

Digital Control of Work Application Manual

Controlled Document

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1. Purpose, Scope, and Deviation Process

1.1 Purpose

The intention of the Suncor Enablon Digital Control of Work (DCoW) Application Manual is to:

- Outline how the logic in the Enablon DCoW application is programmed to inform user for understanding and troubleshooting.
- Outline sequential actions or expectations that are required to support the 'intent' of how the Enablon DCoW application should work.
- Drive consistency amongst sites.
- This manual is intended to support sites enabled by the Enablon Digital Control of Work application in adherence to Manage Control of Work (MCoW) OEMS process MCW ST18.0.

Note: Sites may have further site-specific training to outline the site methods for Permitting, CHE and CSD based on outlined requirement in the site SWP(s).

The Manual covers material to support the execution of the below in the Enablon Digital Control of Work Application:

- Permit to Work
- Control of Hazardous Energy
- Critical System Defeat
- Permit, Isolation, and CSD Assessments
- Data Storage and general tool information

1.2 Scope

This Manual outlines principles and processes for Managing Work Permits, Control of Hazardous Energy and Critical System Defeat within the Enablon Digital Control of Work (DCoW) program in conjunction with the MCoW OEMS process standard and best practices requirements.

- Refer to: OEMS-Hub - Process Execution (sharepoint.com)

Out of Scope:

- Sites or identified areas that do not utilize the Enablon Digital Control of Work application (DCoW) as defined in the sites related SWP.

2. Acronyms

Acronym	Definition
CSD	Critical System Defeat
CSE	Confined Space Entry
DFT	De-isolation for test
EH&S	Environment Health & Safety
FHA	Formal Hazard Assessment
FLOC	Functional Location
HA	Hazard Assessment
ICC	Isolation Confirmation Certificate
JHA	Job Hazard Analysis
KPI	Key Performance Indicator
LTI	Long Term Isolation
LAN	Local Area Network
P.Eng	Professional Engineer or responsible engineer identified for the area
P&ID	Piping and Instrumentation Diagram
PPD	Partial Permanent De-Isolation
PTW	Permit to Work
RA	Risk Assessment
RPO	Recovery Point Object
RWA	Routine Work Authorization
SLD	Single Line Diagram
UTI	Unable to Isolate

3. Introduction

This guide is designed to help you navigate and utilize the full range of features and capabilities of the Enablon Digital Control of Work (DCoW) application effectively.

This manual is best used with:

- Manage Control of Work Standard OEMS-Hub - Process Execution (sharepoint.com)
- Permit to Work Best Practice OEMS-Hub - Process Execution (sharepoint.com)
- Control of Hazardous Energy Best Practice OEMS-Hub - Process Execution (sharepoint.com)
- Critical System Defeat & Critical Valve Management Best Practice OEMS-Hub - Process Execution (sharepoint.com)
- The training courses for Digital Control of Work Application (DCoW) Training and Resources (sharepoint.com)

Note: Sites may have further site-specific training to outline the site methods for Permitting, CHE and CSD based on outlined requirement in the site SWP(s).

The Manual covers material to support the execution of the below in the Enablon Digital Control of Work Application:

- Permit to Work
- Control of Hazardous Energy
- Critical System Defeat
- Permit, Isolation, and CSD Assessments
- Data Storage and general tool information

4. Work Permit

A Work Permit is record that authorizes specific work, at a specific location for a specific duration. Used to control and coordinate work and ensure all foreseeable hazards have been identified and document that required controls are put in place. It also represents an agreement between the Permit Receiver and Permit Approver that all conditions, preparations, precautions and controls are clearly understood before work commences.

The selection of a Work Permit type is based on the work scope and provides a means to identify and document hazards and related controls to manage risks and secure the proper approvals prior to commencing work.

Enablon DCoW Permit Types:

a. **Cold Work:** Cold Work covers a wide range of tasks that do not create an ignition source or generate sufficient heat to ignite a flammable mixture or material (e.g. general maintenance, scaffolding, etc.)

b. Hot work: Hot Work covers work that may introduce a source of ignition sufficient to interact with materials or vapours of flammable products (spark potential and open flame), e.g. welding, grinding, potential spark generators (electrical/electronic), or hot taps.

   DCoW offers two options under this hot work permit type:

   i **Hot Work Spark Potential** permit covers activities that generate either enough heat or sparks to potentially ignite vapours, gases or any other flammable materials. Hot work spark potential includes activities such as using an internal combustion engine, using non-intrinsically safe devices, or using pneumatic tools, radiography, sandblasting (abrasive wet or dry), explosive powder actuated tools, non-explosion proof equipment and opening electrical equipment.

   ii **Hot Work Open Flame** permit covers activities that generate an open flame or a more direct source of ignition that can produce sparks. Hot work open flame includes activities such as, welding, burning, brazing, using open flames, drilling or hot tapping in-service piping, gas or electric cutting and grinding.

c. **Confined Space Entry**: Confined Space Entry (CSE) covers any entry into a Confined Space. A Confined Space is an enclosed or partially enclosed space, not intended for continuous human occupancy, which has a restricted, limited, or impeded means of entry or exit because of its construction, which may become hazardous to a worker because of:

   - An atmosphere that is or may be injurious due to oxygen deficiency or enrichment, flammability, explosivity, or toxicity.
   - A condition or changing set of circumstances within the space that present a potential for injury or illness.
   - The potential or inherent characteristics of an activity that can produce adverse or harmful consequences within the space.

d. **Breaking Containment:** Breaking Containment (First Break) is the initial action of disturbing any pressure or Hazardous Energy boundary following the isolation of a system.

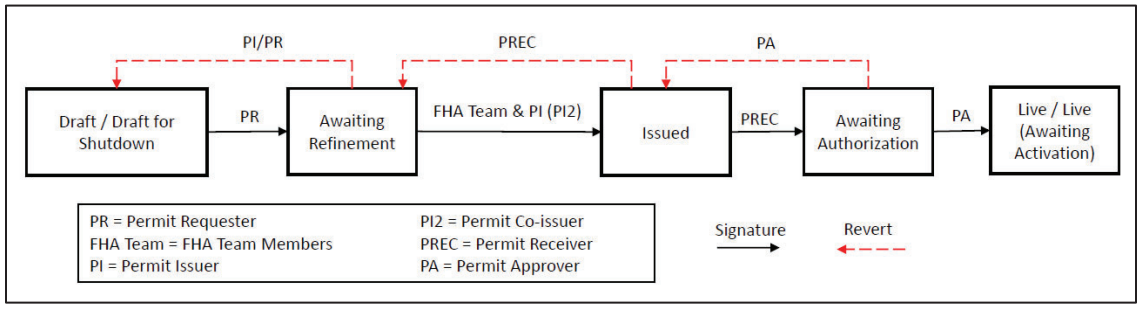
For information on permit lifetimes in the Digital Control of Work application, refer to Appendix D – Permit Lifetime.

4.2 Permit to Work Process

This section covers the processes and Application rules for:

a. **Requesting** a Work Permit
b. **Issuing** a Work Permit
c. **Receiving** a Work Permit
d. **Approving** a Work Permit
e. **Extending** a Work Permit
f. **Closing** a Work Permit

For more information on the roles responsible for transitioning workflows in the Digital Control of Work application, refer to Appendix A – Digital Control of Work Roles and Responsibilities.



4.2.2 Requesting a Work Permit

Work Permits can be created from new, from a copy of an existing Work Permit, from a work order, or from a permit template. The Work Permit is created by the Permit Requester.

The Permit Requester is Responsible for:

- Selecting the correct Work Permit type.
- Completing the permit form including identify any other key Work Permit inputs such as CSD requirements or gas testing.
- Completing the required risk management such as FHA to ensure proper hazard identification and controls are in place.
- Identifying any additional authorizations and resources required to support the Work Permit.
- Signing the Work Permit, with comprehension of the responsibilities listed.

DCoW Application Rules:

The application will not permit you to move forward without the following done:

- Conducting initial gas test for hot work in a classified area, breaking containment on a hydrocarbon service and Confined Space Entry.
- Completing a HA or FHA.
- Attaching an isolation confirmation certificate (ICC) for group isolations when selected.
- Listing individual isolation points on the permit form for individual isolation when selected.
- Selecting and completing applicable checklists before the permit can enter the Live state for the permit is Breaking Containment when selected.

Note: When copying a permit, all details and fields are copied over.

When requesting a permit, the state will change from:

- Draft/Draft for Shutdown to Awaiting Refinement by the Permit Requester.

4.2.3 Issuing a Work Permit

Requested Work Permits are issued or reverted back to the Permit Requester for additional information. The Work Permit is Issued by the Permit Issuer.

The Permit Issuer is Responsible for:

- Reviewing the Work Permit with the Permit Requester to ensure joint understanding of the work scope, location and ensure identification of applicable hazards and any necessary risk management methods.
- Ensuring permit co-authorization(s), when required, has(have) signed prior to authorization and advancing the Work Permit with the understanding of the work scope, hazards and impact on their operating area(s).
- Ensuring permit dependencies for CSE Work Permits and other associated Work Permits is assigned.
- Confirming the Isolation requirements are in place and adequate to allow the safe execution of work.
- Ensuring identification of FHA Team Members as well as signing it off for quality.
- Completing the self-declaration authorization to advance the Work Permit workflow to the next state.
- Reverting the Work Permit to previous state for more clarity if required with comments for the Permit Requester to act upon.
- Signing the Work Permit, with comprehension of the responsibilities listed.

Note: In some locations, the Permit Approver and the Permit Issuer may be the same person who has the accountability of both roles.

DCoW Application Rules:

The application will not permit you to move forward without the following done:

- Indicating approval of minimum two FHA Team Members when FHA is identified.
- Filling out remarks of the Permit Co-Issuer when “Is a Permit Co-Issuer required?” is selected.

When issuing a permit, the state will change from:

- Awaiting Refinement to Issued by the Permit Issuer.

When reverting a permit, the state will change from:

- Awaiting Refinement to Draft/Draft for Shutdown by the Permit Issuer.

4.2.4 Receiving a Work Permit

Issued Work Permits are moved to awaiting authorization or reverted back to the Permit Requester for additional information. The Work Permit is Received by the Permit Receiver; a role responsible for the end-to-end execution of work, as outlined on the Work Permit, in a safe and compliant manner while adhering to the content of the Work Permit.

The Permit Receiver is Responsible for:

- Reviewing the Work Permit with the Permit Issuer to ensure joint understanding of the work scope, location and ensure completeness of the permit.
- Completing the self-declaration authorization to advance the Work Permit workflow to the next state.
- Reverting the Work Permit to previous state for more clarity if required, with comments for the Permit Requester to act upon.
- Entering comments so the Permit Issuer, Permit Co-Issuer, and FHA Team Members understand why the permit was reverted back and what information is sufficient.
- Signing the Work Permit, with comprehension of the responsibilities listed.
- Ensuring their training is up to date to receive permits.
- Receiving and accepting multiple Work Permits if required, that they can practically manage.
- Not assuming the role of the Permit Issuer or Permit Approver for any permits where they are designated as the Permit Receiver.
- Understanding the “take over responsibility by Permit Receiver” is to be used to transfer signing authority from one person to another.
- Understanding who signs a Work Permit as a guest to receive, take over responsibility of, suspend or close a Work Permit must be familiar with the Control of Work processes and agree to the responsibility of signing as a Permit Receiver.

A worker signing as a guest can only do so when someone with a Suncor account is logged in (Guest signing is limited to a Permit Receiver without a Suncor email account).

When receiving a permit, the state will change from:

- Issued to Awaiting Authorization by the Permit Receiver.

When reverting, the state will change from:

- Issued to Awaiting Refinement by the Permit Receiver.

4.2.5 Approving a Work Permit

Issued Work Permits are Approved, or reverted back, to the Permit Receiver for additional information. The Work Permit is approved by the Permit Approver.

The Permit Approver is Responsible for:

- Reviewing the Work Permit with the Permit Receiver to ensure joint understanding of the work scope, location and ensure completeness of the permit.
- Confirming completeness of the pre-requisite controls selected in the HA or FHA to ensure safe execution of the work.
- Ensuring the equipment is safely isolated, prepared and zero energy is confirmed and ready for maintenance activities.
- Ensuring Work Permit procedures and protocols are monitored, enforced within their area of responsibility, and assessed for quality and compliance.
- Completing the self-declaration authorization to advance the Work Permit workflow to the next state.
- Reverting the Work Permit to previous state for more clarity if required, with comments for the Permit Receiver to act upon.
- Signing the Work Permit, with comprehension of the responsibilities listed.

A permit can be printed in the Awaiting Authorization state if the Permit Approver chooses to sign a wet ink signature. The paper copy acts as a live permit signed with wet ink by the Permit Approver. The Permit Approver should workflow the digital permit to the Live state at the earliest opportunity.

Note: In some locations the Permit Approver, and the Permit Issuer may be the same person who has the accountability of both roles.

DCoW Application Rules:

The application will not permit you to move forward without completing the following:

- Completing a Field Tour – A Field Tour is a walk down with the Permit Approver and/or Permit Issuer and the Permit Receiver to establish a mutual understanding of the work scope to be performed within touching distance of the asset or line of sight of the work location. (also referred to as a Joint Job Site Visit).

  A declaration of completing a field tour is triggered for the following scenarios:

  - Confined Space Entry
  - Breaking containment
  - Hot work in classified areas
  - Work Permits with critical work activities (refer to section 4.7 Critical Work)
  - Any Work Permit with an individual or group isolation
  - Can be requested by the Permit Issuer, Permit Receiver, Permit Approver, or workers

  Note: If a field tour is not completed, remarks by the Permit Approver are required for the Application to process the permit to the next stage.

- Entering initial gas measurements, a maximum of one hour before the Work Permit is approved, when required.
- Completing all attached checklists.
- Issuing period cannot start more than 2 hours into the future and cannot exceed 12 hours.

When approving a permit, the state will change from:

- Awaiting Authorization to Live/Live (Awaiting Activation) by the Permit Approver.

When reverting a permit, the state will change from:

- Awaiting Authorization to Issued by the Permit Approver.

4.2.6 Extending a Work Permit

Approved Work Permits can be extended by the Permit Extender who has the role of Permit Issuer or Permit Approver.

The Permit Extender is Responsible for:

- Reviewing the Permit details to ensure conditions support extension of duration for the permitted scope of work.
- Completing the self-declaration authorization to the extension of the Work Permit for the identified duration.
- Ensuring that the Area Operating Authority is consulted before approving the extension of the permit.
- Ensuring that the transfer of responsibility of the Permit Approver and Receiver is completed if the extension will progress over shift change.

DCoW Application Rules:

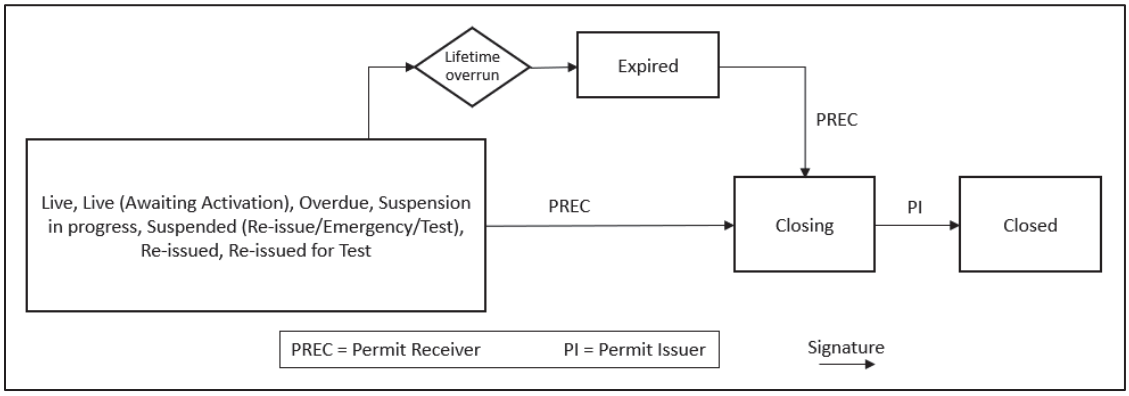
- A permit can be extended for a duration up to 4 hours at a time.
- The maximum permit life duration is 16 hours from the time of the acceptance by the Permit Receiver.
- Signed a maximum of 14 hours in the future.
- Can be signed multiple times.

When extending a permit, the state will remain:

- Live by the Permit Extender.

4.2.7 Closing a Work Permit

Approved, Extended, Overdue, Suspended and Re-Issued permits are closed by the Permit Receiver and Permit Approver.



The Permit Receiver is Responsible for:

- Completing the Work Permit closure questions.
- Completing the Yes/No questions to ensure there is a joint understanding with the Permit Issuer about the Work Permit status (a response of No to any question requires a comment to be entered).
- Entering general comments regarding the Work Permit.
- Completing the self-declaration confirming authorization to advance the Work Permit workflow to the next state.
- Signing the Work Permit, with comprehension of the responsibilities listed.

The Permit Issuer is Responsible for:

- Reviewing the Work Permit with the Permit Receiver to ensure joint understanding of Work Permit completeness, and the Work Permit is safe to close.
- Initiating the closing of the Work Permit for the following reasons:
  - Work scope is complete, and the Work Permit can be closed.
  - Work Permit has extended past the maximum allowable lifetime and the Work Permit has expired.
- Signing the Work Permit, with comprehension of the responsibilities listed.
- Ensuring all required fields are completed prior to closing the Work Permit including relevant detailed notes to any sections requiring comment.

DCoW Application Rules:

The application will not permit you to move forward without the following done:

- Entering the gas measurements that were recorded outside of the Digital Control of Work application prior to closing of a Work Permit. Once the permit is closed, these values cannot be entered.
- Attach all relevant documentation prior to closing the Work Permit. Documents cannot be added to a closed permit.
- Closing the Permit in the digital application. If the closure is not in the application, this permit will remain open in DCoW.

When preparing for permit closure, the state will change from:

- Live to Closing by the Permit Receiver.
- Live (Awaiting Activation) to Closing by the Permit Receiver.
- Overdue to Closing by the Permit Receiver.
- Suspension in Progress to Closing by the Permit Receiver.
- Suspended (Re-Issue/Emergency/Test) to Closing by the Permit Receiver.
- Re-Issued to Closing by the Permit Receiver.
- Expired to Closing by the Permit Receiver.

When completing permit closure, the state will change from:

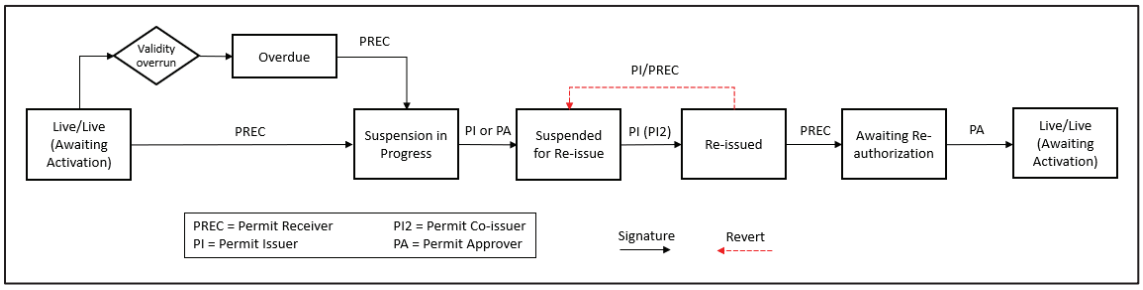
- Closing to Closed by the Permit Issuer.

4.3 Work Permit Suspension Process

A Work Permit can be suspended, re-issued, received, and re-authorized as often as required throughout the execution of work provided the Work Permit remains within the permit lifetime rules.

A Work Permit can be placed into either a suspended or closed state if work is not finished and planned to be executed later.

The process and Application rules are the same each time a Work Permit is suspended and re-issued.



The following sections are for the following scenarios:

- Suspend a Permit and Re-activate
- Suspend a Permit for a Test and Re-activate
- Suspend a Permit due to an Emergency and Re-activate

4.3.1 Suspend a Permit and Re-activate

4.3.1.1 Suspend Permit

A permit can be suspended by the Permit Issuer or Permit Approver, for the following reasons:

- The permit scope is ongoing for future shifts. (Awaiting Activation)
- The Work Permit has moved into the Overdue state (exceeded the maximum duration) but is not complete. (Overdue)
- The work scope requires updating (typically the Permit Receiver communicates this to the Permit Issuer or Permit Approver); therefore, the Work Permit is suspended to allow for review of the work scope to determine if a new Work Permit is required. (Live/Live)

Prior to suspending the Work Permit, it is intended that the work activity is in a state where it is safe and does not pose a risk to personnel, equipment or the environment.

Once the Work Permit is suspended, the live working period and field work should stop.

The Permit Receiver is Responsible for:

- Reviewing the Work Permit with Permit Issuer/Approver before requesting the suspension of the Work Permit to ensure joint understanding.
- Entering comments and signing the Work Permit.

The Permit Issuer/Approver is Responsible for signing the Work Permit.

DCoW Application Rules:

- If a Work Permit moves into the Expired state while in the Suspended for Re-Issue state, it must be closed.
- A Work Permit can remain in the Suspended for Re-Issue state providing the Work Permit has not exceeded its lifetime.

When preparing to suspend a permit, the state will change from:

- Live to Suspension in Progress by the Permit Receiver.
- Live (Awaiting Activation) to Suspension in Progress by the Permit Receiver.
- Overdue to Suspension in Progress by the Permit Receiver.

When completing a permit suspension, the state will change from:

- Suspension in Progress to Suspended for Re-Issue by the Permit Issuer/Approver.

4.3.1.2 Re-activate Permit

A suspended permit can be re-issued or reverted to previous state for additional information.

The Permit Issuer is Responsible for:

- Reviewing the Work Permit with the Permit Receiver to ensure joint understanding of the work scope, location and ensure completeness of the permit.
- Ensuring that all fields on the Work Permit are filled out correctly and that the permit is safe for re-issue and properly completed.
- Re-assessing the quality of the Work Permit to ensure that all fields are filled out according to the permit type, work scope, and duration.
- Verifying that the Permit Co-Issuer(s), if applicable, have re-signed the Work Permit and confirmed the co-issuing permit office they are representing.
- Completing a self-declaration to confirm authorization to proceed with the Work Permit workflow to the next stage.
- Reverting the Work Permit to previous state for more clarity if required, with comments to act upon.
- Signing the Work Permit, with comprehension of the responsibilities listed.

The Permit Receiver is Responsible for:

- Reviewing the Work Permit with the Permit Issuer (and Permit Co-Issuer) to ensure joint understanding of the work scope, location and ensure Work Permit is ready for final authorization.
- Completing a self-declaration to confirm authorization to proceed with the Work Permit workflow to the next stage.
- Reverting the Work Permit to previous state for more clarity if required with comments to act upon.
- Signing the Work Permit, with comprehension of the responsibilities listed.

The Permit Approver is Responsible for:

- Reviewing the Work Permit with the Permit Receiver to ensure joint understanding of the work scope, location and ensure completeness of the permit.
- Re-confirming pre-requisite controls selected in the HA or FHA.
- Completing a self-declaration to confirm authorization to advance the Work Permit workflow to the next state.
- Signing the Work Permit, with comprehension of the responsibilities listed.
- Ensuring all gas measurements that were recorded on paper are entered into the record measurement sheet in the Work Permit for record retention upon suspension or closing of a Work Permit.

DCoW Application Rules:

- ICCs (if attached) must be in the Isolation in Place (Live) state.
- If a field tour is not completed, remarks by the Permit Approver are required.
- If required, initial gas testing must be completed a maximum of one hour before the Work Permit is re-authorized.
- At least one Co-Issuer signature is required for re-issue with remarks.

When re-activating a permit, the state will change from:

a. Suspended for Re-Issue to Re-Issued by the Permit Issuer.

b. Re-Issued to Awaiting Re-Authorization by the Permit Receiver.

c. Awaiting Re-Authorization to Live/Live (Awaiting Activation) by Permit Approver.

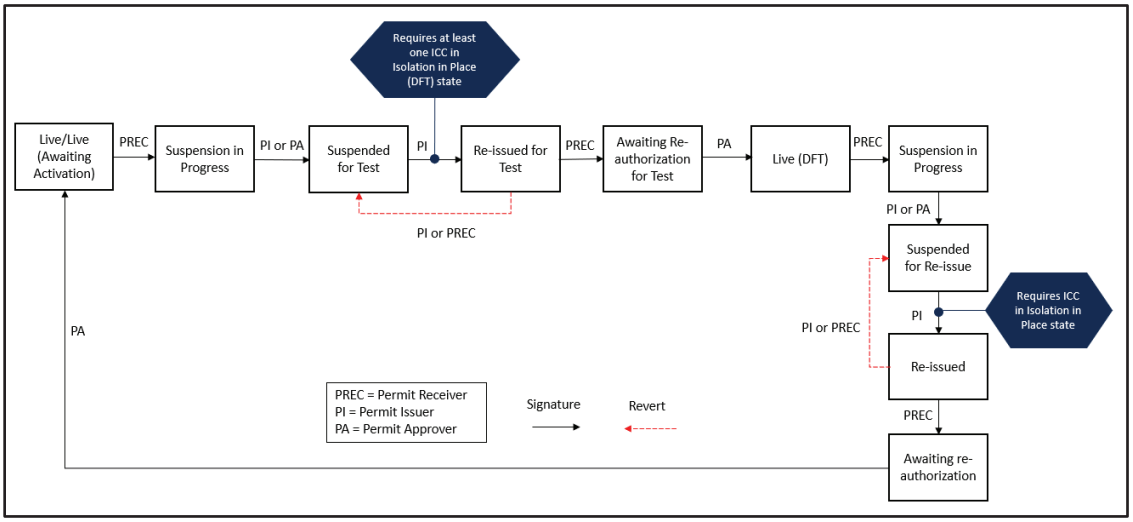
When reverting a permit, the state will change from:

- Re-Issued to Suspended for Re-Issue by the Permit Issuer/Receiver.

4.3.2 Suspend a Permit for a Test and Re-activate

This process occurs in parallel with the de-isolation for test workflow.

For isolations that require de-isolation for test, the associated Work Permit follows a process to allow the suspension, re-issuance, receival, and re-authorization of the Work Permit to ensure the Work Permit and ICC are linked as field conditions change while the de-isolation for test is being executed.



4.3.2.1 Suspend Permit

The approved Permit is suspended for testing by the Permit Receiver.

The Permit Receiver is Responsible for:

- Reviewing the Work Permit with the Permit Issuer/Approver before requesting the suspension of the Work Permit to ensure joint understanding.
- Entering comments and signing the Work Permit.
- Ensuring the work is safe to suspend, including verifying personal locks are removed from isolation or key securing devices.

The Permit Issuer/Approver is Responsible for signing the Work Permit.

DCoW Application Rules:

- The attached ICC (if applicable) must be in the Isolation in Place (Live) or De-isolated for Test state.
- A Work Permit can remain in the Suspended for Test state provided the Work Permit has not exceeded its lifetime. If a Work Permit moves into the Expired state while in the Suspended for Test state, it must be closed.
- Suspension of a Work Permit will end the live working period and requires field work to stop.

- If the work being performed requires a de-isolation for testing, resulting in a change to the linked ICC and suspension of all active Work Permits, the Work Permit may also be suspended for the duration of the test.

When suspending a permit, the state will change from:

a. Live/Live (Awaiting Activation) to Suspension in Progress by the Permit Receiver.

b. Suspension in Progress to Suspended for Test by the Permit Issuer/Approver.

4.3.2.2 Re-activate Permit

A suspended permit for a test can be re-issued or reverted back to previous state for additional information.

The Permit Issuer is Responsible for:

- Reviewing the Work Permit with the Permit Receiver to ensure joint understanding of the work scope, location, and ensure completeness of the permit.
- Ensuring that all fields on the Work Permit are filled out correctly and that the permit is safe for re-issue.
- Re-assessing the quality of the Work Permit to ensure that all fields are filled out according to the permit type, work scope, and duration.
- Verifying that the Permit Co-Issuer(s), if applicable, have re-signed the Work Permit and confirmed the co-issuing permit office they are representing.
- Completing a self-declaration to confirm authorization to proceed with the Work Permit workflow to the next stage.
- Reverting the Work Permit to previous state for more clarity if required, with comments to act upon.
- Signing the Work Permit, with comprehension of the responsibilities listed.

The Permit Receiver is Responsible for:

- Reviewing the Work Permit with the Permit Issuer (and Permit Co-Issuer) to ensure joint understanding of the work scope, location and ensure the Work Permit is ready for final authorization.
- Completing a self-declaration to confirm authorization to proceed with the Work Permit workflow to the next stage.
- Reverting the Work Permit to previous state for more clarity if required with comments to act upon.
- Signing the Work Permit, with comprehension of the responsibilities listed.

The Permit Approver is Responsible for:

- Reviewing the Work Permit with the Permit Receiver to ensure joint understanding of the work scope, location, and ensure completeness of the permit.
- Re-confirming pre-requisite controls selected in the RA or FHA.
- Completing a self-declaration to confirm authorization to advance the Work Permit workflow to the next state.

- Signing the Work Permit, with comprehension of the responsibilities listed.

DCoW Application Rules:

- ICCs (if attached) must be in the Isolation in Place (Live) state.
- If a field tour is not completed, remarks by the Permit Approver are required.
- If required, initial gas testing must be completed a maximum of one hour before the Work Permit is re-authorized.
- At least one Co-Issuer signature is required for re-issue with remarks.

When re-issuing a permit, the state will change from:

a. Suspended for Test to Re-Issued for Test by the Permit Issuer.
b. Re-Issued for Test to Awaiting Re-Authorization for Test by the Permit Receiver.
c. Awaiting Re-Authorization for Test to Live (DFT) by the Permit Approver.
d. Live (DFT) to Suspension in Progress by the Permit Receiver.
e. Suspension in Progress to Suspended for Re-Issue by the Permit Issuer/Approver.
f. Suspended for Re-Issue to Re-Issued by the Permit Issuer.
g. Re-Issued to Awaiting Re-Authorization by the Permit Receiver.
h. Awaiting Re-Authorization to Live/Live (Awaiting Activation) by Permit Approver.

When reverting a permit, the state will change:

- Re-Issued for Test to Suspended for Test by the Permit Issuer/Receiver.
- Re-Issued to Suspended for Re-Issue by the Permit Issuer/Receiver.

4.3.3 Suspend a Permit due to an Emergency

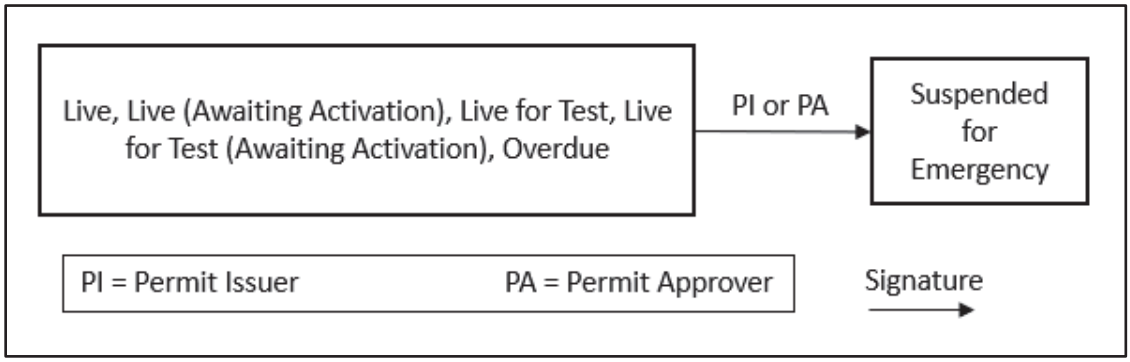
The suspend for emergency process is to allow for suspension of a single or a group of Work Permits for emergencies or at the discretion of area operations. Work Permits must be in one of the following states: Live, Live (Awaiting Activation), Live for Test, Live for Test (Awaiting Activation) or Overdue.

A Work Permit can remain in the Suspended for Emergency state provided the Work Permit has not exceeded its lifetime.

If it moves into an Overdue state while in the Suspended for Emergency state, it must be re-issued or closed.

Once the Work Permit has been re-issued the Work Permit can be suspended, re-issued, received, and re-authorized as often as required throughout the execution of work provided the Work Permit remains within the permit lifetime. The process and Application rules are the same each time a Work Permit is suspended and re-issued.

The mass suspension of Work Permits does not replace communication methods to alert personnel of an emergency (e.g., radio communication, alarms, sirens, general alarm system).



The approved permit is suspended for Emergency by Permit Issuer/Approver.

The Permit Issuer/Approver is Responsible for:

- Reviewing the Work Permit(s) and selecting the appropriate Work Permit before completing the suspension.
- Entering comments and signing the Work Permit(s).
- Ensuring the work is safe to suspend including verifying personal locks are removed from isolation or key securing devices.

Prior to suspending the Work Permit, it is intended that the work activity is in a state where it is safe and does not pose a risk to personnel, equipment or the environment.

Once the Work Permit is suspended, the live working period and field work should stop.

When suspending a permit, the state will change from:

- Live to Suspend for Emergency by the Permit Issuer/Approver.
- Live (Awaiting Activation) to Suspend for Emergency by the Permit Issuer/Approver.
- Overdue to Suspend for Emergency by the Permit Issuer/Approver.
- Live for Test to Suspend for Emergency by the Permit Issuer/Approver.
- Live for Test (Awaiting Activation) to Suspend for Emergency by the Permit Issuer/Approver.
- Overdue to Suspended for Emergency by the Permit Issuer/Approver.

Note: Work Permits can be re-issued or closed when work is safe to resume.

4.4 Take Over Responsibility

The Permit Issuer, Permit Receiver, and Permit Approver are the only responsibilities that can be transferred to other individuals. Transfer of responsibility from one individual to another can occur at any point during work execution.

A Work Permit does not need to be suspended, re-issued or re-authorized to transfer the responsibility to another individual who has adequate training for the same role.

a. **Transfer of Permit Issuer**: The current Permit Issuer reviews active Work Permit and discusses the Work Permit status with the Incumbent Permit Issuer. The Incumbent Permit Issuer signs the Work Permit as the Permit Issuer to assume responsibility for the Work Permit.

b. **Transfer of Permit Receiver**: The current Permit Receiver reviews active Work Permit and discusses the Work Permit status with the Incumbent Permit Receiver. The Incumbent Permit Receiver signs the Work Permit as the Permit Receiver to assume responsibility for the Work Permit.

   i The Permit Receiver does not need to complete a transfer of responsibility when the permit is in the Suspended for Re-Issue state.

   ii Incumbent Permit Receiver must sign onto the existing FLHA or create a new one if they are the sole worker on the Work Permit.

c. **Transfer of Permit Approver**: The current Permit Approver reviews active Work Permit and discusses the Work Permit status with the Incumbent Permit Approver. The Incumbent Permit Approver signs the Work Permit as the Permit Approver to assume responsibility for the Work Permit.

Notes:

- Printed copies of the permit should be reprinted and distributed after transfer of any responsibility in the Live state.
- During transfer of responsibility the permit state will not change.

Transfer of Responsibility for Permit Issuer may occur when the permit is in the below states:

- Live, Live for Test, Live (Awaiting Activation), Overdue, Issued, Re-Issued or Re-Issued for Test

Transfer of Responsibility for Permit Receiver may occur when the permit is in the below states:

- Live, Live for Test, or Live (Awaiting Activation)

Transfer of Responsibility for Permit Approver may occur when the permit is in the below states:

- Live, Live for Test, or Live (Awaiting Activation)

4.5 Gas Measurement

- Gas measurement results, along with time of testing, are inputted in the tool by the Gas Tester.
- Gas data can be entered when the permit is Awaiting Refinement, Issued, Awaiting Approval, Live, or Live (Awaiting Activation).
- Gas data cannot be entered when the permit is Closed.

DCoW Application Rules:

- Each selected substance must be selected as initial or subsequent frequency.
- Substances not in the standard list can be added as free text.
- Initial gas testing must be completed a maximum of one hour before the permit can enter the Live state.
- Initial gas testing is required for Confined Space Entry (CSE) permits.
- Results, times, and dates can be back dated to reflect actual time of test.

The Area Operating Authority or designate is responsible for gas measurements. Gas measurements recorded on paper should be updated on the permit to preserve a clean audit trail but can be added to the permit as an attachment.

4.6 Hazard Management

The risk management methods used for Work Permits are:

- **Hazard Assessment (HA)**: A Hazard Assessment (HA) is the method used to identify and manage hazards and controls related to a work scope. During the drafting of the HA, pre-requisite controls can be identified and assigned prior to the approval of the Work Permit. This is used to verify all necessary controls are in place to ensure the safe execution of work. *(Note: Previously referred to as an RA or Risk Assessment in the Enablon DCoW application)*
- **Formal Hazard Assessment (FHA)**: A Formal Hazard Assessment (FHA) is a step-by-step analysis of specific activities associated with the work scope. An FHA should be used to identify and manage hazards and controls related to a work scope. *(Note: Previously referred to as a JHA or Job Hazard Assessment in the Enablon DCoW application)*

Note: Controls required to be in place prior to approval of the permit should be identified as prerequisite controls with an identified action party on the FHA. These prerequisite controls should be implemented before a Work Permit is workflowed to the Live state allowing work to proceed.

Permit type, work scope, and additional considerations will determine which hazard management method needs to be performed to identify hazards and implement controls.

The hazard management method can be escalated from an HA to FHA if required based on work scope or additional considerations.

The following table shows the ***minimum hazard management method*** to be used for each Work Permit type.

Work Permit Type	HA	FHA
Cold work	X	
Hot work spark potential in classified area	X	
Hot work spark potential in non-classified area	X	
Hot work open flame in classified area		X
Hot work open flame in non-classified area	X	
Breaking containment		X
Confined space entry		X
Critical work		X
Non-routine, high risk work scopes		X
Novice workers are performing a task		X

4.7 Critical Work

Critical work includes tasks that require individual approvals and supporting documents to be attached to the Work Permit.

- DCoW application requires the completion of an FHA and a Field tour for all critical work identified.
- The critical work type should be identified and supporting documents attached to the Work Permit prior to advancing the workflow to the Awaiting Refinement state.
- A checklist should be selected from the available list when applicable for critical work.
- The Permit Issuer (and Permit Co-Issuer if applicable) should ensure the critical work type is applicable to the work scope and the proper approvals are in place to support the Work Permit request.

Note: These approvals may occur outside of the Digital Control of Work application and are unique to each operating site.

Critical work specific to each site should be outlined in the sites SWP. Examples may include:

- Alternate isolations
- Critical or serious lifts
- Diving operations
- Electrical encroachment
- Ground disturbance and/or excavation
- Work on live equipment or process (e.g., live electrical work, hot tap on live process piping, leak sealing, live flare)
- Non-standard single valve isolations

Note: Refer to relevant OEMS Process Best Practices.

4.8 Checklists

Checklists are used to provide additional details about the work scope, hazards, and controls not recorded through the HA or FHA and not available in the hazards and controls library.

Checklists are typically completed by the Permit Requester or Permit Receiver with support from the Permit Issuer and/or Permit Approver as required but can be completed in DCoW by the Permit Requester, Permit Receiver, Permit Issuer or Permit Approver. The Permit Approver is accountable to ensure required checklists are completed and attached prior to work flowing a permit to the Live state.

Note: A Work Permit can have multiple checklists if required by the work scope.

The following table describes the checklist types:

Checklist Type	Description
First Break	• Used when Maintenance is performing the initial opening of a pressure or hazardous boundary using a breaking containment Work Permit. • Completing a checklist is mandatory when the toggle is selected. The checklist is found in “Available Checklists”. • The checklist records information related to the system commodity, temperature, pressure, and other information relevant to the first break activity.
Single Valve Isolation	• Used when work is being completed using a single valve isolation to control hazardous energy. • Completing a checklist is mandatory when the toggle is selected. The checklist is found in “Available Checklists”. • The checklist records information related to the system commodity, mechanical integrity, and alternate controls.
Non-Standard Isolation	• Used when work is being completed for a non-standard isolation excluding a single valve isolation to control hazardous energy. • Completing a checklist is mandatory when the toggle is selected. The checklist is found in “Available Checklists”. • The checklist records information related system commodity, additional controls, and communication requirements.
Hot Work Open Flame in Classified Area	• Used when Maintenance is performing hot work open flame activities in a classified area and is optional. • Completing a checklist is mandatory when the toggle is selected. The checklist is found in “Available Checklists”. • The checklist records information related to work location, additional control measures and field monitoring requirements.

DCoW Application Rules:

- The checklist must be attached to the Work Permit in the Draft/Draft for Shutdown or Awaiting Refinement state.
- The checklist must be completed prior to the Work Permit moving from the Awaiting Authorization state to the Live/Live (Awaiting Activation) state.
- When a Work Permit is moving through a Suspension workflow, the checklist does not need to be redone.
- Once a permit has been approved, the checklists cannot be amended. Changes to the checklist require a new Work Permit.

4.9 Permit Dependencies

Permit dependencies enforce business rules to sequence permits based on specific states.

Permit dependencies are added, edited, or removed by the Permit Requester/Issuer.

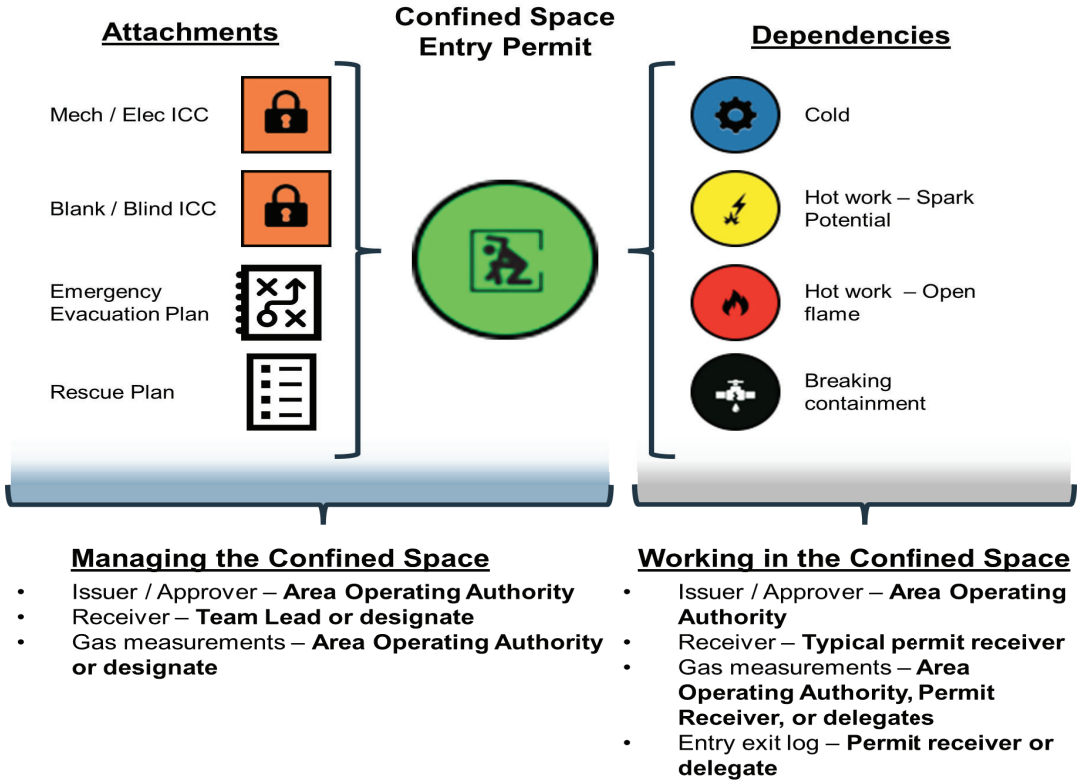
Permit dependencies can be assigned at Draft/Draft for Shutdown, Awaiting Refinement, or Issued states of the permit.

The table below lists DCoW rules for permit dependencies:

Dependency type	This creates a dependency from this permit to another permit, enforcing a rule that this permit
Live/Live	cannot go live unless the referenced permit is live
Live/Not Live	cannot go live unless the referenced permit is not live
Start/Finish	cannot start until the referenced permit is finished

4.10 Confined Space Entry Permit

The Confined Space Entry (CSE) Permit is used to manage the confined or restricted space itself. Work scopes performed within a Confined space are to be completed under separate permits and should be linked with a Live / Live dependency to the CSE Permit.



- Confined Space Entry Permits follow the same application rules as other permit types for drafting, requesting, issuing, receiving, approving, suspending, etc.
- A CSE Permit is a means to control the 'space' and maintain its integrity for the duration of all dependent work scopes. The Area Operating Authority and their Team Lead or designate will issue, receive, and approve the CSE Permit to ensure the space remains in a safe state for other dependant Work Permits to be issued for related work to occur within the confined space. (See table below for example scenarios and CSE Permit relationship roles)
- The CSE Permit should be in the Live state for any entry into the confined space. This includes non-permitted work such as initial entry for atmospheric testing or visual inspections, etc.

Note: Initial gas test results are required to be entered for the CSE Permit to move to the Live state. This may require documentation, and completion of an initial gas test via external means prior entry to support workflow of the permit to the Live state.

Caution – If the atmospheric conditions of the entire space cannot be assessed externally, the space will need to be considered as unconfirmed for the initial entry and atmospheric testing.

- Isolation Confirmation Certificates (ICCs) related to the entry into the confined space are attached to the CSE Permit to prevent changes or closure of the ICCs while the CSE Permit is active.
- Entry Plan (i.e. Space SWP), Rescue Plan, Emergency Evacuation Plan, Ventilation Plan and any other relevant CSE documentation/checklists required by the sites SWP should be attached to the Confined Space Entry Permit.
- The CSE Permit Receiver is accountable for ensuring gas measurements are completed. Gas measurements recorded on paper are recommended to be added in the Digital Control of Work application at the earliest convenience with appropriate dates and times for history and a clean audit trail. Gas measurements on paper can be uploaded as an attachment.
- The confined space entry/exit log should be uploaded daily to the specific Work Permit (not the Confined Space Entry Permit) by the Permit Receiver or designate.

Typical CSE Permit Scenarios:

	Initial Entry for Confirmation of Atmospheric Conditions (Area Operating Authority is Entrant)	**Subsequent Entries for Work Scope Execution (or Contractor Initial Entry for Gas testing)**
CSE Permit Issuer	Area Operating Authority or Permit Issuer	Area Operating Authority or Permit Issuer
CSE Permit Approver	Area Operating Authority	Area Operating Authority
CSE Permit Receiver	Team Lead (or designate) for Area Operating Authority	Team Lead (or designate) for Area Operating Authority
CSE Entrant	Area Operating Authority (or designate entering space) – Entering under authority of CSE Permit Receiver	Workers – Working under specific Work Permit linked as dependency to CSE Permit

An FHA is required for a CSE Permit and must include a minimum of 2 individuals. FHA members should be familiar with the confined space and related hazards.

The FHA for a CSE Permit should include at least 2 sections representing the sequence of events.

- First Section of CSE FHA – Hazards and required controls are identified for initial entry and/or where atmospheric conditions are unconfirmed.
- Second Section of CSE FHA – Hazards and required controls are identified for subsequent entries after the initial confirmation of atmospheric conditions has been established.

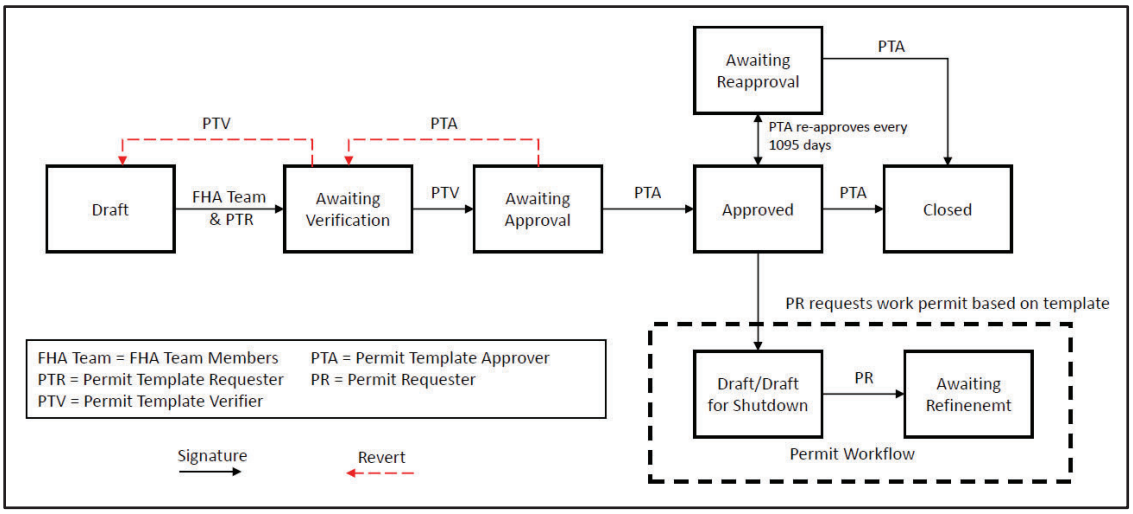
Note: Further sections may be used based on sequence of activities and classification of the confined space (i.e. if cleaning of the space occurs followed by further atmospheric testing post cleaning).

4.11 Work Permit Templates

Work Permit Templates can be created from scratch, from a copy of a closed Work Permit Template, or from an existing Work Permit.

Once a Work Permit Template is approved, it can be used to create a Work Permit.

The Work Permit Template creation is done by the Permit Template Requester.



The Permit Template Requester is Responsible for:

- Completing the permit template form for a pre-determined work scope.
- Attaching an ICC template for a Work Permit with group isolation if required.
- Identifying the risk management method and ensuring FHA Team Members sign, if applicable.
- Signing the Work Permit, with comprehension of the responsibilities listed.

The Permit Template Verifier is Responsible for:

- Reviewing the Work Permit template ensuring it is complete.
- Reverting the Work Permit to previous state (Draft) for more clarity if required, with comments to act upon.
- Signing the Work Permit, with comprehension of the responsibilities listed.

The Permit Template Approver is Responsible for:

- Reviewing the Work Permit template ensuring it is complete.
- Reverting the Work Permit to previous state (Awaiting Verification) for more clarity if required, with comments to act upon.
- Signing the Work Permit, with comprehension of the responsibilities listed.

DCoW Application Rules:

- Work Permit Template validity of 1095 days (3 years) begins at the Approved state.
- Work Permit Templates must be re-approved every 1095 days (3 years) or closed.
- For CSE Work Permits, hot work in classified area or breaking containment on a hydrocarbon service, initial gas testing is mandatory, and substance must be identified.
- A field tour is mandatory for breaking containment, confined space entry permits, hot work in classified area, if the Work Permit has critical work attribute, and individual or group isolations.
- For Work Permits requiring a FHA, signature by at least two FHA Team Members is required.

When developing a Work Permit Template, the state will change from:

a. Draft to Awaiting Verification by the Permit Template Requester.

b. Awaiting Verification to Awaiting Approval by the Permit Template Verifier.

c. Awaiting Approval to Approved by the Permit Template Approver.

d. Approved to Closed by the Permit Template Approver.

When reverting a Work Permit Template, the state will change from:

- Awaiting Verification to Draft by the Permit Template Requester.
- Awaiting Approval to Awaiting Verification by the Permit Template Approver.
- Approved to Awaiting Reapproval by the Permit Template Approver.
- Awaiting Reapproval to Approved by the Permit Template Approver.
- Awaiting Reapproval to Closed by the Permit Template Approver.

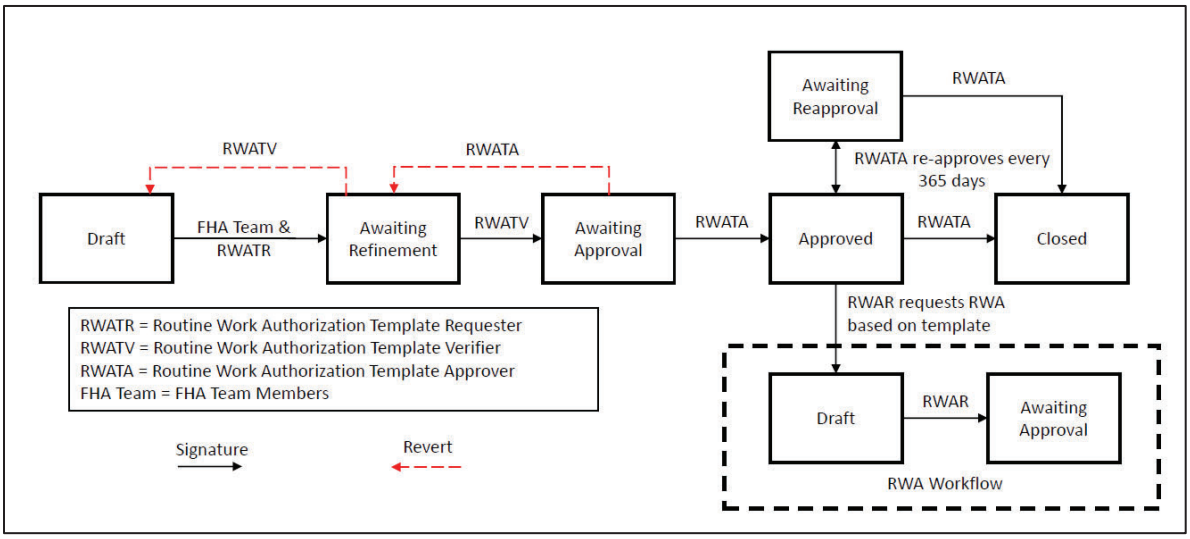
4.12 Routine Work Authorization

An RWA is a record that authorizes low risk and routine tasks in an operating area and provides a minimum level of control to safely execute the work.

An RWA is valid for a specific location and duration and does not require the full rigor of a Work Permit nor a gas testing record.

4.12.1 Creating Routine Work Authorization Template

RWA Templates can be created from scratch, from a copy of a closed RWA Template, or from an existing RWA. Once an RWA Template is approved, it can be used to create an RWA.



The RWA Template Requester is Responsible for:

- Completing the RWA Template form for a pre-determined routine task. If using an approved RWA and the work scope deviates from this approved RWA, the RWA Template must be updated, or a Work Permit must be used.
- Completing the FHA and ensuring FHA Team Members sign.
- Signing the RWA Template, with comprehension of the responsibilities listed.

The RWA Template Verifier is Responsible for:

- Reviewing the RWA Template, ensuring it is complete.
- Reverting the RWA Template to previous state (Draft) for more clarity if required, with comments to act upon.
- Signing the RWA Template, with comprehension of the responsibilities listed.

The RWA Template Approver is Responsible for:

- Reviewing the RWA Template, ensuring it is complete.
- Reverting the RWA Template to previous state (Awaiting Verification) for more clarity if required, with comments to act upon.
- Signing the RWA Template, with comprehension of the responsibilities listed.

DCoW Application Rules:

- An RWA Template validity of 365 days (1 year) begins at the Approved state.
- An RWA Template must be re-approved every 365 days (1 year) or closed.
- RWA Templates require a minimum of two FHA Team Members.
- Area operations leadership typically approve RWA Templates.
- RWA forms can only be created from an approved RWA Template.

Note: RWA Templates can be updated and re-approved when they expire.

When developing a RWA Template, the state will change from:

a. Draft to Awaiting Refinement by the RWA Template Requester.
b. Awaiting Refinement to Awaiting Approval by the RWA Template Verifier.
c. Awaiting Approval to Approved by the RWA Template Approver.
d. Approved to Closed by the RWA Template Approver.

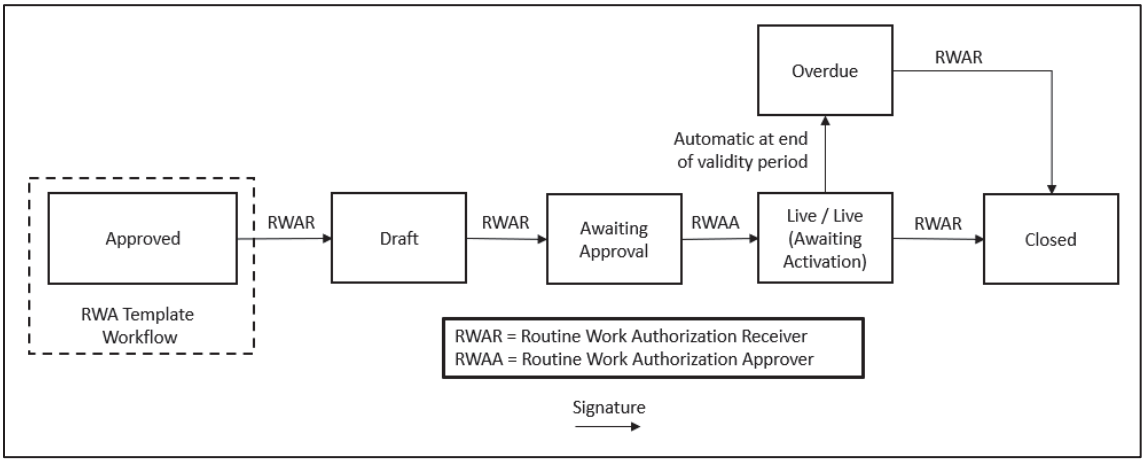
When reverting a RWA Template, the state will change from:

- Awaiting Refinement to Draft by the RWA Template Approver.
- Awaiting Approval to Awaiting Refinement by the RWA Template Verifier.
- Approved to Awaiting Reapproval by the RWA Template Approver.

4.12.2 Using Routine Work Authorization

This section covers the processes and Application rules for requesting, approving, and closing an RWA.

For more information on the roles responsible for transitioning workflows in the Digital Control of Work application, refer to Appendix A – Digital Control of Work Roles and Responsibilities.



The RWA Receiver is Responsible for:

- Completing the RWA Form.
- Signing the RWA form, with comprehension of the responsibilities listed.

The RWA Approver is Responsible for:

- Reviewing the RWA Form for completeness and ensuring there is not conflicting work ongoing in the area.
- Reverting the RWA Template to previous state (Draft) for more clarity if required, with comments to act upon.
- Signing the RWA Form, with comprehension of the responsibilities listed,

An RWA Receiver cannot be the RWA Approver.

DCoW Application Rules:

- All RWA forms must be created from an RWA Template. See the Routine Work Authorization Templates section.
- RWA forms have a maximum validity of a single shift, or 12 hours, and a lifetime of 24 hours.
- When a new RWA Receiver is required, the Live RWA must be closed, and the new RWA Receiver requests a new RWA form.
- A Live RWA will automatically move to the Overdue state when the approved validity period is exceeded and the RWA is not closed.
- An Overdue RWA will automatically expire when the 24-hour lifetime is exceeded or the RWA is not closed.

Type, lifetime, and workflow icons:

Type	Color	Icon	Lifetime (Days)*
Routine Work Authorization	White		1
Workflow Status	**Icon**	**Workflow Status**	**Icon**
Draft		Overdue	
Awaiting Approval		Closed	
Live			

The state of the RWA will change from:

a. Draft to Awaiting Approval by the RWA Receiver.

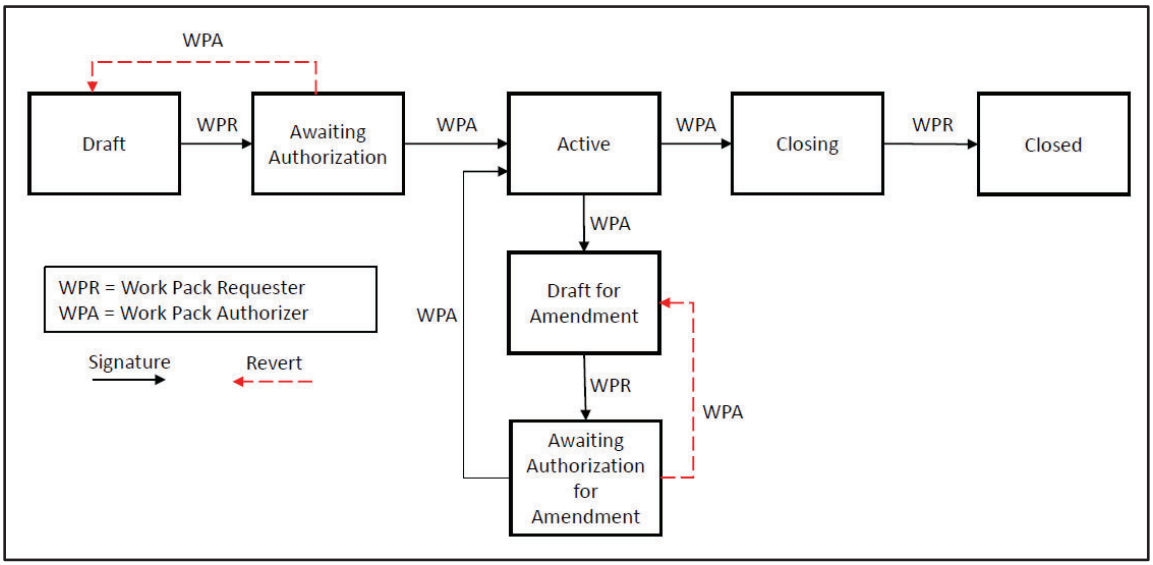
b. Awaiting Approval to Live/Live (Awaiting Activation) by the RWA Approver.

c. Live or Overdue to Closed by the RWA Receiver.

4.13 Work Packs

Work Packs are used to combine groups of Work Permits and isolations together to help manage large work scopes and provide more visibility to work scope activities.

For more information on the roles responsible for transitioning Work Pack workflows in the Digital Control of Work application, refer to Appendix A – Digital Control of Work Roles and Responsibilities.



Work Packs can be created from new or from a copy of an existing Work Pack.

The Work Pack Requester is Responsible for:

- Completing the Work Pack request.
- Attaching a minimum of one Work Permit or ICC.
- Amending the Work Pack request when required.
- Signing the Work Pack request, with comprehension of the responsibilities listed.
- Ensuring attached Work Permits and ICCs are in the correct state.
- Signing the Work Pack request to close.

The Work Pack Authorizer is Responsible for:

- Reviewing the Work Pack request for completeness and ensuring there is not conflicting work ongoing in the area.
- Ensuring the attached ICC is in place (Live state).
- Ensuring attached Work Permits and ICCs are in the correct state.
- Reverting the Work Pack to the previous state for revisions and more clarity if required.
- Reviewing the amended Work Pack request when required for completeness.
- Signing the Work Pack request for amendment.
- Signing the Work Pack request.

DCoW Application Rules:

- Including at least one Work Permit in a Work Pack is necessary.
- Attaching an ICC to the Work Pack is optional; if an ICC is attached, it applies to all Work Permits associated with the Work Pack.
- Copying a Work Pack also copies all Work Permits and ICCs associated with it.
- Requiring re-signing of the FHA to acknowledge changes, modifying the Work Pack after the FHA is signed involves adding or removing Work Permits or ICCs.
- Requiring signatures of at least two FHA Team Members is necessary for Work Packs needing an FHA.

When developing a Work Pack, the state will change:

a. Draft to Awaiting Authorization by the Work Pack Requester.

b. Awaiting Authorization to Active by the Work Pack Authorizer.

c. Active to Closing by the Work Pack Authorizer.

d. Closing to Closed by the Work Pack Requester.

When amending a Work Pack, the state will change from:

a. Active to Draft for Amendment by the Work Pack Authorizer.

b. Draft for Amendment to Awaiting Authorization for Amendment by the Work Pack Requester.

c. Awaiting Authorization for Amendment to Active by the Work Pack Authorizer.

When reverting a Work Pack, the state will change from:

- Awaiting Authorization to Draft by the Work Pack Authorizer.
- Awaiting Authorization for Amendment to Draft for Amendment by the Work Pack Authorizer.

5. Control of Hazardous Energy (CHE)

The control of hazardous energy, often referred to as Lockout/Tagout (LOTO), is used to ensure all sources of Hazardous Energy are controlled through an approved isolation plan to support safe execution of work.

5.1 Definition of Isolation points

A specific location in a system or process where a system (or a portion of a system) is isolated. There may be multiple Isolation Points to isolate an entire system. It should be considered that one side of an isolation point is energized, while the other side of the isolation point is de-energized.

5.1.1 Process/Mechanical

Process/Mechanical isolation best practices such as double block and bleed (DBB), single valve, and non-standard isolations are discussed within the Control of Hazardous Energy-OEMS Best Practice MCW (BP18.2).

DCoW Application Rules:

- DBB and/or Single valve isolation points and associated verification of zero energy points are identified on the ICC as individual points.
- Single valve isolations that are Non-Standard require an FHA to be performed as part of the ICC. And the reason for the non-standard isolation should be listed on the ICC.

5.1.2 Electrical Isolations

Electrical isolations such as Breakers, disconnects, fuses, switches are discussed under Electrical isolations in Section 2.2.6.2, Control of Hazardous Energy-OEMS Best Practice MCW (BP18.2).

Electrical isolations are used to control all types of electrical energy. They are used to isolate energy sources such as low and high voltage electricity. The use of an electrical isolation means the physical disconnection of an electrical device or system from all sources of supplied energy so that an uncontrolled re-energization cannot occur.

DCoW Application Rules:

- All points used for electrical isolations are identified on the ICC as individual points.

5.1.3 Blinding and Blanking

Blinding and Blanking such as Vented, paddle are described in Section 2.2.6.1, Control of Hazardous Energy-OEMS Best Practice MCW (BP18.2).

Note: The use of blinds or blanks is the preferred process/mechanical isolation method as it provides the maximum level of isolation for controlling Hazardous Energy. The installation and removal of blinds or blanks requires specific considerations to ensure the activity is performed properly.

DCoW Application Rules:

- All blinds and blanks used for isolations are identified on the ICC as individual points.
- The blind or blank size, type, and rating should be listed on the ICC in the comments section for each isolation point.

Note:

- The installation of blinds and blanks requires that the mechanical isolation be in place and Live for blinding work to proceed
- Blind and blank ICC's may utilize an individual key securing device (i.e. lockbox or key ring) or be combined with the other ICC(s) using a combined key securing device for work scopes to proceed. Site SWP should provide guidance for the site on preferred approach to blind and blanks key securing practice.

5.1.4 Cross Boundary and Cascading Isolations

Cross boundary and cascading isolations such as linking ICCs across multiple operating areas, within the same operating area, or key securing systems described in Section 2.2.5, Control of Hazardous Energy-OEMS Best Practice MCW (BP18.2).

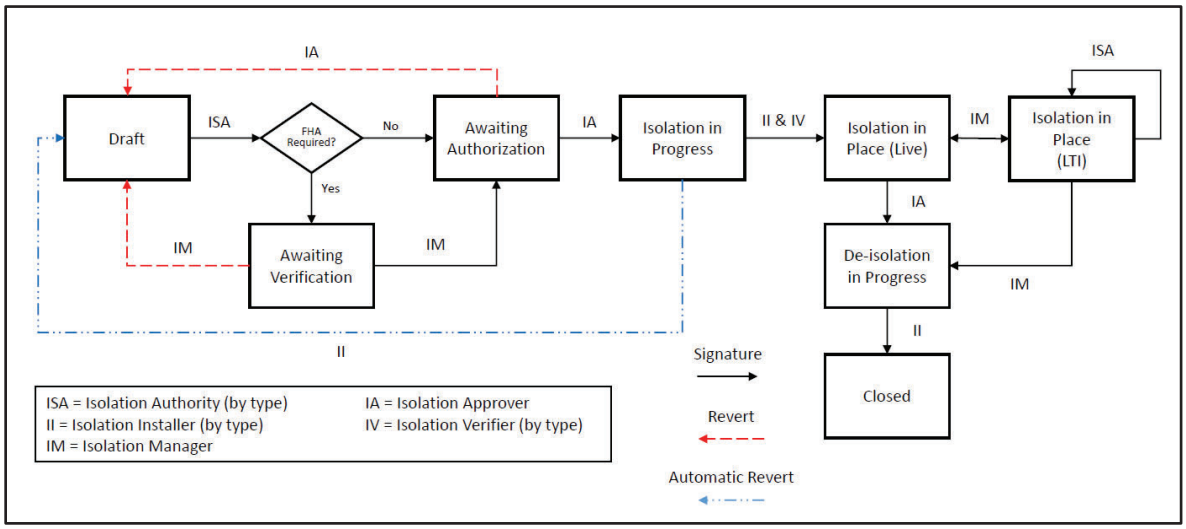
5.2 Isolation Confirmation Certificate (ICC)

This section covers the processes and Application rules for group isolations:

a. **Creating** an ICC
b. **Approving** an ICC
c. **Executing** an ICC
d. **Closing** an ICC
e. **Amending** an ICC

For more information on the roles responsible for transitioning workflows in the Digital Control of Work application, refer to Appendix A – Digital Control of Work Roles and Responsibilities.

For more information on the workflow icons shown in the Digital Control of Work application, refer to Appendix B - Workflow Icons for CHE.



5.2.2 Creating an ICC

ICCs can be created from scratch, from a copy of an existing ICC or from an ICC Template.

The Isolation Authority is Responsible for:

- Completing the ICC.
- Confirming compliance with standard isolation requirements.

In the case where FHA is required for a non-standard isolation:

- Selecting the reason for non-standard isolation on the ICC.
- Ensuring the FHA Team Members complete and sign the FHA.
- Ensuring the FHA Approver reviews and signs the FHA.
- Completing the self-declaration to advance the ICC workflow to the next state.
- Signing the ICC, with comprehension of the responsibilities listed.

The Isolation Manager is Responsible for:

- Reviewing the ICC and the approved FHA.
- Signing the ICC, with comprehension of the responsibilities listed.
- Reverting the ICC to the previous state (Draft) for revisions and more clarity if required, with comments in place.

DCoW Application Rules:

- Identifying the key securing system to be listed on the ICC.
- Confirming each individual isolation form meets the corresponding requirements.

The ICC form can track activities (Actions) without the need for an Isolation Verifier.

Actions are signed by an Isolation Approver and do not carry over to the De-Isolation scheme.

When creating an ICC and an FHA is not required, the state will change from:

- Draft to Awaiting Authorization by the Isolation Authority.

When creating an ICC and an FHA is required, the state will change from:

a. Draft to Awaiting Verification by the Isolation Authority.
b. Awaiting Verification to Awaiting Authorization by the Isolation Manager.

When reverting an ICC, the state will change from:

- Awaiting Verification to Draft by the Isolation Manager.

5.2.3 Approving an ICC

Created ICCs can be approved or reverted back to Draft by the Isolation Approver.

The Isolation Approver is Responsible for:

- Reviewing the ICC with the Isolation Authority, Isolation Installer, and Isolation Verifier for completeness and joint understanding of the isolation requirements.
- Reviewing the FHA for completeness and assurance that controls are in place to safely perform isolation when applicable.
- Completing the self-declaration to advance the ICC workflow to the next state.
- Reverting the ICC to the previous state for revisions and more clarity if required with comments.
- Signing the ICC, with comprehension of the responsibilities listed.

DCoW Application Rules:

- Ensuring that if an FHA is required, it is in the Approved state and attached.
- For a phased isolation approach, the Isolation Approver can approve all or specific isolation points, allowing only those isolation points that are required to be installed and verified.
- The Isolation Verifier can transition the ICC to the Isolation in Place (Live) from the Awaiting Authorization state if no new isolation points were added to the ICC when the ICC was reverted to the Draft state due to one or more isolation points being unable to isolate (UTI).

When approving an ICC, the state will change from:

- Awaiting Authorization to Isolation in Progress by the Isolation Approver.

When reverting an ICC, the state will change from:

- Awaiting Authorization to Draft by the Isolation Approver.

5.2.4 Executing an ICC

Approved ICCs can be executed or reverted back to Draft.

The Isolation Installer by Type* is Responsible for:

- Reviewing the applicable isolation points on the ICC.
- Printing the isolation tags (Where applicable).
- Confirming each isolation point on the ICC.
- Signing the ICC, with comprehension of the responsibilities listed.

In the case where isolation points cannot be isolated:

- Identifying isolation points as Unable to Isolate (UTI).
- Signing the ICC to confirm the isolation points cannot be isolated.
- Reverting the ICC to the previous state for revisions and more clarity if required, with comments.

The Isolation Verifier by Type* is Responsible for:

- Verifying the applicable isolation points on the ICC.
- Verifying each isolation point on the ICC to transition the ICC to the Isolation in Place (Live) state.
- Signing the ICC, with comprehension of the responsibilities listed.

The Isolation Verifier is Responsible for:

- Verifying all isolation points on the ICC are correctly installed and verifying the individual isolation points are secured.
- Completing the self-declaration to advance the ICC workflow to the next state.
- Signing the ICC with comprehension of the responsibilities listed.

The Isolation Manager is Responsible for:

- Entering a comment to explain reason for moving to the Isolation in Place (LTI) state.
- Ensuring the FHA Team Members sign the FHA, if applicable.
- Approving the FHA for non-standard isolations.
- Completing self-declaration confirming authorization to advance the ICC workflow to the next state.
- Signing the ICC, with comprehension of the responsibilities listed.

DCoW Application Rules:

- Ensuring that if an FHA is required, it is in the Approved state and attached.
- All attached Work Permits must be in the Closing or Closed state.
- When an ICC is in the Isolation in Place (Live) state, the ICC can be transitioned in and out of the Isolation in Place (LTI) state (refer to section 5.4 Long Term Isolation).

When executing an ICC, the state will change from:

- Isolation in Progress to Isolation in Place (Live) when:
  - The Isolation Installer by Type* installs the isolation.
  - The Isolation Verifier by Type* verifies the isolation points.
  - The Isolation Verifier completes verification of **all** isolation points and completes the ICC self declaration.
- Isolation in Progress to Draft by the Isolation Installer by Type* if unable to isolate (UTI) or if changes are required. (Verifier can also revert to ICC to Draft in the application if required)
- Isolation in Place (Live) to Isolation in Place (LTI) by the Isolation Manager for long term isolation.
- Isolation in Place (LTI) to Isolation in Place (Live) by the Isolation Manager.

Note: by Type* includes process/mechanical, electrical, blind/blank and cross boundary/cascading.

5.2.5 Closing an ICC

Executed ICCs can be closed.

The Isolation Approver is Responsible for:

- Selecting the applicable isolation points to be de-isolated.
- Completing the self-declaration to advance the ICC workflow to the next state.
- Confirming the isolation is ready to be de-isolated and the Isolation Installer is ready to perform the de-isolation tasks.
- Entering comment(s) to explain reason for moving to the De-isolation in Progress state.
- Signing the ICC, with comprehension of the responsibilities listed.

The Isolation Manager is Responsible for:

- Entering comment(s) to explain reason for moving to the De-isolation in Progress state.
- Completing the self-declaration to advance the ICC workflow to the next state.
- Signing the ICC, with comprehension of the responsibilities listed.

The Isolation Installer by Type* is Responsible for:

- Reviewing the applicable isolation points on the ICC.
- Confirming de-isolation of individual isolation points (FHA automatically closes at this point, if applicable).
- Signing the ICC, with comprehension of the responsibilities listed.

DCoW Application Rules:

- All attached Work Permits must be in the Closing or Closed state.
- Review and audit periods are cancelled when ICC transitions out of the Isolation in Place (LTI) state.
- All applicable documentation should be attached before closing the ICC (cannot be attached in the application once closed).

Recommendation for the Isolation Authority and area operations group to:

- Complete a walkdown of the isolation and associated points to confirm the equipment or system is ready to be de-isolated.
- Discuss with the Permit Receiver and other maintenance groups that all permitted work is complete.

When preparing to close an ICC, the state will change from:

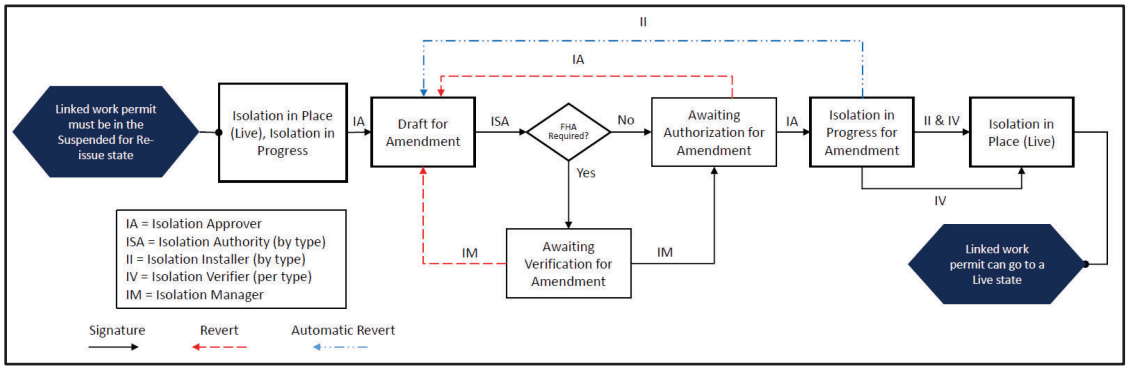
- Isolation in Place (Live) to De-isolation in Progress by the Isolation Approver.
- Isolation in Place (LTI) to De-isolation in Progress by the Isolation Manager.

When closing an ICC, the state of the ICC will change from:

- De-isolation in Progress to Closed by the Isolation Installer by Type*.

5.2.6 Amending an ICC

Amending an ICC allows for isolation points to be added, removed, or edited at any point in the ICC workflow.



The Isolation Approver is Responsible for:

- Reviewing the ICC with the Isolation Authority, Isolation Installer, or Isolation Verifier to confirm the ICC requires an amendment.
- Signing the ICC, with comprehension of the responsibilities listed.
- Reviewing the amended ICC with the Isolation Authority, Isolation Installer, and Isolation Verifier for completeness and ensures there is a joint understanding of the isolation requirements.
- Reviewing the FHA for completeness and ensures controls are in place to safely perform isolation when the FHA is required.
- Signing the amended ICC, with comprehension of the responsibilities listed.
- Reverting the ICC to previous state for more clarity if required with comments to act upon.

The Isolation Installer by Type* is Responsible for:

- Amending the ICC to add, remove or edit isolation points.
- Confirming compliance with standard isolation requirements.
- Signing the amended ICC, with comprehension of the responsibilities listed.
- Reviewing the amended isolation points on the ICC.
- Printing insolation tags for new isolation points.
- Signing the ICC to confirm amended individual isolation points.

The Isolation Manager is Responsible for:

- Reviewing the amended ICC and the approved FHA.
- Signing the amended ICC, with comprehension of the responsibilities listed.
- Reverting the ICC to previous state for more clarity if required, with comments to act upon.

The Isolation Verifier by Type* is Responsible for:

- Verifying the amended isolation points on the ICC.
- Signing the amended ICC, with comprehension of the responsibilities listed.

In the case where unable to isolate:

- Identifying isolation points as UTI.
- Signing the amended ICC to confirm the isolation points cannot be isolated.

The Isolation Verifier is Responsible for:

- Verifying all isolation points on the ICC are independently installed and verified.
- Completing the self-declaration authorization to advance the workflow to the next state.
- Signing the ICC to return to Live State with comprehension of the responsibilities listed.

DCoW Application Rules:

- Attached Work Permits cannot be in the Issued, Re-Issued, Re-Issued for Test, Live, Live for Test, Awaiting Activation or Overdue states before amending an ICC. Once the ICC has progressed through the Amend ICC workflow, the ICC transitions back to the Isolation in Place (Live) state and associated Work Permits can be re-issued against the ICC and field work can continue.
- An FHA can be added to the amended ICC as required by any Isolating Authority (e.g. Electrical, Process/Mechanical, etc.).
- If an FHA is required, the FHA must be approved by at least two FHA Team Members and the FHA must be in the Approved state for an ICC to enter the Live state.

When preparing to amend an ICC, the state will change from:

- Isolation in Place (Live) to Draft for Amendment by the Isolation Approver.
- Isolation in Progress to Draft for Amendment by the Isolation Approver.

When preparing to authorize amendment of an ICC, the state will change from:

- If FHA is not required:
  a. Draft for Amendment to Awaiting Authorization for Amendment by the Isolation Authority by Type*.
- If FHA is required:
  a. Draft for Amendment to Awaiting Verification for Amendment by the Isolation Authority by Type*.
  b. Amendment to Awaiting Verification to Awaiting Authorization for Amendment by the Isolation Manager.

When authorizing amendment of an ICC, the state will change from:

- Awaiting Authorization for Amendment to Isolation in Progress for Amendment by the Isolation Approver.

When implementing amendment to an ICC, the state will change from:

- Isolation in Progress for Amendment to Isolation in Place (Live) when:
  - The Isolation Installer by Type* installs the isolation.
  - The Isolation Verifier by Type* verifies the isolation points.
  - The Isolation Verifier completes verification of **all** isolation points and completes ICC self-declaration.
- Isolation in Progress for Amendment to Isolation in Place (Live) by the Isolation Verifier if no changes are required.
- Isolation in Progress for Amendment to Draft for Amendment by the Isolation Installer by Type* if unable to isolate (UTI) or if changes are required.

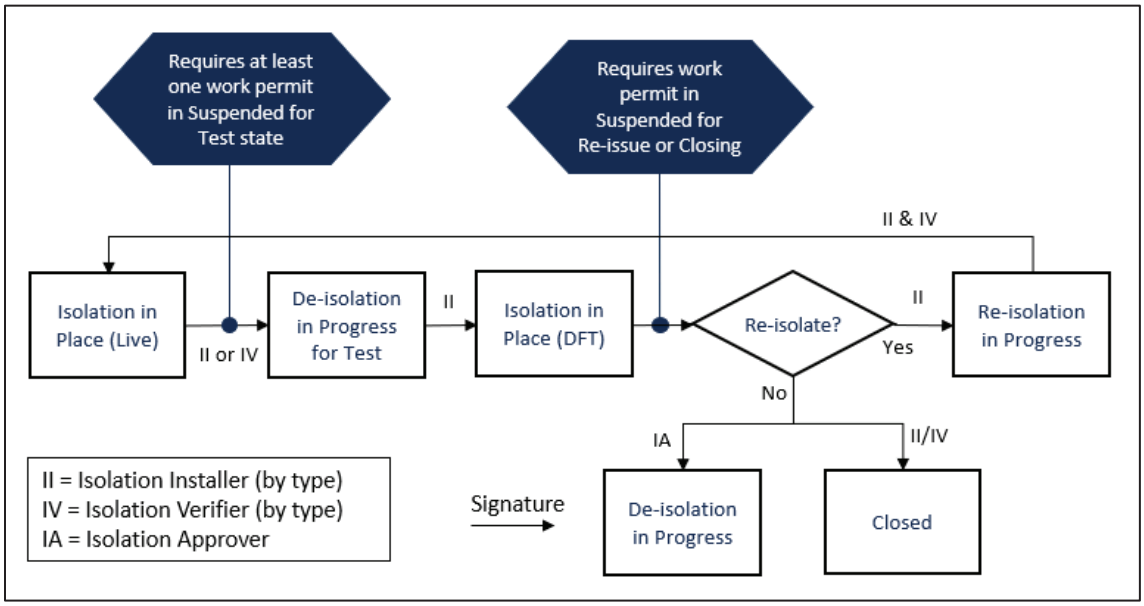
When reverting an ICC, the state will change from:

- Awaiting Verification for Amendment to Draft for Amendment by the Isolation Manager.
- Awaiting Authorization for Amendment to Draft for Amendment by the Isolation Approver.

5.3 De-isolation

5.3.1 De-Isolate for Test

This section covers the processes and Application rules for de-isolating isolation points for test. This process occurs in parallel with the Suspend Work Permit for Test workflow (refer to section 4.3.2).



The Isolation Installer or Isolation Verifier by Type* is Responsible for:

- Reviewing the applicable isolation points to be de-isolated.
- Ensuring there is one attached Work Permit in the Suspended for Test state, and no other attached Work Permits can be in the Live state.
- Signing the ICC to approve the de-isolation for test of individual isolation points.
- Confirming all isolation points on the ICC are de-isolated.
- Signing the ICC to confirm the de-isolation of individual isolation points.
- Ensuring all attached Work Permits are in the Closing or Closed state.
- Signing the ICC to approve closing.

The Isolation Approver is Responsible for: (Work Scope is complete and equipment is ready for return to service)

- Reviewing the applicable isolation points to be de-isolated.
- Ensuring all attached Work Permits are in the Closing or Closed state.
- Signing the ICC to approve closing.

The Isolation Installer by Type* is Responsible for:

- Reviewing the applicable isolation points on the ICC.
- Printing isolation tags.
- Signing the ICC to confirm individual isolation points.

In the case where work scope and/or de-isolation for test is not complete:

- Reviewing the ICC with the Isolation Verifier for completeness and ensuring there is a joint understanding of the re-isolation requirements.
- Ensuring there is one attached Work Permit in the Suspend for Re-Issue, Suspend for Emergency, Closing or Closed State.
- Signing the ICC to confirm the re-isolation of individual isolation points.

The Isolation Verifier by Type* is Responsible for:

- Verifying the applicable isolation points on the ICC.
- Signing the ICC to verify individual isolation points.

The Isolation Verifier is Responsible for:

- Ensuring all isolation points on the ICC are independently installed and verified.
- Completes the self-declaration and signs the ICC.

DCoW Application Rules:

- When the ICC is in the Isolation in Place (DFT) state, the Permit Issuer can re-issue, receive, and approve the attached Work Permits.
- When the ICC is in the Isolation in Place (DFT) state, workers can re-energize the equipment or system to perform testing and Work Permits can be issued to support these activities.

Note: Isolation Installer or Isolation Verifier should determine when the work scope related to the de-isolation for test is complete and collaborate with the Permit Issuer or Permit Approver to confirm that all permitted work and other testing is complete prior to advancing the ICC workflow.

- If the ICC is no longer required and can be closed, the isolation points not part of the de-isolation for test can be approved for de-isolation and the entire ICC closed along with any attached Work Permits (refer to section 5.2.4 Closing an ICC).
- If the isolation is no longer required and all isolation points on the ICC were de-isolated to perform the de-isolate for test, the Isolation Installer or Isolation Verifier can close the ICC.
- Isolation Installer and Isolation Verifier can re-isolate all or just one of the isolation points that was de-isolated but cannot alter the ICC. If changes are required to the isolation points, they must be completed by amending the ICC when it is returned to the Isolation in Place (Live) state (refer to section 5.2.5 Amending an ICC).

When preparing an ICC to de-isolate for test, the state will change from:

a. Isolation in Place (Live) to De-isolation in Progress for Test by the Isolation Installer by Type* or the Isolation Verifier by Type*.

b. De-isolation in Progress for Test to Isolation in Place (DFT) by the Isolation Installer * by Type.

When work scope is complete and equipment is ready for return to service, the state will change from:

- Isolation in Place (DFT) to De-Isolation in Progress by the Isolation Approver.
- Isolation in Place (DFT) to Closed by the Isolation Installer by Type* or the Isolation Verifier by Type*.

When work scope and/or de-isolation for test is not complete, the state will change from:

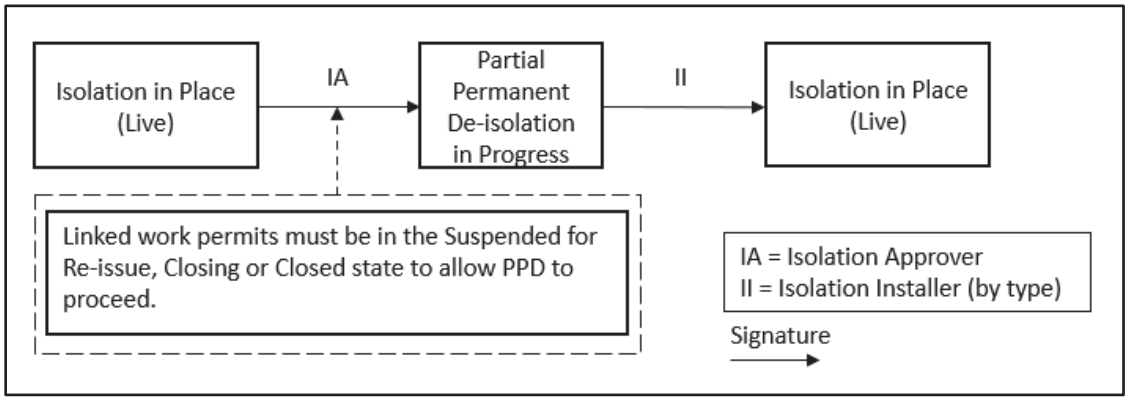
- Isolation in Place (DFT) to Re-isolation in Progress by the Isolation Installer by Type*.

When preparing for re-isolation of an ICC, the state will change from:

- Re-Isolation in Progress to Isolation in Place (Live) when:
  - The Isolation Installer by Type* completes review of isolation point on the ICC and signs the ICC to confirm each isolation point.
  - The Isolation Verifier by Type* verifies the isolation points on the ICC and signs the ICC to verify each isolation point.
  - The Isolation Verifier ensures all isolation points on the ICC are independently installed and verified and signs the ICC.

5.3.2 Partial De-isolation

A partial permanent de-isolation (PPD) may be required to conduct a phased de-isolation to return a portion of a system or equipment to service.



The Isolation Approver is Responsible for:

- Reviewing the applicable isolation points to be de-isolated.
- Completing the self-declaration authorization to advance the workflow to the next state.
- Signing the ICC with comprehension of the responsibilities listed.

The Isolation Installer by Type* is Responsible for:

- Reviewing the applicable isolation points to be de-isolated.
- Updating the ICC for de-isolated points if required.
- Signing the ICC to approve the de-isolation for test of individual isolation points.

Note: It is recommended that the Isolation Authority and area operations group complete a walkdown of the isolation and associated points for de-isolation to confirm the equipment or system is ready to be partially de-isolated.

The Isolation Installer is Responsible for:

- Ensuring all active work is stopped and no personal or department locks are on the key securing system.

DCoW Application Rules:

- Attached Work Permits must be in the Suspended for Re-Issue, Closing, or Closed state before amending an ICC.
- Once the ICC has returned to the Isolation in Place (Live) state, all attached Work Permits can be re-issued, received, and re-approved to allow work to proceed.
- If the Isolation Installer, Isolation Verifier, or Isolation Approver requires additional updates to the ICC once partially de-isolated, the ICC can be amended to have isolation points re-added or edited (refer to section 5.2.5 Amending an ICC).

Note: Amending an ICC by removing an isolation point will only remove the point from the isolation sequence, not the de-isolation sequence. If the same point is to be removed from the de-isolation sequence, it will need to be addressed there as well.

When performing a permanent partial de-isolation, the state of the ICC will change from:

- Isolation in Place (Live) to Partial Permanent De-Isolation in Progress by the Isolation Approver.
- Partial Permanent De-Isolation in Progress to Isolation in Place (Live) by the Isolation Installer by Type*.

5.4 Long Term Isolation

Long Term Isolations (LTI) are described in Section 2.27, Control of Hazardous Energy-OEMS Best Practice MCW (BP18.2). The Long Term Isolation process is used to monitor equipment that is isolated for extended periods of time, as outlined within the site SWP.

Reasons for completing a Long Term Isolation may include:

- Waiting on the material to complete a repair
- Equipment is not ready or needed for service
- Repair requires a turnaround/shutdown

The steps for executing and closing a LTI are the same as an ICC, refer to section 5.2.3 Executing an ICC and section 5.2.4 Closing an ICC.

The Isolation Authority is Responsible for:

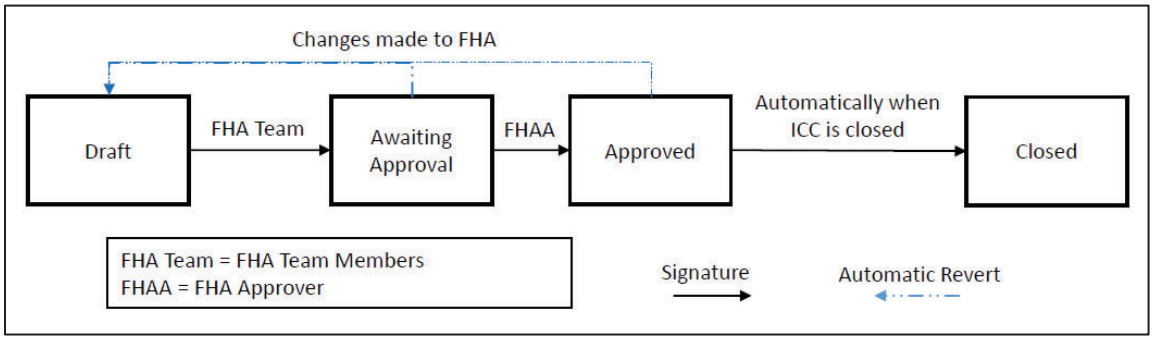
- Completing the review of the isolation every 30 days (where outlined as expectation for the site)
- Completing the review of the isolation every 90 days, including:
  - Performing an LTI Quality Assessment in the Enablon DCoW application.
  - Reviewing the ICC for completeness.
  - Field validating isolation points, isolation devices, and verifying zero energy.
  - Re-installing isolation tags if required.
  - Ensuring there is physical access to the isolation points.
  - Checking dead legs created by the isolation are identified and mitigated.
  - Ensuring heat protection is in service.

DCoW Application Rules:

- FHA is recommended to record the risk of having equipment isolated for an extended period.
- Review and audit periods are cancelled when ICC transitions out of the Isolation in Place (LTI) state.
- Isolation Manager has to approve moving an Isolation in Place (Live) isolation to Isolation in Place (LTI).

5.5 Formal Hazard Assessment (FHA)

A Formal Hazard Assessment (FHA) is a step-by-step analysis of specific activities associated with the work scope. An FHA should be used to identify and manage hazards and controls related to a work scope. (previously referred to as Job Hazard Analysis (JHA) or Job Safety Analysis (JSA)).



An FHA is called for as a hazard management methodology in the Work Permit and CHE processes.

The FHA Team Members are Responsible for:

- Participating in the FHA.
- Reviewing the FHA for completeness.
- Signing the FHA.

The FHA Approver is Responsible for:

- Reviewing the FHA for completeness.
- Signing the FHA.

DCoW Application Rules:

- The FHA must be approved by at least two FHA Team Members. Signatures are invalidated if FHA Team Members, FHA Approver, and/or hazards or controls are edited after signing.
- Any changes to the FHA once it has been approved will require re-approval by the FHA Team Members and the FHA Approver. The FHA automatically reverts to the Draft state.
- When the FHA is in the Approved state, the Isolation Manager can move the ICC to the Awaiting Authorization, Draft, Awaiting Authorization for Amendment or Draft for Amendment states.
- FHA automatically closes when the Isolation Installer completes the de-isolation (FHA moves from the Approved state to the Closed state).

5.6 Field Tagging

Isolation tags can be printed from the Digital Control of Work application and should be applied as close as possible to isolation points in the field for applicable sites as outlined in the site SWP.

Each tag has a QR code that links to the specific isolation point on the ICC. This feature is only available if scanned from within the Digital Control of Work application.

Isolation tags can be ordered in SAP using the material master numbers provided below.

Tags cannot be altered and are only compatible with the tag printers that support the Digital Control of Work application:

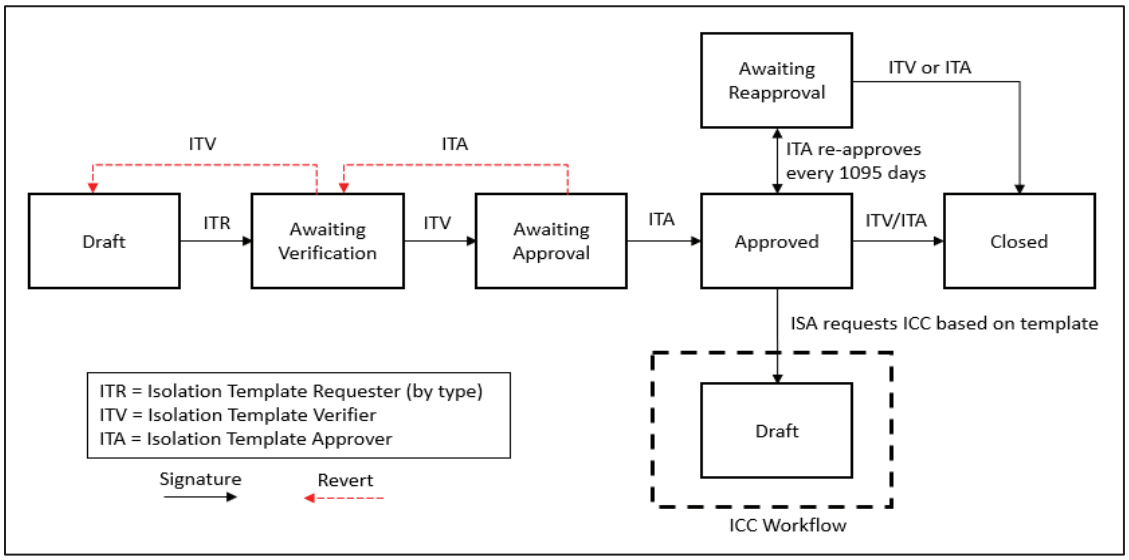
- Mechanical/Process – Blue (MM #1000574444)
- Electrical – Red (MM #1000574442)
- Blind/Blank – Yellow (MM #1000574443)
- Cross Boundary/Cascading – Blue (MM #1000574444)

Isolation tags include the following information:

- Bar Code
- Point No.
- ICC No.
- Type
- Isolation Point
- Isolation State
- Comments

5.7 ICC Template

ICC Templates can be created from scratch, from a copy of a closed ICC Template, or from an existing ICC. Once the ICC Template is approved, it can be used to create an ICC.



The Isolation Template Requester by Type* is Responsible for:

- Completing the ICC Template form for a pre-determined isolation plan.
- Signing the ICC Template with comprehension of the responsibilities listed.

The Isolation Template Verifier is Responsible for:

- Reviewing the ICC Template for completeness.
- Requesting a counter signature as an additional level of approval if required.
- Signing the ICC Template with comprehension of the responsibilities listed.
- Reverting the ICC to the previous state for revisions and more clarity if required, with comments.

The Isolation Template Approver is Responsible for:

- Reviewing the ICC Template for completeness and validity.
- Requesting a counter signature as an additional level of approval if required.
- Signing the ICC Template with comprehension of the responsibilities listed.
- Reverting the ICC to the previous state for revisions and more clarity if required, with comments.

DCoW Application Rules:

- ICC Template validity of 1095 days begins at the Approved state.
- If an ICC is attached to a Work Permit Template, the Work Permit Template must be in the Closed state to close the ICC Template.
- FHAs are not completed when creating an ICC Template.

When developing an ICC Template, the state will change from:

a. Draft to Awaiting Verification by the Isolation Template Request by Type*.

b. Awaiting Verification to Awaiting Approval by the Isolation Template Verifier.

c. Awaiting Approval to Approved by the Isolation Template Approver.

d. Approved to Closed by the Isolation Template Approver/Verifier.

When reverting an ICC Template, the state will change from:

- Approved to Awaiting Reapproval by the Isolation Template Approver.
- Awaiting Reapproval to Approved by the Isolation Template Approver.
- Approved to Closed by the Isolation Template Approver/Verifier.

6. Critical System Defeat (CSD)

A process to manage the defeat of identified Critical Devices within a system. A device or system identified by site as critical is considered to be defeated when its intended function is intentionally disabled, bypassed, suppressed, or it is found to be inoperative.

6.1 CSD Types

The following table outlines the four CSD types and some examples of devices and/or systems of each. Sites will designate devices requiring management of their defeat in the site SWP.

CSD Type	Some Examples of Critical Devices and Systems
Electrical	• Uninterrupted power supply • Electrical protection equipment • Electric heat tracing
Mechanical	• Vibration monitoring devices • Over-speed trip devices • Pressure relief or vacuum breaker devices • Devices associated with Over Pressure protection • Thermal relief devices • Emergency block valves • Rupture disks • Motor Operated Valves (MOVs) installed for emergency isolation • Emergency de-pressure valves. • Heat Tracing • Mobile Equipment safety devices • Compromised PSVs.
Safety	• Fixed gas detection (hydrogen sulfide, hydrocarbon, carbon monoxide, hydrofluoric acid, oxygen, etc.) • Fire suppression and monitoring systems (fire hydrants, fire water pumps and deluge systems, etc.) • Communication systems • Eye wash and safety showers • Manual emergency shutdown systems
Instrument/Process	• Limit switches • Safety instrumented system (SIS) equipment (may include heat trace supporting the functionality of SIS systems) • Critical process analyzers • Distributed control systems (DCS) • Critical alarm systems

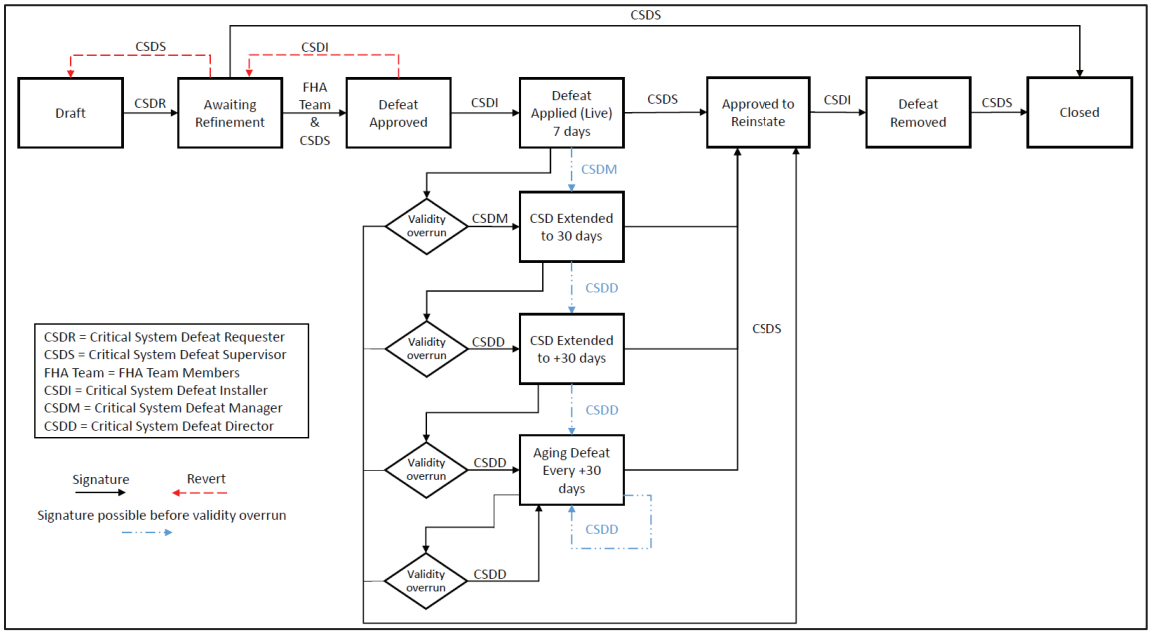
6.2 CSD Process

This section covers the processes and Application rules for CSD:

a. **Requesting** a CSD
b. **Approving** a CSD
c. **Applying** a CSD
d. **Extending** a CSD
e. **Closing** a CSD

For more information on the roles responsible for transitioning workflows in the Digital Control of Work application, refer to Appendix A – Digital Control of Work Roles and Responsibilities.

For more information on the workflow icons shown in the Digital Control of Work application, refer to Appendix C – Workflow Icons for CSD.



6.2.2 Requesting a CSD

A CSD can be requested by the CSD Requester.

The CSD Requester is Responsible for:

- Completing the CSD form.
- Identifying CSD dependencies and attaches supporting documentation.
- Attaching dependent Work Permits that support the CSD.
- Identifying FHA Team Members.
- Signing the CSD, with comprehension of the responsibilities listed.
- Re-signing the CSD form if any fields (including attachments) in the CSD form are edited after the initial signature.

DCoW Application Rules:

- A Formal Hazard Analysis (FHA) must be performed for every CSD request.
- FHA must have at least two FHA Team Members. Additional FHA Team Members can be added to the FHA if necessary.

Note: A professional engineer (P.Eng) is recommended as an FHA member for defeats of pressure relief devices.

When requesting a CSD, the state will change from:

- Draft to Awaiting Refinement by the CSD Requester.

6.2.3 Approving a CSD

A requested CSD can be approved by the CSD Supervisor.

The CSD Supervisor is Responsible for:

- Reviewing the CSD form for completeness.
- Attaching dependent Work Permits that support the CSD.
- Ensuring the FHA Team Members sign the FHA and identify any additional FHA members if required (the FHA must be approved prior to the Approved state).
- Completing the self-declaration authorization to advance the workflow to the next state.
- Requesting additional level of approval such as CSD Manager or CSD Director based on level of Risk (Suncor Risk Matrix provides guidance on escalation for elevated risk).
- Signing the CSD, with comprehension of the responsibilities listed.
- Reviewing the CSD form to determine defeat is no longer required.
- Reverting the CSD to the previous state for revisions and more clarity if required, with comments.

Note: It is recommended that the CSD Supervisor consult with the control room operators prior defeats on DCS bypasses or alarms.

DCoW Application Rules:

- FHA must have at least two FHA Team Members. Additional FHA Team Members can be added to the FHA if necessary.
- The CSD Supervisor and the CSD Installer must be separate individuals.
- CSDs do not expire while in the Defeat Approved state.

When approving a CSD, the state will change from:

a. Awaiting Refinement to Defeat Approved by the CSD Supervisor.

b. Defeat Approved to Closed by the CSD Supervisor.

When reverting a CSD, the state will change from:

- Awaiting Refinement to Draft by the CSD Supervisor.

6.2.4 Applying a CSD

An approved CSD can be applied by the CSD Installer.

The CSD Installer is Responsible for:

- Reviewing the CSD form for completeness.
- Ensuring all pre-requisite controls identified on the FHA are completed before the CSD is applied.
- Signing the CSD, with comprehension of the responsibilities listed.
- Reverting the CSD to the previous state for revisions and more clarity if required with comments.

DCoW Application Rules:

- A CSD goes into an Overdue state after 7 days from time of application.
- A CSD in the Overdue state can be closed or extended.
- The CSD Supervisor and the CSD Installer must be separate individuals.
- A CSD attached to a Work Permit must be in the Live state before the Work Permit can enter the Live state.

When applying the CSD, the state will change from:

- Defeat Approved to Defeat Applied (Live) 7 Days by the CSD Installer.

When reverting the CSD, the state will change from:

- Defeat Approved to Awaiting Refinement by the CSD Installer.

6.2.5 Extending a CSD

An applied CSD can be extended by the CSD Manager or CSD Director.

The CSD Manager is Responsible for:

- Extending a CSD beyond 7 days, up to 30 days.
- Reviewing the CSD form with the CSD Installer and/or CSD Supervisor for completeness and ensuring there is a joint understanding for the CSD extension.
- Entering a comment to provide a reason for extending the CSD.
- Ensuring FHA Team Members re-sign the FHA if updated during the extension approval.
- Completing the self-declaration and signing the CSD form to confirm CSD will be applied for up to 30 days.

The CSD Director is Responsible for:

- Extending a CSD beyond 30 days, and every subsequent 30 days.
- Reviewing the CSD form with the CSD Manager or CSD Supervisor for completeness and ensuring there is a joint understanding for the CSD extension.
- Entering a comment to provide a reason for extending the CSD.
- Ensuring FHA Team Members re-sign the FHA if it was updated during the extension approval.
- Completing the self-declaration and signing the CSD form to confirm a CSD will be applied for an additional 30 days.
- Informing and receiving approval from the Site Senior Operations Leader for any CSD extended longer than 30 days.

DCoW Application Rules:

- If the CSD goes into an overdue state after 30 days, the CSD Director must sign the CSD form to extend the CSD or the CSD Supervisor must sign the CSD form to commence closure of the CSD.
- An FHA must have at least two FHA Team Members. Additional FHA Team Members can be added as necessary.
- Updates to the FHA during CSD extensions will require re-signing by the FHA Team Members.

When extending a CSD, the state will change from:

a. Defeat Applied (Live) 7 days/Validity Overrun to CSD Extended to 30 Days by the CSD Manager.
b. CSD Extended to 30 days/Validity Overrun to CSD Extended to +30 Days by the CSD Director.
c. CSD Extended to +30 days/Validity Overrun to Aging Defeat Every +30 Days by the CSD Director.

6.2.6 Closing a CSD

The CSD Supervisor is Responsible for:

- Reviewing the CSD form with the CSD Installer for completeness and ensuring there is a joint understanding for reinstating the CSD.
- Confirming the CSD is ready for reinstatement and removing controls identified in the FHA.
- Entering a comment to provide a reason for approval to reinstate the device or system.
- Signing the CSD, with comprehension of the responsibilities listed.
- Entering a comment to confirm closing the CSD.
- Completing the self-declaration.

Note: It is recommended that the CSD Installer consult with the control room operators prior to closing defeats on DCS bypasses or alarms.

The CSD Installer is Responsible for:

- Reviewing the CSD form for completeness.
- Signing the CSD, with comprehension of the responsibilities listed.

When preparing to close a CSD, the state will change from:

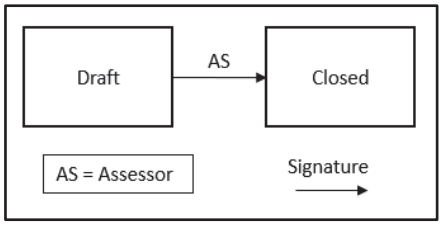
- Defeat Applied (Live) 7 Days to Approved to Reinstate by the CSD Supervisor.
- CSD Extended to 30 Days to Approved to Reinstate by the CSD Supervisor.
- CSD Extended to +30 Days to Approved to Reinstate by the CSD Supervisor.
- Aging Defeat Every +30 Days to Approved to Reinstate by the CSD Supervisor.
- Validity Overrun to Approved to Reinstate by the CSD Supervisor.

When closing a CSD, the state will change from:

a. Approved to Reinstate to Defeat Removed by the CSD Installer.
b. Defeat Removed to Closed by the CSD Installer.

7. Assessments

Assessments are available in the Permit to Work, Isolation Management and Critical System Defeat modules to review quality, consistency, and completeness. Refer to site specific procedures and practices regarding field verifications, communication between parties, and intervention. The workflows are the same for all modules.



The Assessor is responsible for:

- Requesting an assessment in the applicable module.
- Completing the assessment form.
- Adding general assessment comments.
- Completing the self-declaration.
- Signing the assessment certificate.

General DCoW Application Rules:

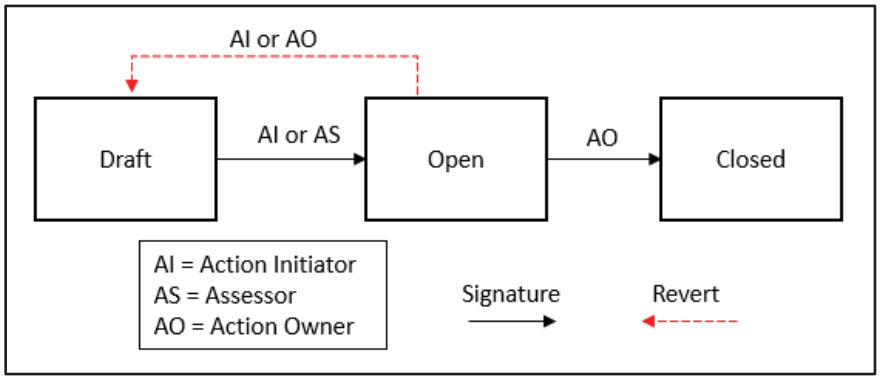
- Only one Assessor can be assigned to an assessment. Names of additional team members may be recorded in the General Comments section.
- There is no limit to the number of assessments on a certificate.
- Assessments completed on hard copy must be entered into the Digital Control of Work application for tracking and closeout. Once entered, the hard copy can be discarded.
- Assessments can be manually entered in the application.
- Assessments do not expire and will not prevent closure of any Digital Control of Work certificate.
- Assessments can be created for any Work Permit, ICC, or CSD within the Assessments module or directly from the applicable certificate.
- The Assessor can create follow-up actions via the Actions module to address assessment findings.
- Work Permit Assessments can be completed for permits in the Live, Live (Awaiting Activation), Live (DFT), and Closed states.
- CHE Assessments can be completed for active ICCs in the Isolation in Place (Live), Isolation in Place (DFT), and Long Term Isolation (LTI) states.
- CSD Assessments can be completed on live CSDs in the Defeat Approved to Defeat Removed states.

When completing an Assessment, the state will change from:

- Draft to Closed by the Assessor.

7.1 Assessment Actions

Actions are used to assign follow-up tasks. Actions in the application do not replace or supersede reporting or incident management processes.



The Action Initiator/Assessor is responsible for:

- Requesting an action in the applicable module.
- Completing the Action form.
- Assigning/identifying an Action Owner and setting a due date.
- Approving the action.
- Signing the certificate.

Note: Action Owners should be informed of the identify actions separate from the Digital Control of Work application (e.g. voice, phone, etc.).

The Action Owner is responsible for:

- Reviewing the action.
- Entering comments when the action is complete.
- Completing the self-declaration.
- Signing the action certificate.
- Reverting the action to the previous state for revisions and more clarity if required with comments.

When creating and completing an Action, the state will change from:

a. Draft to Open by Action Initiator/Assessor.

b. Open to Closed by Action Owner.

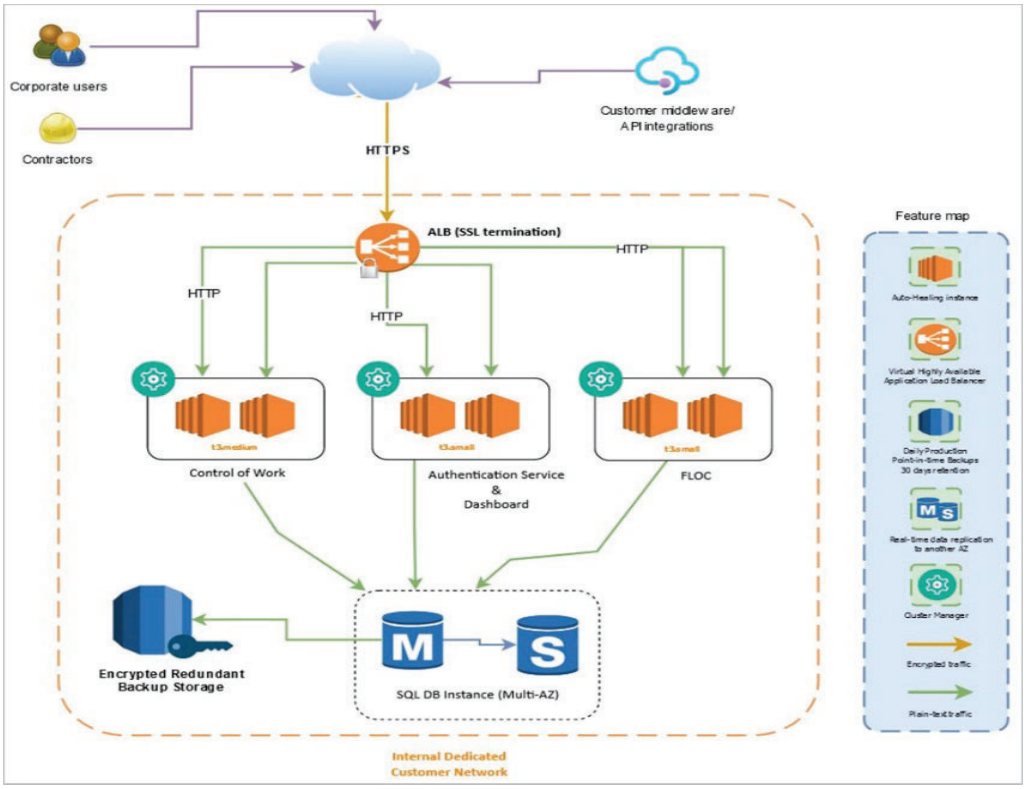
When reverting an Action, the state will change from:

- Open to Draft by Action Owner.

8. Data Management and Backup

Enablon hosts the Digital Control of Work app independently from the Suncor network. The Suncor Production site is in North America (US). Enablon guarantees quick restoration of all data in case of a disaster through auto-healing, daily backups, database replication, and failover to another data center.

The Digital Control of Work application can be accessed by any device connected to the internet.



Enablon Digital Control of Work Application Architecture

During updates, there is a period of read only access. Reasonable efforts will be made to minimize interruption by scheduling updates during off peak hours.

In the unlikely event the data center becomes inoperable, Enablon has managed backup services to provide regular backups of the infrastructure and implement a business continuity and disaster recovery plan aligned with the services that Suncor has subscribed to. The backup procedure is based on daily backups securely encrypted at rest. The default retention period is 30 days.

The Digital Control of Work application is a gold package with D&IT; data is also replicated to a different availability zone to ensure continuity in case of failure in one site. In case of a disaster, the timeline for recovery is:

- Return to Operations (RTO): within 8 hours
- Recovery Point Objective (RPO): 1 hour

Enablon's controls for their procedures follow ISO 27001 certification and SOC 2 audit.

Paper permits are available for self-serve ordering via West Canadian Digital Imaging. Checklists, Templates, and guidance for longer duration outages can be downloaded from the Digital Control of Work SharePoint page.
https://suncor.sharepoint.com/sites/EnterpriseControlofWork

Note: Sites should ensure printed versions of backup protocols, as well as paper permit, ICC and CSD templates are available and stored at site should an IT interruption limiting network access occur.

The Digital Control of Work application retains electronic Work Permits, ICCs, and CSDs indefinitely.

9. Appendix A - Digital Control of Work (DCoW) Roles and Responsibilities

The following table defines the roles used in the Digital Control of Work application and their responsibilities for the assessments and actions processes.

The typical site positions listed for each role are the positions that would typically perform the responsibilities at each site.

Role	Responsibilities
Action Initiator	• Creates actions to follow up with findings • Drafts actions based on findings from an existing assessment or can create action from new • Progresses action to Open state • Revert action
Action Owner	• Addresses open action items • Progresses action to Closed state • Revert action
Assessor	• Fills in fields within the assessment • Assigns actions
Blind/Blank Isolation Authority	• Completes ICC from new, copy or from template • Identifies requirements for an FHA if required
Blind/Blank Isolation Installer	• Confirms isolation point is in the described position and secured according to site specific practice during isolation phase • Confirms isolation point is in the described position and securing device removed during de-isolation phase • Manages amend and de-isolation for test processes
Blind/Blank Isolation Template Requester	• Drafts isolation templates based on predetermined work scope and isolation methods
Blind/Blank Isolation Verifier	• Verifies isolation point is in the described position and secured according to site specific practice during isolation phase • Manages the amend and de-isolation for test processes
Cross Boundary/Cascading Isolation Authority	• Completes ICC from new, copy or from template • Identifies requirements for an FHA if required
Cross Boundary/Cascading Isolation Installer	• Confirms isolation point is in the described position and secured according to site specific practice during isolation phase • Confirms isolation point is in the described position and securing device removed during de-isolation phase • Manages amend and de-isolation for test processes
Cross Boundary/Cascading Isolation Template Requester	• Drafts isolation templates based on predetermined work scope and isolation methods
Cross Boundary/Cascading Isolation Verifier	• Verifies isolation point is in the described position and secured according to site specific practice during isolation phase • Manages the amend and de-isolation for test processes

The current revision of this approved document is kept online. Printed and digital copies are uncontrolled.
Text in green are defined roles in the Roles and Responsibilities section.
Text in blue are states in the Digital Control of Work application.

Role	Responsibilities
CSD Director	• Approves CSD extensions for 30 days or more • Re-approves live CSDs every 30 days beyond the initial 30-day extension • Typical site positions may include: Operations Director, Operations General Manager, Offshore Installation Manager, Site Senior Operations Leader
CSD Installer	• Installs the CSD on the device or system • Removes the CSD on the device or system Typical site positions may include: Area Operator, Operator, Area Operating Authority, Area Operating Authority, performing authority, control room operator, Console Operator, Maintenance worker, vessel operator
CSD Manager	• Approves CSD extensions for 7 to 30 days Typical site positions may include: Operations manager, Operations leader, Operations superintendent, site manager, terminal manager, production/vessel lead, offshore installation manager
CSD Requester	• Submits a request for a CSD Typical site positions may include: Area Operator, Operator, Area Operating Authority, Area Operating Authority, control room operator, Console Operator, Operations Team Lead, Maintenance supervisor, Maintenance coordinator, Maintenance worker, fire system technician, performing authority
CSD Supervisor	• Approves CSDs for 0 to 7 days Typical site positions may include: Operations supervisor, Operations Team Lead, Operations superintendent, shift supervisor, day shift supervisor, control room operator, Area Operating Authority, lead operator, vessel operator, site wide lead, integrated operations lead
Digital Control of Work User	• Read only access: Views information within the Digital Control of Work application
Electrical Isolation Authority	• Completes ICC from new, copy or from template • Identifies requirements for a JHA if required
Electrical Isolation Installer	• Confirms isolation point is in the described position and secured according to site specific practice during isolation phase • Confirms isolation point is in the described position and securing device removed during de-isolation phase • Manages amend and de-isolation for test processes
Electrical Isolation Template Requester	• Drafts isolation templates based on predetermined work scope and isolation methods
Electrical Isolation Verifier	• Verifies isolation point is in the described position and secured according to site specific practice during isolation phase • Manages the amend and de-isolation for test processes
Isolation Approver	• Validates that the ICC conforms to CHE procedures • Approves isolation plans for field installation • Authorizes de-isolation Typical site positions may include: Operations supervisor, Operations superintendent, shift supervisor, Operations manager, energy isolation approver, Maintenance supervisor (in some cases for Electrical and Instrumentations (E&I), MEM), senior operator
Isolation Manager	• Approves non-standard and high-risk isolation tasks that require additional authorization

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Role	Responsibilities
Isolation Verifier	Typical site positions could include: Area Operator, Operator, Area Operating Authority, Area Operating Authority, E&I technician, MEM technician, technician, unit operator, operating authority, energy isolation establisher. Note: In locations with an approved receiver safing or personal isolation process, the Isolation Installer and the Isolation Verifier may be the same person who has the accountability of both roles.
Isolation Template Approver	• Approves isolation certificate template requests
Isolation Template Verifier	• Validates the isolation certificate template forms for completeness
FHA Approver	• Approves FHA for non-standard isolations
FHA Team Member	• Participates in identifying hazards and controls • Approves FHA Typical site positions may include: Operator, Operations manager, unit leader, control room operator, Console Operator, performing authority, Maintenance worker, Maintenance supervisor, engineer, EH&S representatives, third party specialists, EHS advisor.
Gas Tester	• Records gas tests on the Work Permit
Mass Approver	• Responsible for authorizing multiple Work Permits at one time. Able to mass sign Work Permits for authorization from Suspended or Revalidation states.
Mass Deleter	• Primarily an administrative function to remove obsolete, incomplete, unused Work Permits from the Draft state.
Mass Suspender	• Suspends multiple Work Permits for reasons of emergency or suspension for revalidation.
Permit Approver	• Reviews and approves Work Permits in the area of responsibility • Approves specific certificates and/or forms as required by the Work Permit Typical site positions could include: Area Operating Authority, operator, area operator, operating authority, equipment owner, Operations Team Lead, Operations Supervisor
Permit Extender	• Can approve a permit validity past 12 hours up to a maximum of 16 hours.
Permit Issuer	• Issues and Co-issues Work Permits • Fill in checklists Typical site positions could include: Area Operating Authority, operator, area operator, operating authority, equipment owner, permit coordinator, operations specialist, operations coordinator. Note: In some locations, the Permit Approver and the Permit Issuer may be the same person who has the accountability of both roles.
Permit Receiver	• Receives the Work Permit on behalf of a crew or team of workers • Fill in checklists • Typical site positions could include: Worker, technician, performing authority, contractor, Maintenance supervisor, lead hand, job lead, OMC.
Permit Requester	• Fills out the permit to reflect the scope of work being performed Typical site positions could include: worker, technician, performing authority, contractor, Maintenance supervisor, lead hand, Maintenance coordinator (MC), Operations Maintenance Coordinator (OMC), field coordinator, planner, Quality Assurance worker, engineer.

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Role	Responsibilities
Permit Template Approver	• Approves permit template requests • Validates permit template forms for completeness and quality
Permit Template Requester	• Drafts permit templates based on predetermined work scope
Permit Template Verifier	• Validates the permit template forms for completeness prior to moving to the Authorize state
Process/Mechanical Isolation Authority	• Completes ICC from new, copy or from template • Identifies requirements for a JHA if required
Process/Mechanical Isolation Installer	• Confirms isolation point is in the described position and secured according to site specific practice during isolation phase • Confirms isolation point is in the described position and securing device removed during de-isolation phase • Manages amend and de-isolation for test processes
Process/Mechanical Isolation Template Requester	• Drafts isolation templates based on predetermined work scope and isolation methods
Process/Mechanical Isolation Verifier	• Verifies isolation point is in the described position and secured according to site specific practice during isolation phase • Manages the amend and de-isolation for test processes
Routine Work Authorization Approver	• Reviews and approves RWAs in the area of responsibility
Routine Work Authorization Receiver	• Receives the RWA on behalf of a crew or team of workers
Routine Work Authorization Template Approver	• Approves RWA template requests • Validates RWA template forms for completeness and quality
Routine Work Authorization Template Requester	• Drafts RWA templates based on predetermined routine tasks
Routine Work Authorization Template Verifier	• Validates the RWA template form for completeness and confirms task is in pre-approved list of routine work tasks
Site Administrator	• Manages the Digital Control of Work application role assignment to individuals who perform control of work activities and require access to the Digital Control of Work application. • Verifies users have completed the required training prior to granting access to the Digital Control of Work application.
Work Pack Authorizer	• Authorizes Work Pack requests • Authorizes amendments to active Work Packs
Work Pack Requester	• Drafts Work Pack based on predetermined work scope • Links dependent Work Permits and isolations based on work scope • Manages and amends active Work Packs and facilitates updates to Work Permits and isolations within the Work Pack as required

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Text in green are defined roles in the Roles and Responsibilities section.
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10. Appendix B - Workflow Icons for CHE

Workflow Status	Icon	Workflow Status	Icon
Draft / Draft for Shutdown		Isolation in Place (Live)	
Draft for Amendment		Isolation in Place (LTI)	
Awaiting Verification		Isolation in Place (DFT)	
Awaiting Verification for Amendment		Re-isolation in progress	
Awaiting Authorization		De-isolation in Progress	
Awaiting Authorization for Amendment		Partial Permanent De-isolation in Progress	
Isolation in Progress		Closed	
Isolation in Progress for Amendment			

11. Appendix C - Workflow Icons for CSD

Workflow Status	Icon	Workflow Status	Icon
Draft		CSD extended to +30 days	
Awaiting Refinement		Aging Defeat Every +30 days	
Defeat Approved		Re-instate	
Defeat Applied		Defeat Removed	
CSD extended to 30 days		Closed	

12. Appendix D - Permit Lifetime

The following table shows the lifetime of each Work Permit type:

Work Permit Type	Lifetime (Days)
Cold Work Permit	30
Hot Work Spark Potential	7
Hot Work Open Flame	7
Breaking Containment	1
Confined Space Entry	14

*One day is 24 hours

Document Ownership and Approvals

MCoW Enterprise Process Owner (EPO) – Raj Batoo

MCoW Enterprise Process Lead (EPL) – Kent Lindholm

Enablon Digital Control of Work (DCoW) Subject Matter Expert – Alex Wong

Approval Name	Raj Batoo	Kent Lindholm
Approval Date	9/6/2024 | 9:35:25 AM MDT	9/5/2024 | 5:13:50 PM MDT
Approval Signature	DocuSigned by: Raj Batoo 2417B4A279F84D7...	Signed by: 99C29D253729498...