NPP
Nuclear Power Plants

seitzvalve

Scram Solenoid Pilot Valve

The Scram Solenoid Pilot Valves (SSPVs) are an integral part of the BWR reactor protection system. SSPV type 2562 was designed to original specifications and fits into the existing mounting configuration of the BWR Hydraulic Control Unit with no hardware modification needed.

- **Proven design with no reported malfunctions since initial installation in 2000**
- **Reliable, short switching times**
- **Low power consumption reduced aging**
- **No membranes**

Seitz provides spare parts, replacement solenoids and maintenance services for the SSPVs. No preventative maintenance required throughout the qualified lifetime of 40 years in operation.

Qualifications

Safety class	2
Seismic category	I
Electrical class	1E
Qualification and design bases	IEEE 323-1971, 1974, 1983; IEEE 344-1971, 1975, 1987; IEEE 382-1980, 1985, 1996; IEEE C37, 105-1987; NRC Regulatory Guide 1.100; NRC Regulatory Guide 1.89; NUREG-0588-1979; NMP2-416M, Rev. 0 - 1/29/98
Qualified lifetime	40 years

Harsh environment

Temperature peak	187.7 °C (370 °F) duration 3 min
Pressure peak	2.3 bar (33 psig) duration 3 min
Operating time	110 days under defined pressure and temperature profile
Radiation	1.17 × 10^8 rad (normal + accidental + 10% margin)
Relative humidity	100%
Submergence	The solenoid valves were submerged for the first 5 s of the DBE simulation to simulate the froth condition
Chemical spray	40.7 l/min/m^2 (1 gpm/ft^{-2})
Seismic	20 g peak between 0.5 to 100 Hz

NPP references

Nine Mile Point	USA
Perry	USA

Specifications

Valve type 2562	
Operating system	Pilot operated with system media fluid
Function	3-way, NC
Fluid	Air / Nitrogen
Nominal diameter	14 mm (0.55 in)
Ambient temperature	Max. 40 °C (104 °F)
Pressure range	1 to 9 bar (15 to 131 psig)
Flow coefficient Kv (Cv)	3.44 (4.00)
Leakage	Max. 1.4 Nl/h (23.6 scc/min.)
Weight	0.970 kg (2.14 lbs)
Material	Body: Aluminum Ti-anodized Elastomers: FKM
Response time	at 45 psig < 40 ms at 17.5 psig < 60 ms
Reset from scram	≤ 20 s

Specifications

Solenoid type 1B74	
Rated voltage	24 to 250 V AC/DC (+/- 10%)
Rated power	9 W / 15 VA
Frequency range	50 (+/- 3 Hz) to 60 Hz (+/- 3 Hz)
Weight	0.3 kg (0.66 lbs)
Ambient temperature	-30 to 60 °C (-22 to 140 °F)
Ingress degree	IP 66 (NEMA 4/4X)

259.108.01 Rev03 1712/0.3

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