

Enclosure 3
Safety Related Valve Requirements Redacted
(non-proprietary)

SAFETY RELATED VALVE REQUIREMENTS

Purpose:

Valves within the MSRR perform safety related functions related to the control of reactivity and the containment of radionuclides. The preliminary to-and-from location, quantity, valve type, condition, and design/qualification codes and standards of the safety related valves are provided. Because all of the valves are safety related, they are also classified as seismic class I.

Valves:

From	To	Quantity	System	Valve Type*	Temp**
V-7004	V-7002	1 inside V-3004, 1 outside V-3004	ESF	██████████ Fail Closed	██████████
V-7002 and 7001	C-6006	2 inside V-3004, 1 outside V-3004	ESF	██████████ Fail Closed	██████████
UF4 Handling	V-3003	1 inside V-3004, 2 outside V-3004	ESF	██████████ Fail Closed	██████████
V-3003	V-3002	4 outside T-3001	RPS	██████████ Fail Open	██████████
V-3003	V-3002	2 inside T-3001	RPS	████████████████████ ██████████ Fail Open	██████████
V-3002	V-1002	1 inside T-1005	ESF	████████████████████ Fail Closed	██████████
V-3002	V-1002	1 inside T-1005	ESF	████████████████████ ail Closed	██████████
V-7307, V-7308, and V-7003	Common Header V-1002	3 outside T-1005	ESF	██████████ Fail Closed	██████████
V-7307, V-7308, and V-7003	Common Header V-1002	3 outside T-1005 (upstream of both isolation valves)	ESF	Pressure relief valve (PRV) ██████████ ██████████	██████████
Common Header V-1002	V-1002	1 inside T-1005	ESF	██████████ Fail Closed	██████████

From	To	Quantity	System	Valve Type*	Temp**
V-1002	X-1001	1 inside T-1005, 1 outside T-1005	ESF	[REDACTED] Fail Closed	[REDACTED]
T-1005	X-1001	1	ESF	PRV [REDACTED]	[REDACTED]
V-1002	T-1005	1	ESF	PRV [REDACTED]	[REDACTED]
X-6002A/B	V-7003 or F-8002	1 inside T-6009, 1 outside T-6009	ESF	[REDACTED], Fail Closed	[REDACTED]
V-1001, V-1004	V-1002	TBD based on DOE shipping	ESF	TBD based on DOE shipping	[REDACTED]
V-1002	Sample	1 inside T-1005, 1 outside T-1005	ESF	[REDACTED] Fail Closed	[REDACTED]

[REDACTED]

** Unless mentioned otherwise, the valves are primarily made of SS316. Valves with a service temperature above 425 °C require SS316H. Valves with a service temperature below 425 °C may use SS316L.

Operating and Design Conditions:

- The components inside the RTMS shall be designed to operate within the high-temperature environment.
- The preliminary design pressure is 70 psig. The final design pressure will be confirmed in the detailed design.

Applicable Codes and Standards: Safety related valves constructed out of SS316 will be manufactured under ASME BPVC Section III, 2017 Edition. Safety related valves constructed out of Ni-201 will be manufactured under ASME B16.34 (2020 Edition unless the 2013 Edition is required by Section III Division 5). Provisions governing the use of Ni-201 are provided in the description of V-1002. Requirements pertaining to active mechanical equipment within ASME QME-1 (2017) will be satisfied subject to provisions specified in Regulatory Guide 1.100 Revision 4 (2020). ANS 15.8-1995 will define the quality assurance requirements. Safety related valves will be accessible for maintenance and testing.

Materials of Construction: Stainless steel 316 unless otherwise specified.