

QPS Work Breakdown Structure (WBS)

WBS	Account name	Responsibility	Comments
1	Stellarator Core Systems	B. Nelson	
11	In-Vessel Components	P. Goranson	
	111 w		Not in MIE Project
	112 Divertor		Not in MIE Project
	113 PFC local I&C		Not in MIE Project
12	Vacuum Vessel	P. Goranson	
	121 Vacuum vessel assembly		
	122 Centerstack casing		
	123 Thermal insulation and heating system		Not in MIE Project
	124 Vacuum vessel local I&C		
13	Conventional Coils	P. Heitzenroeder	
	131 TF Coils		
	132 PF Coils		
	133 Centerstack Integration		
	134 External Trim Coils		Not in MIE Project
	135 Conventional coils local I&C		
14	Modular Coils	D. Williamson	
	141 w		
	142 Modular coil winding and assembly		
	143 Modular coils local I&C		
15	Coil supports	T. Brown	
	151 Mod coil shear panels and shims		
	152 TF crown structure		
	153 TF and PF brackets		
	154 Support structure local I&C		
16	Coil Services in Test Cell	M. Cole	
	161 Mod coil cooling system		
	162 Conventional coil cooling system		
	163 Electrical Leads		
	164 Coil Protection System		
	165 Coil services local I&C		
17	Machine base	M. Cole	
	171 Machine base columns		
	172 Machine base local I&C		
18	Stellarator Core Assembly	M. Cole	
	181 Inspection and general oversight		
	182 Base assembly		
	183 Centerstack assembly		
	184 VF coils / tank head assembly		
	185 TF coil assembly		
	186 Modular coil assembly		
	187 Cooling and buswork assembly		
	188 Tooling Design and Fabrication		
	189 Measurement Systems		

WBS	Account name	Responsibility	Comments
2	Auxiliary Systems		
21	Gas & Pellet Injection Fueling	P. Goranson	
	211 Gas Fueling		
	212 Pellet Injection		Not in MIE Project
22	Vacuum Pumping	P. Goranson	
	221 High Vacuum Pumping		
	222 Roughing & Backing Vacuum System		
	223 Pumping Ducts/valves		
	224 Leak Detection		Not in MIE Project
	225 Titanium gettering		Not in MIE Project
	226 LN2 panels		Not in MIE Project
	227 Vacuum pumping local I&C		
23	Wall Conditioning Systems	P. Goranson	
	231 Glow Discharge Cleaning System		
	232 Boronizing Startup and Testing System		Not in MIE Project
24	RF Heating	D. Rasmussen	
	241 ICRF		Not in MIE Project
	242 ECH - 28GHz		
	243 ECH - 28 GHz upgrade		Not in MIE Project
	244 ECH - 53 GHz		Not in MIE Project
3	Diagnostics	D. Hillis	
31	Baseline diagnostics		
	311 Vacuum and thermal diagnostics		
	312 Magnetic diagnostics		
	313 Density diagnostics		
	314 Radiation suppression and diagnostics		
	315 Spectroscopic and visible diagnostics		
	316 Magnetic field mapping		
32	Phase 2 Diagnostics, upgrades		
	321 machine diagnostics		Not in MIE Project
	322 global plasma diagnostics		Not in MIE Project
	323 chordal plasma diagnostics		Not in MIE Project
	324 point diagnostics		Not in MIE Project
	325 edge/wall diagnostics		Not in MIE Project
33	Phase 3 Diagnostics, collaborators / optional		
	331 machine diagnostics		Not in MIE Project
	332 global plasma diagnostics		Not in MIE Project
	333 chordal plasma diagnostics		Not in MIE Project
	334 point diagnostics		Not in MIE Project
	335 edge/wall diagnostics		Not in MIE Project

WBS	Account name	Responsibility	Comments
4	Power Systems	J. White	
41	Site Power		
	411 Substation and Utility Interface		Covered by move
	412 AC Power Distribution System		
42	Magnet Power System		
	421 Refurbishment of power supplies		Covered by move
	422 buswork extensions		Covered by move
	423 move power supplies		Covered by move
43	Control and Protection Systems		
	431 Electrical Interlocks		Covered by move
	432 Kirk Key Interlocks		Covered by move
	433 Real Time Control		
	434 Instrumentation		Covered by move
	435 Coil Protection		
	436 Ground Fault Monitor		
5	Central I&C and Data Acquisition	R. Overbey	
51	TCP/IP Network Infrastructure		
52	Central Instrumentation and Control		
53	Data Acquisition & Facility Computing		
54	Facility Timing & Synchronization		
55	Real Time Plasma and Power Supply Control		
56	Central Safety Interlock System		
57	Control Room Facility		
6	Utilities	D. Searle	
61	Water cooling systems		
	611 TF / VF / Mod coils		
	612 ECH/ICRF		Covered by move
	613 Vacuum pumping		Covered by move
	614 Diagnostics		
62	Gas systems		
	621 PFC cooling/htg System (outside VV)		Not in MIE Project
	622 Modular Coils Cooling System (compressed He)		Not used
	623 Inert Gas Distribution		Covered by move
	624 Compressed / instrument Air		Covered by move
7	Core and Facility Integration	M. Cole	
71	Test cell preparation		
	711 Platform design		
	712 Base/pit preparation		
72	Preparation outside test cell		
	721 control room		Covered by move
	722 buswork		Covered by move
	723 water lines		Covered by move
	724 gas lines		Covered by move
73	Integrated systems testing		
8	Project Mangement and Integration	J. Lyon	
81	Project Management & Control		
82	Project Engineering		
83	Environmental & Safety, QA		
84	Project Physics		Not in MIE Project