



Spoke RF Power Station (RFPS)

RUTAMBHARA YOGI, ELECTRICAL POWER SYSTEMS (EPS) GROUP

2025-02-04



Agenda

- 1 Brief Scope description

- 2 Brief status of systems

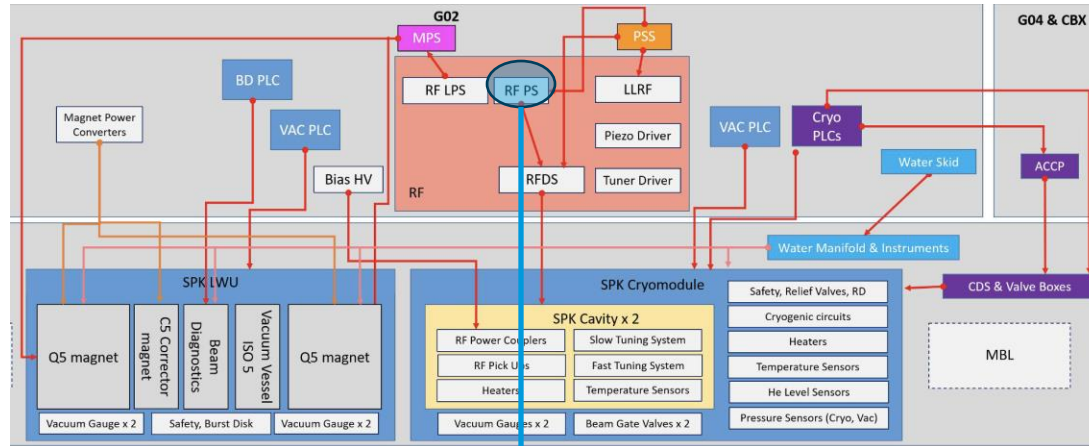
- 3 Status of documentation

- 4 Present status

Scope:



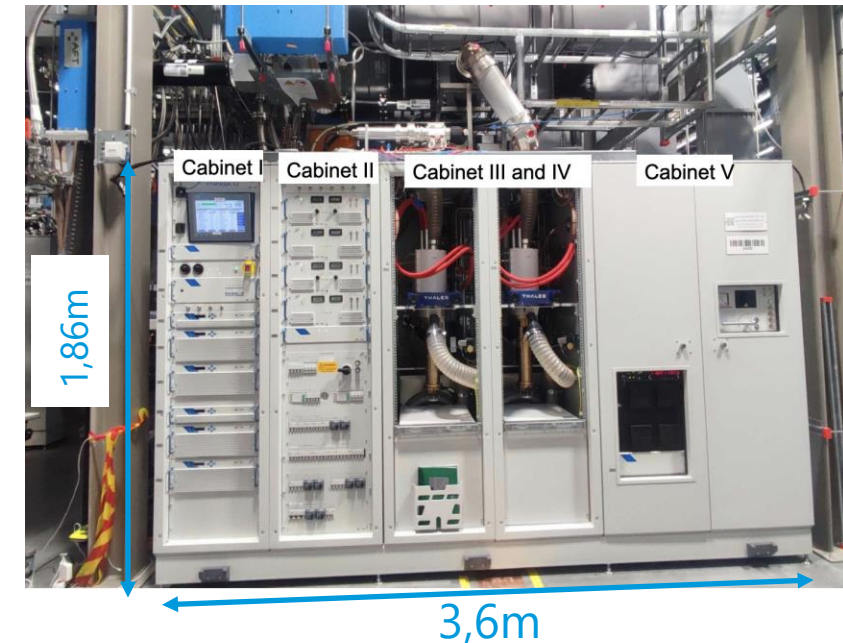
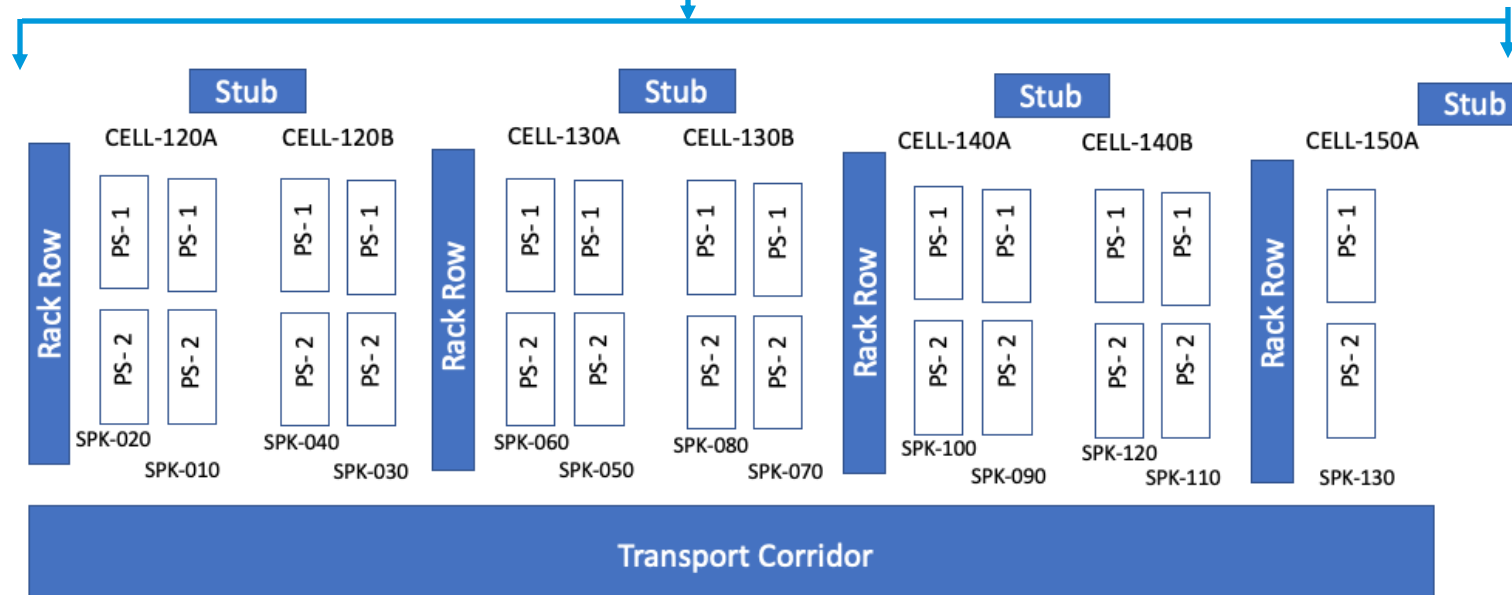
Block-diagram SPK CIDL



RF Power Station (RFPS) for SPK Number : 26

OPERATIONAL and fully handed over to operation

Installed RFPS

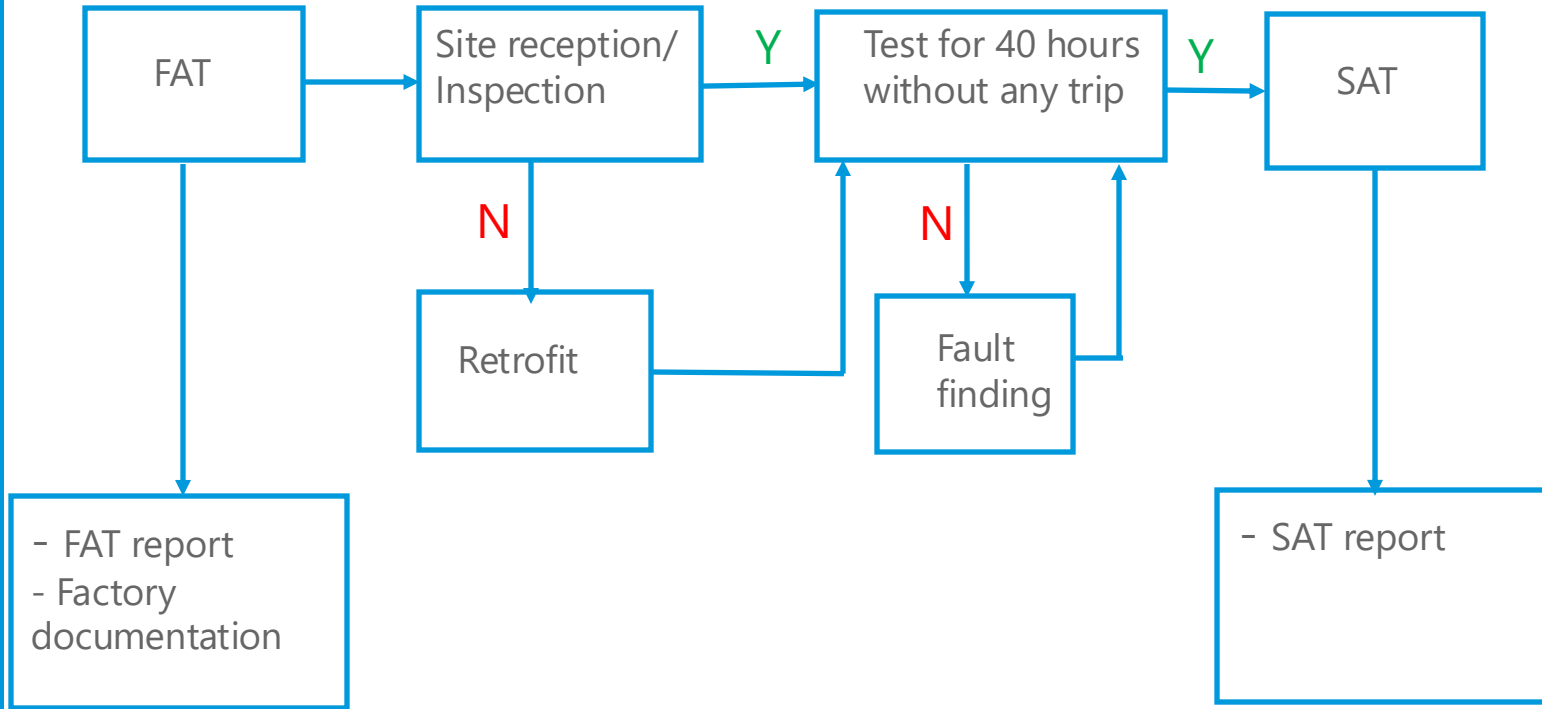


Systems Included:



Asset	FBS Name	Name during FAT	ESS Name	CHESS-ID
21880	=ESS.ACC.A03.A02.E02.T01.T02	RFPS-01	Spk-010RFC:RFS-RFPS-020	ESS-0242141
21596	=ESS.ACC.A03.A03.E01.T01.T02	RFPS-02	Spk-020RFC:RFS-RFPS-010	ESS-0242142
27183	=ESS.ACC.A03.A06.E02.T01.T02	RFPS-03	Spk-050RFC:RFS-RFPS-020	ESS-0242149
24590	=ESS.ACC.A03.A03.E02.T01.T02	RFPS-04	Spk-020RFC:RFS-RFPS-020	ESS-0242143
24588	=ESS.ACC.A03.A02.E01.T01.T02	RFPS-05	Spk-010RFC:RFS-RFPS-010	ESS-0242140
24589	=ESS.ACC.A03.A04.E02.T01.T02	RFPS-06	Spk-030RFC:RFS-RFPS-020	ESS-0242145
21597	=ESS.ACC.A03.A14.E02.T01.T02	RFPS-07	Spk-130RFC:RFS-RFPS-020	ESS-0242164
27181	=ESS.ACC.A03.A06.E01.T01.T02	RFPS-08	Spk-050RFC:RFS-RFPS-010	ESS-0242148
27176	=ESS.ACC.A03.A04.E01.T01.T02	RFPS-09	Spk-030RFC:RFS-RFPS-010	ESS-0242144
27178	=ESS.ACC.A03.A07.E02.T01.T02	RFPS-10	Spk-060RFC:RFS-RFPS-020	ESS-0242151
27179	=ESS.ACC.A03.A05.E01.T01.T02	RFPS-11	Spk-040RFC:RFS-RFPS-010	ESS-0242146
27177	=ESS.ACC.A03.A05.E02.T01.T02	RFPS-12	Spk-040RFC:RFS-RFPS-020	ESS-0242147
27180	=ESS.ACC.A03.A07.E01.T01.T02	RFPS-13	Spk-060RFC:RFS-RFPS-010	ESS-0242150
27184	=ESS.ACC.A03.A08.E01.T01.T02	RFPS-14	Spk-070RFC:RFS-RFPS-010	ESS-0242152
27182	=ESS.ACC.A03.A08.E02.T01.T02	RFPS-15	Spk-070RFC:RFS-RFPS-020	ESS-0242153
27186	=ESS.ACC.A03.A09.E01.T01.T02	RFPS-16	Spk-080RFC:RFS-RFPS-010	ESS-0242154
27185	=ESS.ACC.A03.A09.E02.T01.T02	RFPS-17	Spk-080RFC:RFS-RFPS-020	ESS-0242155
27188	=ESS.ACC.A03.A11.E01.T01.T02	RFPS-18	Spk-100RFC:RFS-RFPS-010	ESS-0242158
27187	=ESS.ACC.A03.A11.E02.T01.T02	RFPS-19	Spk-100RFC:RFS-RFPS-020	ESS-0242159
27189	=ESS.ACC.A03.A13.E02.T01.T02	RFPS-20	Spk-120RFC:RFS-RFPS-020	ESS-0242163
27190	=ESS.ACC.A03.A12.E01.T01.T02	RFPS-21	Spk-110RFC:RFS-RFPS-010	ESS-0242160
27192	=ESS.ACC.A03.A12.E02.T01.T02	RFPS-23	Spk-110RFC:RFS-RFPS-020	ESS-0242161
27194	=ESS.ACC.A03.A10.E02.T01.T02	RFPS-24	Spk-090RFC:RFS-RFPS-020	ESS-0242157
27193	=ESS.ACC.A03.A10.E01.T01.T02	RFPS-25	Spk-090RFC:RFS-RFPS-010	ESS-0242156
27195	=ESS.ACC.A03.A14.E01.T01.T02	RFPS-26	Spk-130RFC:RFS-RFPS-010	ESS-0242165
27191	=ESS.ACC.A03.A13.E01.T01.T02	RFPS-22	Spk-120RFC:RFS-RFPS-010	ESS-0242162

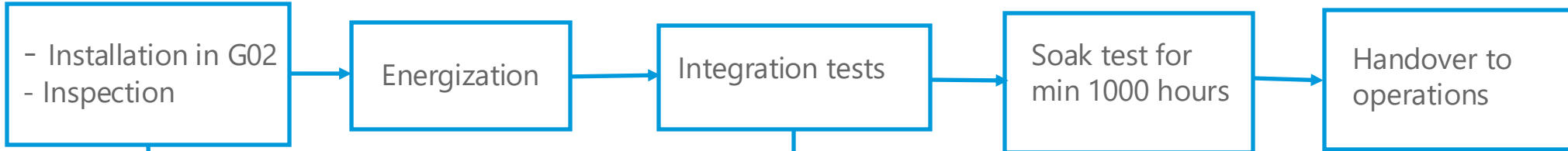
Documentation:



ESS-3482373	Quick user Manual	Released
ESS-3486497	Electrical diagrams of RFPS	Released
ESS-3524363	Electrical diagrams control system	Released
ESS-4836621	Technical Manual - RFPS 400 KW - Power	Released
ESS-4817784	Declaration of Conformity-	Released
	FAT reports	Released

ESS-5362767	RFPS-20 SAT report	Released
ESS-5362737	RFPS-01 SAT report	Released
ESS-5362752	RFPS-12 SAT report	Released
ESS-5362741	RFPS-03 SAT report	Released
ESS-5362746	RFPS-08 SAT report	Released
ESS-5362745	RFPS-07 SAT report	Released
ESS-5362742	RFPS-04 SAT report	Released
ESS-5362743	RFPS-05 SAT report	Released
ESS-5362748	RFPS-09 SAT report	Released
ESS-5362740	RFPS-02 SAT report	Released
ESS-5362744	RFPS-06 SAT report	Released
ESS-5362749	RFPS-10 SAT report	Released
ESS-5362763	RFPS-16 SAT report	Released
ESS-5362766	RFPS-19 SAT report	Released
ESS-5362769	RFPS-22 SAT report	Released
ESS-5362765	RFPS-18 SAT report	Released
ESS-5362762	RFPS-15 SAT report	Released
ESS-5362764	RFPS-17 SAT report	Released
ESS-5362770	RFPS-23 SAT report	Released
ESS-5362753	RFPS-13 SAT report	Released
ESS-5362761	RFPS-14 SAT report	Released
ESS-5362750	RFPS-11 SAT report	Released
ESS-5362771	RFPS-24 SAT report	Released
ESS-5362773	RFPS-25 SAT report	Released
ESS-5362774	RFPS-26 SAT report	Released

Documentation:



Electrical inspection report

ESS-3486653	Electrical inspection of SPK-010RFC:RFS-RFPS-020	Released
ESS-4151852	Electrical inspection of SPK-030RFC:RFS-RFPS-010	Released
ESS-3486655	Electrical inspection of SPK-020RFC:RFS-RFPS-010	Released
ESS-4760186	Electrical inspection of SPK-040RFC:RFS-RFPS-010	Released
ESS-4760187	Electrical inspection of SPK-040RFC:RFS-RFPS-020	Released
ESS-4980519	Electrical inspection of SPK-090RFC:RFS-RFPS-020	Released
ESS-3816034	Electrical inspection of SPK-010RFC:RFS-RFPS-010	Released
ESS-3631431	Electrical inspection of SPK-020RFC:RFS-RFPS-020	Released
ESS-4051099	Electrical inspection of SPK-030RFC:RFS-RFPS-020	Released
ESS-4795029	Electrical inspection of SPK-060RFC:RFS-RFPS-020	Released
ESS-4795030	Electrical inspection of SPK-060RFC:RFS-RFPS-010	Released
ESS-4867734	Electrical inspection of SPK-050RFC:RFS-RFPS-010	Released
ESS-4867736	Electrical inspection of SPK-050RFC:RFS-RFPS-020	Released
ESS-4895751	Electrical inspection of SPK-070RFC:RFS-RFPS-010	Released
ESS-4895750	Electrical inspection of SPK-070RFC:RFS-RFPS-020	Released
ESS-4905930	Electrical inspection of SPK-080RFC:RFS-RFPS-020	Released
ESS-4905929	Electrical inspection of SPK-080RFC:RFS-RFPS-010	Released
ESS-4923059	Electrical inspection of SPK-100RFC:RFS-RFPS-010	Released
ESS-4923057	Electrical inspection of SPK-100RFC:RFS-RFPS-020	Released
ESS-4956969	Electrical inspection of SPK-120RFC:RFS-RFPS-020	Released
ESS-4956970	Electrical inspection of SPK-110RFC:RFS-RFPS-010	Released
ESS-4957140	Electrical inspection of SPK-120RFC:RFS-RFPS-010	Released
ESS-4972276	Electrical inspection of SPK-110RFC:RFS-RFPS-020	Released
ESS-4980517	Electrical inspection of SPK-090RFC:RFS-RFPS-010	Released
ESS-5065439	Electrical inspection of SPK-130RFC:RFS-RFPS-020	Released
ESS-5065438	Electrical inspection of SPK-130RFC:RFS-RFPS-010	Released

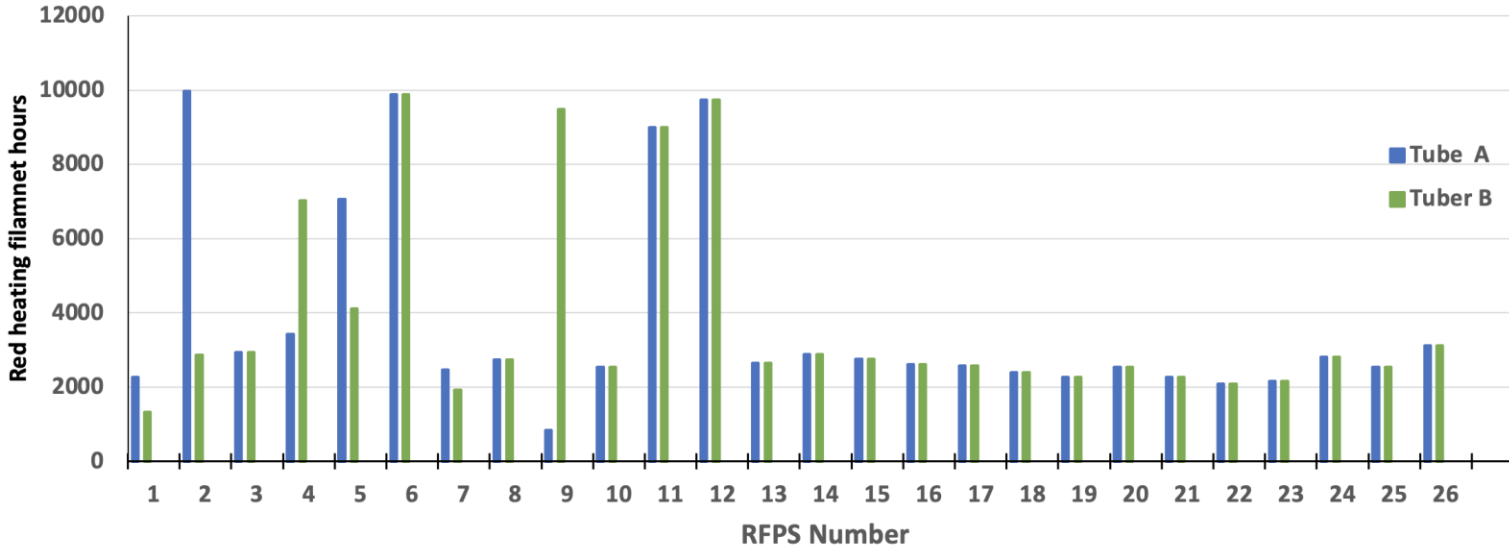
Interface test report

ESS-5505673	INTERFACE TEST FOR Spk-110RFC:RFS-RFPS-020 (RFPS-21)	Released
ESS-5505671	INTERFACE TEST FOR Spk-100RFC:RFS-RFPS-020 (RFPS-20)	Released
ESS-5505651	INTERFACE TEST FOR Spk-010RFC:RFS-RFPS-010 (RFPS-05)	Released
ESS-5505643	INTERFACE TEST FOR Spk-020RFC:RFS-RFPS-010 (RFPS-02)	Released
ESS-5505640	INTERFACE TEST FOR Spk-010RFC:RFS-RFPS-020 (RFPS-01)	Released
ESS-5505650	INTERFACE TEST FOR Spk-020RFC:RFS-RFPS-020 (RFPS-04)	Released
ESS-5505653	INTERFACE TEST FOR Spk-030RFC:RFS-RFPS-020 (RFPS-06)	Released
ESS-5505654	INTERFACE TEST FOR Spk-030RFC:RFS-RFPS-010 (RFPS-09)	Released
ESS-5505657	INTERFACE TEST FOR Spk-060RFC:RFS-RFPS-010 (RFPS-13)	Released
ESS-5505658	INTERFACE TEST FOR Spk-060RFC:RFS-RFPS-020 (RFPS-10)	Released
ESS-5505659	INTERFACE TEST FOR Spk-050RFC:RFS-RFPS-010 (RFPS-08)	Released
ESS-5505656	INTERFACE TEST FOR Spk-040RFC:RFS-RFPS-020 (RFPS-12)	Released
ESS-5505655	INTERFACE TEST FOR Spk-040RFC:RFS-RFPS-010 (RFPS-11)	Released
ESS-5505669	INTERFACE TEST FOR Spk-090RFC:RFS-RFPS-020 (RFPS-24)	Released
ESS-5505664	INTERFACE TEST FOR Spk-080RFC:RFS-RFPS-020 (RFPS-17)	Released
ESS-5505670	INTERFACE TEST FOR Spk-100RFC:RFS-RFPS-010 (RFPS-18)	Released
ESS-5505660	INTERFACE TEST FOR Spk-050RFC:RFS-RFPS-020 (RFPS-03)	Released
ESS-5505661	INTERFACE TEST FOR Spk-070RFC:RFS-RFPS-010 (RFPS-14)	Released
ESS-5505667	INTERFACE TEST FOR Spk-080RFC:RFS-RFPS-010 (RFPS-16)	Released
ESS-5505662	INTERFACE TEST FOR Spk-070RFC:RFS-RFPS-020 (RFPS-15)	Released
ESS-5505672	INTERFACE TEST FOR Spk-110RFC:RFS-RFPS-010 (RFPS-19)	Released
ESS-5505668	INTERFACE TEST FOR Spk-090RFC:RFS-RFPS-010 (RFPS-25)	Released
ESS-5505679	INTERFACE TEST FOR Spk-130RFC:RFS-RFPS-020 (RFPS-07)	Released
ESS-5505674	INTERFACE TEST FOR Spk-120RFC:RFS-RFPS-020 (RFPS-23)	Released
ESS-5505676	INTERFACE TEST FOR Spk-120RFC:RFS-RFPS-010 (RFPS-22)	Released
ESS-5505677	INTERFACE TEST FOR Spk-130RFC:RFS-RFPS-010 (RFPS-26)	Released
ESS-5590134	INTERFACE OF ALL SPK RF POWER STATION (RFPS) WITH PERSONAL SAFETY SYSTEM	Released

Present Status:



Operating hours of RFPSs in SPK Gallery in W5/2025



- Issues found during SAT addressed:

ESS-4817934	SAT Non-Conformity Report	Released
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- No open CCR or NCR
- No radiation safety risk
- Recommendations from previous reviews been addressed.

Procedures / General

ESS-5589756	EoP for RFPS in SPK cell	Released
ESS-3932245	Risk assessment for running RFPS unattended in SPK cell-120A	Released
ESS-4927547	Local LOTO on RFPS for carrying out work on RFDS	Released
ESS-4986584	Maintenance manual RFPS	Released
ESS-5605164	Operator Instructions for Remote Operation of RFPS	
https://confluence.ess.eu/display/IS/Spoke+Amplifier+%28RFPS%29+CS	RFPS EPICS CS	
https://confluence.ess.eu/display/EPSPG/Testing+in+G02	RFPS Test results in G02	

Operations & trips on RFPSs:

- Warm coupler conditioning: 1 trip (VSWR)
- Cold coupler conditioning: 0 trip
- Last trip due to tube: 4 July 2024

** excluding trips due to water cooling and electric grid



Thank you

2025-02-04



FAT report

ESS-3482375	RFPS-02 FAT report	Released
ESS-4752169	RFPS-12 FAT report	Released
ESS-4752168	RFPS-11 FAT report	Released
ESS-4170345	RFPS-09 FAT report	Released
ESS-4020938	RFPS-06 FAT report	Released
ESS-3753822	RFPS-05 FAT report	Released
ESS-4788497	RFPS-03 FAT report	Released
ESS-3629267	RFPS-04 FAT report	Released
ESS-3482372	RFPS-01 FAT report	Released
ESS-4788261	RFPS-21 FAT report	Released
ESS-4788018	RFPS-07 FAT report	Released
ESS-4788029	RFPS-08 FAT report	Released
ESS-4788041	RFPS-16 FAT report	Released
ESS-4788033	RFPS-13 FAT report	Released
ESS-4788034	RFPS-14 FAT report	Released
ESS-4788035	RFPS-15 FAT report	Released
ESS-4788031	RFPS-10 FAT report	Released
ESS-4788257	RFPS-19 FAT report	Released
ESS-4788255	RFPS-17 FAT report	Released
ESS-4788256	RFPS-18 FAT report	Released
ESS-4788258	RFPS-20 FAT report	Released
ESS-4788288	RFPS-22 FAT report	Released
ESS-4788293	RFPS-24 FAT report	Released
ESS-4788291	RFPS-23 FAT report	Released
ESS-4788301	RFPS-27 FAT report	Released
ESS-4788300	RFPS-26 FAT report	Released
ESS-4788297	RFPS-25 FAT report	Released