



**SARNIA REFINERY**

**SAFE WORK PERMIT STANDARD**

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**STANDARD**

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**1. SCOPE AND PURPOSE:**

This Standard applies to Suncor Personnel at the Sarnia Refinery. References in this document to “Suncor Personnel” include employees, contract workers, consultants and agents of Suncor. Safe work permitting is referenced in law and Canadian Standards for equipment energy isolation and confined space entry. This standard serves as a bridge to specific standards at the Suncor Sarnia Refinery that address specific types of risk and legal control requirements.

The purpose of this standard is to:

- Define expectations for permit requests and work authorizations on site.
- Provide a documented communication of identified hazards and safety precautions and establish a written record by which the issuer authorizes, and receiver accepts, a defined scope of work to be conducted in an identified area of the refinery.
- Help establish due diligence in safety, support operational excellence, and align with Suncor’s Journey to Zero and Lifesaving Rules
- Effectively demonstrates proactive due diligence as it documents work area assessments that identify and control risk prior to the execution of work.

Understanding of and adherence to this standard helps to ensure that on site work is performed in a safe manner.

Noting hazards on a SWP does not reduce or remove the need to evaluate and note specific job hazards as part of the pre-work risk assessment process.

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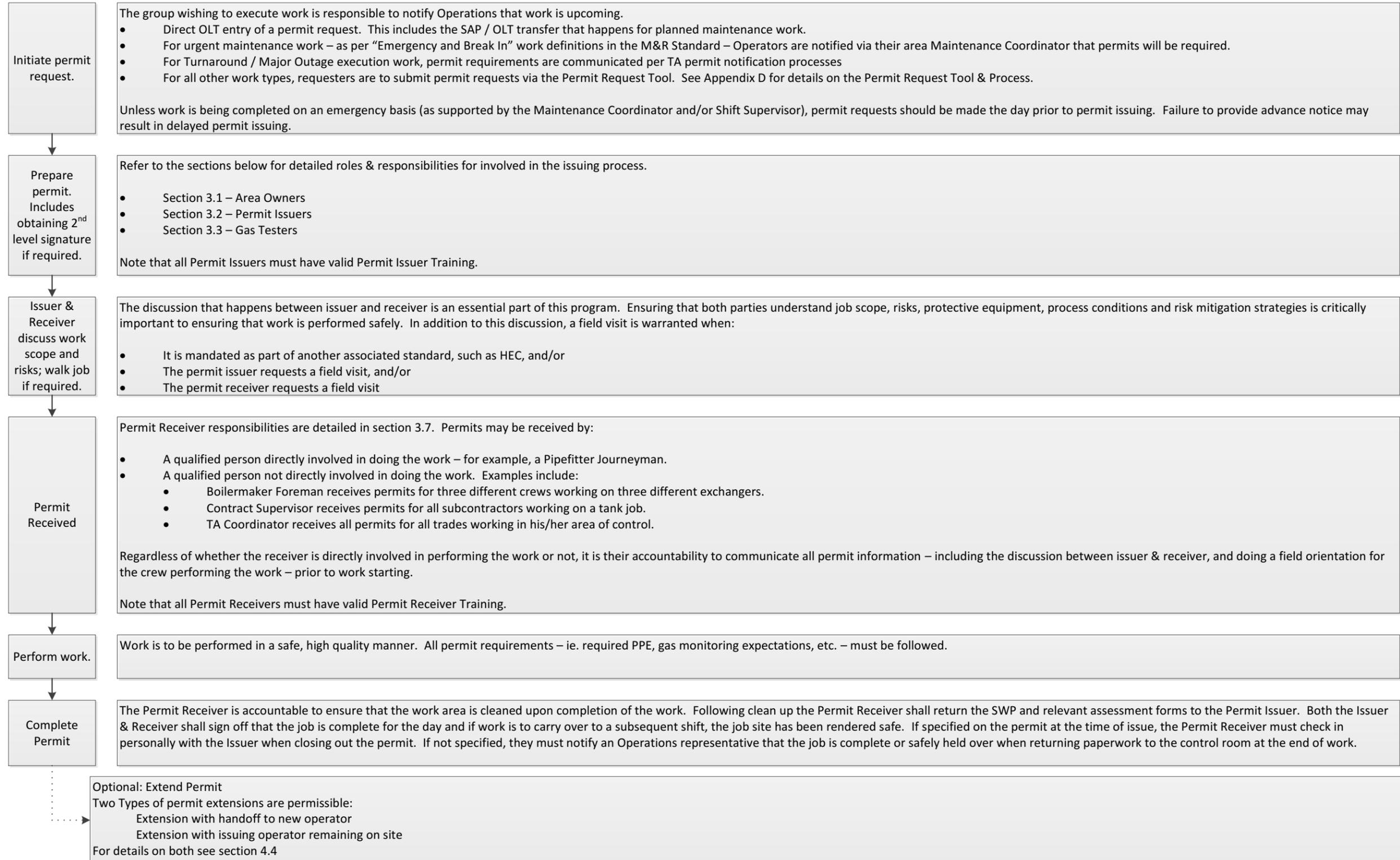
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## SAFE WORK PERMIT STANDARD

### 2. PROCESS OVERVIEW

This process flow gives high level direction on the permit issuing process.



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### 3. ROLES & RESPONSIBILITIES

The following are positions with assigned responsibilities under this standard.

#### 3.1. Suncor Area Owners

Ensure that hazards have been identified in their area of responsibility and take all reasonable precautions to control risk associated with the identified hazards. They are accountable – directly or through delegated authority – to prioritize work notifications, verify that the safety has been considered in the issuing process, ensure that Permit Issuers are aware of hazards and that pertinent controls are established in their area of authority. See Appendix A for details on areas of authority.

Where area ownership is held by Maintenance, but process equipment is present, the Maintenance Area Owner is to consult with appropriate Operations counterparts prior to allowing work to start.

#### 3.2. Suncor Permit Issuers

Permit issuers act on behalf of Area Owners. All Permit Issuers are required to have valid permit issuer training. Issuers are responsible to:

- Prepare the area / equipment per Operating Procedures, Safety Standards & Safe Work Practices
- Review assessments and/or applications
- Compile a copy of the original signed SWP and relevant assessments for issuance to the Permit Receiver
- Review the scope of work with the Permit Receiver to reach a mutual understanding of the work to be performed and how it will be accomplished, including
  - Any hazardous aspects of the task
  - The equipment and area preparation
  - The methods of isolation and lock out
  - The work crew size
- Where appropriate, walk the job with the Permit Receiver to ensure field conditions and expectations are fully understood by both parties.
- Reject the SWP if they feel the work to be unsafe, and immediately notify their Shift Supervisor
- When satisfied with the conditions of the work area the Permit Issuer shall:
  - Sign onto the SWP\*
  - Obtain next level Permit Issuer signature if required or per other associated standards
  - Obtain signature from the Permit Receiver
- Check the job periodically after work commences to ensure conditions remain stable and work is proceeding according to the SWP.
- Take corrective action, up to stopping the job, to ensure that a hazardous condition does not develop
- Take appropriate actions when informed of an emergency, upset, or changing condition
- Close the permit including completing final sign off

Note that for jobs requiring hazardous energy isolation, Permit Issuer is required to adhere to additional obligations outlined in the Sarnia Refinery's HEC Manual.

\*There are two methods of acceptable permit authorization, at the discretion of the signing Operator:

- Sign with the receiver, at the time of permit issue.
- Pre-sign a permit for pick up later that day. This in no way reduces the rigour required around permit issuing; it simply allows Operators to spend more time in the field as compared to waiting at the desk, especially early in the shift. This method is acceptable only when all of the following conditions are met:

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- Operator responsible for that post has pre-signed – the permit cannot be signed on behalf of anyone else
- Earliest acceptable time for pre-signing is at the start of shift – cannot pre-sign days in advance.
- Signed permit is left on the Operations side of the desk. Prior to taking their permit, the permit receiver must ensure the permit issuer is made aware they are in possession of the safe work permit and verify with them if they are to discuss the work and/or review field conditions together prior to starting work.
- It is critical that the signing Operator pay special attention to hot work permits requiring gas testing, and authorize distribution of pre-signed hot work permits only if gas test timing is still valid at the time of permit pickup.

### 3.3 Gas Testers

- Assure that the gas test instrument is operating correctly by checking the equipment prior to use
- Take any failed equipment out of service and follow work procedures to flag and fix faulty equipment. Do not use it again until such time as it is repaired and calibrated.
- Perform an adequate number of tests at the job site to assure a representative gas test result
- Re-test the work area if notified by the Permit Receiver that the work has stopped for more than two hours (more stringent requirements for confined space entry)
- Record gas test results and sign the gas test portion of the SWP
- Understand the impact of temperature changes (i.e. inside equipment) on flash points and adjust gas testing frequency if required

### 3.4 Supply Chain Management

- Accountable to ensure that when authorizing vendors to do work – either by purchase order or with reference to a multiple use contract – language is included that the vendor is responsible to know, understand and adhere to Suncor standards.

### 3.5 Planners and Project Managers

Multiple roles may be involved in the Planning / Project Management of a job. These include people officially designated “Planners” and “Project Managers” but also extend to Construction Coordinators, EH&S representatives, Reliability representatives, etc. Anyone who is leading work scope development that will include a field execution component in an operating area has responsibilities under this heading.

Responsibilities include:

- Completing relevant sections of supporting assessments (i.e. confined space entry, open flame & welding) required as part of the permitting process
- Consult if/as required with site personnel across all departments to ensure that safe work plans are developed in accordance with Suncor standards and the law
- For scheduled work, initiating notification to Operations that a permit will be required.

### 3.6 Contractors

- Read, understand, and adhere to both Suncor’s Safe Work Permit Standard as well as all legislated requirements relating to safe work permitting. Where discrepancies exist, the higher standard shall prevail.
- Provide adequate supervision at the job site to ensure that hazards at the job site are properly identified and controlled
- Ensure that all permit applicants have valid Suncor Sarnia Permit Receiver Training.

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- Train and verify competence of all Supervisors.
- Make any other related procedures and training records available for review by Suncor on request.
- All contractors must develop and implement their own internal processes, training and procedures that ensure personnel under their respective authorities meet or exceed regulatory and Suncor requirements.

### 3.7 Permit Receivers

Permit Receivers are required to hold valid Permit Receiver training. Receivers are responsible to:

- Review the scope of work with the Permit Issuer to reach a mutual understanding of the work to be performed and how it will be accomplished, including
  - Any hazardous aspects of the task
  - The equipment and area preparation
  - The methods of isolation and lock out
  - The work crew size
- Where appropriate, walk the job with the Permit Issuer to ensure field conditions and expectations are fully understood by both parties.
- Ensure familiarity with the precautions and equipment required to complete the task
- Know, understand and comply with the precautions and provisions of the safe work permit. Sign the safe work permit as acknowledgement of this understanding.
- If receiving a pre-signed permit, ensure the Permit Issuer is aware that they are in possession of their safe work permit. Verify prior to starting work if a joint field visit and/or discussion is required prior to starting work.
- Take the copy of the signed safe work permit and relevant assessment form(s) to the field and ensure it remains present at the job site for the duration of work, available for review or audit.
- Ensure that the permit is reviewed with the work crew prior to signing TASCARD
- Ensure that the TASCARD is completed including signatures from all workers. It must reference the permit number and identify all hazards and required safety precautions.
- Communicate emergency procedures, location of safety equipment, and escape routes to the work crew
- If gas testing is required, ensure that work commences within a maximum of 2 hours of gas testing. Note that there are more stringent requirements established in the Confined Space Entry Standard.
- For jobs requiring gas testing, ensure that the Permit Issuer is notified if work has not commenced within 2 hours or has been interrupted for 2 hours or more, for re-testing if required
- Ensure that all work is being performed in accordance with safe work permit conditions, legal requirements, Suncor & Contractor standards
- Ensure that the Permit Issuer is immediately informed should conditions and / or the scope of the work changes, when the job is complete, and the status of the job when the safe work permit has expired.
- Ensure that all materials and equipment are removed from the job site before the job is signed off as complete or rendered safe if work is to be carried over
- For jobs requiring energy isolation, Permit Receiver is required to adhere to additional obligations outlined in the Sarnia Refinery's HEC Manual.

Under the Occupational Health and Safety Act, section 27, Permit Receivers assume the duties and responsibilities of a Supervisor. Acting as a Supervisor, the Permit Receiver is accountable to:

- Ensure the workers work in compliance with all relevant OHSA regulations.
- Ensure workers work in a safe manner, including ensuring access to and training to properly use/wear appropriate personal protective equipment.
- Advises the worker of potential or actual dangers to the health or safety of the worker which the supervisor is aware

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- Where required, provide the worker with written instructions as to the measures and procedures to be taken for the protection of the worker
- Take every precaution reasonable in the circumstances for the protection of the worker
- Ensure that all personnel have appropriate training to perform the work scope, as per the law and Suncor and/or Contractor standards. Where these differ, the higher standard shall apply.

For Receivers who do not otherwise hold a supervisory role, they can enlist the help of Foremen, Coordinators, Supervisors etc. to ensure all accountabilities are being properly met.

Note that whether the Permit Receiver is directly involved in the work (ie. as a journeyman or foreman) or is acting in a supervisory capacity and receiving multiple permits for different crews, trades, contractors etc., expectations do not change. It is still the receiver's accountability to ensure all of the criteria above are met.

### 3.8 Suncor EH&S Group

- Assist all parties in all of the above activities as required to clarify expectations of the standard
- Support the development of training required to fulfill the requirements of this standard.
- Facilitate Permit Receiver Training, including presenting information and tracking compliance.
- Audit the effectiveness of the standard as defined in the "Audit" section.
- Maintain a list of approved "EH&S Coordinators" who may enter the units without log book sign in, as defined in section 5.2.

## 4. PERMIT CLASSIFICATION & AUTHORIZATION TYPES

Operations authorization is required prior to the commencement of maintenance, construction or delivery work in process areas including the Tank Farm. For work outside of Process and Tank Farm areas, refer to the matrix in Appendix A to determine the appropriate Permit Issuer. There are a number of ways this authorization can be granted.

### 4.1 Types & Attributes

There are two primary types of permits – hot and cold. Once defined as hot or cold, the Issuer may choose to select from six additional key attributes:

- Confined Space Entry
- Excavation
- Open Flame & Weld
- Vehicle Entry
- Asbestos
- Radiation / Radiography

Cold Work Permits are issued for a wide range of tasks that do not create a source of ignition or generate sufficient heat to ignite a flammable mixture. Gas testing is not required from a flammability perspective but may still be required to measure toxic materials in the air.

Hot work permits are issued for a wide range of tasks that may create a source of ignition or generate sufficient heat to ignite a flammable mixture. Gas testing is required for all hot work permits to verify lack of a flammable atmosphere. Hot work permits are used both for mechanical work as well as vehicle entries. For work requiring

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a gas test, the time of safe work permit issue must occur after the gas test time. A Permit Issuer can specify a safe work permit to start at any time within the shift, but the gas test must be taken within two hours of the work commencing. It is important to note that more stringent gas testing requirements apply for confined space entries.

Second level signatures may be required based on the attribute(s) selected and/or the supplementary forms or assessments attached based on work scope.

### 4.2 Methods To Issue

Once hot vs. cold, plus attribute selection (if applicable) is defined, permits may be issued for a variety of work types:

Operations Assist Permits are issued to cover work of a similar nature performed under the direct guidance of an Operator in the field. These types of permits are common during start up or shut down activities and are issued by trade.

Operations Assist permits must include the following information:

- What assistance or service is required
- Which trade(s) is/are providing the service
- Where (specific location or equipment) the assistance is required
- When and for what duration the assistance or service is required

Single Trade, Single Job Permits may be issued for either hot or cold work, with no limitations other than those imposed by associated standards (ie. second level sign off for Confined Space, Asbestos, OFW) and the requirement for gas testing as outlined in the “Hot vs. Cold” section above.

Single Trade, Area Permits may be issued for either hot or cold work, provided:

- The area is to be no larger than the Permit Issuer’s area of control
- The Permit Issuer must be able to apply common risk mitigation methods to all work scopes being permitted in the area – ie. no special PPE for one portion of the work
- The Permit does not need to specify each detailed work location covered or the specific environmental hazards at each location (ie. steam leak) – this is the purpose of the TASCARD or similar pre-work hazard assessment,
- If issued for hot work, the gas test results recorded must be applicable to all work scopes in the area. If the gas test can’t reasonably apply to multiple scopes in a broad area, the tasks should not be grouped on a single permit.

### 4.3 Additional Permit Coverage – Scenario / Role Based

In specific scenarios it makes sense to allow individuals to be covered by an existing permit, even if they are from a different trade or employment status. Allowable scenarios are as follows:

- Watchman of a different trade is not required to get their own trade-specific permit
- H2S buddy of a different trade is not required to get their own trade-specific permit
- Bottle watch buddy of a different trade is not required to get their own trade-specific permit
- For confined space entry:
  - A CSE & HEC trained Supervisor\* may enter a permitted confined space provided they:
    - Review the permit with the Permit Receiver
    - Check in with the watchman and ensure they are signed in/out on the entry log

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- Sign on to the WIF (in cases of single EIP) or SIF (battery limit) form
- Sign on to the TASCard
- The permit-issuing Operator may enter a permitted confined space provided that:
  - The Operator was the person who issued the original trade permit
  - They check in with the watchman and ensure they are signed in/out on the entry log and sign onto the WIF, if accessing during regular work hours
  - They provide their own trained watchman and ensure they are signed in/out on the entry log, if accessing during break or lunch times

\*Although specific job title may vary, “Supervisor” in this instance refers to a person in a leadership, non-trade position responsible to oversee work safety and/or quality and/or progress, but not perform hands-on work. Examples include Area Coordinators, Maintenance Manager, Maintenance Director, Construction Coordinators, Engineers, TA Manager, Production Engineer, Suncor Inspector, etc.

### 4.4 Additional Permit Coverage – Time Based

There are two allowable situations where an existing permit can be extended past the original end time/date:

- Permit is issued by Operator A. Operator B takes over the post. Permit may be extended (rather than reissued) provided:
  - Operator B has a discussion with the original permit receiver to:
    - Confirm that the crew executing work remains the same
    - Confirm that the work scope remains the same
    - Make themselves known as the new Operations contact for questions or issues
  - Operator B updates the physical permit with a revised end time/date and signs themselves on as the revised permit issuer

Because MOL limits work execution shift length to 16 hours, and this method has a requirement for the same crew to be performing work, these sorts of extensions are allowable for a maximum of 16 hours. By default this means work can roll over from one shift to the next, but not into a third.

- A permit is originally issued for a certain end time, but work is continuing past that end time. If the original permit issuer stays on site and remains accountable for the work scope, they may extend the original permit for a maximum of 2 hours by:
  - Verbally communicating with the permit receiver, and
  - Updating the end time on the permit

This is most useful in outage or turnaround scenarios where Operators may remain on site past standard shift duration, in order to cover the gap between execution shift changes.

### 4.5 Additional Permit Coverage – Hand Off To Alternate Receiver

A qualified responsible permit receiver must remain on site while a permit is open, or may transfer receiver responsibility only to another trained, qualified permit receiver who is part of the same crew and continuing with a consistent work scope. For example, Permit Receiver A gets the permit for his crew in the morning. After first break s/he needs to leave to attend another site. Permit Receiver B may sign on as the new permit receiver provided:

- S/He holds current Permit Receiver training certification, AND
- S/He has a thorough discussion with the original receiver to fully ensure all scope, risks, mitigations etc. are understood, AND
- S/He physically signs on to both the control room and the field copy of the permit, AND
- Before Receiver A leaves site, the issuing operator is notified that Receiver B is now taking custody of this work.

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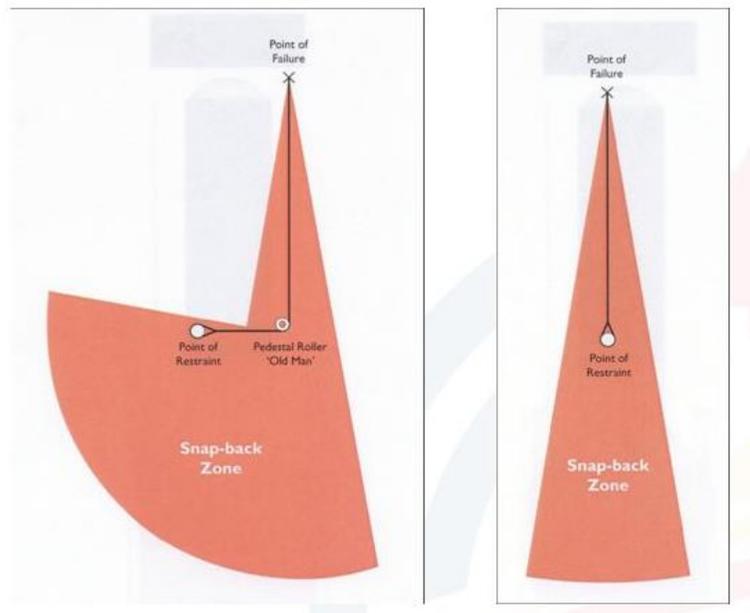
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### 5. EXCEPTIONS TO PERMIT REQUIREMENTS

This section defines scenarios where a permit is not required. For any work not specifically defined here, requests for permit waivers must be documented via the Suncor Management of Change process. In the event of a technical failure (SAP, OLT) a paper-based permit system may be used but all other requirements of this standard remain in effect.

In addition to the consideration in the Safe Work Permit Standard the following needs to be considered when a ship is present at the dock:

- No work is permitted in the Snap Back Zone.
  - **Snap Back Zone:** The area traveled by the parted rope having a force enough to injure or kill a person on its way is known as the snap back zone. When ropes are pulled straight then the snap back zone is minimal but if the ropes are turned in bollard or roller then the snap back area increase.



- No Hot Work should be permitted in a radius of 30 m of the ship. If a Hot work is required a written permission of the Ship Master is required.
- No vehicle entry should be permitted in a radius of 30 m of the ship. If a vehicle entry is required a written permission of the Ship Master is required.

#### 5.1 Control Room Sign In

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Control room sign in – including both recording relevant information on the sign in book, as well as confirming verbal permission for access from an Operator – is required for unit entry for non-physical work purposes. Examples are field checks and safety tours. If there are specific area risks or site conditions that could make access more dangerous, the Operator always retains the right to deny sign in authorization and either prohibit unit access at that time, or insist on the issuance of a full safe work permit prior to granting access.

A copy of the log book sign in sheet is found in Appendix C. All fields must be properly filled out prior to entry. Sign in is required for field visits in the following areas.

- Plants 1, 2, 3 and 4
- Utilities
- Waste Water Treatment Plant
- Tank Farms
- Docks
- Loading Racks

### 5.2 Sign In Exceptions

People holding the following are exempt from log book sign in. They must however verbally report to the control room prior to entry, carry a radio on the appropriate channel, and report out when leaving.

- Operators
- Shift Supervisors
- Managers, Area Operations
- Operations Maintenance Coordinators
- Operations Coordinators
- Operations Turnaround Coordinators
- Construction Coordinators
- Maintenance Foremen / Supervisors
- Maintenance Area Coordinators
- Emergency Response Coordinator
- EH&S Coordinator\*

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“EH&S Coordinator” does not refer to a specific role – there are multiple people both within Suncor and working for contractor companies (both staged and structured) who fulfill these duties. The Suncor EH&S group shall maintain a current list of all approved “EH&S Coordinators” who are granted exemption under this clause.

### 5.3 Operations Exceptions

Operations Personnel performing routine work within the regular scope of their job are exempt from the requirement to obtain a safe work permit. By their training, knowledge, skills and experience, qualified Operations Personnel can ensure that safe conditions exist prior to starting work and that the potential hazards are identified, understood and controlled. A safe work permit and confined space entry assessment are required for Operations Personnel to enter into any confined space.

### 5.4 Area Exceptions

**5.4.1 Non-Suncor Owned Areas.** There are a number of areas within Suncor property that are leased and/or contain equipment owned by third parties. Permits may not be required in these zones. Operations will help determine if permits are required for these areas. Examples where permits are not required include:

- The NOVA meter skid
- The SCPL-owned equipment in the SCPL compound
- The Vidal Street ditch (for environmental sampling)

**5.4.2 Offsites Exceptions.** For the following jobs, an Offsites Operator may sign an area permit that goes beyond his or her specific area of control, provide s/he first discusses the work scope and risk with the other impacted permit issuing stations and ensures all support issuing a broader area permit.

- Grass cutting and other similar landscape services
- Vacuum tank farm sumps and dump to ETF P08 sump
- Critter control – goose, mosquito larva, etc.
- Retention pond transfers

### 5.5 Low Risk Exceptions

The following are exceptions to standard safe work permit processes:

#### 5.5.1 Photography

When a hot work permit is issued for photography with a non-intrinsically safe camera, the need for the photographer to carry a fire extinguisher is waived. The risk of carrying the extinguisher is higher than the risk of photography.

Photography using an intrinsically safe camera is allowed without a permit. Photographer is to follow the control room sign in process.

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### 5.5.2 Generally Low Risk Work

Work scopes may be considered for classification as “Low Risk” if they meet the following criteria.

- No isolation is required
- Basic PPE only – no specialty protection required
- No hot work
- Single trade or vendor
- Not at elevation
- No additional attributes selected

These specific job types, when meeting all the criteria above, are exempt from requiring a permit – control room sign in, including discussion with Operations, is all that is required.

- Garbage collection – manual, no vehicles, standard PPE
- Water distribution at grade, manual, no vehicles, standard PPE
- Running fire hoses – staging in place only, not making connections, manual, no vehicles, standard PPE
- General clean up using manual tools (ie. broom) only at grade, no vehicles, standard PPE
- Snow removal using manual tools only, no vehicles, standard PPE
- Salt spreading at grade, no vehicles, standard PPE
- Water sampling, provided it meets all criteria in 5.5.2 above (ie. Sampling from the dock, where lifejackets are required as additional PPE, would not be exempt from receiving a safe work permit).

Note that although a permit is not required, it is still the responsibility of the worker to ensure that they follow site and safe work practices including the selection of appropriate PPE.

Moving forward, additional low risk items may be considered for inclusion on the exception list (via an amendment to the standard) only if they meet all low risk criteria.

## 5.6 Transportation & Delivery Exceptions

**5.6.1 CSX Rail.** Aligned with our rail standard, CSX employees are not required to receive a permit for work performed along the rail line.

**5.6.2 Sulphur & Chemical loading at the TX Rack.** Drivers are fully accompanied by Operations representatives. Permits, STOP, IEC training are not required.

**5.6.3 Slop Deliveries.** Permits are not required. Unescorted drivers must have STOP and IEC training.

**5.6.4 Chemical, Catalyst & Additive Loading & Offloading.** It is not practical to have all potential drivers for these types of deliveries trained in advance of their arrival on site. For this group only, permits may be issued to an untrained receiver provided:

- They are receiving the permit on behalf of themselves (not on behalf of a group), AND
- They do not require locking out a complex EIP. Individual isolations are acceptable.

If the driver (permit receiver) has both STOP and IEC training, they may proceed unaccompanied at Operator discretion. If they do not have both of these training certifications, they must be fully

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escorted. This exemption is aligned with already established site access allowances for truck drivers.

### 5.6.5 A note on other large deliveries (ie. Gravel) and pickups (ie. Waste) past the warehouse.

There are two options to allow this work to proceed – neither of which is an exception to the standard but is worth clarifying in the transportation section as processes have deviated in the past.

- Regular drivers may elect to be permit receiver trained and receive their own permit
- A qualified receiver on site may receive on behalf of the driver. This aligns with the guidance in section 3.7 where those in a supervisory / coordination role may receive for others – including multiple trades and/or subcontractors – provided they meet all expectations of the permit receiver in terms of communicating essential information like job scope, risks, safety expectations, etc.

### Other

## 6. EMERGENCY SCENARIOS

All personnel receive general instruction on reporting and mustering during emergency scenarios at the Suncor Sarnia Refinery. Special instructions beyond this may be included on the safe work permit form to ensure clarity is established between the Planners, Emergency Teams, Permit Issuer, Permit Receiver and workers.

If a unit alarm sounds, work must immediately stop in that unit and workers must report to the control room. Work may not be re-started without Operations authorization.

All safe work permits are immediately cancelled when the emergency siren sounds. They must be revalidated by the Permit Issuer after the all-clear has been sounded prior to the resumption of work.

For Turnaround execution, a Turnaround emergency response plan will be developed and communicated that will capture emergency response plans for unit and site alarms.

## 7. RECORDS & AUDITING

### 7.1 Records

Area Owners are responsible to ensure that records of work completed in their area are accessible for a minimum of five years. These records include programs, assessments, plans, training records, safe work permits, inspection records and test results. This shall be accomplished by:

- Automatic electronic archiving of OLT entries, SAP work plans, safe work permits and assessments
- Storage of signed off hard copies. These shall be organized by date and stored on site for at least three months, after which they may be sent to an approved offsite storage location.

There may be more stringent record keeping requirements for related standards (i.e. Confined Space Entry) – where these differ, the higher standard shall apply.

All files shall be made available to the EH&S group and the JHSC at their request.

## SAFE WORK PERMIT STANDARD

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### 7.2 Auditing

Area owners and designates shall perform periodic evaluations of the safe work permit process. Permit Issuers shall perform routine checks of the safe work permit activities. Positive feedback and opportunities for improvement shall be communicated to those expected to follow the requirements of the standard. Recommendations for improving the content of the standard shall be communicated to EH&S.

The EH&S group is responsible to ensure that this standard is audited against legal and industry best practice at least once every two years. This audit shall include a review of documentation, records, interviews, and other verification of adherence to this standard by all parties involved with the planning and execution of work. The Joint Health and Safety Committee (JHSC) shall be invited to either participate directly in this audit or review audit findings. A copy of the audit report and work plan required to address identified gaps shall be made available to the JHSC.

## 8. TRAINING & COMPETENCY

### 8.1 Permit Issuers

All personnel who issue safe work permits are qualified because of their:

- Knowledge of potential hazards of the workplace and the specific precautions required to control the hazards.
- Training & qualification on operational and other procedures, instructions, standing orders and EH&S standards at the Suncor Sarnia Refinery.
- Experience in organizing work for safe execution.

Operator Log Tool training provides additional training on how to access, complete and print off a safe work permit. All personnel who sign a safe work permit on behalf of Suncor Energy Products Partnership must also complete in-class training through the EH&S group that includes a review of this standard and the fundamental principles of safe work permitting at the Suncor Sarnia Refinery.

Detailed information on the sections of the Safe Work Permit, and how to properly complete them, is provided in both Permit Issuer & Permit Receiver Training.

### 8.2 Permit Receivers

All people wishing to receive a permit must complete, at a minimum, the following training prior to making a permit request:

- IEC Basic training, which includes a high level overview of Permit Receiver responsibilities
- Suncor Sarnia Permit Receiver training, offered periodically to ensure that receivers are familiar with the specific permit types, forms and processes in place at the Sarnia Refinery.

It is the responsibility of all contractors to develop and implement their own internal processes and procedures to ensure that all personnel under their respective authorities meet or exceed both Suncor and legal / regulatory requirements for Permit Receivers.

Detailed information on the sections of the Safe Work Permit, and how to properly complete them, is provided in both Permit Issuer & Permit Receiver Training.

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### 8.3 Gas Testers

Gas test training shall cover the theoretical knowledge and include a practical skills demonstration. At a minimum it will cover:

- Explosive range and flash point
- Oxygen requirements
- Threshold limit values and occupational exposure limits of measured substances
- Gas testing instrument procedure

Confined space entry gas testing is combined with confined space training and includes:

- Review of legal requirements for confined space entry
- Review of testing considerations for confined spaces
- Written knowledge / understanding competency test

### 9. REFERENCES TO RELATED DOCUMENTS

- Safe Work Permit Standard – Q&A Guidance Document  
<http://ecmprd.network.lan/ecmlivelinkprd/livelink.exe/open/486396328>
- Sarnia Refinery Emergency Organization Manual
- Maintenance & Reliability Standard
- Refinery Safety Standards Manual
- ISO 14001 and associated Standards
- Contractor Control & Contractor Safety Standards
- Confined Space Entry Standard
- Hazardous Energy Control Standard
- Others as required
- ISGOTT (International Safety Guide for Oil Tankers and Terminals) – 5<sup>th</sup> Edition, Chapter 9, Section 8.13

### 10. APPENDICES

- Appendix A – Areas of Responsibility Matrix
- Appendix B – Risk Control Matrix
- Appendix C – Sample Control Room Sign In Log
- Appendix D – Permit Request Process Workflow

### REVISION LOG

| Date<br>(MM/DD/YYYY) | Revision | Section        | Comments   | Editor<br>(Name) |
|----------------------|----------|----------------|--|------------------|
| 09/01/2017           | 11       | 3.2, 5.2,<br>9 | Removed “at the desk” (3.2); Added Job titles (5.2); Reference Q&A (9) | L. Sparks        |

**SAFE WORK PERMIT STANDARD**

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|            |    |      |  |         |
|------------|----|------|--|---------|
| 09/12/2019 | 12 | 5 ,9 | Added exception for work permitted in the "Snap Back Zone" and ISGOTT reference in section 9 | J. Zako |
|------------|----|------|--|---------|



**APPENDIX A**  
**Areas of Responsibility Matrix**

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**AREAS OF RESPONSIBILITY MATRIX**

Area Owners, who directly or through delegated authority, are responsible for permits in the following areas when permits are required to perform work:

| <b>Area</b>       | <b>Contains</b>   | <b>Area Owner</b>      |
|-------------------|---|------------------------|
| Plant 1           | Gas, Alky, Amine Unit, GDS Unit, Plant 1 Crude Unit, HDS, HCC, Boilers (H110 / H115 / H117), Boiler feedwater systems, Treated Water, Reformer 1, Reformer Deprop, Jet/LSD, Splitter/Mole Sieve, CB1, Sub 1, Electrical manholes in unit.   | Plant 1 Area Manager   |
| Plant 2           | Plant 2 Crude Unit, Sour Water Stripper, Vacuum Unit, Pretreater Unit, Reformer 2, BTX Unit, Plant 2 Cooling Tower, Alternate Flare, CB3, Sub 2/7/8, Electrical manholes in unit.   | Plant 2 Area Manager   |
| Plant 3-4         | Plant 3: Reaction Unit, Fractionation Unit, Hydrogen Unit, Amine Recovery, Sour Water Stripper, Acid Gas Flare, Main Flare, Plant ¾ Cooling Tower, Sub 3. Plant 4: Diesel Hydrotreater, Amine Recovery, Sour Water Stripper, Water Treatment Unit, CB4, Sub 11 Fenced In Area, Sub 12, Sulphur Unit, Electrical Manholes in unit. | Plant 3-4 Area Manager |
| Offsites          | Tank Farms (East / West), TX Racks, Docks 1 & 2, SCPL, Land Farm Area, Vidal Street Right of Way, R/R Right of Way (along A Ave), WWT Area, Solvents Tanik Area, Main Gate Weight Scale, CB1, Sub 4/5/6/9/10, STS, Electrical manholes outside process areas.   | Offsites Manager       |
| Mtce / Electrical | All remaining buildings and lands outside of process unit areas including Shops, Admin, Maintenance etc. All refinery parking lots, roadways and walkways except within process unit areas. Wash Pad, Laydown Storage Areas.  | Maintenance Manager    |
| Laboratory        | Main laboratories and lab offices.  | Laboratory Manager     |
| EH&S              | EH&S Offices, Fire Hall, Main gate Security, HC Security Gate, Fire Training Area, Oil Spill Dock.  | EH&S Manager           |
| Warehouse         | Warehouse and yard.   | Warehouse Team Lead    |



**APPENDIX B  
Risk Control Matrix**

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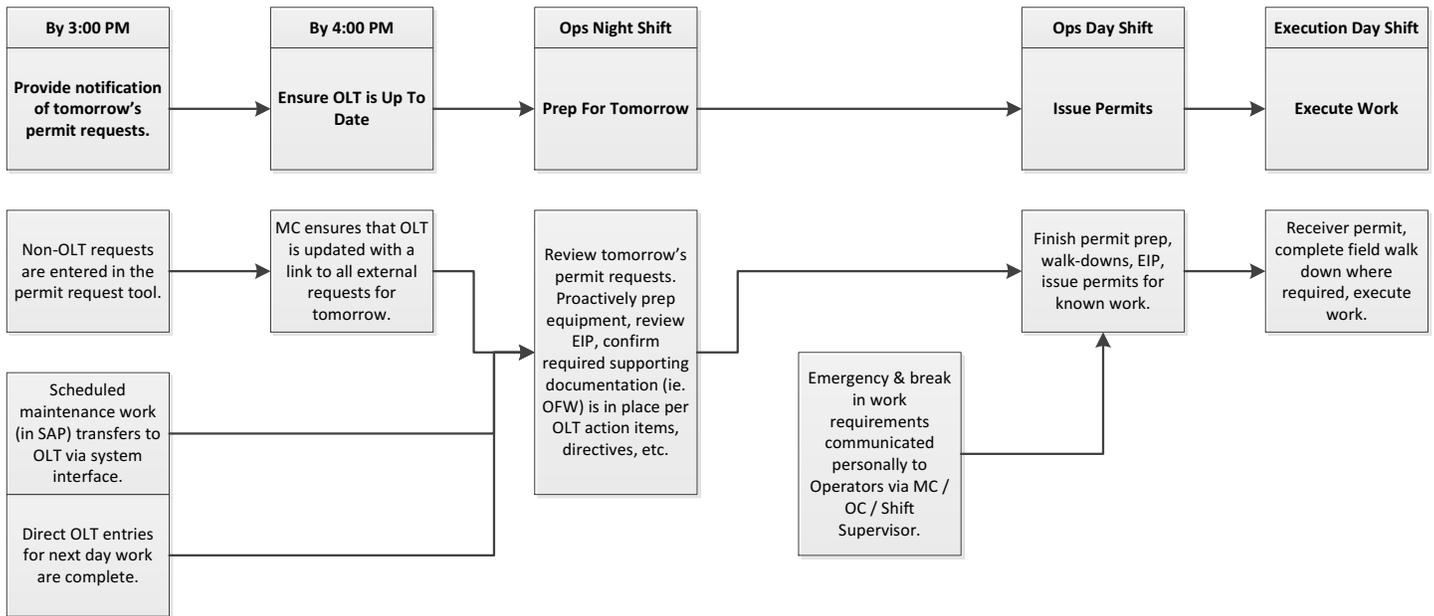
**RISK CONTROL MATRIX**

| LOCATION   | WORK EXAMPLES                                   | RISK CONTROL |      |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|--|---|--------------|------|---------------------|----------------|-------------|-----------------------|----------------|-----------------------|-----------------------|--|-----------------------------------|--------------|------------------------|---------------------------|---------------|--------------------|
|  |   | SWP          | TASC | Asbestos Assessment | CSE Assessment | Rescue Plan | Electrical Assessment | OFW assessment | Excavation Assessment | Waste Disposal Permit | Lift Plan (if required by Crane and Rigging Std) | JSA and/or Job Specific Checklist | Safety Pause | Pre-Job Safety Meeting | Pre-qualification process | STOP Training | Emergency Siren/PA |
| (non-process/no n-tank farm work)  | (this list is not exhaustive)                   |              |      |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
| <b>ALL AREAS</b>   | Entry into a Confined Space                     | ✓            | ✓    |                     | ✓              | ✓           |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Work involving asbestos                         | ✓            | ✓    | ✓                   |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Work using a fall arrest system                 |              | ✓    |                     |                | ✓           |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Electrically hazardous                          | ✓            | ✓    |                     |                |             | ✓                     |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Excavation required                             | ✓            | ✓    |                     |                |             |                       |                | ✓                     |                       |  |                                   |              |                        |                           |               |                    |
| Main Maintenance Shop  | Welding   |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | PM on overhead cranes                           |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Scaffold building                               |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Fabrication                                     |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Pump overhauls                                  |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
| Temp Mtce Shops (e.g. laydown area)  | Welding   |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Scaffold building                               |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Fabrication                                     |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
| Lab  | Hot work  | ✓            | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | OFW work  | ✓            | ✓    |                     |                |             |                       | ✓              |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Cleaning of Lab areas                           |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Slop tank draining (Vacuum truck)               |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | HF Bath Cleaning                                | ✓            | ✓    |                     |                |             |                       |                |                       | ✓                     |  |                                   |              |                        |                           |               |                    |
|  | Moving drums, gas cylinders (OE, Labourer work) |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Bottle cleaning (pick-up and delivery)          |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Praxair deliveries                              |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Roof access (special case for Lab)              | ✓            | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
| Roadways   | Grading   |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Filling pot holes                               |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Road sweeping                                   |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Snow removal                                    |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
| Washpad  | Moving equipment to and from washpad            |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
|  | Cleaning of equipment at                        |              | ✓    |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
| Consider completing per JSA and Job specific checklist guidelines                                |   |              |      |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
| Use for non-routine work or work that is not part of the regular scope of the job.               |   |              |      |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
| Applies to all Contractors and Sub-Contractors working on-site at the Sarnia Refinery            |   |              |      |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |
| Applies to all Employees, Contractors and Sub-Contractors working on-site at the Sarnia Refinery |   |              |      |                     |                |             |                       |                |                       |                       |  |                                   |              |                        |                           |               |                    |





**PERMIT REQUEST PROCESS WORKFLOW**





The following individuals have approved and signed this document.

UserName: Todd Murray (toddmurray)

Title: Manager EH&S Sarnia Refinery

Date: Friday, 20 December 2019, 11:34 AM Mountain Time

Meaning:

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