



DATA SHEET

## Pre-Startup Safety Review (PSSR) Checklist partial example

A PSSR is a very critical document. It needs to be tailored to the specific process and facility to which it applies. In this example we show the major sections it should contain, and we develop [a few sample questions in each section, for a specific case.](#)

This example is an only excerpt of a real, complete PSSR. By no means can it be used for a real application.

A PSSR needs to be complete and fine-tuned to every specific application.

### Pre-Startup Safety Review (PSSR) Checklist | partial example

#### Project Information

- Process Hazard Analysis has been conducted, and the recommendations have been implemented or resolved.

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- Review has been performed and the installation is compliant with legal requirements and corporate standards.

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#### General Safety

- All the conditions concerning safety, hygiene, environmental protection, which were defined in authorization of the new facility/change/overhaul, have been met.

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- List of general safety risks has been updated.

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## Machinery and Equipment Safety

- Ex-proof rated electrical equipment has been inspected - equipment meets the electrical and Ex-proof classification of the area including gas and temperature ratings.
- Grounding of equipment units - a grounding continuity test has been performed and found satisfactory.
- ...

## Procedures and Training

- Instruments, alarms and trips have been properly provided for and located to adequately assist in safe operation.
- Operation instructions have been prepared / updated. Minimum, maximum and desired operating conditions are clearly listed for all operating parameters. Consequences of deviations given and actions to take in the event of a deviation clearly highlighted. PPE caution statements incorporated in step-by-step procedures.
- ...

## Interlocks and Alarms

- Alarm, trip and interlock list has been updated.
- Control logic has been updated.
- ...

## Relief Devices

- Relief cases considered (liquid, vapor, two-phase flow), worst case identified, pressure relief device sizing calculations are available and checked / approved (design has accounted for presence of relief device discharge piping, common vent headers).
- Proper condition, sizing and setting of pressure relief valves and rupture discs.
- ...

## Piping &amp; Valves

- Correct piping has been used (rating, material of construction etc.).
- Piping has been pressure (i.e. hydro-test) or vacuum tested or x-rayed.
- ...

## Mechanical Integrity

- Critical safety systems have been identified, calibrated, tested and they are fully operational.
- Maintenance instructions have been prepared / updated and approved.
- ...

## Fire &amp; Explosion Protection

- Area classification report and drawing has been updated (should include process and ancillaries such as waste handling areas).
- Ventilation rate is suitable - calculations have been done.
- ...

## Industrial Hygiene

- Adequate provisions have been specified for the safe handling of corrosive, toxic, carcinogenic, teratogenic, or otherwise hazardous material.
- Potable water is physically separated from process usage.
- ...

## Environmental Protection

- Secondary containment is adequate e.g. bunds and of adequate volume.
- Air monitoring and noise monitoring instructions have been updated.
- ...

## Field Verification

- Safety signs.
- Proper lighting in the facility for normal operation and maintenance.
- ...

## DEKRA Process Safety

The breadth and depth of expertise in process safety makes us globally recognised specialists and trusted advisors. We help our clients to understand and evaluate their risks, and work together to develop pragmatic solutions. Our value-adding and practical approach integrates specialist process safety management, engineering and testing. We seek to educate and grow client competence to provide sustainable performance improvement. Partnering with our clients we combine technical expertise with a passion for life preservation, harm reduction and asset protection. As a part of the world's leading expert organisation DEKRA, we are the global partner for a safe world.

### Process Safety Management (PSM) Programmes

- > Design and creation of relevant PSM Programmes
- > Support the implementation, monitoring, and sustainability of PSM Programmes
- > Audit existing PSM Programmes, comparing with best practices around the world
- > Correct and improve deficient Programmes

### Process Safety Information/Data (Laboratory Testing)

- > Flammability/combustibility properties of dusts, gases, vapours, mists, and hybrid atmospheres
- > Chemical reaction hazards and chemical process optimisation (reaction and adiabatic calorimetry RC1, ARC, VSP, Dewar)
- > Thermal instability (DSC, DTA, and powder specific tests)
- > Energetic materials, explosives, propellants, pyrotechnics to DOT, UN, etc. protocols
- > Regulatory testing: REACH, UN, CLP, ADR, OSHA, DOT
- > Electrostatic testing for powders, liquids, process equipment, liners, shoes, FIBCs

### Specialist Consulting (Technical/Engineering)

- > Dust, gas, and vapour flash fire and explosion hazards
- > Electrostatic hazards, problems, and applications
- > Reactive chemical, self-heating, and thermal instability hazards
- > Hazardous area classification
- > Mechanical equipment ignition risk assessment
- > Transport & classification of dangerous goods

We have offices throughout North America, Europe, and Asia.

For more information, visit [www.dekra.com/process-safety](http://www.dekra.com/process-safety)

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Would you like to get more information?

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