

### Example from a Function-based FMEA

**Machine/Process:** Onboard compressed air system

**Subject:** 1. Provide compressed air at 100 psig

**Description:** Intake air, compress the air to 100 psig, and distribute the air (without loss) to the manufacturing tool stations or machine

**Next higher level:** Compressed air system

| Failure Mode                             | Effects                 |                              |   | Causes   | Indications  | Safeguards   | Recommendations/Remarks   |
|--|-------------------------|------------------------------|---|--|--|--|---|
|  | Local                   | Higher Level                 | End   |  |  |  |   |
| •<br>•<br>•                              | •<br>•<br>•             | •<br>•<br>•                  | •<br>•<br>•   | •<br>•<br>•  | •<br>•<br>•  | •<br>•<br>•  | •<br>•<br>•   |
| ☐ No/inadequate compressed air on demand | No air flow or pressure | No air flow to manufacturing | Interruption of the systems supported by compressed air | No/inadequate intake air<br>No/inadequate air compression<br>No/inadequate containment of compressed air<br>No/inadequate air distribution flow path | Possibly no air pressure at the gauge on the air receiver or at the gauges for the tool stations (unless the flow path is blocked downstream of a gauge) | Rapid detection of quick interruption of the supported systems | Consider regular monitoring of the pressure differential across the intake air filter<br><br>Consider checking the rain cap on the air intake annually<br><br>Consider a redundant compressor |
| •<br>•<br>•                              | •<br>•<br>•             | •<br>•<br>•                  | •<br>•<br>•   | •<br>•<br>•  | •<br>•<br>•  | •<br>•<br>•  | •<br>•<br>•   |