

Suggested Data for Operation and Configuration Control Plan (OCCP) Requests

What is an OCCP and when is one required?

An OCCP is a written assessment stating that flight or flight-like experimental pressure vessel/systems are safe for pressurization on JSC property. These unique pressure systems are referred to as “Category B” systems in JHB 1710.13B. Flight and flight-like pressure systems typically have one or more components that are not directly compliant with ASME Codes, or other equivalent pressure codes, and therefore are not classified as “Category A” systems. Safety assessment of all JSC Category B systems is the responsibility of the Materials and Process Technology Branch (ES4). Safety assessment of all other JSC pressure systems is the responsibility of the Pressure Systems Manager’s Office (PSMO) within the Safety, Reliability, and Quality Assurance (SR&QA) organization.

An OCCP is required anytime a Category B system will be pressurized on JSC property. Pressurizations may include proof pressure tests, leak tests, functionality tests, charging processes, etc. OCCPs typically apply only to the actual flight or flight-like system. Therefore, the safety of any facility pressure system or ground support equipment to be mated to the Category B system shall be assessed by the PSMO.

The following is a summary of information recommended by ES4 to accompany OCCP requests. Not all the information outlined below will apply to all pressure systems, nor is a *formal* data submittal required to generate an OCCP. Please note, however, that adherence to the information order and content outlined below will facilitate processing of OCCP requests.

1. Statement of purpose.
For what purpose is this OCCP being requested (e.g. proof test, leak test, operational test, combination, etc.)?
2. Test location.
Where will the pressurization take place?
3. System description.
Is the system flight or flight-like?
What is the system designed to do?
When and where was the hardware first assembled?
Has the hardware been modified since its original build?
4. Pressure history.
What historical documentation exists for the system, or for parts of the system?
Is a pressure or service history available?
5. Description of system fluid(s).
What is the system fluid?
Is the fluid toxic?
What nominal and worst-case temperatures might the fluid experience?

6. Schematic diagram:
Provide a schematic of the system showing:
 - Hardware arrangement
 - Test pressures
 - Interfaces with facility hardware

7. Detailed drawings.
Include any detailed drawings available for the system.

8. Maximum Design Pressure (MDP).
What is the system's MDP?
How was the MDP established?
What failure scenario led to determination of the MDP?
Is this at least a two-fault tolerant scenario?
What faults were assumed?

9. Component matrix.
For each part in the system (line, vessel, component, etc.), outline the following in matrix form:
 - Part description
 - System fluid
 - Nominal operating pressure
 - Manufacturer pressure rating
 - MDP
 - Factor of safety (manufacturer pressure rating/MDP)
 - Material of construction
 - Attachment method (i.e. weld, braze, compression fitting, coupling, etc.)

10. Test procedures.
Include any written procedures available that describe the pressurization/operation activities planned for the system.

11. Fracture/stress analyses.
Include any fracture and/or stress analyses that may have been completed for the system.

12. Date required.
When is the OCCP needed?

13. Pressure System Managers Office (PSMO) involvement.
Has the PSMO (Paul Torrance, 281-483-1883) been contacted regarding this pressure system?
Has PSMO inspected any pressurized ground support equipment or other facility pressure systems that might interface with this system?
Is there any pressure equipment planned for use that is not either covered by PSMO or covered within the planned OCCP?

14. Personnel involvement.

Who, besides PSMO, must be included on distribution of this OCCP (i.e. project managers, project and safety engineers, etc.)?

15. Safety review panel involvement.

Has either the Payload Safety Review Panel (PSRP) or the Space Station Review Panel (SRP) assessed this flight system for safety?

If so, please include a copy of the Safety Data Package (SDP).

16. Special considerations.

Are there any special components or system hardware that deserve special attention?

If any welds or brazes exist in the system, did certified personnel make them?

Were the welds or brazes proof pressure tested and/or inspected?

OCCP questions and/or requests should be directed to either:

Glenn Ecord, ES4, (281)-483-8924, or

Keith Beckman, ES4, (281)-244-5876.