IDM UID
55E54L
VERSION CREATED ON / VERSION / STATUS
03 Aug 2022 / 1.1 / Approved
EXTERNAL REFERENCE / VERSION

MQP Level 3

Working Instruction for Operations Readiness Review (ORR)

The purpose of this WI is to define the steps and the management roles and responsibilities to initiate, prepare and pass the Operation Readiness Review (ORR) of a system (or sub-system), with the final goal to place it in operation.
This Level 3 Work Instruction (WI) flows down the management requirements of the Operations Management Procedure.
This WI applies to any system scope at SBS Level 1 and lower, but it does not apply to the ITER Facility (intended to be the SBS L0) as a whole.
This WI is applicable to the systems or subsystems that have passed a Construction Completion Review or a Hand-Over, and have been tested and commissioned.

Approval Process			
	Name	*Action*	*Affiliation*
Author	**Rotella R.**	**03 Aug 2022:signed**	**IO/DG/SCOP/SCOD**
Co-Authors			
Reviewers	**Chenais O.**	**08 Aug 2022:recommended (Short Cycle)**	**IO/DG/SQD/NS**
	Cruz-Mermy M.- L.	**05 Aug 2022:recommended (Short Cycle)**	**IO/DG/SQD/QMD**
	Fimbel C. *	**07 Aug 2022:recommended**	**IO/DG/SCOP/SCOD/OPD/COR**
	Molera M.	**03 Aug 2022:recommended (Short Cycle)**	**IO/DG/SCOP/SCOD/OPD**
	Ramu C.	**08 Aug 2022:recommended (Short Cycle)**	**IO/DG/SQD/SHS**
	Salamon B.	**03 Aug 2022:recommended (Short Cycle)**	**IO/DG/ENGN/CIO/CMD**
Previous Versions Reviews	**Becoulet A.** **Dumarcher V.** **Zhao Z.**	**24 Jun 2022:recommended v1.0** **06 Jul 2022:recommended v1.0** **27 Jun 2022:recommended v1.0**	**IO/DG/ENGN** **IO/DG/SCOP/SCOD/OPD** **IO/DG/SQD/QMD**
Approver	**Luce T.**	**09 Aug 2022:approved**	**IO/DG/SCOP**
Document Security: Internal Use *RO: Cruz-Mermy Marie-Laure*			
Read Access	**GG: MAC Members and Experts, AD: ITER, AD: External Collaborators, AD: External Management Advisory Board, AD: OBS - Quality Management Division (QMD), AD: DA, AD: Auditors, AD: ITER Management Assessor, project administrator, RO**		

Change Log			
Working Instruction for Operations Readiness Review (ORR) (55E54L)			
Version	***Latest Status***	***Issue Date***	***Description of Change***
v0.0	In Work	31 Mar 2021	
v1.0	Revision Required	14 Jun 2022	creation as per approved MQP doc Request 7PHQ8C
v1.1	Approved	03 Aug 2022	§ 4: Addition of reference 10, 11, 27 and 28 § 5: Clarification of the progressive approach to place systems in operation and of the definition of the ORR. Integration of the inspection and maintenance topic. § 6: Integration of the inspection and maintenance related activities and the role of the Maintenance RO. The timeline to initiate, prepare and close the ORR is provided for guidance and not as requirement. § 7: Add the RACI related to the Maintenance RO.

Table of Contents

1 Purpose

This Level 3 Work Instruction (WI) flows down the management requirements of the Operations Management Procedure [4].

The purpose of this WI is to define the steps and the management roles and responsibilities to initiate, prepare and pass the Operation Readiness Review (ORR) of a system (or sub-system), with the final goal to place it in operations.

2 Scope

This WI applies to any system scope at SBS Level 1 [3] and lower, but it does not apply to the ITER Facility (intended to be the SBS L0) as a whole.

This WI is applicable to the systems or subsystems that have passed a Construction Completion Review (CCR) [6] or a Hand-Over [7], and have been tested and commissioned.

This WI does not provide details on the document pyramids of the technical baseline and the technical procedures for operations. Technical details are provided in the [25].

The organization of the operations team and the mechanisms to conduct the system operations are out of scope of this WI, and they are addressed in other WIs of the Operations Management Process [4].

3 Definitions and acronyms

CCR	Construction Completion Review
HMI	Human Machine Interface
IO	ITER Organization
IRP	ITER Research Plan
KoM	Kick-Off Meeting
NPE	Nuclear Pressure Equipment
OCR	Operations Change Request
ORR	Operations Readiness Review
PCR	Project Change Request
PE	Pressure Equipment
RO	Responsible Officer
SBS	System Breakdown Structure
SOA	Sign-Off Authority
WI	Working Instruction

For other definitions see: ITER Abbreviations (2MU6W5) and Operations Glossary [24].

4 Reference Documents

[1] ITER Concept of Operations (S7T73E)

[2] ITER Research Plan (IRP) (2XUY9N)

[3] Level 1 System Breakdown Structure (YSNQBW)

[4] Operations Management Procedure (XA95GG)

[5] Maintenance Management Procedure (VH9LAB)

[6] WI for Construction Completion Review and Turnover to Commissioning (X8LS3F)

[7] Working Instruction for the Processing of Handover, RFE Certificates, CRNs and Taking Over Certificates for Site and Buildings Procurement Arrangement (VENE72)

[8] WI for Temporary Operations (7HLMS8)
[9] WI for Operations Change Request (5JD9RL)
[10] WI for Spare Parts and Consumables Management (3SMZ47)
[11] WI for Preparation and Integration of data in Maintenance System (3VCRRY)
[12] Project Change Procedure (22F4E5)
[13] Environmental Protection Procedure (TBD)
[14] Nuclear Safety Procedure (TBD)
[15] Radiation Protection Procedure (TBD)
[16] Beryllium Management Procedure (TBD)
[17] Occupational Health and Safety Overall Procedure (6LCG7B)
[18] WI for management of in-service monitoring of PE and NPE (7D8XQN)
[19] Commissioning Management Procedure (VH9352)
[20] Template - ORR Scope Statement (6Q2WLE)
[21] Template – ORR Deliverable List (6MLD78)
[22] Template – ORR Walkdown Report (6Q3CEY)
[23] Template – ORR Certificate (6PJY7F)
[24] ITER Operations Glossary (X83TV8)
[25] WI - Management of operational documentation (5EYHR7)
[26] Sign-Off Authority (SOA) for Project Documents (2EXFXU)
[27] Organization of the Operations vs the MQP RACI (7MW4X6)
[28] Implementation of the ORR process for the design authority role (7YRZ3G)

5 Basic principles

Under the time constraint of the ITER Project Schedule and in consideration of the technical complexity introduced by the staged approach, systems (and sub-systems) move in operations progressively. Along this process, a portion of a system (SBS L1, L2 or L3 [3]) may be requested to be operational while other parts of it are still under design or construction.

This level of complexity shall be managed along the execution of the Operations Readiness Review (ORR) processes in order that two objectives are realized:

- Certify that systems (or sub-system) are ready for the immediate operational intents;
- Prepare the readiness of systems (or sub-system) for the ITER configuration to execute the ITER Research Plan (IRP) [2] towards the Fusion Plasma Operation (FPO).

The ORR process is shaped to fulfil both objectives through the following provisions:

- The Scope Statement shall identify the system (or sub-system) in the scope of a specific ORR[1], including any temporary configurations;
- A system (or sub-system) potentially moves in operations through multiple and sequential ORRs, depending on the client needs and the project schedule; each ORR expands the scope of the system placed in operations, or re-authorize for operation a system whose configuration is updated as per the staged approach.
  This means that the Technical Baseline, the Technical Procedures and the HMI evolve along the sequential ORRs in accordance with the scope of the system moved into operations.

[1] The reference used to draw the ORR scope shall be the system configuration (e.g. P&ID or SLD) at the stage when the ORR is held, and the scope statement shall refer the best known configuration for FPO, for information.

The Technical Baseline for Operations[2] [1] shall be established at the ORR[3].

The Technical Procedures for Operations and the Human Machine Interface (HMI) shall be established at the ORR and any change shall be addressed based on the instructions given in the Operations Management Process [4].

The regulatory files and authorizations necessary for the system operations shall be prepared at the appropriate time and approved before the ORR closure.

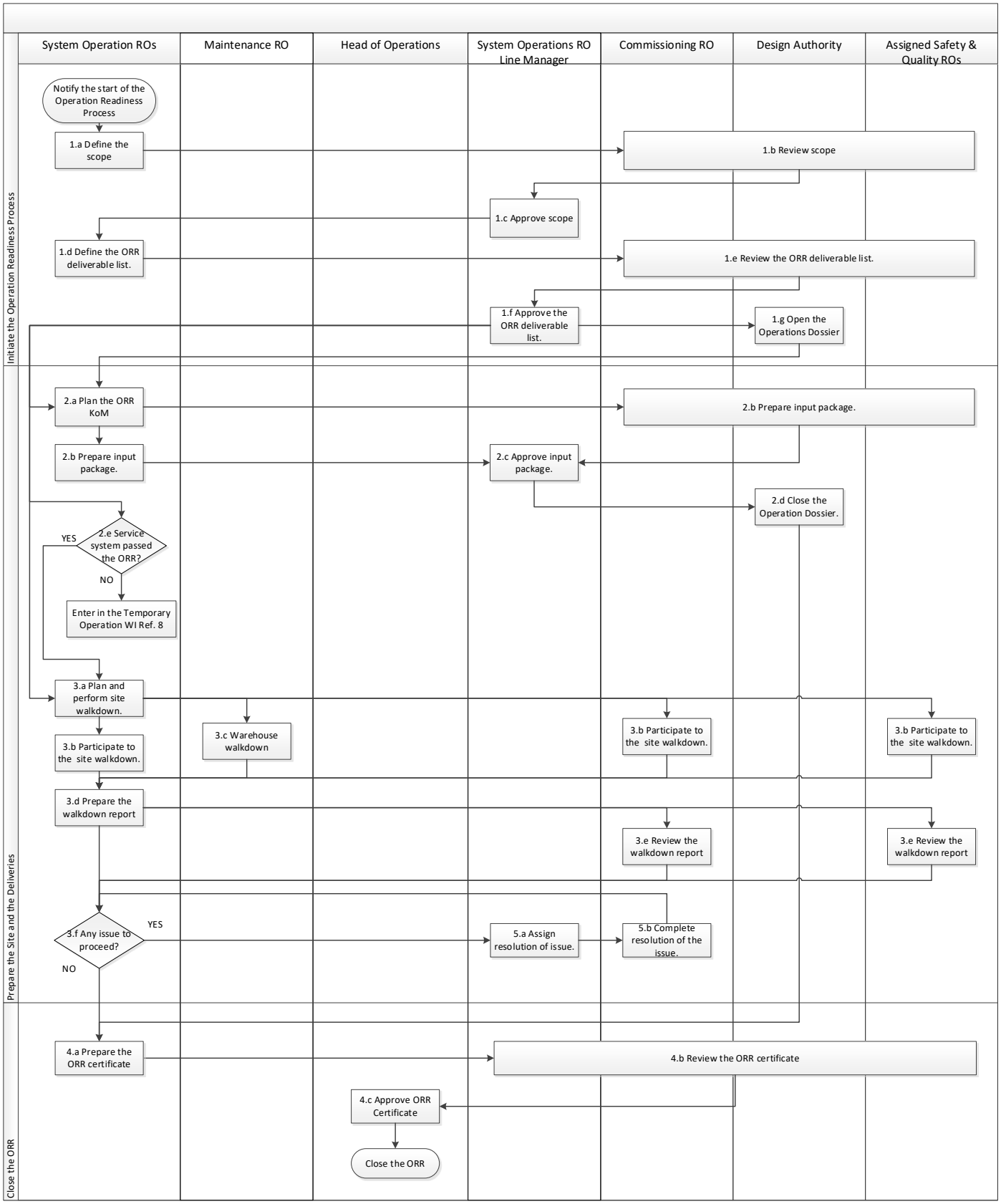
This ORR WI includes the verification of the readiness of system for inspection and maintenance and the consistency between operation baseline and inspection and maintenance baseline.

6 Workflow

6.1 Flow chart

[2] Operations includes operations and maintenance scope.

[3] Any change to the Technical Baseline shall be addressed through an OCR [9], if the change is initiated by a system turned to commissioning/operations, or a PCR [12] if the change is initiated by a system in design/construction.


System Operation ROs
Maintenance RO
Head of Operations
System Operations RO Line Manager
Commissioning RO
Design Authority
Assigned Safety & Quality ROs
Initiate the Operation Readiness Process
Prepare the Site and the Deliveries
Close the ORR
Notify the start of the Operation Readiness Process
1.a Define the scope
1.b Review scope
1.c Approve scope
1.d Define the ORR deliverable list.
1.e Review the ORR deliverable list.
1.f Approve the ORR deliverable list.
1.g Open the Operations Dossier
2.a Plan the ORR KoM
2.b Prepare input package.
2.b Prepare input package.
2.c Approve input package.
2.d Close the Operation Dossier.
2.e Service system passed the ORR?
YES
NO
Enter in the Temporary Operation WI Ref. 8
3.a Plan and perform site walkdown.
3.b Participate to the site walkdown.
3.c Warehouse walkdown
3.b Participate to the site walkdown.
3.b Participate to the site walkdown.
3.d Prepare the walkdown report
3.e Review the walkdown report
3.e Review the walkdown report
3.f Any issue to proceed?
YES
NO
5.a Assign resolution of issue.
5.b Complete resolution of the issue.
4.a Prepare the ORR certificate
4.b Review the ORR certificate
4.c Approve ORR Certificate
Close the ORR

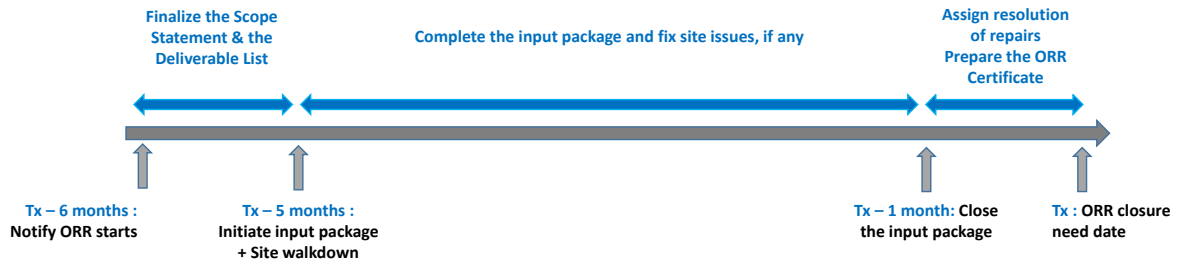


Figure 1 – Timeline to initiate, prepare and close the ORR.

6.2 Description

6.2.1 Establish the scope and the deliverable list

Whenever a system (or sub-system) shall be placed in operations, the System Operations RO is responsible to define the scope and to detail the deliverables and services necessary for the effective and safe operation of the specific system (1.a).

As principle, the process should be initiated 6 months before the required readiness date to place the system in operations, as shown in Figure 1. The System Operations RO is responsible to establish the ORR start date in accordance with the ORR closure need date, based on the project schedule.

The System Operations RO is responsible to prepare the ORR Scope Statement, applying the template [20].

The Scope Statement shall detail the system in the scope of the specific ORR and the services necessary to operate it effectively and safely.

The involvement of the quality, safety and the security RO(s) depends on the service system and associated quality, safety and security risks. For passing the ORR, there could be a need to involve the Environmental Protection RO [13], PE/NPE RO [18], the Health and Safety RO [17] and the Security RO. As a system level ORR shall not introduce new radiological, nuclear and beryllium risks, in addition to those related to the testing and commissioning, the involvement of the nuclear [14], the radiation protection [15] and the beryllium [16] RO(s) is expected to be limited. The Head(s) of Quality, Nuclear Safety, Security and Health Safety (or their delegate) shall communicate to the System Operations RO the appropriate resources to be involved in the ORR based on the Scope Statement. These resources are called Assigned Safety and Quality RO(s).

After review of the scope statement (1.b) by the commissioning RO, the design authority and the assigned safety and security RO, the Line Manager of the System Operations RO approves the Scope Statement and authorizes the System Operations RO to proceed (1.c).

The System Operations RO is responsible for the definition of the deliverable list (1.d) specifying the organization in charge and the completion date. The ORR deliverable list template [21] applies. The type of deliverables expected at the ORR are defined separately in the [25].

The Commissioning RO, the Design Authority and the Safety RO and the Security RO review the list of deliverable (1.e). The Safety RO and the Security RO are accountable for the deliverable list related to the release of to the release of the regulatory files.

The Line Manager of the System Operations RO approves the deliverable list (1.f) and the Design Authority shall open the Operation Dossier (1.g) soon after. The Design Authorities

shall notify the System Operation RO, the LM, the Head of Operation and the Commissioning RO when the action is complete. This step closes the initiation of the ORR.

With the approval of the scope statement and the deliverable list, the Line Manager of the System Operations RO authorizes the preparation of the Technical Baseline for Operations and the associated Technical Procedures and tools, including the HMI.

6.2.2 Prepare the input package

The System Operations RO is responsible to plan and coordinate the KoM for the preparation of the ORR input package (2.a). As general principle, the KoM should be held 5 months before the required readiness date to place the system in operation.

All parties prepare the input packages (2.b) depending on their role and responsibilities. The System Operations RO is responsible for the preparation of the following set of documents:

- The Technical Baseline for Operations [25]
- The Technical Baseline for Inspection and Maintenance [25] and [4]
- The Technical Procedures for Operations [25]
- The Technical Procedures for Inspection and Maintenance [25] and [4]
- Maintenance master data [4] and [11]
- The Human Machine Interface [25]
- The authorization and regulatory file necessary for the operations of the system, if any (in accordance with applicable processes and consultation with the assigned quality and safety ROs).

The assigned Safety and Quality ROs shall assist the System Operations RO in the finalization of the regulatory files and authorization.

The Commissioning RO is responsible for the preparation of the Commissioning Report, in application of the Commissioning Procedure [19], including the evidence of closure of pending actions from previous gate (e.g. CCR punch item [6]) and closure of NCR and DR, if any. The Commissioning Report shall declare the successful completion of the test and commissioning campaign, as specified in the System Commissioning Plan and strictly requested for the purposes of the system operations in the scope of the ORR.

Based on the content of the technical baseline, the System Operations RO shall provide the ORR (“as-is”) configuration to the Maintenance RO [4]. The Maintenance RO consultation can be requested by the System Operation RO for the preparation of the technical procedure for inspection and maintenance and the maintenance master data.

The System Operations RO is in charge to follow-up the preparation and to report any issues and risks to the Line Manager and the Head of Operations.

The deliverables included in the input package shall be reviewed and approved in accordance with the role and responsibilities given in the § 6.3. Each document shall have been reviewed and approved/closed according to the SOA [26].

The Line Manager of the System Operations RO approves the input package (2.c) and the Design Authority closes it (2.d). The Design Authorities shall notify the System Operation RO, the LM, the Head of Operation and the Commissioning RO when the action is complete. This step closes the preparation of the Operation Dossier.

Along this process, the Design Authority, the assigned Safety and Quality ROs have the responsibility to escalate issue and/or risk associated to the operations of the system in the scope of the ORR.

Soon after the KoM, the System Operations RO shall verify the readiness of the services for the operations of the system for the intended purposes (2.f). Service includes but are not limited to:

- Distribution of liquid and gas
- Cooling and/or heating system
- Electrical power distribution
- Environmental control, e.g. ventilation and conditioning systems
- Environmental monitoring, e.g. oxygen monitoring, fire monitoring.

(S)he has the responsibility to liaise with the RO of the system providing the service to verify the readiness of the service system (2.f), and to report technical and schedule issues and/or risks to the Line Manager and the Head of Operations.

If the necessary service has not passed the ORR, the System Operations RO shall express the need of service, as per the applicable process [8].

The status of the services shall be summarized in the ORR Certificate [23].

The Head of Operations is accountable for the readiness of the services for the intended purposes.

6.2.3 Site walkdown

The System Operations RO is responsible to schedule the site walkdown (3.a) aimed at verifying the readiness of the system as per the Scope Definition and the necessary services. As general principle, the site walk down should be held 5 months before the required readiness date to place the system in operation.

The System Operations RO shall notify the Line Manager, the Head of Operations and the Design Authority of the walkdown.

The Commissioning RO, the Security and Safety ROs shall participate to the walkdown (3.b).

The walkdown shall declare any issues to proceed with the ORR closure, including the system in the scope of the ORR and the associated services.

The participants of the walkdown are responsible to escalate any issues, necessary repair and risks that may affect the effective and safe operations of the system, each of them under their scope of expertise and responsibility:

- The Environmental Protection RO is responsible to identify any issue related to the environmental protection topics [13]
- The Nuclear Safety RO is responsible to identify any issue related to the nuclear safety matter [14]
- The Radiation Protection RO is responsible to identify any issue related to the radiation exposure related issues and risks [15]
- The Beryllium Protection RO is responsible to identify any issue related to the beryllium related issues and risks [16]
- The Health and Safety RO is responsible to identify any issue related to the occupational safety matter [17]
- The Security RO is responsible to identify any issue related to security aspect
- The PE and NPE RO [18] is responsible to identify any issue related to PE and NPE topic.

The Maintenance RO shall provide evidence that the spare parts [10] identified as critical (for regulatory and preventive maintenance) at the CCR [6] are available in the warehouse (3.c).

As result of the walkdown, the system Operations RO shall finalize the walkdown report (3.d) [22] and submit it to the participants for review (3.e). The walkdown report shall summarize the outcomes of status of the system in the scope of the ORR and its services.

The System Operations RO shall declare if any issue shall be fixed prior the ORR closure (3.f), related to both the system and its services, if any.

The Line Manager of the System Operations RO shall assign (5.a) the action to close the issue timely to the Commissioning RO. The Line Manager shall notify the Head of Operation and the System Operation RO of the issues identified and the action plan to close them.

The Commissioning RO shall complete the action closure on a timely fashion (5.b). If the issue does not affect the system in the scope of the ORR but a service, then the Commissioning RO is responsible to liaise with the service RO for the resolution of the issue and to report to the Head of Operations who is accountable for the resolution.

The Commissioning RO shall notify the Head of Operation, the System Operation RO and the Line Manager of the completion of issue resolution.

The System Operations RO shall report on the issue resolution in the ORR certificate [23].

Any other need for repair not preventing operations of the system shall be noted and fixed under the responsibility of the Line Manager of the System Operations RO.

6.2.4 Close the review

Based on the successful completion of the site walkdown and the successful closure of the Operation Dossier, the System Operations RO drafts the ORR certificate (4.a) following the template [23].

The ORR Certificate shall provide the following conclusions:

- The system in the scope of the ORR is declared ready for operations, with no issue affecting protection of persons and goods
- The services of the system in the scope of the ORR are in operations, with no issue affecting protection of persons and goods
- The Operations Dossier is complete and approved
- The issues identified are resolved, if any
- The plan to resolve repairs is defined and approved, if any need.

The System Operations RO Line Manager, the Commissioning RO, the Design Authority, Assigned Safety and Quality ROs review the Certificate (4.b) before the final approval of the Head of Operations (4.c).

The ORR is declared closed with the full signature of the ORR Certificate and the system is turned to operations.

6.3 Responsibilities[4]

	System Operations RO	Maintenance RO	Head of Operations	System Operations RO Line Manager	Commissioning RO	Design Authority	Assigned Safety & Quality RO
(1.a, b, c) Establish the scope	R		I	A	C	C	C
(1.d, e, f) Establish the list of deliverables	R		I	A	C	C	C
(1.g) Open the Operations Dossier	R	I	I	I	I	A	I
(2.a) Plan & held the KoM	A	I	I	I	R	I	R
(2.b, c) Input package: Technical Baseline for Operations	R		I	A	C	C	C
(2.b, c) Input package: Technical Baseline for Inspection & Maintenance	R	I	I	A	C	C	C
(2.b, c) Input package: Testing and Commissioning Report	I		I	A	R	C	C
(2.b, c) Input package: Technical Procedures for Operations	R		I	A		C	C
(2.b, c) Input package: Technical Procedures for Inspection & Maintenance	R	C	I	A		C	C
(2.b, c) Maintenance master data available	R			A			
(2.b, c) Input package: authorizations and regulatory files	R		I	C	C	C	A
(2.d) Close the Operations Dossier	R		I	I	I	A	I
(3.a, b, c, d, e) Plan and held the site walkdown	A	R	I	I	R	I	R
(3.c) Evidence of critical spare parts available in the warehouse	I	A		I			
(4.a, b, c) Declare the ORR closure and finalize the certificate	R		A	C	C	C	C
(5.a, b) Resolve issues	I		I	A	R		I

[4] Responsible (Doer), Accountable (Approver), Consulted (Contributor/Reviewer), Informed (User).

7 Records

Output	Author(s)	Reviewer(s)	Approver	To be informed
ORR Scope Statement	System Operations RO (or delegate)	Commissioning RO Design Authority Assigned safety and quality ROs	System Operation RO Line Manager	Head of Operations
ORR Deliverable List	System Operations RO (or delegate)	Commissioning RO Design Authority Assigned safety and quality ROs	System Operation RO Line Manager	Head of Operations
ORR Walkdown Report	System Operations RO (or delegate)			Head of Operations
ORR Certificate	System Operations RO (or delegate)	Commissioning RO Design Authority Assigned safety and quality ROs System Operations RO Line Manager	Head of Operations	

The templates [20], [21], [22] and [23] are managed by the Operations and Maintenance Process Owner who is accountable that the templates are maintained up to date.

Output	Template	Place to store	Doctype?	Naming convention	Retention period years
ORR Scope Statement	[20]	7RGCDT	[OM]-ORR Scope Statement (7USUYH)	SBSL1_aa	Life cycle of the project
ORR Deliverable List	[21]	7RGCDT	[OM]-ORR Deliverable List (7USVHZ)	SBSL1_aa	Life cycle of the project
ORR Walkdown Report	[22]	7RGCDT	[OM]-ORR Walkdown Report (7UT2YX)	SBSL1_aa	Life cycle of the project
ORR Certificate	[23]	7RGCDT	[OM]-ORR Certificate (7UT54M)	SBSL1_aa	Life cycle of the project

(1) SBS L1 is provided in the document [3].