



राज्य स्वास्थ्य समिति, बिहार



सुहर्ष भगत, भा०प्र०से०
कार्यपालक निदेशक

पत्रांक: SHSB/PM/591/2021/.....4842

सेवा में,

सभी सिविल सर्जन, बिहार।

सभी प्राचार्य/अधीक्षक, चिकित्सा महाविद्यालय अस्पताल।

निदेशक, इंदिरा गाँधी आयुर्विज्ञान संस्थान, पटना

निदेशक, लोक नायक जय प्रकाश नारायण अस्थि रोग अस्पताल, पटना

निदेशक, राजेन्द्र नगर नेत्र रोग अस्पताल, पटना

सभी अधीक्षक/उपाधीक्षक, सदर अस्पताल/सभी अनुमंडलीय अस्पताल

पटना, दिनांक 22/09/2021

विषय: राज्य के स्वास्थ्य संस्थानों में अधिष्ठापित PSA Generation Plants/Oxygen Infrastructure की उपलब्धता एवं क्रियाशीलता के परीक्षण हेतु दिनांक 24 सितम्बर, 2025 को 8वें राउंड का Mock drill कराने के संबंध में।

प्रसंग: सचिव, स्वास्थ्य एवं परिवार कल्याण मंत्रालय, नई दिल्ली का D.N. No.- Z.28015/47/2024-DMCell दिनांक 01.09.2025

महाशय,

उपर्युक्त विषय के संबंध में कहना है कि स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार द्वारा प्रासंगिक पत्र के माध्यम से राज्य के सरकारी अस्पतालों में अधिष्ठापित PSA Oxygen generation Plants का Mock drill दिनांक 25 सितम्बर के पूर्व करते हुये तत्संबंधी प्रतिवेदन समर्पित करने का निदेश दिया गया है।

2. उक्त मॉक-ड्रिल में मुख्यतः PSA Plants की क्रियाशीलता, PSA Plants से संबंधित parameters यथा- Oxygen Purity, Oxygen Pressure at manifold/Bedside, Functionality of MGPS आदि का परीक्षण करते हुये आंकड़ों एवं अन्य अनिवार्य सूचनाओं की प्रविष्टि Google form- <https://forms.gle/X4nHPWxVc82wqBZv5> पर अधीक्षक/उपाधीक्षक/प्रभारी चिकित्सा पदाधिकारी, नोडल पदाधिकारी द्वारा किया जाना है।

3. बिहार राज्य में प्रत्येक सरकारी स्वास्थ्य संस्थानों के लिये Mock drill दिनांक 24.09.2025 (बुधवार) को निर्धारित किया गया है। Mock drill के पूर्व भारत सरकार के प्रासंगिक संलग्न पत्र तथा Annexure 1, 2 & 3 का अध्ययन कर तैयारी कर ली जाए, ताकि Mock drill Exercise सफल एवं उद्देश्यपरक हो। Mock drill Exercise के बाद Googleform- <https://forms.gle/X4nHPWxVc82wqBZv5> पर संदर्भित सूचना की प्रविष्टि कर Submit किया जाए और साथ ही, उसकी हस्ताक्षरित प्रति दिनांक 25.09.2025 को संध्या 5.00 बजे तक drugcell@gmail.com एवं psabiharshsb@gmail.com पर अनिवार्य रूप से भेजा जाए। Google Form भरते समय किसी भी प्रकार की तकनीकी कठिनाई होने की स्थिति में राज्य स्वास्थ्य समिति, बिहार में श्री नितेश कुमार (मो० न०-9717176835), श्री शहाब हैदर (मो० न०-9582218198) अथवा श्री दीपक कुमार (मो० न०-9430009504) से सम्पर्क किया जा सकता है।





4. सभी क्षेत्रीय अपर निदेशक एवं सिविल सर्जन यह सुनिश्चित करेंगे कि उनके अधीनस्थ जिलों के सभी स्वास्थ्य संस्थानों में निर्धारित तिथि को समयानुसार Mock drill Exercise कार्य संपन्न हो जाये। इस संपूर्ण प्रक्रिया का अनुश्रवण क्षेत्रीय अपर निदेशक तथा सिविल सर्जन द्वारा करते हुये भारत सरकार के google form पर प्रविष्टि करायी जाय एवं तत्संबंधी फलाफल प्रतिवेदन से राज्य स्वास्थ्य समिति बिहार को अवगत कराया जाए।

5. अतः अनुरोध है कि उपरांकित कंडिकाओं एवं संलग्न पत्र में अंकित दिशा-निर्देशों के अनुरूप दिनांक 24.09.2025 को समयानुसार PSA Plant का Mock drill Exercise कार्य संपन्न कराते हुये यथानिदेशित प्रतिवेदन अचूक रूप से भेजना सुनिश्चित किया जाय।

अनुलग्नक: यथोक्त।

विश्वासभाषित

(सुहर्ष भगत)

[Signature]
22/09/25





राज्य स्वास्थ्य समिति, बिहार



सुहर्ष भगत, भा०प्र०से०
कार्यपालक निदेशक

पत्रांक: SHSB/PM/591/2021/.....

सेवा में,

सभी सिविल सर्जन, बिहार।

सभी प्राचार्य/अधीक्षक, चिकित्सा महाविद्यालय अस्पताल।

निदेशक, इंदिरा गाँधी आयुर्विज्ञान संस्थान, पटना

निदेशक, लोक नायक जय प्रकाश नारायण अस्थि रोग अस्पताल, पटना

निदेशक, राजेन्द्र नगर नेत्र रोग अस्पताल, पटना

सभी अधीक्षक/उपाधीक्षक, सदर अस्पताल/सभी अनुमंडलीय अस्पताल

पटना, दिनांक

विषय: राज्य के स्वास्थ्य संस्थानों में अधिष्ठापित PSA Generation Plants/Oxygen Infrastructure की उपलब्धता एवं क्रियाशीलता के परीक्षण हेतु दिनांक 24 सितम्बर, 2025 को 8वें राउंड का Mock drill कराने के संबंध में।

प्रसंग: सचिव, स्वास्थ्य एवं परिवार कल्याण मंत्रालय, नई दिल्ली का D.N. No.- Z.28015/47/2024-DMCell दिनांक 01.09.2025

महाशय,

उपर्युक्त विषय के संबंध में कहना है कि स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार द्वारा प्रासंगिक पत्र के माध्यम से राज्य के सरकारी अस्पतालों में अधिष्ठापित PSA Oxygen generation Plants का Mock drill दिनांक 25 सितम्बर के पूर्व करते हुये तत्संबंधी प्रतिवेदन समर्पित करने का निदेश दिया गया है।

2. उक्त मॉक-ड्रिल में मुख्यतः PSA Plants की क्रियाशीलता, PSA Plants से संबंधित parameters यथा- Oxygen Purity, Oxygen Pressure at manifold/Bedside, Functionality of MGPS आदि का परीक्षण करते हुये आंकड़ों एवं अन्य अनिवार्य सूचनाओं की प्रविष्टि Google form- <https://forms.gle/X4nHPWxVc82wqBZv5> पर अधीक्षक/उपाधीक्षक/प्रभारी चिकित्सा पदाधिकारी, नोडल पदाधिकारी द्वारा किया जाना है।

3. बिहार राज्य में प्रत्येक सरकारी स्वास्थ्य संस्थानों के लिये Mock drill दिनांक 24.09.2025 (बुधवार) को निर्धारित किया गया है। Mock drill के पूर्व भारत सरकार के प्रासंगिक संलग्न पत्र तथा Annexure 1, 2 & 3 का अध्ययन कर तैयारी कर ली जाए, ताकि Mock drill Exercise सफल एवं उद्देश्यपरक हो। Mock drill Exercise के बाद Googleform- <https://forms.gle/X4nHPWxVc82wqBZv5> पर संदर्भित सूचना की प्रविष्टि कर Submit किया जाए और साथ ही, उसकी हस्ताक्षरित प्रति दिनांक 25.09.2025 को संध्या 5.00 बजे तक drugcell@gmail.com एवं psabiharshsb@gmail.com पर अनिवार्य रूप से भेजा जाए। Google Form भरते समय किसी भी प्रकार की तकनीकी कठिनाई होने की स्थिति में राज्य स्वास्थ्य समिति, बिहार में श्री नितेश कुमार (मो० न०-9717176835), श्री शहाब हैदर (मो० न०-9582218198) अथवा श्री दीपक कुमार (मो० न०-9430009504) से सम्पर्क किया जा सकता है।





4. सभी क्षेत्रीय अपर निदेशक एवं सिविल सर्जन यह सुनिश्चित करेंगे कि उनके अधीनस्थ जिलों के सभी स्वास्थ्य संस्थानों में निर्धारित तिथि को समयानुसार Mock drill Exercise कार्य संपन्न हो जाये। इस संपूर्ण प्रक्रिया का अनुश्रवण क्षेत्रीय अपर निदेशक तथा सिविल सर्जन द्वारा करते हुये भारत सरकार के google form पर प्रविष्टि करायी जाय एवं तत्संबंधी फलाफल प्रतिवेदन से राज्य स्वास्थ्य समिति बिहार को अवगत कराया जाए।

5. अतः अनुरोध है कि उपरांकित कंडिकाओं एवं संलग्न पत्र में अंकित दिशा-निर्देशों के अनुरूप दिनांक 24.09.2025 को समयानुसार PSA Plant का Mock drill Exercise कार्य संपन्न कराते हुये यथानिदेशित प्रतिवेदन अचूक रूप से भेजना सुनिश्चित किया जाय।

अनुलग्नक: यथोक्त।

विश्वासभाजन

ह०/-

(सुहर्ष भगत)

ज्ञापांक SHSB/PM/591/2021/.....⁴⁸⁴²..... पटना, दिनांक. ~~22/09/2025~~

प्रतिलिपि :

- वंदना जैन, संयुक्त सचिव, स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार, निर्माण भवन, नई दिल्ली को कृपया सूचनार्थ प्रेषित।
- सचिव स्वास्थ्य विभाग, बिहार को कृपया सूचनार्थ प्रेषित।
- सभी जिला पदाधिकारी को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- माननीय मंत्री, स्वास्थ्य विभाग, बिहार के आप्त सचिव को सूचनार्थ प्रेषित।
- सभी क्षेत्रीय अपर निदेशक, स्वास्थ्य सेवायें को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- सभी जिला कार्यक्रम प्रबंधक/जिला मूल्यांकन एवं अनुश्रवण पदाधिकारी, बिहार को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- श्री मनीष रंजन, सहायक निदेशक, औपधि-सह-राज्य नोडल पदाधिकारी, PSA, राज्य स्वास्थ्य समिति बिहार को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- श्री भारत भूषण दहिया, तकनीकी परामर्शी, ऑक्सीजन प्रबंधन यूनिट, स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार, नई दिल्ली को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- सभी हॉस्पिटल नोडल ऑफीसर, PSA, बिहार को सूचनार्थ एवं आवश्यक कार्रवाई हेतु।

कार्यपालक निदेशक



Annexure-1 - PSA Mock Drill Introduction & Guidelines

Introduction to Mock Drills

4100+ PSA plants have been installed under various funding sources across States/UTs. These plants augment the total medical oxygen capacity in the country and increase the on-site production capability of medical oxygen. Mock Drill is an important tool for States/UTs to ensure that these plants are able to produce oxygen with adequate purity, pressure, have no leakages and subsequently be used for administering oxygen to patients. The aim of Mock Drill is below:

- Ensure plants go through a standard operating procedure to operate, measure and record important metrics
- Check operational status and full functionality of the PSA plants
- Identification of issues for agency / vendor and subsequent redressal of the same at the earliest

General Instructions

- The drill should be conducted by the hospital Biomedical engineer/ PSA technicians and under the supervision of the HNO/competent authority, Senior officials in the state/ Health facilities such as CMO/MS etc. should oversee the mock drill and ensure compliance.
- If a facility has more than one PSA, then mock drills should be conducted for each PSA. A Google Form must be filled for each PSA plant, mentioning all relevant details as per Annexure - 2

Instructions for day of the Drill

- The minimum duration of the drill should be 6 hours, starting preferably at 9 am. Hospital authorities are recommended to run the PSA plant at full capacity (maximum rated flow rate) during the mock drill.
- Oxygen purity should be checked in the PSA control panel display every 2 hours for a total of 3 readings at 11 am, 1 pm, and 3 pm. Oxygen purity for each PSA plant should be 90-96%. If purity is not attained in this timeframe, then the drill can be extended to 12 hours. In case purity is not attained, concerned authorities and service engineers must be notified.
- Check and ensure that the PSA plant is connected to facility MGPS and there are no leakages either in the linked MGPS pipeline and manifold. If leakages are found, the competent authority (HNO, Hospital Administration etc.) should raise the issue with the respective vendor and the implementing agency (DRDO/HITES/CMSS)
- Oxygen pressure and flow rate should be measured at the oxygen outlet at the patient bedside (while the pressure at bedside should be ~4.2 bar). The Oxygen pressure from PSA should be ranging between 4 and 6 bar.
- Total machine runtime (oxygen generation module runtime) should be measured from the main control panel
- Adequate availability of fire safety prevention and precaution systems in the facility, as recommended under the IPHS guidelines or relevant state level healthcare system guideline, should be checked, and ensured

- The identified gaps should be reported and immediately resolved by the competent state agency/PSA supplier

Reporting of the mock-drill results

- All the information should be recorded in a standardized format (a sample format has been attached as Annexure-2) for all PSA plants across the state and reported to the relevant authorities.
- If the plant is being used continuously for patients requiring oxygen therapy, please fill the reporting form for metrics which do not impact the oxygen delivery process (Eg. Oxygen Purity % from control panel, PSA output pressure) and can avoid bedside metrics (purity & pressure) while filling the form
- The results should be shared positively before 2pm the day after the mock drill is conducted in a standard format.
- The result of mock-drills for each PSA plant should be signed by both the respective hospital administration and the supervising executive engineer or equivalent authority
- It is recommended that the State government use the shared Google Form (bit.ly/psamockdrill3) to collect mock drill results for each PSA plant.

Data-entry guidelines:

- If the plant isn't commissioned or functional at all,
 - kindly fill all the PSA and facility related details such as HNO name, contact number, training status, vendor details etc.
 - For every parameters related to a functional PSA plants such as purity, pressure, leakage, please enter 0, and
 - Mention the issue in detail in the comment section
- Don't enter multiple entries for a particular PSA plant. Some states had shared multiple duplicate entries in mock drill Round 1, please be careful in data entry and follow the recommended process

Directions for checking oxygen flow, pressure and purity at Main control Panel / Wall outlet / bed head pendant during mock drill

- O2 purity, flow to be measured using O2 analyzer and external flow meter. This will help assess calibration of in-built measuring devices in PSA.
- Visually check all wall outlets / bed head panels for leakage
- Ensure flow meter connector and humidifier bottle are tightly fitted, check oxygen flow functional check before clinical use.
- Flow can be measured through a flow meter
- Pressure can be recorded at area alarms installed at nursing stations /floor / zone wise
 - Pressure can be checked using the ventilator inlet pressure or a pressure gauge
- Purity can be measured with the help of ventilator Fio2 feature or an oxygen analyzer. If the facility does not have an analyzer, it is recommended to be used for this exercise.

Directions for measuring total Oxygen generation module runtime (in hrs)

- Oxygen generation module runtime is measured from the control panel
- This metric can help in the following:
 - Can be utilized to measure the total oxygen generated from the equipment
 - May indicate when the next maintenance visit is required based on the runtime over the previous maintenance visit



Logbook Template for PSA plants

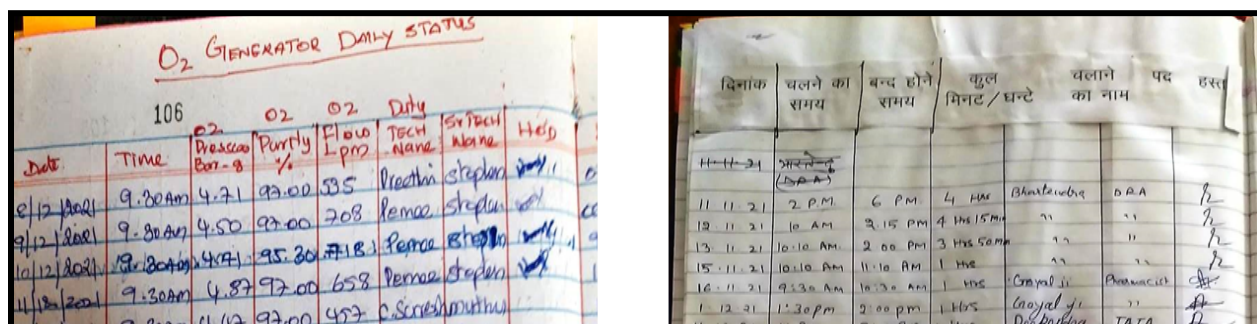
- Mock drill results should be noted in the PSA log book, a format for the same is provided below

Daily logbook templates for PSA plant:
 PSA plant: (Plant 1 / Plant 2/ Plant 3)
 PSA Plant Capacity: (LPM)

Date	Time	Air compressor running hours reading			Air receiver (Buffer Storage) tank pressure	Oxygen Purity	Oxygen Flow rate	Oxygen Pressure	Oxygen receiver (Buffer storage) tank pressure	Status of air inlet filter / Cleaning	Signature of duty operator / technician	Remarks (If any failure)
		ON	OFF	Total								

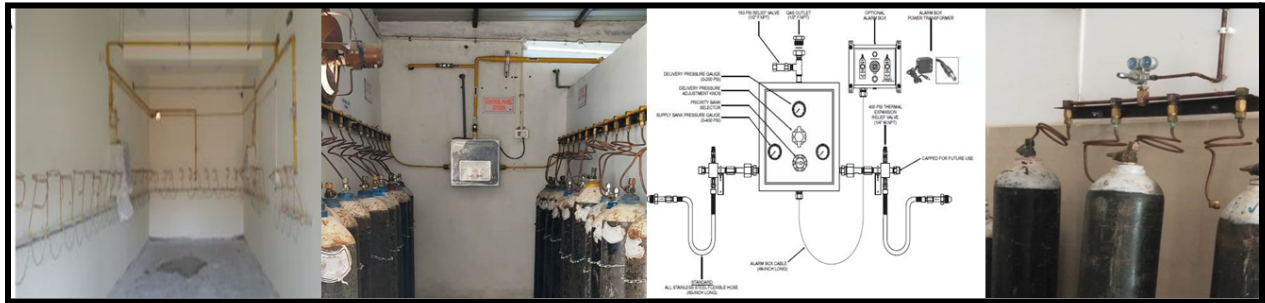
Note: Record the down time.

- Record the PSA parameters on a daily basis (as given in above template) - Performance of air compressor, PSA generator, filter status, purity, and pressure of system
- Templates may be different as per vendor recommendation.
- If there is any indication of sub-optimal performance, the plant operator must intimate the facility manager and register a complaint for service support. Hospital nodal Officer should escalate issues to respective vendors/ implementing agencies/suppliers
- Samples of actual log books provided below:



Key Components of Oxygen System

Manifold Room



- (a) Manifold room
- (b) Manifold room with oxygen cylinder arrangement
- (c) Manifold room control arrangement
- (d) Emergency Manifold arrangement



- (a) Oxygen Manifold control panel (analog)
- (b) Oxygen Manifold control panel (digital)
- (c) Floor isolation valves and area alarm system



Inlet Filter Status

If the gauge needle is in green marking - This means filter in usable condition.

If the gauge needle is near to red marking - This means the filter needs to be replaced soon.

If gauge needle in red marking area - This means filter needs to be replaced immediately

Frequently Asked Questions (FAQs)

1. *What if the patients are on oxygen therapy, should I conduct mock drills? Or PSA is working fine and is under use, do I need to fill the form?*

If PSA is being used for oxygen therapy to patients and is under use, then the administration should record parameters per the prescribed format (google form) without disrupting the oxygen therapy to patients and conclude the mock drill accordingly

2. *If the plant is not functional at all, what should I report? Or If the plant is not commissioned yet, what should I report?*

If the plant isn't functional at all or not commissioned, follow the below steps:

- i. Kindly fill all the PSA and facility related details such as HNO name, contact number, training status, vendor details etc.
- ii. For every parameters related to a functional PSA plants such as purity, pressure, leakage, please enter 0
- iii. Mention the issue in detail in the comment section
- iv. HNO should raise the issue to SNO, vendor and agency accordingly

PSA Mock Drill 8 - MoHFW

All states are recommended to conclude and report their Oxygen Infrastructure Mock Drills **on 22nd- 25th September 2025 (positively); so as to able this Ministry to formulate an Action Taken Report by 30th September 2025.**

PSA mock-drills have been recommended by MoHFW for all States/UTs to ensure functionality and readiness of these Medical oxygen infrastructure during potential exigencies.

Please reach out to PMU team at medsupply.mohfw@gmail.com for any queries, thanks!

* Indicates required question

Generic Information

1. I hereby declare that the information given in this application is true and correct *
to the best of my knowledge and belief.

Mark only one oval.

☐ I agree

☐ I disagree

2. Date of Assessment *

Please enter the date on which the Oxygen Infrastructure Mock Drill was conducted.

Example: January 7, 2019

3. Name of Drill in-charge *

Please add your name, designation, phone number and email ID in the forthcoming questions.

4. Phone Number of Drill in-charge *

5. Designation of Drill in-charge *

6. Email of Drill in-charge *

7. Name of Medical Superintendent (GMC)/Civil Surgeon /HNO *

8. State/UT Name *

 Dropdown

Mark only one oval.

- ☐ A&N Island
- ☐ Andhra Pradesh
- ☐ Arunachal Pradesh
- ☐ Assam
- ☐ Bihar
- ☐ Chandigarh
- ☐ Chhattisgarh
- ☐ Dadra and Nagar Haveli + Daman and Diu
- ☐ Delhi
- ☐ Goa
- ☐ Gujarat
- ☐ Haryana
- ☐ Himachal Pradesh
- ☐ Jammu and Kashmir
- ☐ Jharkhand
- ☐ Karnataka
- ☐ Kerala
- ☐ Ladakh
- ☐ Lakshadweep
- ☐ Madhya Pradesh
- ☐ Maharashtra
- ☐ Manipur
- ☐ Meghalaya
- ☐ Mizoram
- ☐ Nagaland
- ☐ Odisha
- ☐ Puducherry
- ☐ Punjab
- ☐ Rajasthan
- ☐ Sikkim
- ☐ Tamil Nadu
- ☐ Telangana

- ☐ Tripura
- ☐ Uttar Pradesh
- ☐ Uttarakhand
- ☐ West Bengal

Health Facility Details

9. Name of Health Facility *

10. Type of Health Facility *

Mark only one oval.

- ☐ Govt. Medical College (GMC)
- ☐ District Hospital (DH)
- ☐ Sub-District Hospital (SDH)
- ☐ Civil Hospital (CH)
- ☐ Community Healthcare Center (CHC)
- ☐ Primary Healthcare Center (PHC)
- ☐ Private Hospital
- ☐ Other:

11. Source of Funding for PSA Plants *

Mark only one oval.

- ☐ PM Cares *Skip to question 12*
- ☐ Non-PM Cares *Skip to question 15*

PM-Cares Funded PSA Plant Details

Please fill this form for only PM Cares PSA plants, whether commissioned or not commissioned.

It is recommended that PSA plants are run at full capacity for at least 6 hours during the drill. The excess air can be released in the atmosphere.

12. Agency allocated for PM Cares PSA Plant *

Mark only one oval.

☐ DRDO

☐ HITES

☐ CMSS

13. Vendor Name of PM-CARES PSA Plant *

14. PSA Plant Capacity in LPMs *

Mark only one oval.

- ☐ 100 LPM
- ☐ 200 LPM
- ☐ 250 LPM
- ☐ 300 LPM
- ☐ 400 LPM
- ☐ 500 LPM
- ☐ 600 LPM
- ☐ 700 LPM
- ☐ 900 LPM
- ☐ 1000 LPM (960 LPM)
- ☐ 1500 LPM
- ☐ 2000 LPM
- ☐ 2500 LPM
- ☐ 3000 LPM
- ☐ 3200 LPM

Skip to question 19

Non-PM Cares PSA Plant Details

Please fill this form for only Non-PM Cares PSA plants, whether commissioned or not commissioned. This will include PSA plants sourced from CSR's, State Government, foreign funding etc.

It is recommended that PSA plants are run at full capacity for at least 6 hours during the drill. The excess air can be released in the atmosphere.

15. Implementation Agency *

16. Funding source of Non-PM Cares Plants *

Mark only one oval.

- ☐ CSR
- ☐ State Government
- ☐ Foreign funding
- ☐ NGO
- ☐ Others

17. If others, please specify

18. Vendor or manufacturing company (enter the official name of the vendor) *

Skip to question 19

PSA Plant Operations

Please answer these technical questions dealing with optimum upkeep and functioning of PSA plants.

19. What is the total machine runtime since installation? *

20. Maximum O₂ Purity attained during PSA mock-drill (in Percentage) *

Please mention the exact purity level in numerical form. For example "91" if the panel shows 91% purity.

21. How much time is required (in minutes) to reach > 90% purity level after starting the plant post shutdown?

22. What is the pressure at PSA output? (in Bar) *

Range 4-6 bar, depending upon the MGPS infrastructure.

23. Oxygen Flow generated by the PSA plant (in LPM) *

Flow rate depends on the maximum capacity of the PSA plant. Recommendation from MoHFW is to run the plant at maximum flow rate. This enables the PSA plant to be run at its highest oxygen generation capacity

24. What is the manifold room pressure? (in Bar) *

25. Are back-up oxygen cylinders available at the manifold room?

24-48 hour back-up should be available, depending upon the hospital infrastructure.

Mark only one oval.

☐ Yes

☐ No

26. Is there any Zeolite / White Powder Issue? *

Mark only one oval.

☐ Yes

☐ No

27. Is there any leakage in Manifold room? *

Mark only one oval.

☐ Yes

☐ No

28. Status of the availability of the appropriate and functional Fire Safety measures *
in the hospital

29. Add picture of self with PSA plant control panel (purity, pressure, machine runtime) in the background. *

Files submitted:

PSA Manpower Details

Please answer these important questions related to the manpower of the reported PSA plant

30. Total number of Oxygen technician present in the facility *

31. Name of Oxygen Technicians

32. Phone Number of Oxygen Technicians

33. Has Oxygen Technicians been trained?

Mark only one oval.

☐ Yes

☐ No

34. If "Yes" then what type of training?

35. Has the training manual and service manual been made available in English and local language (by vendor)? *

Mark only one oval.

☐ Yes

☐ No

36. Do you have 24 hour electricity backup? *

Mark only one oval.

☐ Yes

☐ No

PSA Maintenance and Capacity Building

Please answer this question with relation to repair and maintenance status of your PSA plant

37. Is your PSA plant covered under AMC/CMC or any other repair modality?

Mark only one oval.

☐ AMC available

☐ CMC available

☐ On-call repair

☐ Under Process

☐ None Available

☐ Other

38. Funds availability for PSA plants maintenance.

Mark only one oval.

- ☐ PSA already covered under AMC/CMC
- ☐ Funds approved by State/CSR Budget
- ☐ Funds approved under NHM-PIP
- ☐ Funds under Process
- ☐ Other

39. Has proposal for step-down training for Medical Oxygen capacity building training sent for PIP approval to NHM?

Mark only one oval.

- ☐ Yes
- ☐ No
- ☐ Not Aware

40. Additional Comments/remarks

This content is neither created nor endorsed by Google.

Google Forms

Annexure 3A

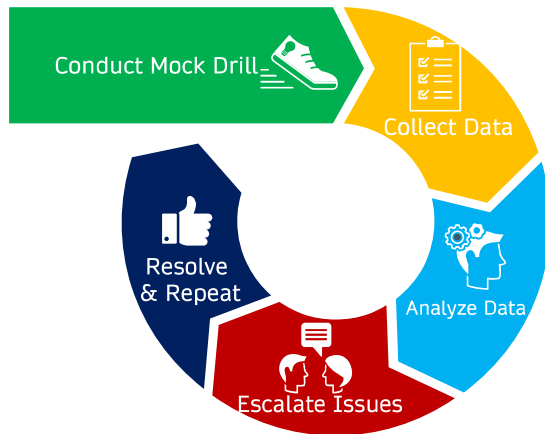
PSA Mock Drill IEC by MoHFW

Why Mock Drill?



- Ensure full functionality of all the PSA plants installed across State/UT
- Remain prepared during medical emergencies such as COVID-19 wave
- Enable timely issue resolution based on mock-drill output
- Acclimatize facility officers' with PSA day-to-day operations, issue handling and

Steps required in Mock Drill



Conduct Mock Drill

Conduct mock drills in all facilities with PSA plants, as per government guideline

Collect Data

Capture data in the Google Forms shared

Analyze Data

Analyze functionality across purity, pressure, flowrate of PSA plants in facilities

Escalate

Escalate issues to respective vendors/ implementing agencies/suppliers

Resolve & Repeat

Ensure timely resolution of all issues; Repeat the mock drills every 1-2 months

What do we aim to measure?

Functionality Check

- Run PSA at **full capacity (maximum flow rate)** from 9:00AM and take readings **every 2 hour**
- Measure oxygen purity, pressure, flow rates at 11:00AM, 1:00PM and 3:00PM
- Overall PSA machine runtime (in hours)

MGPS Check

Check pipelines for leakages

Between PSA and Manifold

Between Manifold and Wards

In the manifold

Electrical Supply Check

Checks to ensure 24/7 electrical supply

Availability of DG set

Voltage fluctuation

Wiring/connection faults

Technician Availability Check

- Check if **at least 2 trained technicians are available on the site 24/7**
- Specify the kind of training they received (10-hour, vendor, state training, etc.) and training modules from vendor

Fire Safety Check

- Check for **appropriate safety measures as per IPHS/state health system guidelines**
- Relevant HR aware of fire safety measures



Best Practices for conducting a Mock Drill

- Run PSA at **full capacity (maximum flow rate)** and take readings **every 2 hours**
- Preferably use external O2 analyzer to check purity, and pressure gauge to measure pressure
 - At bed side, you can use ventilator to measure purity, pressure or flow
- Mock drill must be conducted for **ALL plants**, irrespective of whether they are working fine or not. If plant is operational, then simply measure the indicators and report on google form
- Ensure correct data is entered only in the google form shared by MoHFW and double check before submission
- In case multiple oxygen sources are present (LMO, cylinder, etc.), preferably switch-off other sources and take measurements at bed-side, if possible





Problem/Fault	Possible Cause	Solution	Responsible Stakeholder
ON/OFF button does not illuminate/Plant does not cycle 	No electrical power	- Check connection with main power supply - Ensure DG set is installed for uninterrupted power	PSA Operator
	Circuit Breaker has tripped	Reset circuit breaker	PSA Operator
	PSA plant in standby mode	Plant will start again once the pressure goes down below the set point for standby mode	PSA Operator
	ON/OFF switch bulb tripped	Replace light bulb	Vendor
	Loose wiring / defective switch	Repair or replace	Vendor
Low Operating Pressure 	Restriction in suction air intake filter	Check and replace filter elements	Vendor
	Clogged pre-filter	Clean the air filters regularly and make sure Inlet feed air valve fully open and lines are clear	PSA Operator
	Compressor output reduced	Corrective maintenance should be performed	Vendor
	O2 demand > PSA capacity	- Check oxygen usage - Check Leakage in MGPS hose pipe	PSA Operator
High Operating Pressure	Clogged muffler	Clean or replace the muffler as per manufacturer instruction manual	Technician
	Contaminated sieve beds	Change the adsorbers material	Vendor
Purity Problem	Sensor problem (either ultrasonic sensor or electro-chemical sensor is defective)	- Calibrate the sensor for environmental air @ 21% - Ultrasonic sensor has a long life-span, typically no need for re-calibration. If defective, needs replacement - For electro-chemical sensor, low shelf life (< 2yrs), after this needs replacement	Vendor
	Defective Oxygen analyzer	Repair or replace	Vendor
	Obstructed O2 sample flow line	Ensure that all valves on the oxygen sample line to oxygen analyzer are open	PSA Operator
	Inadequate inlet air	- Check inlet air lines for obstructions. - Adjust or replace the inlet air regulator	PSA Operator
	Leakage in internal pipeline	Check connecting pipe and valve for internal leakage	PSA Operator
	Dew point check on air Dryer	Check and set dew point set to 3 - 7 °C, if problem persists, needs repair	Vendor
	Clogged carbon activated pre-filter	Needs replacement	Technician/ Vendor
	Molecular sieve or zeolite	Replace adsorbing material	Vendor
Dust particles in PSA output	Molecular sieve or zeolite	Replace adsorbing material	Vendor
Compressor trips	Power supply fluctuations	Servo voltage stabilizer if required	Vendor
Overheating of air compressor	Low voltage /low compressor oil due to leakage	- Check mains power supply and Input voltage - Fix the leakage and refill with oil	Hospital/Vendor
PSA relief valve open	Pressure > max. pressure/ Defective relief valve	- Adjust feed air regulator - Replace the relief valve	PSA Operator/ Vendor
Any hardware failure	Malfunction during plant operation	Vendor, per the contract, bound to provide corrective action/replacement within warranty	Vendor
3rd Party lab testing report	Sample collection and report submission delay	- Vendor collects O2 sample in presence of hospital authorities & submit the report to them - OR - Hospital takes the sample and sends it to an NABL approved labs on a regular basis. Must repeat this activity whenever any major part is replaced	Vendor Hospital