

The purpose of this document is to outline the quality specific recommendations for restarting supply chain operations following a shutdown of an operation due to a pandemic. This document is intended to *supplement* any/all existing documents that reference start-up or restart processes. It provides additional specific information required for leaders across all functions to bring the end-to-end supply chain back to running at full or partial capacity.

Quality Recommendations For A Site Start Up

Workstream: Aspect of Workstream	Responsible Organization	Key processes to be Addressed	Owner/Resource	Supporting Process Documentation
Workforce: Proper Training	Plant	<ul style="list-style-type: none"> ➤ Identify where additional training is required, especially for employees who are working in an area they were not working in prior to the shut down ➤ Re-affirm, through quality orientation, what quality control requirements are relevant to each employee, and confirm understanding ➤ Re-affirm key support resources for the operators should any questions arise, specifically regarding quality or safety, during the restart time. (First 30 days) 	Owner: Plant Quality Leader Resource:	Local, Site specific quality procedure for startup Ensure right production personnel resume to work, especially the people for critical process (COC, PTC and Special Processes)
Workforce: Gauges and Other Quality Equipment	Operations, ME, Quality	<ul style="list-style-type: none"> ➤ Ensure that all functional gauges are properly calibrated ➤ Utilize the MSA procedure if new operators are being introduced to the station ➤ Review all, applicable process documentation for adequacy 	Owner: Plant Quality Leader, Operations Leader Support: Operations leaders, managers and team leaders, line quality engineers	Local, Site specific quality procedure for start up *Ensure equipment, facility, fixture/gauge are in the correct status and maintain/repair/calibrate as appropriate.

Workstream: Aspect of Workstream	Responsible Organization	Key processes to be Addressed	Owner/Resource	Supporting Process Documentation
Workforce: Product Traceability	Operations, ME, Quality	<ul style="list-style-type: none"> ➤ Ensure that product that is being introduced into production is clearly identified by lot number, and if possible, serialized individually ➤ Ensure that first piece production is clearly identified by month, day, time, and either lot number or specific part serial number ➤ Ensure that the last piece produced on a given shift is confirmed to be properly inspected and that the part meets all required specification 	<p>Owner: Plant Quality Leader, Operations Leader</p> <p>Support: Operations leaders, managers and team leaders, line quality engineers</p>	<p>Local, Site specific quality procedure for start up</p> <p>*Ensure all product traceability.</p> <p># Retain records of first off and last off daily.</p>
Workforce: Non-Standard Process	Operations, ME, Quality	<ul style="list-style-type: none"> ➤ Any non-standard processes must be approved by the area, and site quality leaders ➤ Any product produced using a non-standard process must be clearly identified, and segmented for clear visibility through the production process, until receiving approval to be placed in the normal production population 	<p>Owner: Plant Quality Leader, Operations Leader</p> <p>Support: Operations leaders, managers and team leaders, line quality engineers</p>	<p>Local, Site specific quality procedure for start up</p> <p>*Ensure to get approval for any repair or rework.</p>
Workforce Process Control	Operations, ME, Quality	<ul style="list-style-type: none"> ➤ Statistical Process Control (SPC) Procedures must be reviewed for adequacy ➤ Strict guidelines should be followed to migrate from 100% inspection, to the prescribed sampling frequency, indicated in the local procedure ➤ Process control should be highly monitored until control charts indicate stability 	<p>Owner: Plant Quality Leader, Operations Leader</p> <p>Support: Operations leaders, managers and team leaders, line quality engineers</p>	<p>Local, Site specific quality procedure for start up</p> <p>#Ensure key process capability to meet requirement especially on SPC control.</p>
Workforce Raw Material Introduction	Operations, ME, Quality	<ul style="list-style-type: none"> ➤ Ensure that the correct material is being brought to the line for processing by checking part number, work order, and line schedule, if applicable ➤ Ensure that material being brought to the line is marked as having been accepted by the responsible people or process 	<p>Owner: Plant Quality Leader, Operations Leader</p> <p>Support: Operations leaders, managers and team leaders, line quality engineers</p>	<p>Local, Site specific quality procedure for start up</p> <p># Ensure to use the correct raw material or components.</p>

Workstream: Aspect of Workstream	Responsible Organization	Key processes to be Addressed	Owner/Resource	Supporting Process Documentation
Workforce EOL and Functional Test	Operations, ME, Quality	<ul style="list-style-type: none"> ➤ Ensure that the end-of-line test equipment has been thoroughly tested and confirmed to be capable to detect performance features that do not meet specification ➤ Ensure that all other functional test, like leak test, have been either re-calibrated, or validated with approved boundary samples and are fit to be placed back into the process 	<p>Owner: Plant Quality Leader, Operations Leader Support: Operations leaders, managers and team leaders, line quality engineers</p>	<p>Local, Site specific quality procedure for start up # Ensure EOL test / Leakage test perform well and keep records.</p>
Supply Chain: Supplier Quality Improvement Engineer (SQIE)	Supplier Quality, Plant Quality	<ul style="list-style-type: none"> ➤ Ensure that all material coming from the supply base has been validated by the appropriate SQIE, and is marked accordingly ➤ Ensure that all applicable start up processes have been completed at the supplier, including, and up to, a PPAP ➤ Ensure that where required, process control sustainability has been documented and confirmed by the responsible SQIE ➤ Ensure required start up quality confirmation, as a part of increased inspection has been completed 	<p>Owner: Supplier Quality</p> <p>Support: Operations leaders, managers and team leaders, line quality engineers</p>	<p>Local, Site specific quality procedure for start up # Ensure to provide SQIE break point of resume to production #Ensure to provide SQIEs the inspection reports of first 3 batches since resume to production with quality leader signature.</p>
Supply Chain: Supplier Quality Improvement Engineer (SQIE) – Supplier Site Activities	Supplier Quality, Plant Quality	<ul style="list-style-type: none"> ➤ Ensure that safe launch, or a comparable process has been completed at the supplier's site ➤ Ensure that similar disciplines are being followed at the supplier's tier 1 suppliers ➤ Ensure that suppliers are aggressively pursuing all actions that could contribute to a Zero-Defect Mentality (ZDM) and are keenly aware of the necessity of a smooth start up for us and our Customers 	<p>Owner: Supplier Quality</p> <p>Support: Operations leaders, managers and team leaders, line quality engineers</p>	<p>Local, Site specific quality procedure for start up #SQIE will evaluate any risk of supplier resume to production and kick off safe launch on applicable suppliers. # Ensure your sub-supplier follow the same actions that you are requested to follow. #Supplier takes other actions to ensure quality as needed per your respectively situations.</p>