ConocoPhillips Canada

PRE-STARTUP SAFETY REVIEW (PSSR) PROCEDURE

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1.0 GENERAL

1.1 Purpose

The Pre-Start-up Safety Review (PSSR) shall confirm before the introduction of hazardous energy or chemicals that a change or facility is ready for safe start-up and operation. This includes verifying that:

- the system is implemented in accordance with approved design and completed risk assessments;
- required documentation, procedures, and training are complete and available; and
- the facility is in a safe condition for start-up.

The PSSR is the final step in the Management of Change (MOC) process prior to handover to Operations, confirming the system is constructed as designed and safe to operate. This procedure defines the requirements and accountabilities for executing the PSSR.

1.2 Scope

1.2.1 This Canada Engineering Standards and Specification (CESS) establishes the minimum requirements for PSSR for ConocoPhillips Canada (CPC) capital projects and Operations related projects.

1.2.2 This CESS applies to activities and operations where CPC is the Operator, as follows:

a. All MOCs executed on ConocoPhillips Canada assets that involve a physical change/modification in the asset. The requirement for a PSSR also applies to changes involving Automation. The PSSR checklist, specific to Automation only MOCs, is accessible in the SAP MOC Tool.
b. A PSSR must be completed before start-up of facilities modifications for a new well, including a redrill. The PSSR shall cover the changes in facilities modifications and operational conditions during the well start-up.
c. Others are covered in Section 2.0.

1.2.3 This CESS does not cover:

a. Start-up after a Turnaround shall follow the Certificate of Fitness (COF) procedure. The COF procedure is used to: confirm that Turnaround work scopes are complete, validate the system integrity, and deem the Isolation Group is operationally fit to resume process conditions. If a PSSR(s) falls within an Isolation Group, it will be completed prior to the COF. The COF process is outside the scope of this procedure.
b. The PSSR process is not applicable to any Replacement in Kind (RIK) changes which did not involve an MOC.

1.2.4 This CESS shall be used in conjunction with applicable codes, regulations, and ordinances, as noted below. Whenever a difference exists between this specification and the referenced codes and specifications, the most stringent requirements shall govern.

1.2.5 Any deviation from this CESS requires a specification deviation request to be completed and approved per the CPC Governance Standard for C-CPMS & Canada ESS Documents: ALL-A0A-00-000-GST-0001.

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1.3 Definition of Terms

1.3.1 "Owner" when used in this document shall mean CPC or designated representative.

1.3.2 "Vendor", "Equipment Supplier", "Seller", "Fabricator", or "Manufacturer" are synonymous and shall mean the organizations responsible for the detailed design and/or supply of the equipment or material covered by this document.

1.3.3 "Contractor" or "Engineering Contractor" shall mean the organization designated by CPC to be responsible for the engineering of the equipment.

1.3.4 "Purchaser" is a generic term to mean the Owner-designated organization responsible for the development and management of the technical aspects of the purchase order. The Purchaser can be the Owner, the Engineering Contractor, or other Owner-designated representative depending on the project execution strategy.

1.3.5 "Shall" indicates a specification requirement, unless otherwise authorized by the Owner.

1.3.6 "Should" indicates a recommended good practice, not a requirement.

1.4 Definitions and Abbreviations

Abbreviation	Definition
PSSR 'A' Deficiency/Punch	Critical deficiencies affecting the integrity of equipment, automation, operating systems, documentation, procedures and/or safety of personnel that ***must be addressed prior to start-up***.
PSSR 'B' Deficiency/Punch	Non-critical deficiencies which will not delay start-up and can be rectified at a future date.
PSSR Presets	PSSR presets are typically determined by the MOC Coordinator or his/her delegate (Operations Assurance Representative in some cases) to simplify the field PSSR facilitation process. Presets include 1) Highlight sections of the PSSR form that are applicable for the project, 2) Assemble relevant documentation, 3) Review the form and the project scope with the PSSR facilitator and 4) Send PSSR preset package to PSSR facilitator.
MOC	Management of Change. A control process applied to identifying, evaluating, reviewing, approving, implementing, and closing out proposed engineering change requests.
Simple MOC	A Simple MOC typically refers to minor system modifications that fall outside the scope of Replacement in Kind (RIK) Guideline (ALL-A0A-00-000-NGL-10000). The MOC Coordinator (owner/engineer) in consultation with

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	Operations is responsible for determining whether a change should be designated as a Simple MOC.
Complex MOC	Any MOC that does not fit the definition of a Simple MOC is classified as a Complex MOC.
TMOC	Temporary Management of Change indicates that the proposed change is temporary, and it will be in effect for a specified period determined by the MOC Coordinator.
RTOC	Return to Original Condition denotes the process of returning a TMOC to its original state.
Start-up	Start-up is the point at which hazardous energy or chemicals are introduced into the system.
TCCC	Turnover Care Custody and Control (TCCC) is the process during which ownership or operational responsibility of a system or facility is transferred from one party to another. This process is governed by the document Project Construction Completion and Turnover Procedure - ALL-A0A-00-000-WPR-0005.
Process Safety Information (PSI)	The minimum documentation required for a current operating facility based on Process Safety Asset Classification (ALL-A0A-00-000-NST-00005), to support the asset and ensure that process safety fundamentals are maintained to minimize process safety events.

1.5 Conflicts

In the event of any conflict, the order of precedence shall be as follows:

a) Legislated Codes, Regulations and Acts

b) This CESS

c) Other referenced specifications, standards or practices

The Contractor shall identify all conflicting requirements between this document and other applicable referenced documents prior to proceeding. The Contractor shall notify the Owner, in writing, and obtain a written ruling from the Owner before proceeding with the work affected.

In all cases where more than one code or standard applies to the same conditions, the more stringent shall apply.

1.6 Reference Publications

References to be used in conjunction with this CESS are the dated or latest revisions of the following:

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DOCUMENT NO.	TITLE
ConocoPhillips Documents	
ALL-A0A-00-000-GST-0001	Governance standard for C-CPMS Documents & Canada Engineering Standards & Specifications
ALL-A0A-00-OPM-OFR-0001	Pre-Start-up Safety Review Form (PSSR)
ALL-A0A-00-000-NFR-0002	Hazard Review Checklist (HRC)
ALL-A0A-00-000-NST-10000	Process Hazard Analysis (PHA)
ALL-A0A-00-000-NST-0004	Management of Change Standard
ALL-A0A-00-000-NPR-00004	Parent Child MOC Procedure
ALL-A0A-00-000-DPR-00006	Wells Group MOC Tool
ALL-A0A-00-000-GST-0026	One Canada Documents and Drawings for Operations (DDFO) Standard
ALL-A0A-00-000-XST-0005	Information Management Standard
CPC-OLS-OPS-PRC-7386	Livening Up Notice (LUN) Procedure
ALL-A0A-00-000-WPR-00015	CSU Go No-Go Procedure
SUR-A0A-00-OPM-OPR-0002	Turnaround Certificate of Fitness Procedure
Provincial Safety Codes, Acts and Regulations	
29CFR 1910.119(i)	Occupational Safety and Health Administration (OSHA) Process Safety Management (PSM) regulations

2.0 PSSR REQUIREMENTS

- Multiple PSSRs within one MOC
  - In cases where a project is conducted and started up in a staged approach, a single MOC might encompass multiple PSSRs. The decision on whether multiple PSSRs are needed and the boundaries of each PSSR will be made and coordinated by the PSSR Facilitator and MOC Coordinator.
  - For CMT executed projects, the PSSR Facilitator, MOC Coordinator and Execution Team (CMT/CSU) will determine if more than one PSSR is required. If yes, the Execution Team, MOC Coordinator and PSSR Facilitator will determine the boundaries of each PSSR.
- Parent-Child MOC
  - For the parent child scenarios, the PSSR may be completed within the Parent MOC or within the Child MOC based on the parent child scenario type. For projects that will be implemented in phases, a separate Child MOC and PSSR will be required for each separate startup. Refer to the Parent Child MOC procedure: ALL-A0A-00-000-NPR-00004.
- Temporary MOC (TMOC)
  - The temporary change cycle requires two PSSRs:

    1. A PSSR required prior to Start-up of a temporary change.
    2. Return to Original Service when a temporary change is removed, i.e., RTOC PSSR.

    Note: MOC Workorder (WO) “Operation data” should have RTOC PSSR task line item, or a new M1 notification is required to be generated for RTOC and RTOC PSSR.
- Re-start of equipment or system out of service for more than a year.

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- Some MOCs do not require changes to equipment or processes (e.g., paper-only re-rate/de-rate). Here, no field walkdown is needed since the system is unchanged. The “Actual Start Date” is when the PSSR is signed. For these cases, follow these PSSR steps:
    - Ensure all PSI (drawings, data sheets, etc.) are redlined and available at the facility.
    - Confirm Operating and Maintenance procedure revisions are drafted and accessible to onsite staff.
    - Make sure affected personnel, including contractors, have been notified and trained on the change.

3.0 PSSR DEFICIENCY/ PUNCH MANAGEMENT

The scope covered in this procedure is for Final PSSR Deficiencies/punches only.

Multiple walkdowns at various project phases may take place, and Deficiencies/Punches identified during other walkdowns are not within the scope of this procedure.

4.0 ROLES AND RESPONSIBILITIES

Role	Responsibilities
Final Approval Authority or Startup Approver	Operations is typically the Final Approval Authority. For PSSRs, the Shift Supervisor typically approves Simple MOCs; for Complex MOCs, the Operations Superintendents will determine sign-off requirements. Automation Only MOCs may be approved by Shift Supervisor or Lead Panel Operator.
Maintenance Planner	The responsibility of the maintenance planner is to include the PSSR task in the work order notification and ensure that the work orders are not closed until the PSSR task is completed. The maintenance planner must also clearly indicate what type of MOC – MOC, TMOC or RTOC – each SAP work order is for.
MOC Coordinator	The MOC Coordinator, also known as the Change Owner, is typically fulfilled by Facility and Project (Brownfield/Greenfield) Engineers and in some cases, by Production and Discipline Engineers and Specialists. Key responsibilities of the MOC Coordinator include, but are not limited to: • Tracking and managing the change process throughout its entire lifecycle, from evaluation to completion. • Overseeing the assessment and implementation of approved changes, ensuring that responsible team members complete their tasks on time. • Assigning team members to ensure that the necessary inputs and reviews are obtained, and that the change is evaluated by the appropriate disciplines. • Maintaining necessary conversation with the PSSR Facilitator throughout various stages of the MOC to ensure smooth and

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	efficient completion of the PSSR during start-up. This includes identifying the critical aspects of the design that need to be assessed in the field and may include completing assessments prior to completion of the final product (to identify items that may be under insulation, buried, etc.) • Ensuring that engineering documents are updated in the Electronic Document Management System.
PSSR Facilitator	An individual responsible for coordinating the completion of the PSSR. Key responsibilities of the PSSR Facilitator include, but not limited to: • Engage with the MOC Coordinator to review the scope and deliverables of an MOC. • Acts as the engineer's field delegate as stated in the Field Review. • Review the questions/applicable sections on the PSSR Form with relevant stakeholders prior to field walkdown for smooth and efficient completion of the PSSR process. • Ensure the appropriate personnel and expertise are available to complete the PSSR review. While the PSSR Facilitator is typically preferred to be different from Final Approval Authority, they can be same for simple MOCs.
PSSR Stakeholder	An individual or group involved in the PSSR process. The stakeholders are subject matter experts who ensure all safety and operational requirements are met before commissioning a new or modified facility or process. Key PSSR stakeholders can be operations personnel, operations assurance representatives, facility/project engineers, trade disciplines, etc. depending on the project type. Upon confirming their satisfaction with the PSSR, the PSSR Stakeholder must provide their name and signature on the PSSR form.
Construction Coordinator	The Construction Coordinator documents deficiencies for CMT in their tool and will be responsible for transferring operations and maintenance related "B" type deficiencies to the MOC Coordinator within 7 days from start-up for entry into the SAP MOC tool.

5.0 RECOMMENDED ROLES AND RESPONSIBILITIES FOR PSSR FACILITATION

The following table provides recommendations on Roles and Responsibilities for PSSR facilitation depending on the project type and execution party. The MOC Coordinator should confirm the roles and responsibilities during the risk assessment or HRC process of the project as applicable

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Execution Party	Project Type	Engineering Group	PSSR Presets (Optional)	PSSR Execution (Field)	Signed PSSR Form Upload	"B" Punch Item Entry
CMT	Complex	Greenfield	• GE • OA Rep.	**Facilitator:** CSU or CMT Supervisor **Stakeholder:** Senior Ops with OA Rep., GE and Trade disciplines as required	Facilitator (or delegate)	• GE • OA Rep.
CMT	Complex	Brownfield	• BE • OA Rep. (if involved in project)	**Facilitator:** CSU or CMT Supervisor **Stakeholder:** Senior Ops with OA Rep (if involved in project), BE and Trade disciplines as required	Facilitator (or delegate)	• BE • OA Rep (if involved in project)
CMT	Complex	Facilities Engg.	FE	**Facilitator:** CSU or CMT Supervisor **Stakeholder:** Senior Ops with FE or FFE and Trade disciplines as required	Facilitator (or delegate)	FE
Maintenance	Complex	Facilities Engg.	FE	**Facilitator:** FE or FFE (Senior Ops as contingency) **Stakeholder:** Senior Ops, or delegate and Trade disciplines as required	FE or FFE	FE
Maintenance	Simple*	Facilities Engg.	FE	**Facilitator:** Senior Ops or delegate* **Stakeholder:** N/A	Senior Ops	FE

* In Surmont, Simple MOC typically means simple PSSR involving only one person at site for the PSSR facilitation process which is Senior Ops or delegate and there is typically no other coordination involved with other stakeholders.

CMT – Construction Management Team; CSU – Commissioning and Start-up; GE – Greenfield Engineer; BE – Brownfield Engineer; FE – Facility Engineer; FFE – Field Facility Engineer; OA – Operations Assurance; Ops - Operations

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6.0 STEP-BY-STEP PROCEDURE

6.1 Determination of PSSR Roles

STEP 1 During the hazard review or risk assessment (in the design stage of the MOC), the MOC Coordinator should confirm 1) Simple or Complex MOC, 2) PSSR Facilitator, 3) PSSR stakeholders, 4) Final Approval Authority and 5) Personnel responsible for uploading the signed PSSR form and entry of "B" Punch items into the SAP MOC tool as per the recommendations provided in Section 5.0.

6.2 Number of PSSRs

STEP 2 If it has been determined that more than one PSSR is required because the project is being completed and started up in multiple phases or in a staged approach, each PSSR shall be listed in the SAP MOC tool (see Figure 1 below):

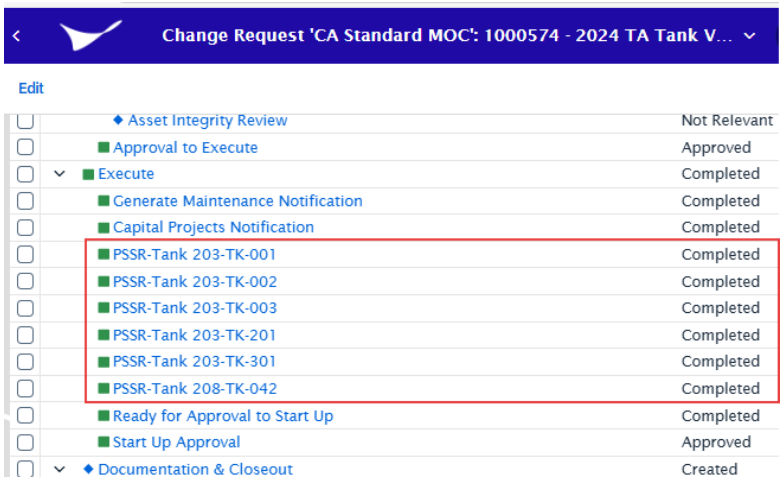


Figure 1: Example of Multiple PSSRs used in an MOC.

6.3 Completing the PSSR Review Form

STEP 3 The PSSR Facilitator should engage with the MOC Coordinator and other relevant stakeholders to review the PSSR form prior to field walkdown for seamless completion of PSSR. PSSR preset package is optional and will be determined based on discussions between the MOC Coordinator and PSSR Facilitator. It should be prepared by the applicable engineer depending on the project type, execution party and engineering group involved as per Section 5.0. In most cases, the applicable engineer is likely the MOC Coordinator. The package can be prepared after the execution stage prior to start-up to support the PSSR process.

STEP 4 A PSSR is initiated after project execution when it is ready to handover to Operations. For maintenance projects, this is typically after all relevant work orders are executed to completion.

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STEP 5 During the field walkdown with the PSSR Stakeholders, the PSSR Facilitator must answer each question in the relevant PSSR sections and acknowledge by the corresponding “YES”, “NO”, or “N/A” column on the PSSR form. If NO, the deficiency must be identified as an ‘A’ or ‘B’ Deficiency.

STEP 6 If any ‘A’ Deficiencies have been identified, these should be discussed with the MOC Coordinator and ***must be addressed prior to start-up.***

STEP 7 All parties involved in the completion of the PSSR must be identified using their full name and sign in the “SIGN-OFF” section on the PSSR form. The PSSR team’s signatures are required to show the Final Approval Authority that field verification of the work has been completed.

NOTE: **The completion of the General PSSR section is mandatory for all MOCs and is typically adequate for Simple MOCs.**

6.4 Approval for Start-up

STEP 8 The PSSR Facilitator reviews the PSSR(s) with the Final Approval Authority and must show the Final Approval Authority that the PSSRs encompass all items within the project scope and these have been signed off by all stakeholders ensuring compliance with the requirements.

Without all stakeholder signatures, authorization for start-up shall not be given.

STEP 9 The **Final Approval Authority** authorizes **Start-up Approval** by signing off on the PSSR form.

STEP 10 For CMT executed projects, upon completion of the PSSR (**Final Approval Authority signs off PSSR form)** and acceptance by the operations team, the execution team (CMT/CSU) are permitted to remove their locks from the system, indicating that it has been officially handed over to the operations team. The operations team will then place their locks on the system and seek approval from the Final Approval Authority for start-up.

For projects executed by operations or maintenance, their locks shall remain in place until final approval is granted by the Final Approval Authority.

STEP 11 The ***PSSR Facilitator signs the PSSR last***, indicating that the PSSR has been completed in compliance with the PSSR procedure and that approval for start-up has been given by the Final Approval Authority.

STEP 12 The PSSR Facilitator then reviews the completed PSSR(s) with the MOC Coordinator, including any deficiencies.

STEP 13 The PSSR Facilitator or his/her delegate as per Section 5.0 uploads the signed PSSR Form(s) into the SAP MOC tool within 48 hours of start-up.

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6.5 Deficiency Identification and Management

STEP 14 For CMT projects, only “B” deficiencies related to Ops/Maintenance will be transferred to the MOC Coordinator or his/her delegate (Operations Assurance Representative in some cases) for entry into the SAP MOC tool. The rest of the deficiencies are managed by CMT in their own system. After the deficiencies are entered into SAP, MOC Coordinator must create M1 maintenance notifications to address each deficiency.

For non-CMT executed projects, the MOC Coordinator is responsible for entering both the deficiencies into the SAP MOC tool and creating the M1 maintenance notifications within 7 days from start-up.

A PSSR Deficiency is defined as an incomplete component of the MOC which is identified during or prior to the PSSR. Management of operations’ deficiency completions and deficiency extensions will be completed via the MOC procedure.

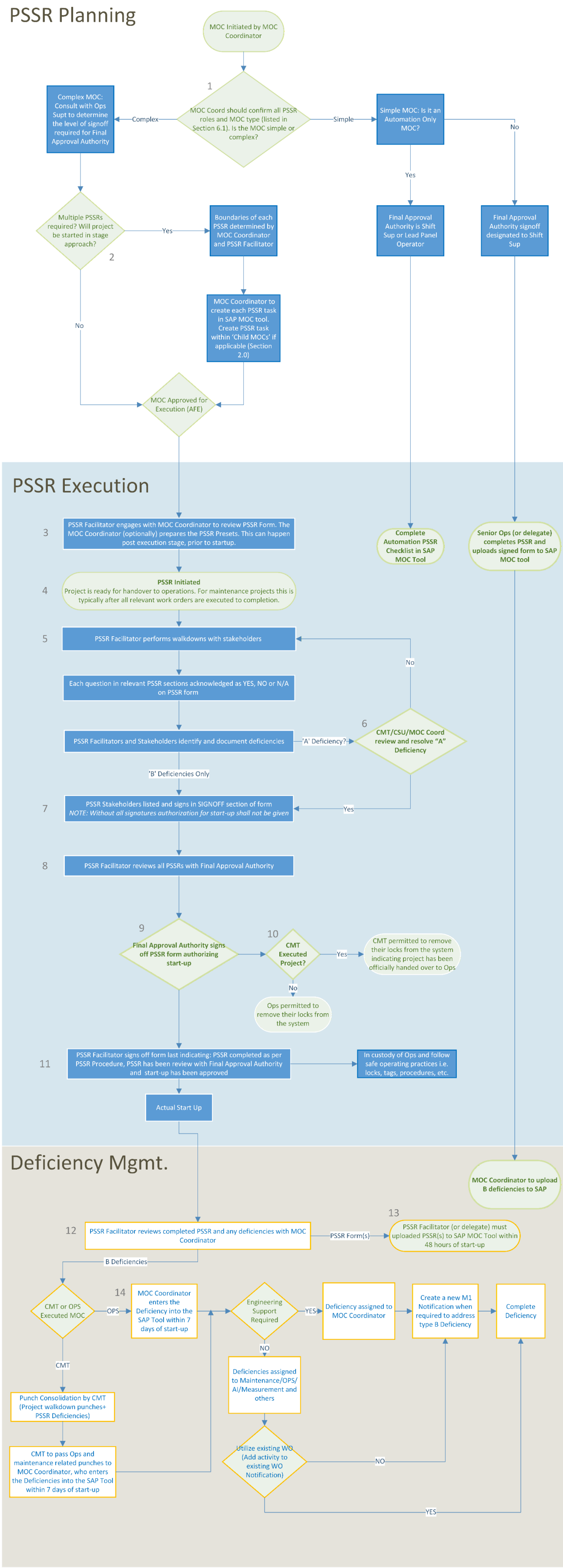
If any changes are identified during final start-up preparation or if any unexpected conditions are encountered, start-up operations should be suspended until the change or conditions can be investigated. In this event, the PSSR Facilitator and MOC coordinator should assess need to repeat the PSSR.

7.0 PSSR TRAINING

All personnel involved in the PSSR process must be familiar with the PSSR procedure. There is a training component available on Workday - Canada PSSR Procedure - Awareness Training - Workday. Technical Safety team shall be consulted if there are any issues with accessing the training.

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8.0 APPENDIX A - PSSR WORKFLOW



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