

# Reaching Impact, Saturation and Epidemic Control (RISE)

## CHECKLIST FOR PRE-COMMISSIONING/ PRE-STARTUP REVIEW OF OXYGEN MGPS

YOU ARE INSTRUCTED TO READ THE FOLLOWING THOROUGHLY BEFORE PROCEEDING TO UNDERTAKE THE METHODS DESCRIBED.

UNDER NO CIRCUMSTANCES ARE THESE INSTRUCTIONS TO BE AMENDED OR ALTERED IN ANY WAY OTHER THAN BY THE AUTHOR / APPROVER.

THIS CHECKLIST IS MEANT TO BE USED/ COMPLETED BY ANY TECHNICAL STAFF AVAILABLE AT HOSPITALS MANAGING MGPS, MANIFOLD, PSA PLANTS, AND LMO TANKS.

Date	Author	Reviewer	Version No.	Pages	Next Review
December 2021	Joydeep	Varun Manhas, Bikramjit Debnath	1		Dec 2022

S. No	Description	Yes	No	Remarks
1.	Design and Engineering of MGPS has been validated and approved by a Process Flow Expert?			
2.	Both automatic and manual change-over (as a backup) control systems are available at the manifold?			
3.	Are 2 primary manifolds and 1 emergency manifold available?			
4.	Are oxygen sources within 20m of manifold?			
5.	Entire pipeline sizing and distribution routing has been designed based on 1.3 x of			

	volume requirement (beds with oxygen outlets)?			
6.	Installation piping layout (construction and dimensions) are as per approved Process instrument diagram (P&ID)? List out deviations (if any) in the remarks section			
7.	Installation piping is laid/buried under ground/wall or inside trench with signage. N.B. pipeline not advisable to be laid underground			
8.	Civil work has been done as per approved construction drawings?			
9.	Minimum 1m distance has been kept from any nearby oil lines or electrical cables?			
10.	Adequate access is provided for smooth operation and maintenance of pipelines and valves/accessories?			
11.	Each isolation valve of individual section of MGPS are secured inside valve-box having key-access to only authorized personnel of hospital?			
12.	Pipeline has been clearly painted as per "Std Color Codes"?			
13.	Painting quality is as per PO terms?			
14.	Electrical power supply is provided and power back up through UPS (capacity as per PO terms)?			
15.	Individual floor and section area have been provided with individual isolation valve for ease of operation and maintenance?			
16.	System and pipelines are pressure-tested for leakages and certified by authorized inspection agency?			
17.	Nameplate details of electrical and control panels are as per PO terms (technical data sheet)?			
18.	Maintenance spares and tools are available at site?			

19.	Manufacturers' Document Register: Test Certificates, Drawings, piping and instrumentation diagram (P&ID), Data Sheets, material safety data sheet (MSDS), Operational manual (O&M) Manuals, Warranty Certificates, etc. are available with User?			
20.	Entire piping, fittings and equipment has been cleaned and certified by authorized inspection agency to be suitable for "Oxygen Service Cleaned"?			
21.	All equipment material is safe and compatible for medical oxygen use?			
22.	Electrical wiring is safely executed as per PO terms?			
23.	Electrical and Instrumentation single line diagram (SLD) and Wiring diagram is displayed on the Panel board?			
24.	No physical damage visible to the naked eye?			
25.	End-user training has been conducted by Original Equipment Manufacturer (OEM) and training material available with the end-user?			
26.	OEM representative is available during start-up/commissioning of system?			
27.	Product labels, signage, nameplates are available on the system as well as respective component?			
28.	Signage (such as "No smoking" and "No open flames") clearly displayed in the manifold room?			
29.	Fire extinguishers are available in the manifold room?			
30.	"Operating Procedures" and "Maintenance Procedures" are displayed prominently in English and Local Vernacular Language?			
31.	OEM has submitted "Warranty/Guarantee" certificates?			

32.	Cylinders and/or LMO tanks are duly approved by PESO for oxygen use?			
33.	No combustible materials such as wood, paper, plastic, rubber items, oil, grease, etc. stored in the manifold room.			
34.	All alarm systems (low content, low pressure, etc.) are in place?			
35.	Hospital fire safety training and assessments have been conducted?			
36.	Hospital emergency and evacuation plan (also displayed at the site) during leakages and/or fire in place?			
37.	Checklist for manifold daily inspection in place?			
38.	Oxygen cylinders and/or LMO tank and/or micro cylinders handling checklist available with the operators?			
39.	Fire detection system such as smoke or heat detector heads are installed in the manifold room?			
40.	An automatic shutdown system, linked to local smoke detectors, installed in the manifold room?			
41.	Availability of oxygen sensor to measure oxygen levels in the manifold room?			
42.	Manifold is suitable to withstand the pressure for different types of gases as listed in the design of the MGPS?			
43.	Pipeline headers have pressure indicator/gauge?			
44.	Pipeline headers have over pressure relief valve (PRV)?			
45.	Manifold change over panel regulators inlet and outlet pressure gauges are in good condition?			
46.	All pressure gauges and safety devices are calibrated?			
47.	Back pressure compensated (BPC) flow meter is available?			

Date:

Plant Location Name:

Plant Capacity/Model Number:

Name of OEM Vendor/Supplier:

Name & Signature of PATH/CHRI representative (auditor):