

Job Hazard Assessment (JHA)

Risk Definition: Risk is the likelihood that illness, injury or even death might result because of the hazard. It also includes the likelihood of harm to the environment or property. A hazard is something with the potential to cause harm to people, the environment, or property. This could include chemical substances, live electricity, work process and/or other aspects of the work environment.

To assist with completing the Job Hazard Assessment the following descriptions are provided:

- **Task/Activity** – List each major task/activity associated with the contract, addressing the sequential order of the tasks/activities throughout the contract lifecycle.
- **Hazards** – Identify the hazards associated with each task/activity.
- **Risk Rating** – Following the risk matrix below, hazards should be categorized by the risk they introduce before and after controls have been established.
- **Control** – Actions taken to eliminate or minimize the identified hazards.

Risk Matrix:

| | | SEVERITY | | | | |
|-------------|--------------------|-------------------|-----------|--------------|-----------|-------------|
| | | INSIGNIFICANT (1) | MINOR (2) | MODERATE (3) | MAJOR (4) | EXTREME (5) |
| PROBABILITY | RARE (1) | 1 | 2 | 3 | 4 | 5 |
| | UNLIKELY (2) | 2 | 4 | 6 | 8 | 10 |
| | POSSIBLE (3) | 3 | 6 | 9 | 12 | 15 |
| | LIKELY (4) | 4 | 8 | 12 | 16 | 20 |
| | ALMOST CERTAIN (5) | 5 | 10 | 15 | 20 | 25 |

Severity

- Insignificant – negligible injury or no absence from work.
- Minor – minor injury requiring first aid treatment.
- Moderate – injury leading to a medical treatment.
- Major – injury leading to a lost time injury.
- Extreme – fatality or injury causing permanent disability.

Probability

- Rare – freak occurrence of factors would be required for an incident to occur.
- Unlikely – rare combination of factors would be required for an incident to result.
- Possible – could happen when additional factors are present.
- Likely – not certain to happen, but an additional factor could result in an incident.
- Almost Certain – almost inevitable that an incident would result.

Risk Calculation (Probability X Severity = Risk Ranking):

| Risk Ranking | Risk Level | Response |
|--------------|------------|--|
| 1-6 | Low | No additional controls are necessary. Ensure all identified controls are in place prior to starting work. |
| 7-14 | Medium | Consider additional controls, if no others are reasonable, implement identified controls and proceed with caution. |
| 15-25 | High | Additional controls are required. Re-assess existing controls and attempt to reach a higher level of protection. |

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Guidelines:

| Hazards | Health, Safety, and Environmental Considerations | |
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| General | <ul style="list-style-type: none"> • Prepare Job Safety Analysis (JSA) • Check worker licenses and qualifications • Obtain up-to-date drawings • Confirm contractor equipment | <ul style="list-style-type: none"> • Personal protection equipment • Work Protection • Establish safe work zone • Emergency response and rescue plan |
| Biological | <ul style="list-style-type: none"> • Identify licensing requirements (e.g., pesticide application, trapping) • Determine if exposure to untreated sewage possible | <ul style="list-style-type: none"> • Identify presence of harmful plants or animals |
| Compressed Gases | <ul style="list-style-type: none"> • Identify safe work practices | <ul style="list-style-type: none"> • Storage and handling |
| Confined Space | <ul style="list-style-type: none"> • Determine if confined space or limited access workspace exists • Establish "observer" requirements • Obtain up-to-date drawings • Identify worker training and qualifications • Determine emergency response requirements | <ul style="list-style-type: none"> • Determine if hazardous atmosphere will be introduced into space • Identify atmospheric testing requirements • Determine ventilation/purging requirements • Determine isolation de-energization (WP) requirements |
| Hoisting and Rigging | <ul style="list-style-type: none"> • Identify worker training and qualification requirements • Determine signal person requirements • Determine supervisor or lift requirement • Identify equipment inspection and certification requirements • Identify barricades and signage required • Good rigging practices | <ul style="list-style-type: none"> • Rigging points approved • Check for overhead power lines • Engineered and critical lifts • Tugger operations • Beam clamp approval • Wire rope splicing practices |
| Drilling and Excavation | <ul style="list-style-type: none"> • Arrange buried service location • Establish soil type, if required • Obtain up-to-date drawings | <ul style="list-style-type: none"> • Review permit requirements • Identify shoring and sloping requirements • Identify emergency response plan requirements |
| Electrical | <ul style="list-style-type: none"> • Obtain up-to-date drawings • Identify isolation and re-energization (WP) requirements • Identify worker training and qualification requirements • Identify equipment approval and certification requirements (e.g., CSA, ESA, UL/ULC) • Identify grounding requirements • Identify temporary power supply needs • Review limits of approach requirements | <ul style="list-style-type: none"> • Identify live line work requirements • Potential hazards assessed • Explosion proof equipment • Abandoned cables - instructions • Cover up • GFCI • Protection of electrical equipment Determine personal protective equipment requirements |
| Flammable Material | <ul style="list-style-type: none"> • Approved storage cabinets • Safety containers | <ul style="list-style-type: none"> • Firefighting equipment |
| Hazardous Materials | <ul style="list-style-type: none"> • Review local hazardous material approval procedures • Identify worker training requirements (e.g., WHMIS, TDG) • Identify and provide MSDSs for hazardous materials on site to contractor • Identify requirements for designated substances. E.G. Arsenic, Asbestos, | <ul style="list-style-type: none"> • Establish Personal Protective Equipment requirements • Identify fire protection requirements (e.g., explosion-proof equipment) • Obtain Material Safety Data Sheets (MSDS) from contractor • Identify ground and bonding requirements |

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| | Isocyanates, Lead, Mercury, Silica, etc. | <ul style="list-style-type: none"> Establish storage/handling/disposal requirements |
| Radiation | <ul style="list-style-type: none"> Determine worker qualification requirements Identify dose control measures Determine shielding requirements Identify requirements for barricades signage and notification | <ul style="list-style-type: none"> Determine storage, handling, and disposal Identify access control needs Determine personal protective equipment requirements |
| Material Handling | <ul style="list-style-type: none"> Determine equipment approval and certification requirements Identify fuel storage, handling, and transportation requirements Determine worker training and qualification needs | <ul style="list-style-type: none"> Establish lay down areas Determine need for designated travel areas |
| Mechanical | <ul style="list-style-type: none"> Obtain up-to-date drawings Identify machine guarding requirements List equipment inspection and certification requirements | <ul style="list-style-type: none"> Determine isolation and de-energization needs Identify personal protective equipment requirements |
| Pressurized Fluids and Gases | <ul style="list-style-type: none"> Obtain up-to-date drawings Identify isolation and de-energization (WPC) requirements Identify barricade and signage requirements | <ul style="list-style-type: none"> Determine vent/drain requirements Determine personal protective equipment needs |
| Traffic | <ul style="list-style-type: none"> Determine need for traffic control plan Determine barricade and signage requirements | <ul style="list-style-type: none"> Identify high visibility clothing requirements |
| Transport and Work Equipment | <ul style="list-style-type: none"> Identify equipment inspection and certification requirements Determine operator training and qualification requirements | <ul style="list-style-type: none"> Identify helicopter operation requirements |
| Welding, Cutting and Grinding | <ul style="list-style-type: none"> Determine gas storage and handling needs Identify hot work permit requirements Identify worker qualification and training needs Determine equipment inspection and certification requirements | <ul style="list-style-type: none"> Identify personal protective equipment requirements Identify fire watch requirements Determine ventilation requirements |
| Working at Height | <ul style="list-style-type: none"> Establish equipment inspection and certification requirements (e.g., elevating work platforms (EWPs), scaffolds) Identify fall protection requirements (e.g., railings, covers for openings) Identify requirements for prevention of falling objects and certification requirements | <ul style="list-style-type: none"> Identify personal protection requirements Identify and ensure certification of tie-off/anchor points Determine rescue plan requirements |
| Physical Environment | <ul style="list-style-type: none"> Plan for adverse weather conditions (e.g., ice, snow, wind) Identify visibility conditions Identify special terrain conditions | <ul style="list-style-type: none"> Establish housekeeping requirements Identify areas of heat/cold stress |
| Occupational Diving | <ul style="list-style-type: none"> Medical fitness to dive Diving safety plan submitted for Nalcor review against CSA requirements Equipment service and maintenance Notifications (e.g. Coast Guard, Provincial/ Federal agencies, Harbour Master) Weather/sea conditions | <ul style="list-style-type: none"> Diving log books Diver certification and training (first aid, O₂ administration, heavy underwater lifting) Current breathing air purification analysis Dive manuals and tables at dive site Communications system |
| Work In or Around Water | <ul style="list-style-type: none"> Identify training and qualification required Determine personal protective equipment required (e.g. life jackets, fall | <ul style="list-style-type: none"> Identify rescue plan requirements Identify water flow control requirements |

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| | arrest) | <ul style="list-style-type: none"> Establish boating safety requirements |
| Environmental Management System | <ul style="list-style-type: none"> Refer to local EMS for a list of relevant environmental aspects. Consult the environment department for advice on aspects and impacts associated with the work and communication. | <ul style="list-style-type: none"> Determine specific training requirements. Determine record keeping requirements. |
| Approvals | <ul style="list-style-type: none"> Ensure copies of all permits, authorizations, licenses, approvals, etc. are available on site. Review existing approvals and ensure compliance with terms and conditions. | <ul style="list-style-type: none"> Identify new approval requirements. |
| Emergency Preparedness and Response | <ul style="list-style-type: none"> Identify potential emergencies affecting people, property, or the environment. (e.g. spills, fire) | <ul style="list-style-type: none"> Identify emergency planning requirements. Ensure emergency contact numbers are identified and readily available. |
| Community or General Public Impacts | <ul style="list-style-type: none"> Identify potential community impacts Review local by-laws Consult with Communications, Legal, and/or the Environment Departments regarding the mitigation of community impacts. | <ul style="list-style-type: none"> Determine the need for consultation sessions and information sessions with the municipality, community groups, and non-governmental organizations. Develop a Violence Prevention Plan for public consultation of a sensitive nature. |
| Pesticide Management | <ul style="list-style-type: none"> Identify Pesticide Applicator License requirements. Ensure unused pesticide is removed from site. | <ul style="list-style-type: none"> Identify signage, reporting, and record keeping requirements Identify appropriate PPE to be worn. |
| Wastewater Management | <ul style="list-style-type: none"> Identify wastewater collection and treatment requirements | <ul style="list-style-type: none"> Identify groundwater protection requirements |
| Soil Contamination | <ul style="list-style-type: none"> Determine if contaminated soil is present at the site. Develop a safe work procedure if contamination is present. | <ul style="list-style-type: none"> Identify hazardous material storage and fuelling station requirements. Ensure emergency measures are in place to address leaks, spills, etc. |
| Ecological Interaction | <ul style="list-style-type: none"> Review inventory of environmentally sensitive species and habitats Identify site protection and restoration requirement | <ul style="list-style-type: none"> Ensure transfer of unwanted animal and plant species is prevented. |