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सदस्य सचिव
G. V. V. Sarma, IAS
Member Secretary

सत्यमेव जयते

भारत सरकार
गृह मंत्रालय
राष्ट्रीय आपदा प्रबंधन प्राधिकरण
Government of India
Ministry of Home Affairs
National Disaster Management Autho

No. 1-137/2020-Mit II

dated 9th May, 2020

Dear Madam/ sir,

Enclosed herewith please find guidelines on restarting manufacturing industries after the lockdown period. It is requested that the field functionaries may be advised to ensure strict compliance.

Yours sincerely,

9/5/2020

G.V.V. Sarma,
Member Secretary

To

Chief Secretaries of States/

Administrators/ Advisers to Administrators of Union Territories

Guidelines for restarting manufacturing industries after lockdown

In early response to COVID-19, nationwide lockdown was ordered with effect from 25th March. As the lockdown is being gradually released in some zones, certain economic activities are being permitted as per NDMA orders No.1-29/2020-PP dated 1st May 2020 and MHA order No. 40-3/2020-DM-I(A) dated 1st May 2020.

Due to several weeks of lockdown and the closure of industrial units during the lockdown period, it is possible that some of the operators might nothave followed the established SOP. As a result, some of the manufacturing facilities, pipelines, valves, etc. may have residual chemicals, which may pose risk. The same is true for the storage facilities with hazardous chemicals and flammable materials.

National Disaster Management Authority has issued 1. Guidelines on Chemical Disasters, 2007 2. Guidelines on Management of Chemical (Terrorism) Disasters, 2009 and 3. Strengthening of Safety and Security For Transportation of POL Tankers,2010, which are relevant for chemical industries. The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 under Environment Protection Act, 1086 provide the statutory requirements for these industries.

When Lockout/Tagout procedures are not in place, many energy sources can prove to be hazardous to operators/supervisors who are servicing or maintaining electrical, mechanical or chemical equipment. When heavy machinery and equipment are not maintained periodically, they can become dangerous for the operators/engineers.

Combustible liquids, contained gaseous substances, open wires, conveyor belts and automated vehicles make manufacturing facilities a high-risk environment. Improper enforcement of safety codes and improperly labelled chemicals can further pose serious health hazards.

When an unexpected event occurs, managing rapid response becomes challenging. In order to minimise the risk and to encourage a successful restart of the industrial units, the following guidelines are being issued.

State Governments shall also ensure that the off-site disaster management plan of the respective Major Accidental Hazard (MAH) units are up to date and preparedness to implement them is high. It is also advised that all the responsible officers of the district shall ensure the the Industrial On-Site Disaster Management Plans are also in place and cover Standard Operating Procedures for safe re-starting of the industries during & after COVID 19 lock down.

Generic guidelines:

1. While restarting the unit, consider the first week as the trial or test run period; ensure all safety protocols; and not try to achieve high production targets.
2. To minimize the risk it is important that employees who work on specific equipment are sensitized and madeaware of the need toidentify abnormalities like strange sounds or smell, exposed wires, vibrations, leaks, smoke, abnormal wobbling, irregular grinding or other potentially hazardous signs which indicate the need for an immediate maintenance or if required shutdown.
3. Especially during the Covid-19 times, ensure all lockout and tagout procedures are in place on a daily basis (not applicable for units running 24hrs).
4. Inspection of all equipment as per the safety protocols duringthe restart phase
5. In case the industry has any difficulty in managing crucial bakcward linkages that may be critical for their safe functioning, they should approach the local district administration for specific assistance. District Magistrates may be instructed to ensure that in such instances, the industrial

unit may be fcilitated to run their end to end operations, in the overall interests of industrial security.

For specific industrial processes:

1. **Storage of raw material**
    a. Inspect the storage facilities for any signs of spills, wear and tear during the lockdown.
    b. Check for already opened storage vessels/containers/bags/silos for possible oxidation/chemical reaction/ rusting/ rotting etc.
    c. HAZMAT Chemicals in the storage need to be checked for chemical stability before using for any processes
    d. Ensure ventilation and proper lighting before entering the storage areas
    e. Sense for abnormalities like strange sounds or smell, exposed wires, leaks and smoke
    f. Check supply pipelines/valves/conveyor belts for any signs of damage/wear & tear
    g. Check the storage building for any signs of distress and damage to the roof.
2. **Manufacturing Processes**
    a. Carry out a complete SafetyAudit of the entire unit before taking up starting activities
    b. Cleaning of pipelines, equipment and discharge lines: Mechanical cleaning followed by air /water flushing and chemical cleaning based on the type of the process equipment
    c. Run-in of rotatory equipment under supervision
    d. Boilers/ furnaces/ heat exchangers to be checked for lining and signs of wear and tear
    e. Check supply pipelines/valves/conveyor belts for any residual material and wear and tear. Also check all the pipelines / valves for obstructions/ pressure levels.
    f. Ensure all pressure, temperature gauges are functional
    g. **Tightness test:**Many process units handle combustibles or toxic substances (or both), the leakage of which could result in disaster, damage, or economic loss. To prevent the occurrence of such incidents, it is necessary to confirm that the plant complies with the required tightness before start-up.
    h. **Service test** need to be performed for all water, compressed air, and steam piping and equipment with normal operating fluids. The system is first pressurized with operating fluids and then checked for leakage. For air lines, leaks can be found using soap solution. For water and condensate lines, the leakage can be observed visually. Leakage points found during the test are retightened. The test is deemed successful if no foam is observed from soap solution, or if no water or condensate is observed visually.
    i. **Vacuum hold test:** All vacuum systems must be leak tested. Air inside the system is first evacuated to attain the required vacuum. The best way is to start at one end of the section and work through to the other end, checking flanges, valves, fittings, instruments, and other equipment. Each leak is tagged, making it easy for the maintenance team and personnel of the next shift to continue with the work.
    j. Trial testing be carried out before the full-fledged production is initiated with full human resources
    k. Ensure the arrangement for round-the-clock emergency crews/ professional technical teams provided with MAH and cluster of MAH should have an extended coverage of 200 km to reach transport accident spots for help

3. **Storage of products**

a. Check the storage facilities / silos for any damage or wear and tear

4. Guidelines for the workers

1. Ensure 24 -hour sanitisation of the factory premises.
   a. Factories need to maintain a sanitisation routine every two-three hours especially in the common areas that include lunch rooms and common tables which will have to be wiped clean with disinfectants after every single use.
   b. For accommodation, sanitisation needs to be performed regularly to ensure worker safety and reduce spread of contamination.
2. Entrance health checks
   a. Temperature checks of all employees to be done twice a day.
   b. Workers showing symptoms should not report to work.
3. Provisions of hand sanitisers and mask to all employers.
   a. Providing gloves, masks and hand sanitisers to be done at all factories and manufacturing units.
4. COVID 19 health and prevention staff education
   a. Education on safety steps to take from entry to exit in the factory
   b. Measures to take precautions at personal level
5. Quarantine measures for supply and storage of goods
   a. Sterilise boxes and wrapping brought into factory premises
   b. Isolate and sanitise finished goods as appropriate
   c. Delivery of goods in shifts
6. Physical distancing measures
   a. Create physical barriers to ensure the physical distance within the work floor and dining facilities
   b. Provide face protection shields along with masks and PPEs.
7. Working in shifts
   a. Factories that work 24 hours at full production capacity should consider one hour gap between shifts, except factories/plants requiring continuous operations.
   b. Managerial and administrative staff should work one shift at 33 per cent capacity as per MHA guidelines; but while deciding which particular person to be included in 33% at any given point of time, overriding priority should be given to personnel dealing with safety.
   c. Ensure no sharing of tools or workstations to the extent possible. Provide additional sets of tools if needed.
8. Scenario plan on discovering a positive case
   a. Factories have to prepare accommodation to isolate workers, if needed.
   b. HR has to help manage the whole process for individual, all travelling employees also to undergo a mandatory14-day quarantine
9. Presence of skilled workers

Workers involved in dealing with hazardous material must be skilled and experienced in the field. No compromise on deployment of such workers should be permitted when an industrial unit is opened up.
