temporary Escort Required Pass

An Escort Required pass allows access to the restricted or airside area when the holder is escorted by a valid permanent RAIC holder. An Escort Required pass holder must be under the supervision of a permanent RAIC holder at all times, and must present valid government photo identification [passport, driver's license] at all security checkpoints.

4.7.1 Issuance of Temporary Block Passes

Issuance of temporary block passes is subject to prior authorization by the Airport Authority signing sponsor.

All persons who will be escorted by means of a temporary block pass will present valid government-issued photo identification—either a driver's license or passport—to the RAIC holder before a temporary block pass is issued. All temporary block pass wearers will also present their own photo identification to the Access Control Point Guard at each Primary Security Line.

Where more than one person is under escort by a RAIC holder, the RAIC holder will complete the *Block Pass Register* form with the names, photo identification number, date, and duration of access for each temporary block pass holder.

4.7.2 Obtaining Passes

All passes will be made available upon proper application to the Airport Authority Access Control Office, Vancouver International Airport. Temporary passes may be issued within 48 hours, but RAIC applications require a security clearance that may take up to four months to process. A charge of $200 plus applicable taxes will be levied for each temporary pass not returned on completion of the work. Contractors are responsible for the safekeeping of all passes.

4.8 Escort Ratios

Canadian Aviation Security Regulations stipulate maximum allowable ratios for RAIC holders escorting non–RAIC holders. The following ratios must be maintained at all times when escorting in any restricted area unless otherwise approved by the Airport Authority.

RAIC holders may not escort more than 3 non–RAIC holders in the sterile area of the terminal, and may not escort more than 10 non–RAIC holders in any other part of the restricted area.

4.8.1 Large Airside Construction Sites

Fenced “groundside islands” are expected to be used on some airside projects. All fences and gates must meet the standards and approval of Transport Canada. This approval will be provided on a project-by-project basis. Once approved, work may proceed inside the fenced compound largely as though it were groundside, with an unrestricted number of non–RAIC holders. Conditions for site access will be included in the Transport Canada request for security exemption. Contractors should consult with the Airport Authority Project Manager to determine whether groundside islands will be used on the project.

4.9 Contractor Escorting

The Airport Authority reserves the right, at its discretion and in consultation with Transport Canada, to accept or reject a contractor RAIC holder as an acceptable method of escort. A contractor may be qualified to act as escort under the following conditions:

- Where the work is entirely within an established airside baghall
- Where access to and exit from the work area can be gained through a Primary Security Line, and where the RAIC holder and persons under escort do not require a vehicle escort to access and exit the work area
- Where, at the discretion of the Manager, Aviation Security, a contractor RAIC holder can provide Static Escort for non–RAIC holders as defined below:
  - Where the work location is a carved-out groundside area on airside, and access and egress are provided by Airside Escorts
  - In a remote grass area, where access and egress do not require crossing a paved surface or crossing under a Glideslope
  - Where Airside Escort is provided by an approved Airport Authority employee
  - Where the Manager, Aviation Security or designate deems the use of contractor RAIC holder escort acceptable

4.9.1 Contractor Escorting Responsibilities

When a contractor RAIC holder performs the function of an escort, the primary responsibility is to maintain security of the facilities and all persons under escort. Contractors are cautioned that they should not expect the RAIC holder to be able to perform normal contractor duties when acting as escort.

Duties of the contractor RAIC holder escort include the following:

- Ensure that each non–RAIC holder carries photo identification at all times. Acceptable photo identification is a passport or a valid driver's licence.
- The RAIC holder escort will issue a temporary block pass to each non–RAIC holder who will be under escort by the RAIC holder. See *Issuance of Temporary Block Passes* in this chapter for details.
- When escorting more than one non–RAIC holder, the RAIC holder escort will complete the restricted area *Block Pass Register* form with the names and photo identification number of each non–RAIC holder under escort.
- The RAIC holder escort will carry the restricted area *Block Pass Register* form at all times while in post-security or other restricted areas, and present it to any security, police, or Airport Authority personnel on demand.
- The RAIC holder escort will maintain visual contact with all non–RAIC holders at all times.
- The RAIC holder escort will ensure that non–RAIC holders do not stray beyond the immediate vicinity of the RAIC holder escort. Non–RAIC holders should always be within voice communication range, and should maintain visual contact of the RAIC holder escort. Note: this distance can be quite small when working in areas with aircraft noise.
- If the RAIC holder escort, or any escorted non–RAIC holder, needs to leave the restricted area, the RAIC holder escort will ensure that all non–RAIC holders accompany the RAIC holder escort back to the non-secure area.
- When escorting non–RAIC holders through a Primary Security Line door, the RAIC holder escort must stay at the PSL door until all non–RAIC holders under escort have passed through, and then confirm that the door is properly closed and locked.
- If the PSL door does not properly close or lock, the RAIC holder escort must notify Airport Operations and stand guard at the PSL door until relieved by security personnel or the Airport Authority.

- The RAIC holder escort may not permit any person, even if the person has a RAIC, through a PSL door.
- The RAIC holder escort will continually monitor the work activities to ensure that foreign object debris [FOD] is not released onto airside, and if the potential for FOD release exists, the RAIC holder will take immediate action to contain and control the FOD.
- The RAIC holder escort will ensure that no contractor tools, materials, or equipment is left unattended in a restricted area.
- The RAIC holder escort will ensure that all non–RAIC holders are aware of and in compliance with restricted area safety and security requirements.

4.10 Security Exemption Request Procedures

An exemption is a request made to Transport Canada to be exempt from specific federal regulations under the *Aeronautics Act*. Generally this procedure is followed only for construction projects of a large scale and duration where the number of Airside Escorts required for “conventional” escorting would be prohibitive to the project (that is, they would greatly extend the length of time it would take to reach completion).

An exemption request is made up of two parts:

- Official letter to Transport Canada requesting exemption temporarily from one or more sections of a federal regulation
- Detailed plan outlining what alternate security measures will be in place to effectively maintain the security of a restricted area

For an exemption request to be considered by Transport Canada, it must be in the “public interest,” and it must be unlikely to affect aviation safety.

All requests for an exemption will be made by the party overseeing the work to be done (Project Manager or designate). A security plan will be created following a template, with consultation from the Airport Authority Aviation Security Compliance Inspector. Once the security plan is received and approved by the security department, a letter will be drawn up by the Security Compliance Inspector quoting specific regulations to be exempt. This letter is then signed by the Manager, Aviation Security and forwarded to Transport Canada.

Chapter

5

Airside Escort Service

This chapter will assist contractors working on the airside of Vancouver International Airport. It provides an overview of the responsibilities of Airport Authority–approved Airside Escort Service Provider(s). It also details the important role that Airside Escorts play in the contractor's Airside Emergency Response Plan.

Contractors working on airside are required to enter into a contract with an authorized Airside Escort Service Provider for the provision of Airside Escort services. The Airside Escort Service Provider, in conjunction with an Airport Authority Project Manager and/or Operations Project Coordinator, will work with the contractor to determine the number and type of escorts required to safely facilitate the contractor's work plan. The contractor will discuss the availability and scheduling of the Airside Escorts directly with the Airside Escort Service Provider. Details of the services provided including costs and other terms and conditions are available in the *Airside Escort Program* document.

5.1 Airside Escort Service Provider

The Airside Escort Service Provider is authorized by the Airport Authority to provide operational safety and security services to contractors working in post-security or airside portions of Vancouver International Airport.

The Airside Escort Service Provider is required to ensure that the contractor maintains compliance with Transport Canada and Airport Authority aviation safety regulations. The Airside Escort Service Provider will provide frequent and regular updates to Airport Operations and Engineering on the progress of airside projects, and advise of any contractor transgressions and of subsequent corrective actions taken to resolve a situation.

Contractors are advised that the Airside Escort Service Provider is mandated by the Airport Authority to ensure the safety and security of the airfield at all times during construction work. If the contractor provides to the Airside Escort Service Provider instructions that are contrary to law or regulation, the requirements detailed in Chapter 1, *Construction Safety*, or the procedures and methodology established in the Plan of Construction, the Airside Escort Service Provider must refuse, without risk of penalty, to accept the instructions.

5.2 Airside Emergency Response Programs

Every contractor is required to have a prepared plan to deal with potential site emergencies. The plan will include the role of the Airside Escort in resolving the emergency. Airside Escorts must review the emergency plan prior to the start of the work, or at the beginning of the duty shift if the project is underway.

In addition, an emergency situation unrelated to the construction work may arise and require the work to be stopped, and further could require immediate egress of construction personnel and equipment from airside. Contractors and Airside Escorts must be familiar with the requirements of the emergency plan and ensure the plan is implemented immediately upon notification or discovery of the emergency.

5.2.1 Site Emergency Procedures

The contractor is responsible for developing and implementing the specific procedures to address site emergencies occurring on construction sites. The following general requirements apply to most airside construction projects.

5.2.2 Emergency First Aid

Worker injuries take precedence over construction site activities and normal airside operations. The site First Aid Attendant [FAA] will evaluate the injured worker and make decisions about the need to transport the injured worker, including the appropriate level of transportation.

WorkSafeBC *Occupational Health and Safety Regulation* stipulates that the FAA's transportation decisions cannot be overruled by supervisory personnel.

In medical situations, the Airside Escort will:

- Take direction from the First Aid Attendant or designate in all matters relating to transporting the injured worker. However, all decisions about the safest means of transport from the site to non airside are still the responsibility of the Airside Escort.
- Immediately notify Airport Operations of the emergency and confirm whether an Airside Escort is proceeding to the designated airside gate to escort the ambulance to the work area.
- Request that Operations notify the Airport Safety Officer of the situation and await any instructions to be communicated to site personnel or the Airside Escort supervisor.
- Immediately inform the Airside Escort Supervisor of the emergency and any instructions issued by the Airport Safety Officer.
  - As instructed, the Airside Escort will immediately proceed to the designated airside gate and wait for the ambulance.
  - As instructed, the Airside Escort will immediately escort the ambulance to the injured worker location.
- Unless otherwise directed by Airport Operations, the Airport Safety Officer or the Airside Escort Supervisor, the Airside Escort will stand by to escort the ambulance back to groundside.

5.2.3 Non-Emergency First Aid

If a worker sustains an injury that the First Aid Attendant deems to require routine transfer to medical facilities, the Airside Escort will:

- Advise the Airside Escort Supervisor of the worker injury and advise that the Airside Escort has been asked to assist in removing the injured worker.

> Note: The Airside Escort Supervisor should communicate with the contractor supervisor and advise of any delay in activities as a result of removing the Airside Escort from normal duty to assist with the escort of the injured worker non-airside.

- Escort the injured worker to non-airside.
- Retrieve any temporary passes and vehicle placards.

5.2.4 Accidents

The severity and location of the accident will dictate the response efforts by construction personnel, the Airport Authority, and the Airside Escorts. If the accident has occurred on a non-enclosed airside surface, Airport Operations will have overall control of the accident scene and response efforts.

If the accident has occurred within the confines of an enclosed construction area on airside, the contractor Project Manager or designate will have overall control of the accident scene.

In either situation, the scene controller will provide instructions on the actions to be taken to prevent any further injury or damage, or in resolution of the accident.

In either situation, the Airside Escort will immediately notify Airport Operations of the accident and:

- Advise on the location of the accident and who is designated to be the scene controller [Airport Operations or contractor]
- Advise on any potential impacts to normal operations
- Request instruction on any actions to be taken by the Airside Escorts while awaiting the arrival of the Airport Response Coordinator

Regardless of the nature or location of the accident, the Airside Escorts will assist in resolving the accident and report all details to the Airside Escort Supervisor for further review.

5.2.5 Airport Emergencies

If the Airport Authority declares an emergency situation that necessitates removal of the contractor personnel for safety or security reasons, the Airside Escorts will be informed of the emergency by Airport Operations, or the Airside Escort Supervisor. The Airside Escort receiving such notification will communicate the relevant requirements immediately to the contractor Project Manager or designate and all other Airside Escorts. Without delay, the Airside Escorts will assist the contractor personnel in preparing to return to a safe location as identified by Airport Operations personnel.

The Airside Escort will use best judgment when advising the contractor of the emergency and the timeframe for abandoning the work area. Depending on the nature and urgency of the emergency, the Airside Escort should assist the contractor to shut down the work to the extent that the equipment or processes are not unduly at risk due to the unexpected departure from the work area.

Appendix

1

Construction Safety / Security Manual Checklist

During Bidding Process	
Safety Pre-Qualification Application Process	Successful completion of this process is required prior to bidding on Airport Authority projects. Have you received approval? At least 10 working days will be required for the properly completed *Application for Safety Pre-Qualification* to be processed. The application is to be submitted to Construction Safety [Email construction_safety@yvr.ca; fax 604-232-6238; phone 604-276-6040]
Before Start of Construction	
Airside Work or Work Beyond Security Checkpoints	If so, Chapter 3, *Airside Construction Safety*, Chapter 4, *Security – Restricted Area Access*, and Chapter 5, *Airside Escort Service*, apply to the work.
Facility Permit [FAP]	An approved *Facility Permit* is required before work starts. Engineering Services requires 14 working days to review and approve the completed *Facility Permit* application. A copy of the FAP is to be posted on the Project Information Board [PIB].
Notification of Project	Before work starts, the contractor must notify the Airport Authority using the *NOPA/Construction Impact Assessment* [CSSM10]. Construction Safety must be notified 7 days before construction starts. Post a copy on the Project Information Board [PIB].
Construction Safety Officer [CSO]	Where required by contract, a CSO will provide coverage on all projects. The CSO is to be identified with contact information on the Project Information Board. CSO responsibilities include: • Document twice-daily site inspections and retain copies for Airport Authority review. • Ensure worker safety orientations and visitor safety orientations are conducted and documented. • When the prime contractor, establish Occupational Health & Safety Committee including the subcontractors. • Attend the weekly Construction Safety meeting held by Airport Authority Construction Safety • Retain subcontractor's records and include in the monthly summary.
Subcontractor Trades Safety Coordinator [TSC]	Each subcontractor will nominate an individual who will be the Trades Safety Coordinator for that subcontractor.

Before Start of Construction (continued)	
Risk Assessment Program	The contractor is to develop and design a risk assessment program that meets the minimum standards of Chapter 1. The Site Superintendent will ensure that this program is properly developed, documented, and implemented on site, and that: • Supervisory personnel are trained to implement the program • Employees are trained and knowledgeable of the Risk Assessment Tool and the established reporting structure • Risk assessment program is regularly reviewed • All assessments are kept on site
Construction Emergency Response Plan [CERP]	The prime contractor is to develop a CERP for each construction site or area before construction activities start. Post a copy on the Project Information Board.
Fire Safety Plan	According to the hazard assessment review, the contractor is required to develop and update Fire Safety Plans. All employees must receive instruction on the relevant fire prevention rules and regulations for each area where hot work will occur. Post a copy on the Project Information Board [PIB].
Firefighting Equipment	The contractor will provide the amount and types of firefighting equipment required by the construction site. Locations must be identified, well marked, and maintained.
Indoor Environmental Quality	A completed *CSSM10 NOP/ Construction Impact Assessment* must be submitted for all construction and renovation work inside the terminals to Construction Safety 5 working days before the start of site activities. [Email: construction_safety@yvr.ca; fax 604-232-6238]
Asbestos Clearance	Work in the Domestic Terminal Building, including piers A, B, and C, and other Airport Authority buildings, requires an approved *Request for Asbestos Clearance* [CSSM230]. Applications must be submitted to Construction Safety 5 working days prior to the start of work. Post asbestos clearance letters and labelling information on the Project Information Board [PIB]. [Email: construction_safety@yvr.ca; fax 604-232-6238]
Contractor Environmental Response Plan	If required for the project, the contractor is to assess the nature and risks, develop a site-specific response contingency plan for the project, and provide appropriate training and initial oil spill response equipment capability. All spills are to be reported to Richmond Fire-Rescue (911) and then to Airport Operations (phone 604-207-7022) and the appropriate agency indicated in the CSSM.
Traffic Control Program	A contractor must submit a detailed traffic control program for review and approval by the Airport Authority prior to any lane or road closures in accordance with the CSSM.
Site Specific Safety Plan	All of the above plans should be compiled in the Site Specific Safety Plan including a response for all action items identified in the site wide risk assessment.
Before Work in a Restricted Area or Airside	
Restricted Area Identity Cards (RAIC) for Work in a Restricted Area or Airside	If the project is large, lasting over six months, the project managers, supervisors, and site first aid and safety officers should consider applying for their Restricted Area Identity Card [RAIC]. These can take three months for approval. If escorts are required for the project, a RAIC may not be necessary.
Airside Escorts	For work in a restricted area or airside, the contractor will be responsible to enter into a contract with the Airside Escort service provider licensed by the Airport Authority for Airside Escorts to escort their staff and equipment to the work site and back and to monitor the staff on the work site. For more information, see Chapter 5, *Airside Escort Service*, and Chapter 3, *Airside Construction Safety*.

Before Work in a Restricted Area or Airside (continued)	
Vehicle and Equipment Operation Airside	A contractor's vehicle can only be operated airside if it is escorted by an Airside Escort or operated by a driver that has both a RAIC and an *Airside Vehicle Operating Permit* [AVOP]. The vehicle must be properly equipped with a beacon and radio if operating on the controlled surfaces, and must have the required insurance. All contractor vehicles and equipment operating airside must have spill containment kits.
NOTAMs	Any airside work that affects the availability of airside pavements, lighting, or navigational aids will require the issuance of NOTAM to advise pilots of the changes. These require a minimum of 7 days to put in place.
Access to Restricted Areas	In addition to those areas beyond Security that are "restricted," a number of areas require specific permission to access. These include U.S. Customs and Border Protection areas, Canadian Border Services Agency areas, Airport Authority's Communication Equipment Rooms [CER], Mechanical Equipment Rooms [MER], and Terminal Equipment Rooms [TER], and NAV Canada's Control Tower. See Chapter 4, *Airside Construction Security*, for detailed information.
During Construction	
Safety Orientation Signature Sheet	Before entering the construction site, workers and visitors must complete the construction safety orientation and the *Safety Orientation Signature Sheet* [CSSM170]. Post notice of the requirement for site safety orientations on the Project Information Board [PIB]. Completed copies are to be sent to Construction Safety. [Email: construction_safety@yvr.ca; fax 604-232-6238]
Excavation/Trenching	An approved *Excavation, Trenching Permit* [CSSM50] is required. The application must be submitted to the Project Manager or Engineering Services (fax 604-276-5414) 3 days before this work starts. A copy of the permit must be kept with each piece of excavating equipment. Airside operations require that the contractor have electrical as-builts and underground utilities drawings for the area at the work site.
Coring/Saw-Cutting	Coring and saw-cutting work within an Airport Authority building must have an approved *Coring, Saw-Cutting Permit* [CSSM40]. The application is to be sent to the Project Manager (fax 604-276-6565) or Engineering Services (fax 604-276-5414) and Construction Safety (fax 604-232-6238) 3 working days before this work starts. A copy of the permit must be kept at each coring/saw-cutting location.
Cranes	A *Crane Operating Permit* [CSSM110] is required. The application must be made 5 working days before works. The application is to be sent to Construction Safety. [Email: construction_safety@yvr.ca; fax 604-232-6238] A copy of the approved permit must be kept with the crane.
Lockouts	Work requiring the shutting down of portions of airport systems, including (but not limited to) electrical, HVAC, sewer, water, fire alarms systems, security alarm systems, and baggage systems, must be approved through a *Request for Lockout* [CSSM20]. For airport projects, the application must be sent to the Project Manager, and for tenant projects, the application must be sent to Engineering Services (fax 604-276-5414) 5 working days before the required start of the lockout. Post on the PIB.
Fire Safety Systems	Before work can proceed on these systems, a *Request for Lockout* [CSSM20] is required. The permit must be completed and submitted to the Project Manager (fax 604-276-6565) for Airport Authority projects or Engineering Services (fax 604-276-6514) for tenant projects a minimum of 7 days before the shutdown.

During Construction (continued)	
Hot Work	Work involving welding, cutting or soldering employing open flame, arc welding or similar processes creating hot byproducts, equipment or processes that create spark or flame, use of propane heaters, or any other activity or equipment that could generate a heat source sufficient to cause combustion requires an approved *Hot Work Permit* [CSSM100]. Applications are to be submitted to Construction Safety 5 working day before this work starts. [Email: construction_safety@yvr.ca; fax 604-232-6238] Post on the PIB.
Confined Space Entry	If confined space entry is required, the contractor must prepare and implement a written confined space entry program in compliance with WorkSafeBC Regulations.
Weekly CSO Meeting	These meetings are held Wednesdays and are chaired by Construction Safety. All Construction Safety Officers and trade safety persons are required to attend and present all work plans for the following week.
Daily Construction Meetings (Airside Construction)	These meetings are held Monday to Friday mornings and are chaired by Airside Operations. Contractor management must attend and present all work plans at this meeting.
Work Plan Changes (Airside Construction)	Any changes to approved work plans must be submitted to and approved by Airport Operations (phone 604-207-7022).
Airside Work Site Inspection	Airport Operations (phone 604-207-7022) must be notified at least 30 minutes before work ends for an inspection of the work site. Any deficiencies must be immediately corrected.
Airside Incidents / Accidents / Damage, Vehicle Breakdown	Airport Operations (phone 604-207-7022) must be notified immediately.
Administration	
Contractor Monthly Safety Report	The *Contractor Monthly Safety Report* [CSSM190] must be submitted by the fourth working day following month-end to Construction Safety. [Email: construction_safety@yvr.ca; fax 604-232-6238]
Minutes of Toolbox Safety Meeting	This form [CSSM180] is recommended for recording toolbox safety meeting minutes. A record of these meetings must be retained for review by the Airport Authority and WorkSafeBC.
Investigation Report	All injury or property damage occurring on construction projects must be reported to Construction Safety within 24 hours of occurrence. Contractors are required to conduct an accident investigation immediately after securing the scene. The completed *Investigation Report* [CSSM130] is to be sent to Construction Safety. [Email: construction_safety@yvr.ca; fax 604-232-6238]
Witness Statements	*Witness Statements* [CSSM150] are to be submitted to Construction Safety [Email: construction_safety@yvr.ca; fax 604-232-6238] with the *Investigation Report*.
Fire Incident Report	All construction-related fires must be immediately reported to Richmond Fire-Rescue (911) and Airport Operations (phone 604-207-7022). Contractors must conduct an investigation and forward the *Investigation Report* [CSSM130] within 24 hours to [Email: construction_safety@yvr.ca; fax 604-232-6238]
CSO Daily Report	Submit the *CSO Daily Report* [CSSM250] to Construction Safety [Email: construction_safety@yvr.ca; fax 604-232-6238]

Administration (continued)	
Stop Work Order	When a contractor's site activities, events, or site conditions or circumstance pose an immediate, serious, and/or ongoing danger to workers, tenants, or the general public, and/ or non-compliance with Airport Authority *Construction Safety/Security Manual* requirements, where such non-compliance poses adverse health and/or safety risk(s) to workers, tenants, or the general public, a contractor may be issued a *Stop Work Order* [CSSM260] until conditions meet with Airport Authority approval in written format.

Appendix

2

Forms and Permits

CSSM10 NOPA/Construction Impact Assessment
CSSM20 Request for Lockout
CSSM40 Coring, Saw-Cutting Permit
CSSM50 Excavation, Trenching Permit
CSSM100 Hot Work Permit
CSSM110 Crane Operating Permit
CSSM130 Investigation Report
CSSM150 Witness Statement
CSSM170 Safety Orientation Signature Sheet
CSSM190 Contractor Monthly Safety Report
CSSM220 Site Inspection Report
CSSM230 Request for Asbestos Clearance
CSSM250 CSO Daily Report
CSSM260 Stop Work Order - Safety

Health and Safety

NOP/ Construction Impact Assessment

The Airport Authority requires notification of construction project commencement 7 days prior to the start of site activities. **Routing:** Forward to construction_safety@yvr.ca or fax 604-232-6238

Project Information

Project Name:		Request Date:	
Location:	☐ Airside ☐ Groundside ☐ Inside Terminal ☐ DTB ☐ ITB ☐ STB ☐ Other		
Requestor Name:		Fax No:	
Work Being Performed for:	☐ YVRAA ☐ Tenant	Tenant Name:	
Project Manager Name:		Phone No:	
Facility Permit No:	ENG Project No:	Fax No:	

Contractor Information

Contractor:		Phone:	
Address:		Fax:	
Project Manager:		Cell Phone:	
Superintendent:		Cell Phone:	
Safety Officer:		Cell Phone:	
24 Hour Emergency Contact:		Phone:	

Work Start Date:		Est. Completion Date:			
☐ Day Shift Hours of Work: from:		☐ am ☐ pm	to:		☐ am ☐ pm
☐ Afternoon Shift Hours of Work: from:		☐ am ☐ pm	to:		☐ am ☐ pm
☐ Night Shift Hours of Work : from:		☐ am ☐ pm	to:		☐ am ☐ pm
Dates of Work: from:		to:			
Work Days:	☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday ☐ Sunday				

Hazard Identification

1. Does the work require demolition of existing structures, systems, or building finishes?				☐ Yes ☐ No
Identify items for demolition:				
☐ Drywall	☐ Ceilings/Floors	☐ Interior Walls	☐ Exterior Walls	☐ Structural
☐ Tile Removal	☐ Concrete Removal	☐ Interior Finish	☐ Mechanical	☐ Electrical
☐ HVAC	☐ Sprinkler	☐ Fire Alarm	☐ Baggage	☐ Other
2. Does the work require modification of existing structures, systems, or building finishes?				☐ Yes ☐ No
Identify items for modification:				
☐ Walls	☐ Floors/Ceilings	☐ Mechanical	☐ Electrical	☐ Communication
☐ HVAC	☐ Sprinkler	☐ Fire Alarm	☐ Baggage	☐ Other
3. Will work impact terminal operations or alter passenger flow?				☐ Yes ☐ No
4. Will the work generate airborne contaminants, such as dust, fumes, odours?				☐ Yes ☐ No

5. Will glues, solvents, or paints be used during the work?	☐ Yes ☐ No
6. Will there be excessive noise generated during the work?	☐ Yes ☐ No
7. Will work be conducted in the bag hall?	
☐ DTB ☐ Link ☐ Transborder	
8. Will work be conducted airside?	☐ Yes ☐ No
9. Will work require: ☐ Coring ☐ Cutting ☐ Excavation	☐ Yes ☐ No
10. Will work require the use of mobile equipment?	☐ Yes ☐ No
☐ Crane ☐ Hiab ☐ Forklift ☐ Scissor Lift ☐ Genie Lift ☐ Other:	
11. Will work be conducted on roadways or require lane closers?	☐ Yes ☐ No
12. Will a construction disposal bin be required?	☐ Yes ☐ No
13. Will curbside deliveries be required for construction materials?	☐ Yes ☐ No
14. Will site containment be used?	☐ Yes ☐ No
☐ 8' Hoarding ☐ 4' Hoarding ☐ Shrink Wrap ☐ Other:	

Construction Safety Review (FOR AIRPORT AUTHORITY USE ONLY)

Comments:	

Required Permit Submission

	Application for Safety Pre-Qualification	
	Hot Work Permit/Fire Safety Hazard Assessment	**CSSM100**
	Crane Operating Permit	**CSSM110**
	Request for Lockout	**CSSM20**
	Request for Asbestos Clearance Letter	**CSSM230**
	Traffic Control Plan	
	Hoarding Plan	
	Crane Zone Assessment	

Review Completed by:		Dept.	**Airport Authority Construction Safety**
Phone No:	604-276-6040	Fax No:	604-232-6238
Copies Faxed to:	☐ OPS at: 276-6099 ☐ ERS at: 276-6318 ☐ Requestor ☐ Project Manager		

Forward completed hazard assessment to Airport Authority Construction Safety
construction_safety@yvr.ca or Fax to 604-232-6238

VANCOUVER AIRPORT AUTHORITY

Request for Lockout

Initiating

This form must be submitted a minimum of **5 WORKING DAYS** prior to the start of the lockout. All work is subject to the *Construction Safety/Security Manual*. **Routing:** Forward to Airport Authority Project Manager for Airport Authority projects or to Engineering Services (fax 604-276-5414) for tenant projects.

Project Name:		**Tracking No: RLO**	
Company Name:		Request Date:	
Contractor Name:		Phone No:	
Requestor Name:		Fax No:	
Work Being Performed for:	☐ YVRAA ☐ Tenant	Tenant Name:	
Project Manager Name:		Phone No:	
Facility Permit No:	ENG Project No:	Fax No:	
Name of Supervisor on Duty During Lockout:		Phone No:	
Date and Time of Start of Lockout: Date:		Start (24-hour clock):	

Affected Systems and Areas Information

Type of Lockout:	☐ Electrical ☐ Mechanical ☐ Both
	☐ Other: Specify:
Type of System:	☐ Communication ☐ Baggage ☐ Passenger Loading Bridge ☐ Security ☐ HVAC
	☐ Sanitary/Storm ☐ Lighting ☐ Power
	☐ Other: Specify:
Type of Life Safety System:	☐ Potable Water System ☐ Fire Suppression System ☐ Fire Warning System
	☐ Emergency Power ☐ Airfield Lighting ☐ Natural Gas
	☐ Other: Specify:

Affected Systems and Areas: SPECIFY IN DETAIL THE AFFECTED SYSTEMS, AREAS, AND EQUIPMENT, AND PROVIDE DRAWINGS OF IMPACTED AREAS.

Description of Work: PROVIDE FULL DETAILS ON THE WORK TO BE PERFORMED. USE ADDITIONAL PAGES AS NECESSARY.

VANCOUVER AIRPORT AUTHORITY

Request for Lockout

Initiating

Project Name: _____ **Tracking No: RLO** _____

Describe how functionality verification or quality testing will be conducted on all affected systems after work is completed:

Lockout Duration

☐ **One-time Lockout:** COMPLETE THIS SECTION IF LOCKOUT IS REQUIRED FOR A SINGLE DAY OR SHIFT.

Date: _____ Start: _____ (24-hour clock) Stop: _____ (24-hour clock)

☐ **Extended Lockout:** COMPLETE THIS SECTION IF LOCKOUT IS REQUIRED FOR AN EXTENDED DURATION.

From Start Date: _____ Start Time: _____ (24-hour clock)

To Stop Date: _____ Stop Time: _____ (24-hour clock)

☐ **Repeating Lockout:** COMPLETE THIS SECTION IF LOCKOUT IS REQUIRED ON A DAILY BASIS FOR MORE THAN ONE DAY/SHIFT.

From Date: _____ To Date: _____

Daily Start Time: _____ (24-hour clock) Daily Stop Time: _____ (24-hour clock)

Days of Work: ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday ☐ Sunday

Supplementary Information and Requirements

1.	Will this lockout affect any life safety system?	☐ Yes ☐ No **IF YES, COMPLETE AND ATTACH:** *Supplementary Page 8 - Life Safety Impairment Mitigation Plan*
2.	Will this lockout require shutdown of any fire warning or fire suppression systems?	☐ Yes ☐ No **IF YES, COMPLETE AND ATTACH:** *Supplementary Page 8 - Life Safety Impairment Mitigation Plan* and *Supplementary Page 9 - Shutdown of Fire Safety Systems Impact Review*
3.	Will the lockout require alteration to the fire alarm systems?	☐ Yes ☐ No **IF YES, COMPLETE AND ATTACH:** *Supplementary Page 8 - Life Safety Impairment Mitigation Plan* and *Supplementary Page 9 - Shutdown of Fire Safety Systems Impact Review* and *Fire Alarm Alteration Request* [CSSM25]
4.	Will hot work be performed as part of this lockout in conjunction with a shutdown of any fire warning or fire suppression systems?	☐ Yes ☐ No **IF YES, COMPLETE AND SUBMIT:** *Fire Safety Hazard Assessment Terminal* [CSSM80] or *Airside* [CSSM85] and *Hot Work Permit* [CSSM100]

Contractor Safety Measures

The Requestor must complete and submit a *Risk Assessment and Hazard Mitigation Plan* for the work being done (page 3 of this form). ☐ Submitted

The Requestor must ensure all workers on site hold and attend a safety and work planning meeting prior to the start of this work. This will include, but is not limited to, all information on the Risk Assessment and if required a copy of any specific Safe Work Procedures [SWP]. ☐ Understood

Are task-specific safe work procedures required for this lockout? If Yes, attach copy of SWP. ☐ Yes ☐ No

Contractor Request for Lockout Verification

The Requestor confirms the information provided in this *Request for Lockout* is accurate to the best of the Requestor's knowledge. The Requestor further confirms that all safety measures / procedures will be employed throughout the lockout and that no lockout will be performed or work started without the requirements under *Approvals* (page 5) being met.

Requestor Signature: _____ Date: _____

Request for Lockout

Risk Assessment and Mitigation Plan

Project Name: _____ **Tracking No: RLO** _____

Risk Assessment and Hazard Mitigation Plan

Hazards DESCRIBE IN DETAILS THE HAZARD(S) ASSOCIATED WITH THE LOCKOUT. INCLUDE ALL OPERATIONAL IMPACT(S)	**Type of Risk** USE NUMBER CODE FROM BELOW	**Actions to Mitigate Risk** DESCRIBE IN DETAIL THE ACTION(S) THAT WILL BE TAKEN TO MITIGATE THE RISKS ASSOCIATED WITH THE IDENTIFIED HAZARDS

1 = PERSONAL INJURY 2 = PROPERTY/EQUIPMENT DAMAGE 3 = OPERATIONAL IMPACT 4 = ENVIRONMENTAL IMPACT

Request for Lockout

Verification

Project Name: _____ **Tracking No: RLO** _____

Target Crew: _____ **Target Date** (mm/dd/yy): _____

List below all lockout points required to establish the lockout. USE ADDITIONAL FORMS AS NECESSARY.

System, Equipment Devices, Identifier	Location, Impacted Areas or Systems	Returned to Pre-Lockout Position?			
		☐ Yes	☐ No	Restoration Date	Contractor Initials
		☐ Yes	☐ No		
		☐ Yes	☐ No		
		☐ Yes	☐ No		
		☐ Yes	☐ No		
		☐ Yes	☐ No		
		☐ Yes	☐ No		
		☐ Yes	☐ No		
		☐ Yes	☐ No		
		☐ Yes	☐ No		
		☐ Yes	☐ No		

Explanation: Provide identity and reason for any equipment or device(s) not returned to pre-lockout position

Contractor Verification for System/Equipment Restoration

No lockout is complete until the Contractor has called Maintenance [MTE] to re-attend the job site and provided MTE with their (Contactor representative) signature on the MTE copy of the following declaration. Each of the lockout points identified above must have the *Returned to Pre-Lockout Position?* section completed. This includes lockouts that are spread over multiple days or nights, where the system/equipment is put back into service for the day or night.

Mandatory Post-Lockout Signatures

I, [PRINT NAME] _____, employed by _____, have inspected all lockout points and hereby verify that all lockout points have been restored to their pre-lockout position and that the system/equipment is ready for restoration.

Signed: _____ Date: _____ Time: _____

System/Equipment Restoration

The system/equipment was restored to operation by: [PRINT NAME]: _____

Signed: _____ Date _____ Time: _____

Request for Lockout

Approvals

Project Name: _____ **Tracking No: RLO** _____

Target Crew: _____ **Target Date** (mm/dd/yy): _____

Contractors Approval to Proceed

Contractor must call Operations (207-7000) and request MTE to attend to the job site in order to receive a signed copy of this Approval before performing the lockout or starting work. Contractor must provide his/her signature on MTE copy before performing the lockout or starting work. No lockout is approved without first, the exchange of these two signatures.

Mandatory Pre-Lockout Signatures

Duty Maintenance Manager:

This Signature gives Airport Authority MTE approval for the Contractor to proceed with the lockout. This approval is based on the MTE Managers' understanding of the risks identified in this *Request for Lockout* and the Contractors' adherence to the mitigation plans provided.

Print: _____

Signed: _____

Date: _____

Onsite Contractor Representative:

This signature signifies that the Contractor representative understands and will comply with the requirement of contractor verification for system/equipment restoration and will follow all safety measures and procedures identified in this lockout.

Print: _____

Signed: _____

Date: _____

Lockout is assigned to [MTE Tradesperson]:

Attending Tradesperson's Notes:

Duty Manager's Notes:

RETURN THIS COMPLETED AND SIGNED FORM TO MAINTENANCE ADMINISTRATION ONCE LOCKOUT IS COMPLETE

Request for Lockout

Review Section

Project Name: _____ **Tracking No: RLO** _____

Project Manager Review Section

CHECK ☒ BOX TO CONFIRM SUBMISSION AND/OR REQUIREMENT

	Item	When Required
☒	*Request for Lockout*	Always
☒	*Risk Assessment and Hazard Mitigation Plan*	Always
☐	*Supplementary Page 8 - Life Safety Impairment Mitigation Plan*	When affecting any system classified as a life safety system
☐	*Supplementary Page 9 - Shutdown of Fire Safety Systems Impact Review*	When disabling fire suppression and/or warning systems or making alteration to fire alarm software
☐	*Fire Alarm Alteration Request*	Any alteration to fire alarm software, functioning
☐	Simplex required to monitor fire panel in OPS	When two or more zones are off-line in Operational areas
☐	*Fire Safety Hazard Assessment*	When hot work performed while fire safety systems are disabled
☐	*Hot Work Permit*	When hot work performed while fire safety systems are disabled
☐	Fire Watch Monitor [FWM] required	Operational areas are without fire warning/suppression systems
☐	FWM coverage will be provided by:	☐ Contractor ☐ Securiguard

Project Manager Notes:

The Project Manager has completed his/her review of the *Request for Lockout* and any other required attached forms and confirms that the information is complete and accurate to the best of his/her knowledge.

Project Manager Signature: _____ Date: _____

Total Number of Pages in this Submission: _____ Date Forwarded to Transition Team: _____

Request for Lockout

Review Section

Project Name: _____ **Tracking No: RLO** _____

Transition Team Review Section		
1	Has the *Request for Lockout* including the Risk Assessment been completed? If No, return to Project Manager for completion.	☐ Yes ☐ No
2	Does the *Request for Lockout* start date give adequate time for review? If No, return to Project Manager for re-scheduling.	☐ Yes ☐ No
3	Have all required documents been submitted? If no, return to Project Manager for completion.	☐ Yes ☐ No
4	Will this *Request for Lockout* affect a life safety system? If Yes, subject to questions 5 and 6, forward to Technical Services.	☐ Yes ☐ No
5	Has the Requestor completed *Supplementary Page 8 - Life Safety Impairment Mitigation Plan*? If No, return to Project Manager for completion.	☐ Yes ☐ No ☐ N/A
6	Has the Requestor completed *Supplementary Page 9 - Shutdown of Fire Safety Systems Impact Review*? If No, return to Project Manager for completion.	☐ Yes ☐ No ☐ N/A

Transition Team Notes

Transition Team Review by: _____ Date: _____

Transition Team Routing

Forwarded to: ☐ Technical Services for review – when required Date: _____

Forwarded to: ☐ Duty Superintendent on: _____ Crew Date: _____

Copied to: ☐ Project Manager Date: _____

Copied to: ☐ Operations Date: _____

Technical Services Review Section

Have all required documents been submitted? If no, return to Project Manager for completion. ☐ Yes ☐ No

Have the safety measures provided by the Requestor completely addressed (minimized) any increased risks resultant from the impairment? If no, return to Project Manager for completion. ☐ Yes ☐ No

Is the duration of the impairment acceptable? If no, return to Project Manager for completion. ☐ Yes ☐ No

Will Simplex/Edwards have to complete information on the *Fire Alarm Alteration Request*? ☐ Yes ☐ No

Review by: _____ Date: _____

Forwarded to: ☐ Duty Maintenance Superintendent on: _____ Crew Date: _____

Copied to: ☐ Project Manager Date: _____

Copied to: ☐ Operations Date: _____

Request for Lockout Supplementary Page

Life Safety Impairment Mitigation Plan

Project Name: _____ **Tracking No: RLO** _____

Life Safety Impairment Mitigation Plan: DESCRIBE IN DETAIL THE NATURE, EXTENT, AND DURATION OF THE IMPAIRMENT TO THE LIFE SAFETY SYSTEM (I.E., IMPACT TO THE FACILITY FIRE SAFETY SYSTEMS). USE ADDITIONAL PAGES AS NECESSARY.

Protection Measures: GIVE DETAILS ON ALL MEASURES TAKEN TO MINIMIZE THE IMPACT OF THE IMPAIRMENT. INCLUDE DRAWINGS SHOWING AFFECTED LOCATIONS. DESCRIBE IN DETAIL THE TEMPORARY PROTECTION MEASURES TO BE EMPLOYED. USE ADDITIONAL PAGES AS NECESSARY.

Technical Services Team Notes:

Request for Lockout Supplementary Page

Shutdown of Fire Safety Systems

Project Name: _____ **Tracking No: RLO** _____

Submissions: WHERE REQUIRED, COMPLETE AND SUBMIT THE FOLLOWING:

Fire Safety Hazard Assessment	☐ Submitted ☐ Not Required
Fire Alarm Alteration Request	☐ Submitted ☐ Not Required
Will Simplex be required to monitor the fire alarm system from Operations?	☐ Yes ☐ No
Will the temporary fire protection measures include a Fire Watch Monitor? If yes, provide name and telephone number of Fire Watch Monitor.	☐ Yes ☐ No

Company Name: _____ Phone No: _____

Fire Watch Monitor Name: _____ Phone No: _____

Technical Services Review: A NO ☒ REQUIRES REJECTION OF REQUEST

Has the Contractor submitted a *Fire Safety Hazard Assessment*?	☐ Yes ☐ No ☐ N/A
Has the Contractor submitted the *Fire Alarm Alteration Request*?	☐ Yes ☐ No ☐ N/A
Has Simplex/Edwards provided all required information on *Fire Alarm Alteration Request*?	☐ Yes ☐ No ☐ N/A
Has the Requestor submitted and attached all other required documentation?	☐ Yes ☐ No
Has the Contractor properly identified the impact to the facility fire safety systems?	☐ Yes ☐ No
Has the Requestor provided detailed measures that will ensure that any increased risks resultant from the impairment are minimized?	☐ Yes ☐ No
Have the appropriate fire protection measures been identified?	☐ Yes ☐ No
Is the duration of the impairment acceptable?	☐ Yes ☐ No

If Reviewer has checked **NO** to any of the above or has any other concern with this impairment, indicate the area where more information is required and return to Project Manager for completion.

☐ **REQUEST APPROVED** ☐ **REQUEST APPROVED SUBJECT TO CONDITIONS** ☐ **REQUEST REJECTED**

DETAIL ANY CONDITIONS FOR APPROVAL OR ADDITIONAL REQUIREMENTS TO OBTAIN APPROVAL:

Approved by: _____ Date: _____

Dept: MTE Technical Services Phone: _____ Fax: _____

Impairment Coordinator Notes for Actioning Superintendent:

RETURN THESE COMPLETED AND SIGNED FORMS TO MAINTENANCE ADMINISTRATION ALONG WITH ANY ATTACHED DOCUMENTS

Health and Safety

Coring, Saw-Cutting Permit

This Permit must be submitted for approval a minimum of 72 hours prior to starting any coring, saw-cutting. All work is subject to the *Construction Safety/Security Manual*. **Routing:** Forward to the Airport Authority Project Manager at fax: 604-276-6565, or the Technical Data Centre for tenant requests at fax: 604-276-5414.

Project Information

Project Name: _____ Request Date: _____

Contractor Name: _____ Phone No: _____

Requestor Name: _____ Fax No: _____

Work Being Performed for: ☐ YVRAA ☐ Tenant Tenant Name: _____

Project Manager Name: _____ Phone No: _____

Facility Permit No: _____ ENG Project No: _____ Fax No: _____

Coring, Saw-Cutting Information

Area of Work:
INCLUDE SITE MAP _____

Start Date: _____ Start Time: _____ ☐ am ☐ pm

Stop Date: _____ Stop Time: _____ ☐ am ☐ pm

Type of Work: ☐ Core ☐ Saw-cut ☐ Both ☐ Other: _____

Description of Work: _____

Hazard Review

1 Are there multiple core, saw-cut locations? ☐ Yes ☐ No. PROVIDE DRAWING SHOWING ALL LOCATIONS.

2 Does the work involve saw-cutting a slab or wall to a depth greater than 3 inches? ☐ Yes ☐ No

3 Has the Requestor obtained drawings showing the location of all embedded, underground utilities within the influence of the core, saw-cut location(s)? ☐ Yes ☐ No ☐ Not yet. If No, contact TDC for drawings.

4 Will the Requestor be X-raying the core, saw-cut locations to verify if any other embedded, underground utilities are present? ☐ Yes ☐ No. If Yes, answer question 5. If no, proceed to question 6.

5 Has the Requestor provided copies of the X-rays to the coring Contractor? ☐ Yes ☐ No ☐ Not yet.

6 Is access to tenant areas required? ☐ Yes ☐ No. If Yes, specify location: _____

Airport Authority Approval

Authorized by: _____ Dept: _____ Phone No: _____

Issuance Date: _____ **Expiry Date:** _____

Copies sent to: ☐ OPS at: 276-6099 ☐ ENV at: 276-6699 ☐ Requestor

Special Conditions:

Permit Must Be Kept at Each Core, Saw-Cut Location

Health and Safety

Excavation, Trenching Permit

This Permit must be submitted for approval a minimum of 72 hours prior to starting any excavations or trenching. All work is subject to the *Construction Safety/Security Manual*. **Routing:** Forward to Airport Authority Project Manager at fax: 604-276-6565, or Technical Data Centre for tenant requests at fax: 604-276-5414.

Project Information

Project Name:		Request Date:	
Contractor Name:		Phone No:	
Requestor Name:		Fax No:	
Work Being Performed for: ☐ YVRAA ☐ Tenant	Tenant Name:		
Project Manager Name:		Phone No:	
Facility Permit No:	ENG Project No:	Fax No:	

Excavation, Trenching Information

Area of Work: **INCLUDE SITE MAP**	
Start Date:	Duration of Work:
Type: ☐ Excavation ☐ Trench ☐ Other:	
Description of Work:	

Hazard Review

1. Is the area to be excavated in proximity to underground utilities? ☐ Yes ☐ No ☐ Unknown.
2. If Yes, indicate utilities: ☐ Gas/fuel ☐ Water ☐ Sanitary ☐ Storm ☐ Electrical ☐ Communication.
3. Has the Requestor received underground utility drawings? ☐ Yes ☐ No. If No, contact TDC for copies.
4. Have all underground utilities been marked and flagged? ☐ Yes ☐ No ☐ Not yet ☐ Unknown
5. Has the equipment Operator been advised of location of underground utilities? ☐ Yes ☐ No ☐ Unknown
6. Is sloping/shoring required? ☐ Yes ☐ No. If Yes, indicate method: ☐ Sloping ☐ Shoring ☐ Shoring cage
7. Is work in proximity to overhead utilities? ☐ Yes ☐ No. If Yes, have utilities been flagged? ☐ Yes ☐ No
8. Does the area require protection? ☐ Yes ☐ No. Type of protection: ☐ Barricades ☐ Steel plate ☐ Other
9. Will the excavation cross a roadway? ☐ Yes ☐ No. If Yes, name roadway:

Airport Authority Approval

Authorized by:	Dept:	Phone No:	
Issuance Date:	Expiry Date:		
Copies Sent to: ☐ OPS at: 276-6099 ☐ ENV at: 276-6699 ☐ Requestor			
Special Conditions:			

Permit Must Be Kept in Each Piece of Excavating Equipment

Health and Safety
HOT WORK PERMIT
Fire Safety Hazard Assessment

Contractors must complete this Hot Work Permit/fire safety hazard assessment for all construction/renovation work inside the terminals. **Routing:** Forward to construction_safety@yvr.ca or fax: 604-232-6238.

Project Information

Project Name:		Request Date:	
Contractor Name:		Phone No:	
Requestor Name:		Fax No:	
Work Being Performed for: ☐ YVRAA ☐ Tenant	Tenant Name:		
Project Manager Name:		Phone No:	
Facility Permit No:	ENG Project No:	Fax No:	

Room No., Area INCLUDE MAP	
Description of Project Work:	

Hazard Identification

Hot Work Duration:	☐ One Time ☐ One Day ☐ Multiple Days ☐ Multiple Shifts ☐ Continuous				
Hot Work Locations:	☐ One Location ☐ Multiple Locations ☐ Other:				
Work Start Date:		Work Stop Date:			
☐ Day Shift Hours of Work: from:		☐ am ☐ pm	to:		☐ am ☐ pm
☐ Afternoon Shift Hours of Work: from:		☐ am ☐ pm	to:		☐ am ☐ pm
☐ Night Shift Hours of Work: from:		☐ am ☐ pm	to:		☐ am ☐ pm
Dates of Work: from:		to:			
Work Days:	☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday ☐ Sunday				

Identify Fire Safety Issues:	

Hot Work Type: **CHECK ALL APPROPRIATE BOXES**

☐ Weld/Cut:	☐ Arc ☐ Wire ☐ Stick ☐ Oxy-acetylene ☐ Spot ☐ Full ☐ Back Gouge
☐ Open Flame:	☐ Soldering ☐ Tiger Torch ☐ Tar Kettle ☐ Water Heater ☐ Other
☐ Grind/Cut:	☐ Chop Saw ☐ Portable Cut-off Saw ☐ Handheld Grinder ☐ Stationery Grinder
☐ Fuels:	☐ Gasoline ☐ Propane ☐ Diesel ☐ Compressed Gas ☐ Other
☐ Other:	

VANCOUVER AIRPORT AUTHORITY

Health and Safety
HOT WORK PERMIT
Fire Safety Hazard Assessment

Identify fire safety measures to be employed during hot work. **CHECK ALL APPROPRIATE BOXES**

☐ Fire Extinguishers ☐ Fire Blankets ☐ Smoke Eater ☐ Flash Shields ☐ Contractor Fire Watch Monitor

☐ Securiguard Fire Watch Monitor ☐ By-pass Smoke/Heat Detectors ☐ Node Off-line

☐ By-pass All Devices ☐ Negative Air Units ☐ Localized Exhaust

Containment: ☐ Project Containment ☐ Localized Containment ☐ No Containment

☐ Other: Specify:

Identify the Risk Level AFTER Controls Are in Place:

Consider the severity/consequence and the probability

☐ **Green** ☐ **Yellow** ☐ **Orange** ☐ **Red**

Construction Safety Review (FOR AIRPORT AUTHORITY USE ONLY)

Hazard Rating

Identify Project Fire Safety Requirements:

Has requestor provided all necessary information? ☐ Yes ☐ No

Reason for permit being denied:

Is requestor approved to proceed with the hot work? ☐ Yes ☐ No ☐ Yes, subject to conditions listed herein

Airport Authority Approval

Authorized by: Dept. **Airport Authority Construction Safety**

Phone No: 604-276-6040 Fax No: 604-232-6238

Start Date: **Expiry Date:**

Copies Faxed to: ☐ OPS at: 276-6099 ☐ ERS at: 276-6318 ☐ Requestor ☐ Project Manager

Health and Safety

Crane Operating Permit

This permit must be submitted for approval according to the requirements of the *Construction Safety / Security Manual*. Please allow for up to 30 business days for processing. **Routing:** Forward to construction_safety@yvr.ca or fax to 604-232-6238.

Project Information

Project Name:		Request Date:	
Contractor Name:		Phone No:	
Requestor Name:		Fax No:	
Work Being Performed for: ☐ YVRAA ☐ Tenant	Tenant Name:		
Project Manager Name:		Phone No:	
Facility Permit No:	ENG Project No:	Fax No:	
Date Work Starting:		**Date Work Completed:**	

Work Information

Type of Equipment: ☐ Tower ☐ Mobile ☐ Other		Make and Model:	
Rated Capacity:		Date of Last Certified Inspection:	
Area of Work: **INCLUDE SITE MAP**			
Operator Certificate:			
Description of Work:			
Dates: Start Date:	Finish Date:	Hours of Work: from:	to:

Hazard Review

1. Have the site ground conditions been inspected and confirmed safe for crane use?	☐ Yes ☐ No ☐ N/A
2. Are there any obstructions and/or utilities that could be impacted by the crane?	☐ Yes ☐ No ☐ N/A
3. Are inspection and testing records and logbook on site and available for inspection?	☐ Yes ☐ No ☐ N/A
4. Is the operator trained and qualified to operate this equipment?	☐ Yes ☐ No ☐ N/A
5. Have all safety devices been tested and confirmed as functioning properly?	☐ Yes ☐ No ☐ N/A
6. Will a load test be performed prior to first lift each day?	☐ Yes ☐ No ☐ N/A
7. Will a documented pre-work safety meeting be held prior to first lift each day?	☐ Yes ☐ No ☐ N/A
8. Is there a designated signalman who will coordinate all lifts?	☐ Yes ☐ No ☐ N/A

Airport Authority Approval

Authorized by:		Dept:		Phone No:	604-276-6040
Issuance Date:		**Expiry Date:**			
Copies Sent to:	☐ OPS at: 276-6099	☐ ASO at: 276-6599	☐ Project Manager	☐ Requestor	
Special Conditions:					

Permit Must Be Kept With Crane

Health and Safety

Investigation Report

All Incidents and Accidents must be reported to Airport Authority Construction Safety within 24 hours of occurrence. **Routing:** Forward to construction_safety@yvr.ca or fax to 604-232-6238.

PRINT ALL INFORMATION

Project: _____

Contractor: _____

Location: _____

Classification:

☐ Accident ☐ Property Damage ☐ Potential for Injury ☐ Potential for Damage

Date and Time of Event: _____ at _____ ☐ am ☐ pm

Date and Time Event Was Reported: _____ at _____ ☐ am ☐ pm

Description of Event: _____

Provide a chronology of events starting with what preceded the event, what happened during, and what happened after the event if possible.

Contributing Factors to Event:

Consider all the conditions or chain of events that led to the event. Check all boxes that apply:

☐ Procedures ☐ Training ☐ Inspections ☐ Communications ☐ Management System ☐ Human Factors ☐ Work Direction

VANCOUVER AIRPORT AUTHORITY

Health and Safety

Investigation Report

Action Required to Prevent Reoccurrence:

Person Responsible: _____ Due by: _____

Assigned to: _____ Due by: _____

Assigned to: _____ Due by: _____

Assigned to: _____ Due by: _____

Assigned to: _____ Due by: _____

Notifications Made/Agencies that Attended:

☐ 911 ☐ Airport Operations ☐ Richmond Fire ☐ BC Ambulance ☐ WorkSafeBC ☐ TDO/ASO ☐ YVR Construction Safety

Persons Involved or with Information:

Name	Employer	Contact Number

Hazard Identification/Risk Assessment:

If you have identified/uncovered potential hazard(s), assign a risk level using the risk rating method below.

☐ **Green** ☐ **Yellow** ☐ **Orange** ☐ **Red**

Describe:

Person Completing Form:

Name: _____ Contact Number: _____

Email: _____ Employer & Position: _____

Routing: ☐ Construction Safety ☐ Project Manager ☐ Operations ☐ Other: _____

Health and Safety

Witness Statement

Persons possessing information relevant to the investigation are requested to provide written statements attesting to their knowledge. **Routing:** Forward to construction_safety@yvr.ca or fax to 604-232-6238. Include *Investigation Report.*

Project: _____ Contractor: _____

Date and Time of Accident: _____ at: _____ am/pm

Date and Time of Statement: _____ at: _____ am/pm

Witness Information:

Name: _____ Employer: _____

Occupation: _____ Year of Experience: _____

Type of Statement: ☐ Witness ☐ Relevant Information

Statement:

The foregoing statement which I have given to _____ has been read over by me (to me). I understand the contents of this statement, and I declare it truly and accurately records the information given by me.

Signature: _____ **Date:** _____

Use additional pages as required to complete statement. Page: _____ of _____

Health and Safety

Safety Orientation Signature Sheet

Persons must complete and sign the appropriate section of this form on completion of their Airport Authority safety orientation. **Routing:** Forward to Construction Safety construction_safety@yvr.ca or fax to 604-232-6238

I hereby certify that I, _____
Print Name

Employed by: _____
Print Name

have viewed the:

Construction Safety Video _____
Signature

Asbestos Awareness Video_____
Signature

I understand that failure to follow all safety and security rules and regulations can result in disciplinary action against me. This has been explained to me.

_____
Date

_____
Instructor Signature

_____
Name of Contractor (Print Name)

For Airport Authority Use

Orientation Card Issued by: _____ Date: _____

VANCOUVER AIRPORT AUTHORITY

Health and Safety

Contractor Monthly Safety Report

Complete and submit report by **the fourth working day following month end**. Use additional pages as necessary. **Routing:** Forward to construction_safety@yvr.ca or fax to 604-232-6238.

Project Name: _____ Principal Contractor: _____

PRINT ALL INFORMATION

Month of: _____

Contractor INCLUDE ALL SUBCONTRACTORS	**Man-hours this Month**	**Lost Time Accidents**		**Lost Days**	**Medical Aids**		**First Aid**		**Incidents**
		#	Type		#	Type	#	Type	
Principal Contractor									
Totals for this Month									
Total since start of project									
New total since start of project									

Turn page over

BRIEFLY DESCRIBE EACH INJURY. ATTACH COPIES OF INCIDENT REPORTS.	Injury Type & Location	Type No.
	Fall	1
	Trauma	2
	Strain	3
	Sprain	4
	Penetrating	5
	Burn	6
	Head	7
	Neck	8
	Back	9
	Eye	10
	Arm	11
	Leg	12
	Hand	13
	Foot	14
		15

Prepared by: _____ Title: _____

Contractor: _____ Date: _____ Page _____ of _____

VANCOUVER AIRPORT AUTHORITY

Construction Safety

Site Inspection Report

Date: _____ Inspection Type: ☐ Full ☐ Partial Contractor: _____ Location: _____

Items: **CHECK ITEMS INSPECTED**

Access and Egress
- ☐ Safe means of access and egress
- ☐ Clear of debris
- ☐ Handrails / guardrails

Air Tools
- ☐ Air supply disconnected for servicing
- ☐ Trigger operating correctly
- ☐ Hoses do not present a tripping hazard
- ☐ Hoses wired together

Scaffolds
- ☐ All braces on
- ☐ All connections on
- ☐ Firm base, no concrete blocks
- ☐ Guardrails on open sides and ends
- ☐ Min. of 2 planks – 10 in. wide
- ☐ 6–12 in. overhang
- ☐ Erected plumb and level
- ☐ Tied to structure every three sections
- ☐ Toe boards

Repairs
- ☐ Out-of-order equipment is shut down
- ☐ Suitable signs have been posted

Indoor Air Quality (Full Containment)
- ☐ 8-ft wall panels in place
- ☐ Joints panels are sealed with tape
- ☐ White poly is applied to the outside
- ☐ Negative air unit used (if needed)

First Aid
- ☐ First Aid Attendant on site
- ☐ Equipment is maintained
- ☐ Written procedures in place
- ☐ Attendant's number is posted

Excavations
- ☐ Over 4 ft deep sloped or shored
- ☐ Utilities identified

Personal Protective Equipment (PPE)
- ☐ Class footwear
- ☐ Loose clothing near moving equipment
- ☐ Hard hats
- ☐ Hand protection
- ☐ Eye protection
- ☐ Hearing protection

Compressed Gas Cylinders
- ☐ Secured from falling
- ☐ Standing on end
- ☐ Away from heat and sparks
- ☐ Empty cylinders are capped

Electrical
- ☐ Cord insulation intact
- ☐ Cords elevated or covered
- ☐ Cords present "no tripping hazard"
- ☐ Three-prong plugs are used
- ☐ Energized junction boxes covered
- ☐ Electrical panels are covered
- ☐ Energized rooms are locked
- ☐ Ground fault circuit interrupters used
- ☐ Clearance is ok for workers and equip.

Hot Works
- ☐ Permit is valid and posted
- ☐ Fire extinguisher is accessible
- ☐ White poly is applied to the outside
- ☐ Modified program for airside work
- ☐ Fire Watch Monitor in place

Lockout
- ☐ Lockout permit in place
- ☐ Personal locks are being used
- ☐ Combination locks are not being used
- ☐ Detectors are not being bagged
- ☐ Fire watch for life safety lockout

Fire Protection
- ☐ Is accessible and in working order
- ☐ Emergency phone numbers posted
- ☐ Clearance for heating devices
- ☐ Danger signs in hazardous areas

Housekeeping
- ☐ Work area is clean and free of debris
- ☐ Spilled or leaked liquids are cleaned
- ☐ Adequate available garbage containers
- ☐ Nails are pulled or bent over
- ☐ Materials stored in a safe manner
- ☐ Combustible waste stored safely

Machinery Guarding
- ☐ Prevent contact with moving parts
- ☐ Guards not circumvented

WHMIS
- ☐ Appropriate WHMIS labels
- ☐ Contents as per label
- ☐ Stored in a compatible manner
- ☐ Not leaking
- ☐ MSDS available (within 3 years)

Asbestos Management
- ☐ Is site in DTB or outbuildings?
- ☐ Is there an asbestos clearance letter?
- ☐ Is it with the people doing the work?
- ☐ Is the containment complete?

Confined Space
- ☐ Area has documented air testing
- ☐ Continuous air monitoring in place
- ☐ Area is being ventilated
- ☐ Emergency/evacuation plan in place
- ☐ Engineer has signed program

Hazard Control
- ☐ Lockout procedures in place
- ☐ Signs and tags

Ladders
- ☐ Rungs and rails in good condition
- ☐ 4 to 1 ratio is maintained
- ☐ Extend 3 ft above the platform
- ☐ No metal ladders near electrical
- ☐ Barricaded when used in passageways
- ☐ Job ladders built according to regs.

Fall Protection
- ☐ Lifelines and safety harnesses are used
- ☐ Life line attached structural member
- ☐ Guard rails are used as a first choice
- ☐ Lifelines with adequate strength
- ☐ Documented equipment inspections

Stairways
- ☐ Free of obstructions
- ☐ Handrails
- ☐ Adequate lighting

Public Interaction
- ☐ Is the public at risk

Emergency Preparedness
- ☐ Evacuation routes posted
- ☐ Horn is accessible and charged
- ☐ Emergency numbers are posted
- ☐ Spill kit is adequate and accessible

Cranes
- ☐ Crane permit in place
- ☐ No overhead hazards
- ☐ Multiple cranes are in communication
- ☐ Operator qualified

Details of the deficient items from this page must be transferred over to the next page.

VANCOUVER AIRPORT AUTHORITY

Construction Safety

Site Inspection Report

Priority Scale: 1 – High 2 – Moderate 3 – Low

Location	Unsafe Act or Item	Priority	Corrective Action Required	Action By	Date Completed

Inspected by: _____ **Department:** _____ **cc:** _____

Health and Safety

Request for Asbestos Clearance

Asbestos Clearance Letter(s) are mandatory for all DTB construction projects. Complete and forward this form at least four days prior to the start of the project. **Routing:** Forward to construction_safety@yvr.ca or fax: 604-232-6238

Project Information					
Project Name:				Request Date:	
Contractor Name:				Phone No:	
Requestor Name:				Fax No:	
Work Being Performed for:	☐ YVRAA ☐ Tenant	Tenant Name:			
Project Manager Name:				Phone No:	
Facility Permit No:		ENG Project No:		Fax No:	

Type of Request: ☐ Issue Clearance Letter ☐ Report on asbestos issues based on current information.
☐ Conduct assessment. *Requires funding from Project Manager*. ☐ Provide quote for assessment work.

Location of Work: INCLUDE GRIDLINES	
Description of Work:	

Scope of Work:	Check all appropriate boxes. Provide additional information in comment area.
Does project require demolition?	☐ Yes ☐ No. If yes, indicate:
☐ Columns ☐ Ceilings ☐ Walls ☐ Floors/Flooring ☐ Baggage Systems ☐ Other:	
Comments:	
Will building systems require demolition/alteration?	☐ Yes ☐ No. If yes, indicate applicable systems:
☐ HVAC ☐ Mechanical ☐ Electrical ☐ Fire Safety ☐ Security ☐ Telecom/Data ☐ Other:	
Comments:	

Identify items to be installed. Provide drawings showing routing and terminations.

☐ HVAC ☐ Mechanical ☐ Electrical ☐ Sprinkler ☐ Fire Alarm ☐ Telecom/Data ☐ Security ☐ PA/Speaker	
Other:	
Comments:	

Clearance letters will be granted based on the scope of work as provided on this document. Requestors are encouraged to provide as much detail as possible to reduce the need for additional clearance letters.

CSO Daily Report

VANCOUVER AIRPORT AUTHORITY

The project Construction Safety Officer will ensure that this report is completed during each shift and will maintain copies on all reports on site for review by Airport Authority.

Project: _____ Date: _____

Report by: _____ Shift: _____

Site Activities MAJOR ACTIVITIES AND PROGRESS	**Event**	**Total**
	New worker orientations	
	Site visitors/consultants	
	Incidents DESCRIBE BELOW	
	Injuries DESCRIBE BELOW	
	Site Workers	**Total**
	☐ Ironworkers	
	☐ Carpenters	
	☐ Electricians	
Site Equipment LIST MAJOR EQUIPMENT	☐ Plumbers	
	☐ Sprinkler fitters	
	☐ Millwrights	
	☐ Dry-wallers	
	☐ Painters	
	☐ Finishing trades	
	☐	
	☐	
	☐	

Inspections

#	Item	OK	N/A	**Action Required** DESCRIPTION AND TIMELINE
1	Security escorts/fences/gates	☐	☐	
2	Interior hoarding/containment/IAQ	☐	☐	
3	Fire safety	☐	☐	
4	Housekeeping/FOD	☐	☐	
5	Excavations/shoring/trenching/coring	☐	☐	
6	Cranes/lifting equipment/vehicles	☐	☐	
7	Scaffolding/ladders	☐	☐	
8	Guardrails/openings/stairs	☐	☐	

VANCOUVER AIRPORT AUTHORITY

CSO Daily Report

#	Item	OK	N/A	Action Required DESCRIPTION AND TIMELINE
9	Asbestos	☐	☐	
10	Personal protective equipment	☐	☐	
11	First aid equipment and supplies	☐	☐	
12	Power tools/cords	☐	☐	
13	Lighting/egress routes	☐	☐	
14	WHMIS and hazmat storage	☐	☐	
15	Emergency procedures	☐	☐	
16	Airport forms and permits	☐	☐	
17		☐	☐	
18		☐	☐	
19		☐	☐	
20		☐	☐	

Safety Actions: MEETINGS, TOOLBOX TALKS, REPRIMANDS, INCIDENTS, AND INJURIES. USE ADDITIONAL PAGES AS NECESSARY.

Upcoming Activities LIST ALL MAJOR UPCOMING ACTIVITIES, SHUTDOWNS, OPERATIONALLY SENSITIVE TASKS.

Keep copies of report on site for inspection and review by Airport Authority

STOP WORK ORDER

Notice is hereby given to immediately cease construction activities until written approval from the Airport Authority (for Airport Authority projects) or Airport Authority Project Management (for Airport Authority Project Management projects) is obtained. The location specified on this Stop Work Order will be closed, with special attention given to leaving the area safe for employee and public use as applicable.

Project: _____ Date Issued: _____

Contractor: _____ Time Issued: _____

Location of Closure: _____

Reason for Closure: (CHECK APPROPRIATE BOX)

☐ Activity, event, condition, or circumstance posing an **immediate**, **serious**, and/or **ongoing** danger to workers, tenants, or the general public.

☐ Non-compliance with Airport Authority *Construction Safety/Security Manual* requirements, where such non-compliance poses adverse health and/or safety risk(s) to workers, tenants, or the general public.

Specifics of Closure: (DETAIL REASONS FOR CLOSURE AND CORRECTIVE ACTIONS REQUIRED TO RESOLVE ISSUE)

Unsafe Act or Item	Corrective Action Required	Action By	Date Completed

The Contractor will be required to demonstrate that the issue(s) surrounding this Stop Work Order have been rectified to the satisfaction of the Airport Authority. For additional information regarding this Stop Work Order, contact Airport Authority Construction Safety at **604-276-6040**.

Vancouver Airport Authority Representative
Issued by:
Phone No:
cc: ☐ **Superintendent Construction Safety**
cc: ☐ **Project Manager**
cc: ☐ **Director Engineering**

DO NOT REMOVE WITHOUT WRITTEN PERMISSION

Appendix

3

Airport Terms and Definitions

ACL	**A**sbestos **c**learance **l**etter
ACM	**A**sbestos-**c**ontaining **m**aterial
AEC	**A**pproved **e**nvironmental **c**onsultant
Aborted Landing	A planned landing that is discontinued for reasons such as conflicting traffic, weather, or **landing surface obstacle.**
Aborted Takeoff	A planned takeoff that is discontinued for reason such as conflicting traffic, aircraft malfunction, weather, or **take-off surface obstruction.**
Accelerate-Stop Distance Available [ASDA]	The length of the take-off run available plus the length of the stopway, if provided.
Accident	A preventable, unplanned, work-related event or exposure, or series of events or exposures that result in personal harm and/or damage to things.
Aerodrome	Any area of land, water (including the frozen surface thereof), or other supporting surface used, designed, prepared, equipped, or set apart for use, either in whole or in part, for the arrival, departure, movement, or servicing of aircraft. This includes any buildings, installations, and equipment situated thereon or associated therewith.
AGL	**A**bove **g**round **l**evel
Aircraft Movement	Take-offs, landings, and taxiing of the aircraft.
Airside Safety Officer [ASO]	Airport Authority **A**irside **S**afety **O**fficer
Aircraft Stand	An area of the apron designated for the parking of aircraft for the purpose of loading and unloading passengers and for ground services.

Aircraft Stand Taxilane	A portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.
Airport	An aerodrome for which an airport certificate is in force.
Airport Authority	Vancouver Airport Authority, the functioning body charged with the overall management of Vancouver International Airport.
Airside	All areas inside the perimeter fence that mark the restricted area (as defined in the *Aerodrome Security Regulations*) at the airport.
Airside Escort	Persons, firms, or a corporation qualified and approved to provide security services to individuals required to work on airside who do not have the required security clearances or driving qualification.
Airside Escort Service Provider	Company licensed by Vancouver Airport Authority to provide Airside Escort Services.
AMP	**A**sbestos **m**anagement **p**rogram
Apron (Tarmac, Ramp)	The part of an aerodrome, other than the maneuvering area, intended to accommodate the loading and unloading of passengers and cargo; the refuelling, servicing, maintenance, and parking of aircraft; and any movement or aircraft, vehicles, and pedestrians engaging in servicing necessary for such purposes.
ATC	**A**ir **T**raffic **C**ontrol services provided by NAV CANADA
Airside Vehicle Operator's Permit [AVOP]	Refers to the authorization to operate a vehicle on the airside area of an airport. The AVOP program is in accordance with all applicable federal legislation, including the *Aeronautics Act*, *Air Regulations*, *Aerodrome Security Regulations*, *Airport Regulations*, *Air Traffic Regulations*, and *Aerodrome Standards and Recommended Practices*. The two kinds of AVOP permits are: **D** and **D**/**A** (defined below).
AVOP Coordinator	The Airport Authority person who administers the AVOP program and oversees *Airside Traffic Regulations*.
Baghall, Baggage Make Up Area	Areas of the building designated for the loading and unloading of passenger baggage. For the purpose of this program, **Baghall** and **Baggage Make Up Area** mean the same.
Barrette	Three or more aeronautical ground lights closely spaced in a transverse line so that from a distance they appear as a short bar of light.
BIDS	**B**aggage **I**nformation **D**isplay **S**ystems

Blast Fence A barrier used to divert or dissipate jet or propeller blast.

Block Pass Temporarily issued pass for accessing restricted areas. **Must be worn at all times** by all personnel escorted into the restricted area who do not have permanent Restricted Area Identity Cards.

CCG **C**anadian **C**oast **G**uard

Clearway A defined rectangular area on the ground or water under the control of the appropriate authority, selected or prepared as a suitable area over which an aircraft may make a portion of its initial climb to a specified height.

Closed Runway A runway that is unusable for aircraft operations; only airport management can close a runway.

Compass Rose A circle, graduated in degrees, used as a reference to true, magnetic, or grid direction.

CSSM ***C**onstruction **S**afety / **S**ecurity **M**anual*

CSO **C**onstruction **S**afety **O**fficer

Construction As defined in the Airport Authority Land Development Bylaws, includes erection, alteration, repair, dismantling, demolition, structural maintenance, painting, land-clearing, earth-moving, grading, excavating, trenching, digging, boring, drilling, blasting, concreting, the installation of any machinery or plant, or any other work or undertaking.

CERP **C**onstruction **E**mergency **R**esponse **P**lan

Controlled Area An area of the airport that cannot be entered until ATC clearance is received.

Control Tower A unit established to provide ATC service to aerodrome traffic.

Coordinated Universal Time The time system used in aviation operations and given to the nearest minute. Expressed as Zulu or Universal time, during Pacific Standard Time [PST], the time is 8 hours ahead; during Pacific Daylight Time [PDT] the time is 7 hours ahead.

D/A Permit The D/A AVOP Permit allows a driver to operate on the aprons and other uncontrolled airside surfaces. D/A holders are not permitted to enter the maneuvering area of the airport at any time. D/A holders with special training and an Airport Authority endorsement are permitted to cross certain taxiways.

D Permit The D AVOP Permit allows drivers to drive anywhere in the airport in performing their duties. Permission must be received by clearance from ATC to enter the maneuvering areas.

Note: Contractors are not able to obtain D AVOP Permits.

Displaced Threshold A threshold not located at the end of a runway.

DTB **D**omestic **T**erminal **B**uilding

ECL **E**mergency **C**ontact **L**ist

Elevation The vertical distance of a point or a level, on or affixed to the surface of the earth, measured from mean sea level [MSL].

Encroachment The act of entering a controlled surface or zone beyond the established safe distances.

Escort Required Pass A pass issued to a non–Restricted Area Identity Card [RAIC] holder. This means whenever the individuals enter a restricted area, they must be escorted by a RAP holder at all times while in the restricted area.

Exemption The process of seeking a change in the standing operating procedures on airside.

FIDS **F**light **I**nformation **D**isplay **S**ystems

Frangible Object An object of low mass designed to break, distort, or yield on impact so as to present the minimum hazard to aircraft.

Facility Permit [FAP] A permit issued by the Airport Authority's Engineering Services – Permit Department before authorized construction, renovation, or demolition activities start.

Final Approach Area The area within which the final approach portion of an instrument approach procedure is carried out.

Flight Path A trajectory along which an aircraft is flying or intended to be flown.

Flight Service Station [FSS] An ATS unit established to provide selected flight service.

Flow Control Measures designed to adjust the flow of traffic into a given airspace, along a given route, or bound for a given aerodrome, so as to ensure the most effective use of the airspace.

Forecast A statement of expected meteorological conditions for a specified time or

period, and for a specified area or portion of airspace.

Glideslope (Glidepath-GP) A descent profile determined for vertical guidance during a final approach segment.

Groundside The area of the aerodrome not intended to be used for activities related to aircraft operations and to which the public normally has unrestricted access.

Green-Tagging and Owner Acceptance Green-tagging is the process used to turn over completed systems or equipment to the owner. At completion of installation, the contractor places a red tag on the system or equipment to verify that the work is complete and ready for acceptance by the owner. The owner then reviews the system or equipment, and when satisfied that the system or equipment meets the requirements stipulated in the contract documents, then places a green tag onto the system or equipment.

Guardhouses North, South, and South Terminal Guardhouses are a means of checking vehicles and Restricted Area Identity Cards for validity to go airside.

Head of Stand Road Portion of the airside vehicle corridor that runs between the nose of the aircraft and the Terminal Building.

Heading The direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from north (true, magnetic, compass, or grid north).

Helipad A designated area, usually with a prepared surface, used for the take-off, landing, or parking of helicopters.

HEPA **H**igh **E**fficiency **P**articulate **A**erosol

High-Speed Taxiway The high-speed taxiway is designed to expedite aircraft turning off the runway after landing, thus reducing runway occupancy time.

Hold Short Instructions to hold at a specified distance from an aircraft maneuvering area.

HVAC **H**eating, **V**entilation, and **A**ir **C**onditioning

IAQ **I**ndoor **A**ir **Q**uality

IEQ **I**ndoor **E**nvironmental **Q**uality

IDLH **I**mmediately **D**angerous to **L**ife or **H**ealth

Incident A preventable, unplanned, work-related event or exposure, or series of events or exposures that had the potential to result in personal harm and/or damage to things but did not. A “near-miss” is considered an incident.

Instrument Flight Rules [IFR] A set of rules governing the conduct of flight under instrument meteorological conditions.

Instrument Landing System [ILS] A radio navigation precision-approach system that provides aircraft with horizontal and vertical guidance just before and during landing, and that, at certain fixed points, indicates the distance to the reference point of landing.

ILS Critical Area An area of defined dimensions in the vicinity of localizer [LOC] and Glidepath [GP] antenna arrays within which vehicle and aircraft operations may interfere with the radio signal transmitted by the ILS.

Intersection On airside, means the point where two runways, a runway and a taxiway, or two taxiways, cross or meet.

ITB **I**nternational **T**erminal **B**uilding

Jet Blast Jet aircraft engine exhaust.

Key, Proximity Card For the purpose of this manual, *key* means a device, including a proximity card, that is designed to allow entry to a Restricted Area and is issued by, or under the authority of, the aerodrome operator [Vancouver Airport Authority] to an individual.

Landing An aircraft coming into contact with a supporting surface and the immediately preceding and following acts.

Landing Distance Available [LDA] The length of runway that is declared available and suitable for the ground run of an aircraft landing.

Localizer [LOC] The component of an instrument landing system [ILS] that provides lateral guidance with respect to the runway centreline.

Lighting – Obstruction Any lights displayed on an obstruction as a means of indicating the presence of the obstruction.

Low-Visibility Operating Conditions Special operating conditions that occur when the Runway Visual Range [RVR] Operations falls below 800 m (2,600 ft) RVR (0.5 mi. visibility) due to fog, rain, snow (CAT II and CAT III).

Maneuvering Area The part of an aerodrome, other than an apron, that is intended to be used for the take-off and landing or aircraft and for the movement of aircraft associated with take-off and landing.

Marker On airside, means an object of a conventional shape, flag, or painted sign displayed above ground level [AGL] for the purpose of indicating an obstacle or delineating a boundary.

MCTC Canadian Coast Guard's **M**arine **C**ommunication & **T**raffic **S**ervices

MSL	**M**ean **S**ea **L**evel
Movement Area	The part of an aerodrome that is intended to be used for the surface movement of aircraft and that includes the maneuvering area and aprons.
MSDS	**M**aterial **S**afety **D**ata **S**heet
NAV CANADA	The corporation providing air navigation service in Canadian airspace.
Navigational Aid [NAVAID]	Any visual or electronic device, airborne or on the surface of the earth, that provides point-to-point guidance information or position data to aircraft in flight.
NFHC	**N**orth **F**raser **H**arbour **C**ommission
Non-Instrument Runway	A runway intended for the operation of aircraft using visual approach procedures, or an instrument approach down to a height above aerodrome or a height above touchdown zone elevation not lower than 150 m (500 ft).
Non-Precision Runway	A runway served by visual aids and non-visual NAVAIDS that provide at least lateral guidance adequate for approach down to a height above aerodrome /height above touchdown of 75 m (500 ft) but not lower than 75 m (250 ft).
NOTAM [Notice to Airmen]	A notice distributed by means of telecommunications containing information concerning the establishment, condition, or change in any aeronautical facility, service, procedure, or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.
NOP	**N**otification of **P**roject
Obstacle	All fixed (temporary or permanent) and mobile objects, or parts thereof, that are located on an area intended for the surface movement of aircraft or that extend above a defined surface intended to protect aircraft in flight.
Obstruction	An object that is deemed, for reason of location, size, etc., to be a hazard to air navigation and thus needs to be marked.
Obstacle Clearance Height	The lowest height relevant to the runway threshold above which an object interferes with aircraft operations.
Obstacle Limitation Surface [OLS]	A surface that establishes the limit to which objects may project into the airspace associated with an aerodrome so that aircraft operations at the aerodrome may be conducted safely.
OH&S	**O**ccupational **h**ealth and **s**afety
Operational Stand	An area of the apron designated for the parking of aircraft for the purpose of loading and unloading passengers and for ground services. Operational

	stands may have bridges or may have apron passenger path lines painted on the apron.
Precision Approach Path Indicator [PAPI]	An approach path indicator system consisting of four light units situated on the left side of the runway.
Parallel Runways	Two or more runways at the same airport whose centerlines are parallel. In addition to having a runway number, parallel runways are designated as “L” (left) and “R” (right).
Pavement Classification Number [PCN]	A number expressing the bearing strength of a pavement for unrestricted aircraft operations.
Pavement Load Rating [PLR]	A number expressing the bearing strength of a pavement for unrestricted aircraft operations.
Perimeter Road	An established surface route on the movement area meant for the exclusive use of vehicles.
PIB	**P**roject **I**nformation **B**oard
PPE	**P**ersonal **p**rotective **e**quipment
Primary Security Line [PSL]	Separates the “Non-Restricted Area” from the “Restricted Area”; a security barrier to prevent the introduction of unauthorized persons, explosives, and incendiary devices in the Restricted Area.
Prime Contractor	The company designated to be responsible for the project.
Push Back	The rearward movement of an aircraft being moved by a tractor.
Radar	A radio detection device that provides information on range, azimuth, or elevation of objects.
Restricted Area Identity Card [RAIC]	**R**estricted **A**rea **I**dentity **C**ard. Issued to employees, tenants, or contractors working at the airport to permit access to restricted areas.
RFR	**R**ichmond **F**ire-**R**escue
Rotation	The point at which an aircraft lifts off the runway surface.
Runway	A rectangular area located on a land aerodrome and prepared for the landing and take-off runs of aircraft along its length.
Runway Heading	The magnetic or true direction that corresponds with the runway centreline

rather than the painted runway numbers.

Runway Incursion Any occurrence at an airport involving the unauthorized or unplanned presence of an aircraft, **vehicle,** or person on the maneuvering area.

Runway Visual Range [RVR] The maximum horizontal visual distance measured at the ends of the runways.

Security Escort An individual qualified and authorized by the Airport Authority to escort persons into restricted or sensitive areas.

STB **S**outh **T**erminal **B**uilding

SWP **S**afe **w**ork **p**ractices

Tail of Stand Road The portion of the airside vehicle corridor that runs behind the tail of the aircraft.

Take-off An aircraft leaving a supporting surface, including the take-off run and the acts immediately preceding and following the leaving of that surface.

Take-off Runway Available [TORA] The length of the runway declared available and suitable for the ground run of an aircraft taking off.

Take-off Distance Available [TODA] The length of the take-off run available plus the length of the clearway, if provided.

Taxi The movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing.

Taxi Patterns Patterns established to illustrate the desired flow of ground traffic for the different runways or aerodrome areas available for use.

Taxiway A defined path on a land aerodrome established for the taxiing of aircraft. Defined by blue edge lights or green centreline lights.

Threshold The beginning of the portion of the runway usable for landing.

Threshold Lights Lights placed across the ends of a runway or landing strip to indicate its usable limits.

Touchdown The point at which an aircraft first makes contact with the landing surface.

Touchdown Zone The first 915 m (3,000 ft) of the runway or the first third of the runway, whichever is less, measured from the threshold in the direction of landing.

Touchdown Zone Lights Variable intensity white lighting in the touchdown zone consisting of bars of three inset lights per bar situated on either side of the runway centreline at 30-m (100-ft) intervals, starting (30 m) 100 ft from the threshold and

	extending 915 m (3,000 ft) down the runway. The lights are unidirectional, showing in the direction of approach to landing.
Transport Canada [TC]	The federal authority responsible for the regulation of civil aviation.
TP312	Transport Canada document outlining the standards and recommended practices of civil aviation.
TSC	**T**rades **S**afety **C**oordinator
Turbojet Aircraft	An aircraft having a jet engine in which the energy of the jet operates a turbine, which, in turn, operates the air compressor.
Turboprop Aircraft	An aircraft that derives most of its propulsive power from the thrust developed by a turbojet engine having a turbine-driven propeller.
Uninterruptible Power Supply [UPS]	A power system that is not subjected to any interruption when a break occurs in the normal power supply—required during CAT II and CAT III operations.
Uncontrolled Area or Surface	An area in which vehicle movement is permitted **without** an ATC clearance.
Vehicle	Any type of automobile, truck, van bicycle, skateboard, over-snow vehicle, or other type of propelled machine is classified as a vehicle. For the purpose of this manual, *vehicle* also includes construction equipment.
Vehicle Corridor	A space delineated by parallel, 15 cm (5.9 in) wide, solid white lines spaced 7.5 m (24.6 ft) apart to provide guidance to vehicle and equipment operators.
Visual Approach	An approach wherein an aircraft on an IFR flight plan, operating in visual meteorological conditions under the control of ATC and having ATC authorization, may proceed to the airport of destination.
Visual Flight Rules [VFR)]	The rules that govern the procedures for conducting flight under visual conditions.
VOC	**V**olatile **o**rganic **c**ompounds
YVR	International aviation code for the Vancouver International Airport.
YVRAA	Vancouver Airport Authority
WHMIS	**W**orkplace **H**azardous **M**aterials **I**nformation **S**ystem
Windsock	A wind direction indicator that is in the form of a truncated cone made of orange and white fabric.

Appendix

4

Canadian Aviation Security Regulations for Restricted Area Identity Card Holders

***Aeronautics Act*, *Canadian Aviation Security Regulations*, partial sections applicable to Restricted Area Identity Card holders.**

PART 3
AERODROME SECURITY
Interpretation

35. Not included
35.1 Not included
36 Not included
37 Not included
37.1 Not included
38. Not included
39. Not included

39.1 A person must not provide false information for the purpose of obtaining a restricted area identity card.

39.2 Not included
39.3 Not included
39.4 Not included
40. Not included .
40.1 Not included
40.2 Not included
40.3 Not included
41 Not included
41.1 Not included
41.2 Not included
41.3 Not included
41.4 Not included

41.5 Not included
41.6 Not included
42. Not included
42.1 Not included
42.2 Not included
42.3 Not included
43 Not included .
43.1 Not included
44 Not included
45 Not included

46. A person must not enter a restricted area except through a restricted area access point.

46.1 A person must not enter or remain in a restricted area unless the person is
(a) a person to whom a restricted area identity card has been issued; or
(b) in possession of a document that is issued or approved by the aerodrome operator in accordance with a security measure as authorization for the person to enter or remain in the restricted area.

46.2 (1) A person to whom a restricted area identity card has been issued must not enter or remain in a restricted area unless
(a) they are acting in the course of their employment;
(b) the card is in their possession;
(c) the card is active; and
(d) they are in possession of a key that, if applicable, has been issued to them for the restricted area or a combination code or personal identification code that has been assigned to them for the restricted area.
(2) Paragraph (1)(d) does not apply to crew members.

46.3 A person to whom a restricted area identity card has been issued must not enter or remain in a restricted area unless they visibly display the card on their outer clothing at all times.

46.4 Not included
47**.** Not included
47.1 Not included
47.2 Not included

Use of Restricted Area Identity Cards, Keys, Combination Codes and Personal Identification Codes

48. (1) No person
(a) may lend or give a restricted area identity card or a key that has been issued to them to another person;
(b) may use a restricted area identity card or a key that has been issued to them to provide access to a restricted area to another person without authorization from the aerodrome operator;
(c) other than an aerodrome operator or a person designated by the aerodrome operator, may intentionally alter or otherwise modify a restricted area identity card or a key;
(d) may use a restricted area identity card or a key that has been issued to another person;
(e) may have in their possession, without reasonable excuse, a restricted area identity card or a key that has been issued to another person;
(f) may use a counterfeit restricted area identity card or a counterfeit key; or
(g) may make a copy of a restricted area identity card or a key.

(2) No person
(a) other than an aerodrome operator or a person designated by the aerodrome operator, may
(i) disclose a combination code, or
(ii) use a combination code that has been assigned to another person;
(b) may disclose a personal identification code; or
(c) may use another person's personal identification code.

48.1 (1) A person to whom a restricted area identity card or a key has been issued must immediately report its loss or theft to their employer or to the aerodrome operator that issued the card or key.
(2) An employer who is informed by an employee of the loss or theft of a restricted area identity card or a key must immediately report the loss or theft to the aerodrome operator that issued the card or key.

48.2 An employer who is informed by an employee that a restricted area identity card is not functioning must immediately so notify the aerodrome operator that issued the card.

48.3 An aerodrome operator that has issued a restricted area identity card must notify CATSA if the card is reported as lost or stolen.

Presentation and Surrender of Restricted Area Identity Cards

49. (1) A person in possession of a restricted area identity card who is in a restricted area must, on demand, present the card to the Minister, the aerodrome operator, the person's employer or a peace officer.
(2) A person in possession of a restricted area identity card who is being screened by a screening officer at a restricted area access point or at a location in a restricted area must, on demand, present the card to the screening officer.

50. (1) A person in possession of a restricted area identity card must, on demand, surrender it to the Minister, an aerodrome operator, a screening officer or a peace officer.
(2) The Minister or an aerodrome operator may demand the surrender of a restricted area identity card if
(a) the card has expired or has been reported as lost or stolen;
(b) the card has been deactivated; or
(c) the surrender of the card is required in order to ensure aviation security.
(3) A screening officer may demand the surrender of a restricted area identity card if
(a) the card has expired or has been reported as lost or stolen;
(b) the card has been deactivated; or
(c) the screening officer is conducting screening at a restricted area access point or at a location in a restricted area and the person who is in possession of the card refuses to submit to a screening or to the screening of goods in his or her possession.
(4) A peace officer may demand the surrender of a restricted area identity card if
(a) the card has expired or has been reported as lost or stolen; or
(b) there is an immediate threat to aviation security, the security of any aircraft or aerodrome or other aviation facility or the security of the public, passengers or crew members and the surrender of the card is required in order to respond to the threat.

50.1 A screening officer or a peace officer to whom a person surrenders a restricted area identity card must return the card to the aerodrome operator of the aerodrome at which the card is surrendered or the aerodrome operator that issued the card.

50.2 An aerodrome operator to which a person surrenders a restricted area identity card must notify the Minister if the aerodrome operator demanded the surrender in accordance with paragraph 50(2)(c).

Doors, Gates, Emergency Exits and Other Devices

51 Not included

51.1 Not included

51.2 Any person who has temporary use or control of a door, gate or other device that allows access between a restricted area and a non-restricted area must prevent access to or from the restricted area by unauthorized persons.

51.3 Unless an authorized person is controlling access between a restricted area and a non-restricted area, a person who enters or leaves the restricted area must
(a) lock the door, gate or other device that allows access to or from the restricted area; and
(b) prevent access to or from the restricted area by unauthorized persons while the door, gate or other device is open or unlocked.

51.4 A person must not prevent a door, gate or other device other than an emergency exit that allows access between a restricted area and a non-restricted area from being locked.

51.5 A person must not open any door that is designated as an emergency exit and allows access to a restricted area unless
(a) the emergency exit is a restricted area access point; or
(b) there is an emergency.

52 Not included

52.1 Not included

52.2 Not included

52.3 Not included

52.4 Not included

52.5 Not included

53 Not included

54 [reserved]

Appendix

5

Conditions of Issue of a Restricted Area Identity Card

The following material has been reprinted from the Airport Authority Application for Restricted Area Identity Card, Vancouver International Airport, for reference and understanding of applicable requirements.

1. If I am applying for a Restricted Area Identity Card (RAIC), I hereby expressly consent to the collection and use by the Aerodrome Operator (Vancouver Airport Authority) of personal information arising from and directly relating to the fingerprint and iris images that will be used to create the biometric templates that will be stored and, in the case of certain specific personal information, displayed on the RAIC. Furthermore, I hereby expressly consent to the disclosure of my biometric templates to the Canadian Air Transport Security Authority (CATSA).

2. I understand that the Restricted Area Identity Card (RAIC) or other document of entitlement issued to me, and all information contained therein, is the property of the Vancouver Airport Authority. I will present the RAIC or other document of entitlement for inspection or surrender immediately upon demand to the Minister, the Aerodrome Operator (Vancouver Airport Authority) (including those appointed or authorized by the Aerodrome Operator), a CATSA screening officer, a peace officer, or my employer.

3. I understand the RAIC or other document of entitlement issued to me is only valid while I am on duty or in the performance of functions directly duty related. I will not use the RAIC or other document of entitlement to access Restricted Areas for personal reasons.

4. I will use the RAIC or other document of entitlement issued to me to enter only those Restricted Areas to which I require access during the performance of my duties or functions directly work-related. The Aerodrome Operator, Minister, and/or a peace officer reserve the right to confirm my duties within the Restricted Area.

5. I will not knowingly or willingly assist an unauthorized person(s) to access the Restricted Areas of the Aerodrome.

6. I will not use the RAIC or other document of entitlement issued to me to bypass passenger screening, where as an intended passenger on a commercial aircraft, or where required by airport procedure and/or legislation I would be subject to such screening.

7. I will acknowledge and follow the instructions relating to security issues given to me by the Aerodrome Operator, its representatives, the Minister, a CATSA screening officer, or a peace officer.

8. I will ensure the RAIC or other document of entitlement issued to me is visibly displayed on my outer clothing at all times while I am in the Restricted Area.

9. It is my responsibility to safeguard the RAIC or other document of entitlement issued to me and I will report a lost or stolen pass to the Access Control office immediately.

10. I will return the RAIC or other document of entitlement issued to me to the Access Control office immediately upon any change in the circumstances under which it was issued, including termination of employment, change of duties, completion of temporary work activities, a change in restricted area access requirements, an absence from work for a period exceeding 60 days, or on or before the date of card expiry.

11. I acknowledge that I am subject to all applicable sections of the Canadian Aviation Security Regulations. A copy is available for my reference from my employer or can be referenced on-line at the Canada Gazette website; http://tc.gc.ca/civilaviation/regserv/Affairs/cars/menu.htm

12. I will comply with all rules and regulations as laid down in accordance with the Restricted Area Access Control Directive, Airside Traffic Directives and Airport Operations Directives as relevant to my employment and work activities within the restricted area. Any questions I have relating to these or other Directives, Policies or Regulations may be directed to appropriate Aerodrome Operator staff.

13. I am subject to any fees associated with the administration of the RAIC program. These fees are subject to change at the discretion of the Vancouver Airport Authority.

Appendix

6

Safety Pre-Qualification Application

The Vancouver Airport Authority [Airport Authority] is the functioning body that oversees the safe and efficient operation of Vancouver International Airport. To meet the needs associated with passenger and cargo growth, the Airport Authority is continuing with a significant program of expansion and renovation. Contractors will have a key role in ensuring the work is performed in a safe, secure, and environmentally conscious manner.

To confirm that the work is performed in accordance with Airport Authority safety requirements, applicable legislation, and good industry practices, contractors are required to meet our established levels of safety competence and compliance by successfully completing the *Application for Safety Pre-Qualification*, which will be administered during the tendering process for construction contracts. Through this process, contractors will be expected to provide evidence of an acceptable construction safety record along with a corporate commitment that ensures safe establishment and maintenance of work sites and practices.

Subsequent to successful completion of the *Application for Safety Pre-Qualification*, construction work will not begin until the contractor has completed their site-specific safety program based on the unique hazards and related risks associated with their airport project, and has submitted this material to the Airport Authority for review.

Safety pre-qualification will apply to all construction contracts undertaken by or on behalf of the Airport Authority, and, at the discretion of the Airport Authority, may be applied to any airline, tenant, or other contracts where the work is deemed to have the potential to impact sensitive operational areas.

Application, Submission, and Inquiries

Applicants are required to apply for safety pre-qualification by completing the *Application for Safety Pre-Qualification*. **Copies of the application may be obtained through:**

Vancouver Airport Authority
Superintendent Construction Safety
PO Box 23750 APO Richmond, BC
Phone: 604-276-6040
Fax: 604-232-6238

Direct all submissions and inquiries to the Superintendent Construction Safety.

Pre-Qualification Levels

Pre-qualification levels are established in relation to the value and complexity of the anticipated work. Applicants need only apply for the highest level of pre-qualification being sought, as lower levels are automatically granted upon successful award of pre-qualification status.

Stand-Alone Contractor Pre-Qualification	**Level 1**	Project work to a maximum value of $100,000 where the work is performed by one contractor.
	Level 2	Project work over $100,000 to $1 million where the work is performed by one contractor.
	Level 2 SC	Specialty Contractor designation for select contractors. Intended primarily for earthworks and paving contracts or other specialized fields. Work is performed by one contractor. Waives dollar value associated with level 2.
Prime Contractor Pre-Qualification	**Level 3**	Project work from $100,000 to $1 million where the contractor will be the prime contractor.
	Level 4	Project work from $1 million to $5 million where the contractor will be the prime contractor.
	Level 5	Project work above $5 million where the contractor will be the prime contractor.

General Requirements

Applicants are required to submit the following documentation in support of their safety pre-qualification application:

- Proof of registration with WorkSafeBC
- Letter of Good Standing from WorkSafeBC
- Copies of WorkSafeBC *Experience Rating Assessment* [ERA] letters for the previous five years, including all sub-classes for which the contractor receives an ERA
- Copies of WorkSafeBC *Claims Cost Summary* for the previous five years
- Details of any penalties assessed against the contractor by WorkSafeBC within the previous five years, including copies of relevant WorkSafeBC *Inspection Reports*
- Accident statistics, current to within 60 days of application, that include:
  - Employee hours: actual employee hours worked
  - Number of lost-time accidents
  - Number of lost days
- Copy of contractor occupational health and safety [OH&S] program complete with a general construction safety orientation program for all workers, duly signed and dated within the previous year
- Copy of recent safety audit conducted by or on behalf of the contractor
- Names of Project Managers, Superintendents, Construction Coordinators, Supervisors, and Site Safety Coordinators anticipated to work on airport projects, along with documentation of safety training and experience for each person

In addition, the applicant is required to affirm, in writing, the following:

- The contractor will undertake all health and safety matters in accordance with the requirements described in the Airport Authority *Construction Safety / Security Manual*.
- The contractor will undertake all health and safety matters in accordance with applicable legislation and good industry standards,

- The contractor will undertake all health and safety matters in accordance with company occupational health and safety program and the site-specific safety program that will be developed based on the safety, environmental, and operational risks associated with their specific airport construction project.

- The contractor will promote, assist at, and demonstrate a positive safety attitude at the workplace.

The Airport Authority will request and require authorization for release of information or documentation as necessary to complete the safety pre-qualification assessment.

Where the Airport Authority requires modification to submitted documents to make them acceptable, the applicant may be requested to make such modifications and resubmit the documents.

For new contractors with no past safety history, the Airport Authority may request records of the parent company, associate company, or previous company. The Airport Authority may also request records of firms managed by the principal managers and senior supervisory personnel of the new company to use as evidence of the safety commitment of the new company.

Note: The Airport Authority recognizes the Certificate of Recognition (**COR)** program of British Columbia. Contractors who are certified under this program are still required to complete the *Contractor Application for Pre-Qualification* however some sections can be omitted. Supporting **COR** documentation must be submitted with the application. For more information on the required sections reference page 1 of the *Contractor Application for Pre-Qualification*.

Specific Health and Safety Requirements

In performing the contract with the Airport Authority, the applicant is required to comply with the following health and safety conditions. The Airport Authority reserves the right to require or impose on the applicant additional health and safety conditions as may be identified or necessary to ensure the safety and security of the airport, including tenants, passengers, the public, and applicant employees.

Risk Assessment

The applicant will conduct a risk assessment before starting any activities that could pose a hazard to people, the environment, or the operation, which includes

the applicant's work site and normal operations of the airport. The contractor's site-specific safety program will be based upon the unique hazards faced at the airport. Copies of all risk assessments must be kept at the airport and made available for reference and review by the Airport Authority.

Site-Specific Safe Work Procedures

The applicant will develop and implement appropriate site-specific safe work procedures for all tasks and activities performed in respect to the contract where the task or activity is identified by federal or provincial *Occupational Health and Safety Regulation* as requiring a safe work procedure, including tasks and activities identified during site-wide risk assessments and ongoing risk assessments. The contractor's site-specific safety program based upon the unique hazards and risks associated with working at the airport must be kept onsite and made available for reference and review by the Airport Authority.

Employee Training

For all work activities identified through risk assessment, or requiring safe work procedures in respect to the contract, the applicant will provide the necessary training to all applicant employees prior to permitting the activity or safe work procedure being performed. Training will be to a method and degree that ensures proper understanding by applicant employees.

Copies of training curriculum and training records confirming completion will be kept at the airport and made available for reference and review by the Airport Authority.

Workplace Hazardous Materials Information System

The applicant will ensure that all materials subject to Workplace Hazardous Materials Information System [WHMIS] requirements are properly identified, labeled, used, and stored in accordance with the general requirements of the *Hazardous Products Act* and the *Hazardous Materials Information Review Act*, as amended from time to time, and the specific requirements of the Material Safety Data Sheet [MSDS] for the specific product.

The applicant will ensure that all hazardous materials are properly labelled and have the accompanying MSDS prior to arrival and use at the airport. Copies of MSDS will be made available for reference and review by the Airport Authority.

Note: The Airport Authority reserves the right to disseminate copies of MSDS sheets to tenants that have employees who may have a vested interest in the materials being used in the facilities.

The applicant will ensure that all applicant employees receive WHMIS training before using any hazardous materials at the airport. Records of training and competency will be kept at the airport for reference and review by the Airport Authority.

Monitoring and Reporting

To validate compliance with the requirements of safety pre-qualification and the contractor's site-specific safety program, the applicant is required to submit a weekly safety report to the Airport Authority Project Manager and to the Superintendent Construction Safety. The report will identify the following:

- All lost-time accidents occurring to any workers on site while working at the airport
- All incidents or accidents occurring to any workers on site while working at the airport
- All incidents or accidents caused by any workers on site that result in operational delay to the facilities or tenants
- Incidents or accidents involving tenants, passengers, or the public
- Incidents or accidents that result in damage to Airport Authority property or equipment
- Incidents or accidents that result in damage to tenant, airline, or other contractor or third-party property or equipment
- Incidents or accidents that result in property damage to the public or passengers

An *incident* is defined as a preventable, unplanned, work-related event or exposure, or series of events or exposures that had the potential to result in personal harm and/or damage to things but did not. A "near-miss" is considered an incident.

An *accident* is defined as a preventable, unplanned, work-related event or exposure, or series of events or exposures that result in personal harm and/or damage to things.

Submission of Records

The Airport Authority requires submission of applicant records on request that demonstrate that Occupational Health & Safety Committee meetings, investigations including incident investigations, inspections, equipment certification and testing, risk assessments, or other pertinent health and safety matters are being conducted as required by applicable *OH&S Regulation*.

Inspections and Auditing

The Airport Authority may conduct periodic health and safety inspections and audits of the applicant to ensure that all health and safety requirements are maintained in accordance with the requirements of this safety pre-qualification.

Stand-Alone/ Subcontractor Pre-Qualification
(Levels 1 and 2, and Level 2 Specialty Contractor)

Levels 1, Level 2, and Level 2 Specialty Contractor are intended for applicants seeking work as a stand-alone or sub contractor. In addition to the requirements described under section *General Requirements* above, the applicant's occupational health and safety program will be reviewed to verify that appropriate instructions, procedures, and documentation are in place that supports their role and responsibilities.

The applicant's occupational health and safety program must include the following information:

- Policy statement of company on safety goals and objectives
- Description of safety roles and responsibilities for project management, supervisors, site safety coordinators, foremen, and workers
- Process for obtaining information from an owner or prime contractor on workplace hazards
- Process for evaluating project risks, including actions to eliminate, minimize, or control these risks, at project start-up and throughout course of project
- Process for providing site-specific safety orientations to workers and visitors prior to going on site
- Process for identifying and controlling hazardous materials according to WHMIS requirements

- Identification of requirement to attend prime contractor Occupational Health & Safety Committee meetings, where applicable
- Process for investigating incidents including near misses and accidents occurring at the workplace
- Process for providing and maintaining appropriate first aid supplies and personnel
- Process for ensuring that all injuries, incidents, and accidents are reported
- Appropriate safe work procedures for the tasks performed by the contractor's forces
- Acknowledgement of Airport Authority *Construction Safety / Security Manual* requirements, including provisions for implementing these requirements
- Process for holding safety toolbox and tailgate meetings as necessary to ensure proper communication of safety information to workers
- Description of contractor policy for inappropriate behaviour at the workplace, including drug and alcohol use
- Process for disciplinary action taken against workers for non-compliance with Airport Authority, contractor, or WorkSafeBC requirements
- Process to ensure that workers have appropriate training before undertaking work activities
- Policy and provision for supply and use of personal protective equipment
- Provision for maintenance procedures for site tools and equipment, including tag-out procedures for defective equipment or tools
- Provision for inspecting equipment prior to use on site
- Process for conducting site safety inspections as required to eliminate unsafe acts or conditions, including identifying procedures to correct unsafe site or working conditions
- Identification of contractor emergency response program procedures, including training for workers and visitors, where applicable
- Provision for security program to meet Airport Authority Security requirements, where applicable

- Provision for environmental management program to meet Airport Authority Environment Department requirements, where applicable

- Policy for ensuring that registered professional documentation, manufacturers' operating instructions, or other such documentation is received and maintained at the workplace prior to process, structure, or equipment use

Prime Contractor Pre-Qualification
(Levels 3, 4, and 5)

Levels 3, 4, and 5 are intended for applicants seeking contracts as a prime contractor. Under WorkSafeBC *OH&S Regulation* 20.3, prime contractors have the responsibility for coordinating the safety activities of all persons on the work site under their control or direction.

In addition to the requirements described under section *General Requirements* above, applicants are required to demonstrate that they are knowledgeable in their intended role as prime contractor, that their occupational health and safety program provides appropriate instruction for their forces and those of subcontractors, and that they have processes to qualify subcontractors based on acceptable safety competence and compliance.

Construction Safety Officer

The Airport Authority requires prime contractors to have designated Construction Safety Officers for complex projects, responsible for overseeing the safety activities of all workers and sub contractors under the direction of the prime contractor. Construction Safety Officers will be qualified and have the appropriate levels of training and experience necessary to perform their duties. Airport Authority requires the prime contractor to provide documentation supporting the qualifications of the proposed Construction Safety Officers.

In addition to the duties assigned by the prime contractor, the Construction Safety Officer will liaise with Airport safety personnel as necessary to demonstrate the activities of the project are in accordance with applicable legislation, Airport Authority *Construction Safety / Security Manual* requirements, and this safety pre-qualification program. Construction Safety Officers are required to attend weekly coordination meetings held by the Airport Authority.

Verification of Subcontractors

Airport Authority requires prime contractors to ensure all sub contractors have completed a thorough safety prequalification, including all other contracts executed for or on behalf of a subcontractor as part of the principal contract.

Occupational Health and Safety [OH&S] Program

The applicant's OH&S program will include information about the following:

Requirements of Prime Contractor

- Policy statement of company with respect to safety goals and objectives
- Description of safety roles and responsibilities for project management, supervisors, site safety coordinators, foremen, and workers
- Policy statement for obtaining information from the owner on workplace hazards
- Process for providing site-specific safety orientations to workers, subcontractors, and visitors prior to going on site
- Process for identifying and controlling hazardous materials according to WHMIS requirements
- Corporate risk assessment process for evaluating project risks, including actions to eliminate, minimize, or control these risks, at project start-up and throughout course of project
- Process for establishing and maintaining Occupational Health & Safety Committee meetings, including record-keeping
- Process for investigating incidents and accidents occurring at the workplace
- Process for providing and maintaining appropriate first aid supplies and personnel
- Process for ensuring that all injuries, incidents, and accidents are reported
- Appropriate safe work practices for the tasks performed by the prime contractor's workforce
- Acknowledgement of Airport Authority *Construction Safety / Security Manual* requirements, including provisions for implementing these requirements

- Process for holding safety toolbox / tailgate meetings as necessary to ensure proper communication of safety information to workers
- Policy statement on inappropriate behaviour at the workplace, including drug and alcohol use
- Process for disciplinary action taken against workers for non-compliance with safety requirements
- Process to ensure that workers have appropriate training prior to undertaking work activities
- Policy and provision for supply and use of personal protective equipment
- Provision for maintenance procedures for site tools and equipment, including procedures for defective tools
- Provision for inspecting equipment prior to use on site, including subcontractor equipment
- Process for conducting site safety inspections as required to eliminate unsafe acts or conditions, including identifying procedures to correct unsafe site or working conditions
- Identification of contractor emergency response program procedures, including training for workers, subcontractors, and visitors
- Provision for security program to meet Airport Authority Security requirements, where applicable
- Provision for environmental management program to meet Airport Authority environmental requirements, where applicable
- Policy for ensuring that registered professional documentation, manufacturers' operating instructions, or other such documentation is received and maintained at the workplace prior to process, structure, or equipment use

Out-of-Province Applicants

Applicants based outside of British Columbia will submit documentation from the local agency responsible for compliance with safety on construction sites for their province or state. Documentation should mirror the requirements established in sections *General Requirements*, *Specific Health and Safety Requirements*, and *Stand-Alone and Subcontractor Pre-Qualification*.

Criteria for Acceptance of Pre-Qualification Status

The applicant will be recommended for their requested pre-qualification level if the applicant meets the following criteria:

- Registered with WorkSafeBC
- WorkSafeBC assessments are paid in full
- WorkSafeBC *Experience Rating Assessment* not greater than 15% demerit at any time during the past three years
- Contractor is not listed as a WorkSafeBC Focus Firm
- Contractor has a lost-time accident [LTA] frequency rating of less than 7.5, and corresponding severity rating of less that 15.0
- Contractor occupational health and safety program and practices are acceptable to the Airport Authority for the level of pre-qualification being sought
- Qualifications of management and supervisory personnel are acceptable to the Airport Authority for the level of pre-qualification being sought
- Demonstrated record of conducting business in a safe, efficient, and environmentally conscious manner
- Achieves an acceptable score on the quantitative component of the safety pre-qualification application

Assessment

The assessment period for applications may take up to 10 working days after full receipt of all requested information and documentation. As necessary, interviews

will be arranged with the applicant to clarify any details and assess the applicant's commitment to safety.

Assessments will be undertaken by the following groups:

Level 1 **Level 2**	Superintendent Construction Safety
Level 2 Specialty Contractor **Level 3**	Superintendent Construction Safety Manager, Health and Safety
Level 4 **Level 5**	Superintendent Construction Safety Manager, Health and Safety Director, Engineering

Additional personnel may be included as deemed necessary.

Notification of Assessment

Applicants will be advised in writing of the outcome of their pre-qualification assessment.

Applicants who are unsuccessful in their application will receive written notification itemizing the reasons for the rejection. The contractor may re-apply at any time, subject to demonstrating that the reasons for the rejection have been resolved to the satisfaction of the Airport Authority.

Pre-Qualification Period and Renewal

Pre-qualification status is valid for three years from the date of approval, subject to maintaining approved status and may be extended based on length of a particular project should it exceed three years. The Airport Authority reserves the right to request and require re-submission of documents prior to the contractor pre-qualification anniversary date.

Contractors are responsible for seeking renewal prior to the expiration date of their pre-qualification period. Contractors will not be eligible to receive contracts after the expiration date of their pre-qualification status.

Contractors should submit the full safety pre-qualification application a minimum of four weeks prior to their expiration date. The contractor's previous record and demonstrated efforts toward operating a safe, efficient, and environmentally

conscious manner while at working at the airport will be a major consideration when evaluating request for renewal of safety pre qualification.

Maintaining Pre-Qualification Status

Maintaining safety pre-qualification status is subject to the contractor's ongoing demonstration that the work is performed in accordance with the requirements described in this document.

Inspections and Auditing

The Airport Authority will inspect, audit, and review relevant documentation as necessary to confirm ongoing compliance with pre-qualification requirements. Contractors are required to provide this information as necessary to assess compliance. Contractors will be provided with copies of all inspection reports and audits, with the expectation that any noted deficiencies are immediately corrected.

Non-Compliance and Disciplinary Action

Non-compliance with this program will not be accepted and will precipitate disciplinary action appropriate to the severity or frequency of the non-compliance. Airport Authority will provide the contractor with written notification specifying the nature of the non-compliance and corresponding disciplinary actions. This notification may be in the form of a *Stop Work Order – Safety* form.

Facsimile transmission of a *Stop Work Order – Safety* form or other written correspondence will constitute proof of contractor's receipt of notification. These written notifications will remain on file and will be reviewed and taken into consideration by the Airport Authority during subsequent applications for pre-qualification status by the contractor.

Non-compliance may include the following:

- **Gross misconduct.** Categorized as:
  - Serious injury or death to worker, visitor, tenant, or public due to negligence by contractor
  - Significant property damage or environmental disaster due to negligence by contractor

  - Significant operational impact on facilities due to negligence by contractor—e.g., false fire signal resulting in terminal evacuation, friable asbestos spill
  - Damage to aircraft due to negligence by contractor

- **Significant misconduct.** Categorized as:
  - Injury to tenant or public due to negligence by contractor
  - Aggravation of worker injury due to inadequate or inappropriate treatment
  - Penalties levied by WorkSafeBC for infractions on airport projects
  - Violation of *Construction Safety / Security Manual* requirements, resulting in operational impact to the facilities—e.g., indoor environmental quality, unauthorized lockouts, hot work
  - Airport Authority *Stop Work Order – Safety* issued against the contractor
- **Ongoing misconduct.** Categorized as:
  - Unacceptable injury, incident, or accident rates on the project from failure to take appropriate actions
  - Repeated failure to rectify reported safety deficiencies
  - Repeated failure to comply with WorkSafeBC, the Airport Authority, or contractor safety requirements
  - Repeated failure to enforce subcontractor compliance with safety requirements
  - Repeated complaints from Airport Authority, airlines, or tenants due to contractor's failure to follow safety requirements

Disciplinary action may include the following:

- Notification to the contractor that safety pre-qualification status has been suspended until the offence has been corrected to the satisfaction of the Airport Authority
- Notification of non-compliance with WorkSafeBC *OH&S Regulation* to a WorkSafeBC officer and request for follow-up by the WorkSafeBC officer

Revocation or suspension of safety pre-qualification status during the execution of Airport Authority contracts will be considered a breech of the General

Conditions of Contract. The Airport Authority may levy penalties as stipulated in the contract documents for failure of the contractor to meet contractual obligations.

Appeals and Determinations

Contractors may launch an appeal by providing Airport Authority written notification of appeal within five working days after receipt of the non-compliance letter. Appeals launched after five working days of notification will not be considered.

Airport Authority will only accept appeals under the following criteria:

- To challenge the circumstances resulting in the disciplinary action
- To demonstrate that the circumstances resulting in the disciplinary actions have been rectified to the satisfaction of the Airport Authority
- To make recommendations to replace contractor on-site management or supervisory personnel
- To make recommendations to replace a subcontractor in circumstances where the subcontractor was responsible for the non-compliance resulting in disciplinary action against the prime contractor
- To request an appeal extension by providing valid reasons for extension

Appeals will not extend beyond 30 calendar days from the contractor's receipt of the non-compliance letter, except where an appeal extension has been granted in writing.

Appeals and determinations will be undertaken by a Disciplinary Review Board consisting of the Airport Authority Project Manager, the Assessment Group granting safety pre-qualification status, and Airport Authority Corporate Counsel. At the discretion of Airport Authority, additional representation may be added.

Decisions of the Disciplinary Review Board are final and binding.

Limitations of Liability

The Airport Authority accepts no responsibility or liability incurred against the contractor for failure to meet the General Conditions of Contract.

The Airport Authority accepts no responsibility or liability for loss incurred against the contractor or other parties resulting from a revocation or suspension issued against the contractor under the conditions described in this document.

Part A - Qualitative Application

Submissions, Program Content, and Inquiries:

Contractors are invited to apply for safety pre-qualification by completing and submitting the *Application for Safety Pre-Qualification*. For details of this process, see Appendix 6, *Safety Pre-Qualification Application*, of the *Construction Safety / Security Manual* version 6. Copies may be obtained through:

Vancouver Airport Authority
Superintendent Construction Safety
PO Box 23750 Airport Postal Outlet
Richmond, BC V7B 1Y7
Phone: 604-276-6040
Fax: 604-232-6238
Email: construction_safety@yvr.ca

Direct all submissions and inquiries to the Superintendent Construction Safety (Vancouver Airport Authority).

NOTE: Certificate of Recognition (COR) certified contractors who hold a valid COR certificate are only required to complete the sections listed below:

- ✓ Part A - Qualitative Application
- ✓ Part B – Quantitative Application
  - Section 3.3.2
  - Section 3.7
  - Section 6.2 to 6.4
  - Sections 8 to 11

COR documentation must be submitted with this application.

1 Company Identification

Business Name: _____

Address: _____ Postal Code: _____

Telephone: _____ Fax: _____

Contact Name: _____ E-mail: _____

Mailing Address (if different): _____

Company is a: ☐ Sole Proprietorship ☐ Partnership ☐ Limited Company

Number of Years in Business: _____

Parent Firm of: _____ Subsidiary/Division of: _____

2 Level of Pre-Qualification

Indicate the level of pre-qualification being sought.

Stand-Alone Contractor:	
☐ Level 1	Project work to a maximum value of $100,000 where the work is performed by one contractor.
☐ Level 2	Project work over $100,000 to $1 million where the work is performed by one contractor.
☐ Level 2 SC	Specialty Contractor (SC) designation for select contractors. Intended primarily for earthworks and paving contracts or other specialized fields. Work is performed by one contractor. Waives dollar value associated with level 2.
Prime Contractor:	
☐ Level 3	Project work from $100,000 to $1 million where the contractor will be the prime contractor.
☐ Level 4	Project work from $1 million to $5 million, where the contractor will be the prime contractor.
☐ Level 5	Project work above $5 million, where the contractor will be the prime contractor.

3 WorkSafeBC Information

WorkSafeBC Registration No: _____ Sub-class: _____

WorkSafeBC Letter of Good Standing attached? ☐ Yes ☐ To follow

Experience Rating Assessments [ERA] attached? ☐ Yes ☐ To follow

Year-end WorkSafeBC Claims Cost Statements attached? ☐ Yes ☐ To follow

4 Personnel

Provide the following information relating to experience and qualifications of company officers, senior management, project management, and supervisory personnel who are employed on a permanent basis. Attach additional information as necessary.

4.1 Head Office

Name: _____ Title: _____

Years with Company: _____ Years of Construction Experience: _____

Largest Contract Managed: Name: _____ $ _____

Safety Training/Accreditation: _____

Name: _____ Title: _____

Years with Company: _____ Years of Construction Experience: _____

Largest Contract Managed: Name: _____ $ _____

Safety Training/Accreditation: _____

Name: _____ Title: _____

Years with Company: _____ Years of Construction Experience: _____

Largest Contract Managed: Name: _____ $ _____

Safety Training/Accreditation: _____

4.2 Site Personnel

Name: _____ Title: **Project Manager**

Years with Company: _____ Years of Construction Experience: _____

Largest Contract Managed: Name: _____ $ _____

Safety Training/Accreditation: _____

Name: _____ Title: **Site Superintendent**

Years with Company: _____ Years of Construction Experience: _____

Largest Contract Managed: Name: _____ $ _____

Safety Training/Accreditation: _____

Name: _____ Title: **Supervisor/ Coordinator**

Years with Company: _____ Years of Construction Experience: _____

Largest Contract Managed: Name: _____ $ _____

Safety Training/Accreditation: _____

Name: _____ Title: **Site Safety Coordinator**

Years with Company: _____ Years of Construction Experience: _____

Largest Contract Managed: Name: _____ $ _____

Safety Training/Accreditation: _____

Name: _____ Title: **First Aid Attendant**

Years with Company: _____ Years of Construction Experience: _____

Largest Contract Managed: Name: _____ $ _____

Safety Training/Accreditation: _____

Name: _____ Title: _____

Years with Company: _____ Years of Construction Experience: _____

Largest Contract Managed: Name: _____ $ _____

Safety Training/Accreditation: _____

Name: _____ Title: _____

Years with Company: _____ Years of Construction Experience: _____

Largest Contract Managed: Name: _____ $ _____

Safety Training/Accreditation: _____

Part B - Quantitative Application

1 Leadership and Commitment

1.1 Commitment to Health and Safety through Leadership

1.1.1 Are senior managers personally involved in health and safety management? ☐ Yes ☐ No

1.1.2 Is there evidence of commitment at all levels of the organization? ☐ Yes ☐ No
If Yes, provide evidence.

1.1.3 Is there a positive culture towards health and safety management? ☐ Yes ☐ No
If Yes, how is this measured and demonstrated?

2 Policy and Strategic Objectives

2.1 Health and Safety Policy

2.1.1 Does your company have a health and safety policy document? ☐ Yes ☐ No
If Yes, attach a copy.

2.1.2 Who has overall and final responsibility for health and safety in your organization?

2.1.3 Who is the most senior person in the organization responsible for this policy being carried out at the premises and on site where his/her employees are working? Provide name, title, and experience.

Name:	
Title:	
Experience:	

2.2 Health and Safety Policy Awareness

2.2.1 Explain how you make your employees aware of all your health and safety policies.

2.2.2 How do you advise your employees of changes in policy?

3 Organization, Responsibilities, Resources, Standards, and Documentation

3.1 Organization – Commitment and Communication

3.1.1 How is management involved in health and safety activities, objective-setting, and monitoring?

3.1.2 How is your company structured to manage and communicate health and safety effectively?

3.1.3 What provision does your company make for health and safety communications?

3.2 Competence and Training of Managers/ Supervisors / Senior Site Staff and Health & Safety Advisors

3.2.1 Have the managers and supervisors at all levels who will plan, monitor, oversee, and carry out the work at YVR received formal health and safety training suitable for their responsibilities and the work to be carried out? ☐ Yes ☐ No
If Yes, provide details of training provided externally and in-house.

3.3 Competence and General Health and Safety Training

3.3.1 Does your company have a program for training new employees in your own company health and safety policies and practices? ☐ Yes ☐ No
If Yes, provide details.

3.3.2 Does your company have a program for training new employees who will work at YVR in health and safety with provision for updating the program content? ☐ Yes ☐ No
If Yes, provide details.

3.3.3 What programs does your company have to ensure new employees have been instructed and received information on any specific hazards arising out of activities?

3.3.4 What arrangements does your company have to ensure existing staff health and safety knowledge is up to date? Provide details of external and in-house training.

3.4 Specialized Training

3.4.1 Have you identified areas of your company's operations where specialized training is required to deal with potential dangers? (e.g., confined spaces, fall protection, lockout, hot work, etc.) ☐ Yes ☐ No

3.4.2 If specialized work involves chemicals, asbestos removal, or other occupational health hazards, how are the hazards identified, assessed, and controlled?

3.5 Health and Safety Qualified Staff – Additional Training

3.5.1 Does your company employ any staff who possesses health and safety qualifications that aim to provide training in more than the basic requirements? If Yes, provide examples. ☐ Yes ☐ No

3.6 Standards

3.6.1 Where do you specify your corporate health and safety standards?

3.6.2 How do you ensure these standards are met and verified?

3.6.3 Is there an overall structure for producing, updating, and disseminating standards? If Yes, explain. ☐ Yes ☐ No

3.7 Assessment of Suitability of Subcontractors from Other Companies

3.7.1 How do you assess the health and safety competence of subcontractors? (if applicable)

3.7.2 How do you assess the health and safety performance of the subcontractors and companies with whom you place contracts? (if applicable)

3.7.3 Where do you require health and safety standards to be met?

3.7.4 How do you ensure these standards are met and verified?

4 Risk Management

4.1 Hazards and Risks Assessment

4.1.1 Do you have a formal risk assessment program? ☐ Yes ☐ No

4.1.2 What techniques are used within your company for the identification, assessment, and control of hazards and their associated risks?

4.2 Exposure Assessment

4.2.1 Do you have in place any systems to monitor the exposure of your workforce to chemical, physical, ergonomic, and/ or biological agents? ☐ Yes ☐ No
If Yes, explain.

4.3 Handling of Chemicals

4.3.1 How is your workforce advised of the properties of chemicals encountered in the course of their work?

4.4 Personal Protective Equipment

4.4.1 What arrangements does your company have for provision and upkeep of protective clothing, both standard issue and that required for specialized activities?

4.5 Waste Management

4.5.1 Does your company have in place systems for identification, classification, and management of waste? ☐ Yes ☐ No
If Yes, explain.

5 Planning and Procedures

5.1 Health and Safety Manuals

5.1.1 Do you have a company health and safety manual with relevant sections on health and safety, which describes in detail your company-approved health and safety work practices relating to your work activities?
If Yes, attach a copy. ☐ Yes ☐ No

5.1.2 How do you ensure that the working practices and procedures used by your employees on site are consistently in accordance with your health and safety policy objectives and arrangements?

5.2 Equipment Inspection and Maintenance

5.2.1 How do you ensure that plant and equipment used on site by your employees is correctly inspected, maintained, and used in a safe condition?

5.3 Traffic Control and Vehicle Management

5.3.1 What arrangements does your company have for combating road and vehicle incidents?

6 Implementation and Performance Monitoring

6.1 Management and Performance Monitoring of Work Activities

6.1.1 What arrangements does your company have for supervision and monitoring of safety performance?

6.1.2 What key performance indicators for safety are used in your company?
Name three.

1.

2.

3.

6.1.3 What arrangements does your company have for passing on any results and findings of this supervision and monitoring to your senior management, site superintendent, and site employees?

6.2 Health and Safety Achievement Awards

6.2.1 Has your company received any awards for health and safety performance achievement? ☐ Yes ☐ No
If Yes, list.

1.
2.
3.

6.3 WorkSafeBC Penalties

6.3.1 Has your company suffered any penalties from WorkSafeBC in the last 5 years? ☐ Yes ☐ No
Responses should include dates, most frequent types, causes, and follow-up preventive measures taken.

Date	Type	Causes	Preventive Measures

6.4 Health and Safety Performance Records

6.4.1 Have you maintained records of your incidents and health and safety performance for the last 5 years? ☐ Yes ☐ No
If Yes, provide details for the past five years.

Item	Year	Year	Year	Year	Year
Employee-hours worked[1]					
Lost Time Accidents [LTA]					
LTA frequency[2]					
Lost Time Days [LTD]					
LTD severity[3]					

[1] MUST BE EMPLOYED BY THE APPLICANT. DO NOT INCLUDE SUB-CONTRACTOR MAN-HOURS
[2] LTA FREQUENCY CALCULATION: # OF LTAs X 200,000, DIVIDED BY EMPLOYEE-HOURS WORKED
[3] LTD SEVERITY CALCULATION: # OF LTDs X 200,000, DIVIDED BY EMPLOYEE-HOURS WORKED

6.4.2 How often and by whom is health and safety performance reviewed?

6.5 Incident Investigation and Reporting

6.5.1 Who conducts incident investigations?

6.5.2 How are incidents and the findings of an incident investigation communicated to your employees?

6.5.3 Are near-misses reported? If Yes, what is done with the information? ☐ Yes ☐ No

7 Auditing and Review

7.1 Auditing

7.1.1 Are you COR (Certificate of Recognition) certified? ☐ Yes ☐ No
If Yes, move to Section 8.

7.1.2 Do you have a written policy on health and safety auditing? ☐ Yes ☐ No
If Yes, how does this policy specify the standards for auditing?

7.1.3 Does your company health and safety plans include schedules for auditing? ☐ Yes ☐ No
If Yes, what is the scope of the audit process and when was the last audit completed?

7.1.4 How is the effectiveness of auditing verified and how does management report and follow up on the recommendations made in your audits? ☐ Yes ☐ No

8 Health and Safety Management – Additional Features

8.1 Membership and Associations

8.1.1 Does your company hold membership in any industry, trade, or health and safety organization? ☐ Yes ☐ No
If Yes, list below.

8.2 Additional Features of Your Health and Safety Management System

8.2.1 Does your company have any other health and safety features or arrangements not covered elsewhere in your response to the questionnaire? ☐ Yes ☐ No

9 Conditions

Pursuant to their request for safety pre-qualification, the applicant hereby certifies, through his/her signature, that the company named in this application understands and agrees to the following conditions:

1. That the Company shall undertake all health & safety matters in accordance with the requirements as stipulated in the Vancouver International Airport Authority Construction Safety / Security Manual.

Signature

2. That the Company shall undertake all health & safety matters in accordance with applicable legislation and good industry standards.

Signature

3. That the Company shall undertake all health and safety matters in accordance with Company occupational health and safety program and company site-specific safety program, which will be based on the unique hazards associated with working in an airport environment.

Signature

4. That the Company shall promote, assist at and demonstrate a positive safety attitude at the workplace.

Signature

10 Authorization for Release of WorkSafeBC Information

I, the undersigned, do hereby authorize the Vancouver Airport Authority to obtain safety information, pursuant to the *Freedom of Information Act*, from WorkSafeBC. I understand and agree that said information shall be used, in whole or in part, for the purpose of evaluating the applicant for safety pre-qualification.

Name: _____ Position: _____

Signature: _____ Date: _____

11 Declaration

I, the undersigned, in application for safety pre-qualification with Vancouver Airport Authority, do hereby certify that all information contained in this application is accurate to the best of my knowledge.

Name: _____ Position: _____

Signature: _____ Date: _____