



April 2020

# Marsh Risk Consulting Checklist

# IMPORTANT MEASURES FOR COMPANIES IN CASE OF TEMPORARY BUSINESS INTERRUPTION, MINIMAL OPERATION

This information sheet applies to temporary shutdowns, such as company holidays, production-related shutdowns, planned shutdowns on a longer term, temporary closures, etc. or reduced operational activities as minimum operation.

The possible measures listed below are intended to be helpful and supportive for the employees who are responsible for the preparation of operational downtimes, the duration of the operational downtime and for restarting activities after operational downtimes.

## I. Measures before the shutdown

### Fire Protection System

	Yes	No
<b>Fire alarm system</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Check the batteries</li> <li>• Test the alarm chain before shutting down the operation</li> <li>• Ensure the connection to a permanently occupied location</li> </ul>		
<b>Automatic extinguishing systems</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Check the filling levels (firefighting water, diesel tanks for pumps and emergency power systems, foam agents, gas of gas extinguishing system)</li> <li>• Ensure the automatic operation of the pumps</li> <li>• Check if all valves are in the correct position</li> <li>• Mechanically secure externally accessible valves of extinguishing systems (e.g. chain)</li> <li>• Check the power supply in the event of a power cut in some areas</li> </ul>		
<b>Fire protection closures</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Close all fire doors and fire gates</li> </ul>		
Documentation of the above mentioned measures for verification	<input type="checkbox"/>	<input type="checkbox"/>
Temporarily complete repair measures on fire protection systems, if possible	<input type="checkbox"/>	<input type="checkbox"/>
<b>Hydrants on the property</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Check that all valves on hydrant pipes are in open position</li> <li>• Ensure accessibility for the firefighting service</li> <li>• Check the marking of the hydrants</li> </ul>		

## Infrastructure

	Yes	No
<b>Gas supply</b> <ul style="list-style-type: none"> <li>Switch off the natural gas or liquid gas supply at the next shut-off level behind the necessary heating</li> <li>Shut down the gas supply at storage tanks, such as pressure vessels or gas cylinders</li> <li>Do not disconnect or remove connecting pipes or tubes</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Water supply</b> <ul style="list-style-type: none"> <li>Ensure frost protection for water lines, drain if necessary</li> <li>Shut off the main water supply if possible (not fire water supply)</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Building heating system</b> <ul style="list-style-type: none"> <li>Check the water level of the boiler and heating system</li> <li>Control the setting of the minimum temperature to ensure frost-free areas where necessary</li> <li>Ensure the fuel supply for the heating system of necessary areas</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Air handling system</b> <ul style="list-style-type: none"> <li>Do not switch-off the air handling and ventilation system for storage areas of hazardous liquids</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Compressed air supply</b> <ul style="list-style-type: none"> <li>Shut down air compressor according to standard</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Electrical power supply</b> <ul style="list-style-type: none"> <li>Deactivate the electrical power of production lines, buildings and other areas</li> <li>Switch off non-relevant electrical equipment, pulling plugs might be necessary (battery charges, coffee machines, printer, monitors etc.) if the hall power must be maintained</li> <li><b>Attention:</b> Do not switch off the power supply for safety-relevant systems, e.g. sprinkler system, pumping equipment, server rooms</li> <li>Check if systems that have critical shutdown and start-up times must remain powered</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Access control</b> <ul style="list-style-type: none"> <li>Lock all external doors of the buildings</li> <li>Organize the provision of emergency keys if no fire brigade key depot is available on site</li> <li>Arm the alarm systems in arrangement with the security service</li> <li>Switch-on of the automatic night security lighting, motion sensor controlled or continuous</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Building integrity</b> <ul style="list-style-type: none"> <li>Close the roof lights and roof openings as well as smoke and heat venting systems</li> <li>Check and clean the roof drains to ensure that the storm drainage systems (gutters, overflow pipes, scuppers) are not obstructed</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Perimeter integrity</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Remove combustible storage in &gt;20 m distance from buildings</li> <li>Remove combustible storage from the plot boundary</li> <li>Clearance of the access and by-pass road for the fire brigade</li> </ul>		
<b>Protection against natural hazards (if present)</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Ensure the availability of defined protection measures against natural hazards like flood barriers</li> <li>Organization and provisioning of an emergency response team for natural hazards to follow the emergency plan</li> </ul>		
<b>Organizational measures</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>External communication</li> <li>Inform the insurers about the planned duration and extent of the shutdown Inform the fire brigade, police and public authorities</li> <li>Inform the security service about the changed operation hours</li> <li>Inform suppliers and other third parties (logistic company) about the shutdown</li> <li>Display the emergency phone numbers at the main gate or entrance</li> <li>Check the housekeeping</li> <li>Clean critical areas</li> <li>Reduce the combustible load inside the building as good as possible</li> <li>Minimize quantities of flammable liquids stored on site and move all flammable liquids to dedicated ignitable- liquid storage areas or using appropriately rated containers.</li> <li>Remove products from machines and production lines</li> <li>Check the maximum storage height in sprinkler protected areas of production and storage buildings</li> <li>Consider the parking position of cranes to prevent spray obstructions of the sprinkler</li> <li>Define the steps for the ramp-up phase and the function of the teams before the first production shift begins after the shutdown</li> <li>Instruct the staff on control rounds that have to be carried out during the shutdown</li> </ul>		

## II. Measures during shutdown

	Yes	No
<b>Regular control rounds</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Inspections of the property to check the security measures of the building and the integrity of the fence</li> <li>Check the windows and building parts for damages</li> <li>Visual inspection of the sprinkler system (leakage, system pressure, fluid level of the sprinkler water tank and the diesel tank) – if possible weekly</li> <li>Inspection of the alarm panel of the fire alarm system and sprinkler system regarding any fault indication - if possible weekly</li> <li>Inspection of the necessary heating system regarding fault indication</li> <li>Check the emergency power system for operational readiness</li> </ul>		

<b>Natural hazards</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Inspection of snow loads on the roofs</li> <li>• Monitoring of the weather forecasts regarding hazards</li> </ul>		
<b>Fire protection and safety systems</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Maintenance and test of the sprinkler system if the operation downtime is longer than 4 months</li> <li>• Check and test of the alarm transmission</li> <li>• Testing of the emergency power if the operation downtime is longer than 4 months</li> </ul>		
<b>Organizational</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Organization and scheduling of teams for commissioning</li> </ul>		

### III. Measures for start of operation

#### Fire Protection System

	Yes	No
<ul style="list-style-type: none"> <li>• Complete maintenance and inspection of the sprinkler system according to the regulation using the time of the interruption as the basis for the degree of inspection</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Complete maintenance and inspection of the fire detection system according to the regulation using the time of the interruption as the basis for the degree of inspection</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Inspection of all other fire protection systems according to the regulation</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Before the ramp-up of the production, all fire protection systems must be tested and operable</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>

#### Infrastructure

	Yes	No
<ul style="list-style-type: none"> <li>• Observance of the defined sequence of commissioning of utility systems and the production facilities</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Pipelines</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Check the gas pipes regarding leakages before commissioning</li> <li>• Check the building heating system regarding leakages before commissioning.</li> <li>• Purge tap water pipes to avoid legionella and bacteria</li> </ul>		
<b>Exhaust air systems</b>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Empty and clean the filter systems</li> <li>• When restarting the filter systems, check for a possible pressure drop or additional cleaning after an appropriate period of time</li> <li>• Before commissioning of RTO, thermal after-burner unit of other thermal exhaust gas-cleaning units, exhaust pipes have to be inspected for condensates and deposits</li> </ul>		

## Others

	Yes	No
<ul style="list-style-type: none"><li>Sequential switching-on of the electrical power downstream from the main supply to distribution boards</li></ul>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Check the safety shields of machines like the operator protection at rotating machines</li></ul>	<input type="checkbox"/>	<input type="checkbox"/>

If you have any questions or need additional guidance, please reach out to your Marsh Risk Consulting property risk consultant or visit <http://marsh.co.in/service/riskconsulting> / or contact [riskconsulting.india@marsh.com](mailto:riskconsulting.india@marsh.com)

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