

4.1 Applicable Standards by Voltage Level

4.1.1 *HIGH VOLTAGE*

Table 4.1-1 Standards for HV Electrical Components

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
HIGH VOLTAGE							
400 kV SWITCHYARD							
CIRCUIT BREAKER							
	IEC 60071-2 IEC 60265-2 IEC 62271-1 IEC 62271-100 IEC 62271-102	IEC 60068-1	IEC 60265-2 IEC 61140 IEC 61936 IEC 62271-1 IEC 62271-100 IEC 62271-102 NFC 13000 HD 637 S1	IEC 60068-3-3	IEC 60479 IEC 61140 IEC 62271-1 IEC 62271-100 IEC 62271-102		IEC 60060 – 1 IEC 60068-1 IEC 60068-2-1 IEC 60068-2-2 IEC 60068-2-30 IEC 60068-3-3 IEC 60265-2 IEC 60815 IEC 62271-1 IEC 62271-100 IEC 62271-102 IEC 62271-300
DISCONNECTOR							
	IEC 60071-2 IEC 60265-2 IEC 62271-1 IEC 62271-102	IEC 60068-1	IEC 60265-2 IEC 61140 IEC 61936 IEC 62271-1 IEC 62271-102 NFC 13000 HD 637 S1	IEC 60068-3-3	IEC 60479 IEC 61140 IEC 62271-1 IEC 62271-102		IEC 60060 – 1 IEC 60068-3-3 IEC 60815 IEC 62271-1 IEC 62271-102

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
HIGH VOLTAGE							
LIGHTNING ARRESTER							
	IEC 60071-1 IEC 60071-2 IEC 60071-4 IEC 60071-5 IEC 60099-1 IEC 60099-4 IEC 60099-5 IEC 60672-3		IEC 61140 IEC 61936 IEC 62305-1 / NF C 17-100 NFC 13000 HD 637 S1	IEC 60068-3-3	IEC 60479 IEC 61140		IEC 60060 – 1 IEC 60068-3-3 IEC 60071-1 IEC 60071-4 IEC 60099-1 IEC 60099-3 IEC 60099-4 IEC 60099-5 IEC 60507 IEC 60815
LINE AND BUSBARS CURRENT TRANSFORMER							
	IEC 60071-2 IEC 60044-1 IEC 60044-6 IEC 60137 IEC 62271-1	IEC 60068-1	IEC 61140 IEC 61936 IEC 62271-1 NFC 13000 HD 637 S1	IEC 60068-3-3	IEC 60479 IEC 61140 IEC 62271-1		IEC 60044-1 IEC 60044-6 IEC 60060 – 1 IEC 60060-2 IEC 60068-3-3 IEC 60137 IEC 60695-2 IEC 60815 IEC 62271-1
VOLTAGE TRANSFORMER							
	IEC 60044-2 IEC 60071-2 IEC 60137 IEC 62271-1	IEC 60068-1	IEC 61140 IEC 61936 IEC 62271-1 NFC 13000 HD 637 S1	IEC 60068-3-3	IEC 60479 IEC 61140 IEC 62271-1		IEC 60060 – 1 IEC 60060-2 IEC 60068-3-3 IEC 60137 IEC 60695-2 IEC 60815 IEC 62271-1

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
HIGH VOLTAGE							
EARTH SWITCH							
	IEC 60071-2 IEC 62271-1 IEC 62271-102	IEC 60068-1	IEC 61140 IEC 61936 IEC 62271-1 IEC 62271-102 NFC 13000 HD 637 S1	IEC 60068-3-3	IEC 60479 IEC 61140 IEC 62271-102		IEC 60060 – 1 IEC 60060-2 IEC 60068-3-3 IEC 60815 IEC 62271-1 IEC 62271-102
MAIN STEP-DOWN TRANSFORMERS							
STEP-DOWN TRANSFORMER							
	IEC 60071-2 IEC 60076-1 IEC 60076-2 IEC 60076-3 IEC 60076-4 IEC 60076-5 IEC 60076-11 IEC 60296 IEC 60905 IEC 61000-6-2 IEC 61000-6-4 IEC 61000-5 NF C 52-100 (1990)	IEC 60068-1	IEC 61000-5 IEC 61140 IEC 61936 NFC 13000 HD 637 S1	IEC 60068-3-3	IEC 60479 IEC 61140		IEC 60060 – 1 IEC 60068-2-6 IEC 60068-2-57 IEC 60068-3-3 IEC 60076-1 IEC 60076-2 IEC 60076-3 IEC 60076-4 IEC 60076-5 IEC 60076-11 IEC 61000-6-2 IEC 61000-6-4

4.1.2 *MEDIUM VOLTAGE*

Table 4.1-2 Standards for MV Electrical Components

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
MEDIUM VOLTAGE							
MV 6,6 KV SWITCHGEAR (CLASS 4)							
SWITCHGEAR							
	IEC 60044-1 IEC 60044-2 IEC 60044-8 IEC 60071-2 IEC 60079-7 IEC 60255 IEC 60265-1 IEC 60282-1 IEC 60282-2 IEC 60470 IEC 60529 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61958 IEC 62271-1 IEC 62271-100 IEC 62271-102 IEC 62271-105 IEC 62271-200 IEC 62271-201 IEC 62271-203 IEC 62271-301	IEC 60068-1	IEC 60265-1 IEC 60470 IEC 61000-5 IEC 61140 IEC 61936 IEC 61958 IEC 62271-1 IEC 62271-100 IEC 62271-102 IEC 62271-105 IEC 62271-200 IEC 62271-201 IEC 62271-203 NFC 13000 NF C13.200 HD 637 S1	IEC 60068-3-3	IEC 60079-7 IEC 60479 IEC 60529 IEC 61140 IEC 61936 IEC 61958 IEC 62271-1 IEC 62271-100 IEC 62271-102 IEC 62271-105 IEC 62271-200 IEC 62271-201 IEC 62271-203	IEC 60754 IEC 61249-2-21	IEC 60060 – 1 IEC 60068-2-2 IEC 60068-2-30 IEC 60068-3-3 IEC 60079-7 IEC 60255 IEC 60265-1 IEC 60282-1 IEC 60282-2 IEC 60470 IEC 60529 IEC 60721-2-1 IEC 60754 IEC 61000-4-2 IEC 61000-6-2 IEC 61000-6-4 IEC 61249-2-21 IEC 61958 IEC 62271-1 IEC 62271-100 IEC 62271-102 IEC 62271-105 IEC 62271-200 IEC 62271-201 IEC 62271-203

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
MEDIUM VOLTAGE							
MOTOR CONTROL CENTRE							
MCC							
	IEC 60044-1 IEC 60044-2 IEC 60044-8 IEC 60071-2 IEC 60079-7 IEC 60255 IEC 60265-1 IEC 60282-1 IEC 60282-2 IEC 60470 IEC 60529 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61958 IEC 62271-1 IEC 62271-100 IEC 62271-102 IEC 62271-105 IEC 62271-200 IEC 62271-201 IEC 62271-203 NFC 13000 NF C13.200 HD 637 S1	IEC 60068-1	IEC 60265-1 IEC 60470 IEC 61000-5 IEC 61140 IEC 61936 IEC 61958 IEC 62271-1 IEC 62271-100 IEC 62271-102 IEC 62271-105 IEC 62271-200 IEC 62271-201 IEC 62271-203 NFC 13000 NF C13.200 HD 637 S1	IEC 60068-3-3	IEC 60079-7 IEC 60479 IEC 60529 IEC 61140 IEC 61936 IEC 61958 IEC 62271-1 IEC 62271-100 IEC 62271-102 IEC 62271-105 IEC 62271-200 IEC 62271-201 IEC 62271-203	IEC 60754 IEC 61249-2-21	IEC 60060 – 1 IEC 60068-2-2 IEC 60068-2-30 IEC 60068-3-3 IEC 60079-7 IEC 60255 IEC 60265-1 IEC 60282-1 IEC 60282-2 IEC 60470 IEC 60529 IEC 60721-2-1 IEC 60754 IEC 61000-4-2 IEC 61000-6-2 IEC 61000-6-4 IEC 61249-2-21 IEC 61958 IEC 62271-1 IEC 62271-100 IEC 62271-102 IEC 62271-105 IEC 62271-200 IEC 62271-201 IEC 62271-203

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
MEDIUM VOLTAGE							
CIRCUIT BREAKER							
	IEC 60071-2 IEC 60079-7 IEC 60265-1 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 62271-1 IEC 62271-100 IEC 62271-102 IEC 62271-105 IEC 62271-200	IEC 60068-1	IEC 60265-1 IEC 61000-5 IEC 61140 IEC 61936 IEC 62271-1 IEC 62271-100 IEC 62271-102 IEC 62271-105 IEC 62271-200 NFC 13000 NF C13.200 HD 637 S1	IEC 60068-3-3	IEC 60079-7 IEC 60479 IEC 61140 IEC 61958 IEC 62271-1 IEC 62271-100 IEC 62271-102 IEC 62271-105 IEC 62271-200 EN 50019	IEC 60754 IEC 61249-2-21	IEC 60060 – 1 IEC 60079-7 IEC 60068-2-2 IEC 60068-2-30 IEC 60068-3-3 IEC 60721-2-1 IEC 60754 IEC 61000-6-2 IEC 61000-6-4 IEC 61249-2-21
Income circuit breaker Coupling circuit breaker Outlets circuit breaker							
COUPLER DISCONNECTOR							
	IEC 60071-2 IEC 60079-7 IEC 60265-1 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 62271-1 IEC 62271-102	IEC 60068-1	IEC 60265-1 IEC 61000-5 IEC 61140 IEC 61936 IEC 62271-1 IEC 62271-102 NFC 13000 NF C13.200 HD 637 S1	IEC 60068-3-3	IEC 60079-7 IEC 60479 IEC 61140 IEC 62271-1 IEC 62271-102	IEC 60754 IEC 61249-2-21	IEC 60060 – 1 IEC 60068-3-3 IEC 60079-7 IEC 60265-1 IEC 60754 IEC 61000-6-2 IEC 61000-6-4 IEC 61249-2-21 IEC 62271-1 IEC 62271-102

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
MEDIUM VOLTAGE							
FUSES							
	IEC 60071-2 IEC 60079-7 IEC 60282-1 IEC 60282-2 IEC 60787 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 62271-1 IEC 62271-105	IEC 60068-1	IEC 61000-5 IEC 61140 IEC 61936 IEC 62271-1 IEC 62271-105 NFC 13000 NF C13.200 HD 637 S1	IEC 60068-3-3	IEC 60079-7 IEC 60479 IEC 61140 IEC 62271-1 IEC 62271-105	IEC 60754 IEC 61249-2-21	IEC 60060 – 1 IEC 60068-3-3 IEC 60079-7 IEC 60282-1 IEC 60282-2 IEC 60754 IEC 61000-6-2 IEC 61000-6-4 IEC 61249-2-21 IEC 62271-1 IEC 62271-105
INSTRUMENTATION TRANSFORMERS							
	IEC 60044-1 IEC 60044-2 IEC 60044-6 IEC 60071-2 IEC 60079-7 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 62271-1	IEC 60068-1	IEC 61000-5 IEC 61140 IEC 61936 IEC 62271-1 NFC 13000 NF C13.200 HD 637 S1	IEC 60068-3-3	IEC 60079-7 IEC 60479 IEC 61140 IEC 62271-1	IEC 60754 IEC 61249-2-21	IEC 60044-1 IEC 60044-2 IEC 60060 – 1 IEC 60068-3-3 IEC 60079-7 IEC 60216 IEC 60754 IEC 61000-6-2 IEC 61000-6-4 IEC 61249-2-21 IEC 62271-1
Current transformers (windows type) Voltage transformers zero sequential toroidal transformers							

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
MEDIUM VOLTAGE							
RELAYS							
	IEC 60071-2 IEC 60255 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4	IEC 60068-1	IEC 61000-5 IEC 61140 IEC 61936 NFC 13000 NF C13.200 HD 637 S1	IEC 60068-3-3	IEC 60079-7 IEC 60479 IEC 61140	IEC 60754 IEC 61249-2-21	IEC 60060 – 1 IEC 60068-2 IEC 60068-3-3 IEC 60255-5 IEC 60255-11 IEC 60754 IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-10 IEC 61000-4-12 IEC 61000-6-2 IEC 61000-6-4 IEC 61249-2-21 EN 55022

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
MEDIUM VOLTAGE							
MEDIUM VOLTAGE POWER CABLES							
	IEC 60038 IEC 60055-2 IEC 60071-2 IEC 60183 IEC 60228 IEC 60287 IEC 60304 IEC 60502 IEC 60840 (ABOVE 36KV) IEC 60949 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 NF C 32070 NF C 32323 HD 308 HD 620S1 HD 632 S1 (above 36 kV) HD 632.16 (above 36 kV)	IEC 60068-1	IEC 61000-5 IEC 61140 IEC 61936 NFC 13000 NF C13.200 HD 637 S1	IEC 60068-3-3 IEC 60780 IEC 60980	IEC 60079-7 IEC 60446 IEC 60479 IEC 61140	IEC 60754 IEC 61249-2-21 EN 50267-2-1	IEC 60055-1 IEC 60332-1 IEC 60332-2 IEC 60332-3-24 IEC 60502 IEC 60754 IEC 60811 IEC 60840 (ABOVE 30KV) IEC 61034 IEC 61000-6-2 IEC 61000-6-4 EN 50266-2-4 EN 50267-2-1 EN 50267-2-3 NFC 20454 NF C 32070
MV SWITCHGEAR (CLASS 3) SR (*)							
(*) Comply with the standards shown above but it has to be into account safety relevant condition				IEC 60068-3-3 IEC 60780 IEC 60980		IEC 60754 IEC 61249-2-21	

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
MEDIUM VOLTAGE							
EMERGENCY POWER SUPPLY							
DIESEL GENERATOR WITH AUXILIARIES							
	IEC 60034 IEC 60071-2 IEC 60529 IEC 60950 IEC 61131-3 IEC 62305-3 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4	IEC 60068-1	IEC 60950 IEC 61000-5 IEC 61140 IEC 61936 NFC 13000 NF C13.200 HD 637 S1	IEC 60068-3-3 IEC 60780 IEC 60980	IEC 60079-7 IEC 60479 IEC 61140		IEC 60060 – 1 IEC 60529 IEC 61000-6-2 IEC 61000-6-4
Main motor							
Generator							
Control Panels							

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
MEDIUM VOLTAGE							
MOTORS							
	IEC 60034-1 IEC 60034-2 IEC 60034-5 IEC 60034-6 IEC 60034-7 IEC 60034-8 IEC 60034-9 IEC 60034-11 IEC 60034-12 IEC 60034-14 IEC 60071-2 IEC 60072-1 IEC 60072-2 IEC 60072-3 IEC 60079-0 IEC 60079-1 IEC 60079-2 IEC 60079-7 IEC 60079-14 IEC 60079-15 IEC 60079-19 IEC 60204-11 IEC 60071-2 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61241-0 IEC 61241-1 IEC 61241-11 IEC 61241-17	IEC 60068-1	IEC 60034-7 IEC 60079-14 IEC 60204-11 IEC 61000-5 IEC 61140 IEC 61241-14 IEC 61936 NFC 13000 NF C13.200 HD 637 S1	IEC 60068-3-3 IEC 60780 (SR) IEC 60980 (SR)	IEC 60034-5 IEC 60204-11 IEC 60479 IEC 60529 IEC 61140	IEC 60754 IEC 61249-2-21	IEC 60034-1 IEC 60034-2 IEC 60034-5 IEC 60034-9 IEC 60034-11 IEC 60034-12 IEC 60060 – 1 IEC 60071-2 IEC 60079-0 IEC 60079-1 IEC 60079-2 IEC 60079-7 IEC 60079-14 IEC 60079-15 IEC 60079-19 IEC 60204-11 IEC 60754 IEC 61000-6-2 IEC 61000-6-4 IEC 61241-0 IEC 61241-1 IEC 61241-11 IEC 61241-17 IEC 61249-2-21

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
MEDIUM VOLTAGE							
SPEED DRIVES							
	IEC 60071-2 IEC 60079-0 IEC 60079-1 IEC 61000-2-4 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61241-0 IEC 61241-1 IEC 61800-3 IEC 61800-4 EN 50178	IEC 60068-1	IEC 60204-1 IEC 61000-5 IEC 61140 IEC 61800-1 IEC 61800-2 IEC 61800-5 IEC 61936 NFC 13000 NF C13.200 HD 637 S1 EN 50178	IEC 60068-3-3 IEC 60780 (SR) IEC 60980 (SR)	IEC 60204-1 IEC 60479 IEC 61140	IEC 60754 IEC 61249-2-21	IEC 60060-1 IEC 60068-3-3 IEC 60079-0 IEC 60079-1 IEC 60754 IEC 61000-2-4 IEC 61000-6-2 IEC 61000-6-4 IEC 61241-0 IEC 61241-1 IEC 61249-2-21 IEC 61800-3 IEC 61800-4

4.1.3 *LOW VOLTAGE*

Table 4.1-3 Standards for LV Electrical Components

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
MV / LV DISTRIBUTION TRANSFORMERS							
	IEC 60076-1 IEC 60076-2 IEC 60076-3 IEC 60076-4 IEC 60076-5 IEC 60076-10 IEC 60076-11 IEC 60296 IEC 60664-1 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 HD 538-2 S1 NF C 52-112 / NF EN 50464	IEC 60068-1 IEC 60364	IEC 60076-7 IEC 60364 IEC 60905 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3 IEC 60780 (SR) IEC 60980 (SR)	IEC 60364-4 IEC 60479 IEC 61140 NF C15-100	IEC 60754 IEC 61249-2-21	IEC 60068-3-3 IEC 60076-1 IEC 60076-2 IEC 60076-3 IEC 60076-4 IEC 60076-5 IEC 60076-5 IEC 60076-11 IEC 60664-1 IEC 60754 IEC 61000-6-2 IEC 61000-6-4 IEC 61249-2-21
DRY TRANSFORMER							
OIL TRANSFORMER							

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
LOCAL INSTRUMENTATION CONTROL, PROTECTION SYSTEM							
LOAD DISTRIBUTION CENTRE (CLASS 4 & 3) IP							
	IEC 60269 IEC 60439-1 IEC 60529 IEC 60664-1 IEC 60715 IEC 60947-1 IEC 60947-2 IEC 60947-3 IEC 60947-4 IEC 60947-5 IEC 60947-6 IEC 60947-7 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 62208/EN 50298 EN 50 102 NF C 20-010/IEC 60529/EN 50 102 NF C 20-015/IEC 62262 NF C 20-030/IEC 61140 NF C 20-040/IEC 60664-4	IEC 60068-1 IEC 60364	IEC 60364 IEC 60439-1 IEC 60947-1 IEC 60947-2 IEC 60947-3 IEC 60947-4 IEC 60947-5 IEC 60947-6 IEC 60947-7 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3	IEC 60364-4 IEC 60439-1 IEC 60479 IEC 60529 IEC 61140 NF C15-100	IEC 60754 IEC 61249-2-21	IEC 60068-3-3 IEC 60439-1 IEC 60529 IEC 60664-1 IEC 60754 IEC 60947 IEC 61000 IEC 61249-2-21 IEC 61641 IEC 62262 NF C 63-421/IEC 60439-1 NF C 20-010/IEC 60529 NF C 20-015/IEC 62262 NF C 20-030/IEC 61140 NF C 20-040/IEC 60664-4

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
CIRCUIT BREAKER							
	IEC 60664-1 IEC 60947-1 IEC 60947-2 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4	IEC 60068-1 IEC 60364	IEC 60364 IEC 60947-1 IEC 60947-2 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3	IEC 60364-4 IEC 60479 IEC 61140 NF C15-100	IEC 60754 IEC 61249-2-21	IEC 60068-3-3 IEC 60439-1 IEC 60664-1 IEC 60947-1 IEC 60947-2 IEC 61000-4-2 IEC 61000-4-4 IEC 61000-4-8 IEC 61000-4-9 IEC 61000-4-10 IEC 61000-4-13 IEC 61000-6-2 IEC 61000-6-4
Income and coupling automatic circuit breaker (double-ended type)							
Circuit Breaker for outgoing circuits Thermal magnetic breaker							

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
PROTECTION RELAYS							
	IEC 60255 IEC 60664-1 IEC 60755 IEC 60947-1 IEC 60947-5-1 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4	IEC 60068-1 IEC 60364	IEC 60364 IEC 60755 IEC 60947-1 IEC 60947-5-1 IEC 60755 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3	IEC 60364-4 IEC 60479 IEC 60755 IEC 61140 NF C15-100	IEC 60754-1 IEC 61249-2-21	IEC 60060 – 1 IEC 60068-2 IEC 60068-3-3 IEC 60255-5 IEC 60255-11 IEC 60529 IEC 60664-1 IEC 60754-1 IEC 60755 IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-10 IEC 61000-4-12 IEC 61000-6-2 IEC 61000-6-4 IEC 61249-2-21 EN 55022
Motor Electronic protection relay							
Undervoltage (ANSI) relay							
DC undervoltage relay (ANSI 80)							
Differential Relay							
Isolation relays							

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
INSTRUMENT TRANSFORMERS							
	IEC 60044-1 IEC 60044-2 IEC 60664-1 IEC 61000-5 NF C 42502	IEC 60068-1 IEC 60364	IEC 60364 IEC 61000-5 IEC 61140 NF C15-100		IEC 60364-4 IEC 60479 IEC 61140 NF C15-100	IEC 60754 IEC 61249-2-21	IEC 60044-1 IEC 60044-2 IEC 60664-1 IEC 60754 IEC 61249-2-21 NF C 42502
Potential transformers							
Current transformers							
METERING UNIT (Comprise all components)							
	IEC 60051 IEC 60359 IEC 60529 IEC 60664-1 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 62053	IEC 60068-1 IEC 60364	IEC 60364 IEC 61000-5 IEC 61140 NF C15-100		IEC 60364-4 IEC 60479 IEC 60529 IEC 61140 IEC 61010-1 NF C15-100	IEC 60754 IEC 61249-2-21	IEC 60529 IEC 60664-1 IEC 60754 IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11 IEC 61000-6-2 IEC 61000-6-4 IEC 61010-1 IEC 61249-2-21 EN 55011
Voltmeter Ammeter Communication bus communication protocol							

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
LOAD DISTRIBUTION CENTRE (CLASS 3) SR (*)							
<p>(*) Comply with the standards shown above but it has to be into account safety relevant condition</p>				<p>IEC 60068-3-3 IEC 60780 IEC 60980</p>		<p>IEC 60754 IEC 61249-2-21</p>	

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
MOTORS							
	IEC 60034-1 IEC 60034-2 IEC 60034-5 IEC 60034-6 IEC 60034-7 IEC 60034-8 IEC 60034-9 IEC 60034-11 IEC 60034-12 IEC 60034-14 IEC 60072-1 IEC 60072-2 IEC 60072-3 IEC 60079-0 IEC 60079-1 IEC 60079-2 IEC 60079-7 IEC 60079-14 IEC 60079-15 IEC 60079-19 IEC 60664-1 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61241-0 IEC 61241-1 IEC 61241-11 IEC 61241-17	IEC 60068-1 IEC 60364	IEC 60034-7 IEC 60079-14 IEC 60204-1 IEC 60364 IEC 61000-5 IEC 61241-14 IEC 61140 NF C15-100	IEC 60068-3-3 IEC 60780 (SR) IEC 60980 (SR)	IEC 60034-5 IEC 60204-1 IEC 60364-4 IEC 60034-5 IEC 60479 IEC 61140 NF C15-100	IEC 60754 IEC 61249-2-21	IEC 60034-1 IEC 60034-2 IEC 60034-5 IEC 60034-9 IEC 60034-11 IEC 60034-12 IEC 60071-2 IEC 60079-0 IEC 60079-1 IEC 60079-2 IEC 60079-7 IEC 60079-14 IEC 60079-15 IEC 60079-19 IEC 60204-11 IEC 60664-1 IEC 60754 IEC 61000-6-2 IEC 61000-6-4 IEC 61241-0 IEC 61241-1 IEC 61241-11 IEC 61241-17 IEC 61249-2-21

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
SPEED DRIVES							
	IEC 60079-0 IEC 60079-1 IEC 60664-1 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61800-1 IEC 61800-2 IEC 61800-3 IEC 61800-5 IEC 61241-0 IEC 61241-1 EN 50178	IEC 60068-1 IEC 60364	IEC 60204-1 IEC 60364 IEC 61000-5 IEC 61140 IEC 61800-1 IEC 61800-2 IEC 61800-5 EN 50178 NF C15-100	IEC 60068-3-3 IEC 60780 (SR) IEC 60980 (SR)	IEC 60204-1 IEC 60364-4 IEC 60479 IEC 61140 NF C15-100	IEC 60754 IEC 61249-2-21	IEC 60079-0 IEC 60079-1 IEC 60664-1 IEC 60754 IEC 61000-2-4 IEC 61000-6-2 IEC 61000-6-4 IEC 61241-0 IEC 61241-1 IEC 61249-2-21 IEC 61800-1 IEC 61800-2 IEC 61800-3 IEC 61800-5

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
LOW VOLTAGE MOTOR CONTROL CENTRE (CLASS 4 & 3) (as an Unit)							
	IEC 60269 IEC 60439 IEC 60529 IEC 60664-1 IEC 60715 IEC 60947-1 IEC 60947-2 IEC 60947-3 IEC 60947-4 IEC 60947-5 IEC 60947-6 IEC 60947-7 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 EN 50102	IEC 60068-1 IEC 60364	IEC 60269-2 IEC 60269-3 IEC 60364 IEC 60439 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3	IEC 60269-2 IEC 60269-3 IEC 60364-4 IEC 60479 IEC 60529 IEC 61140 NF C15-100	IEC 60754 IEC 61249-2-21	IEC 60068-3-3 IEC 60269 IEC 60439-1 IEC 60664-1 IEC 60754 IEC 61000-6-2 IEC 61000-6-4 IEC 61641 IEC 61249-2-21 IEC 61641 IEC 61249-2-21

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
EMERGENCY POWER SUPPLY							
DIRECT CURRENT SYSTEM (class I)							
	IEC 60038 IEC 60146-2 IEC 60664-1 IEC 60896-11 IEC 60896-21 IEC 60947-1 IEC 60947-2 IEC 60947-3 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61056-1 IEC 61056-2 IEC 61660-1 IEC 62040-3 EN 55022	IEC 60068-1 IEC 60364	IEC 60364 IEC 60947-2 IEC 60947-3 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3 IEC 60780 IEC 60980	IEC 60364-4 IEC 60479 IEC 61140 NF C15-100		IEC 60254-1 IEC 60254-2 IEC 60664-1 IEC 60896-11 IEC 60896-21 IEC 60947-1 IEC 60947-2 IEC 60947-3 IEC 61000-4-2 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-8 IEC 61000-4-9 IEC 61000-4-10 IEC 61000-4-13 IEC 61000-4-17 IEC 61000-6-2 IEC 61000-6-4 IEC 62040-2 EN 55022 NF C 58-311
125 Vdc lead-acid accumulator, Stationary battery							

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
	IEC 60038 IEC 60664-1 IEC 60896-11 IEC 60896-21 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61056-1 IEC 61056-2	IEC 60068-1 IEC 60364	IEC 60364 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3 IEC 60780 IEC 60980	IEC 60364-4 IEC 60479 IEC 61140 NF C15-100		IEC 60254-1 IEC 60254-2 IEC 60664-1 IEC 60896-11 IEC 60896-21 IEC 61000-4-17 IEC 61000-6-2 IEC 61000-6-4 NF C 58-311
400 Vac/250 Vdc charger							
	IEC 60146-2 IEC 60664-1 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 62040-3 EN 55022	IEC 60068-1 IEC 60364	IEC 60364 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3 IEC 60780 IEC 60980	IEC 60364-4 IEC 60479 IEC 61140 NF C15-100		IEC 60664-1 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-17 IEC 61000-6-4 IEC 62040-2 EN 55022 NF C 58-311
Dc circuit breakers							
	IEC 60664-1 IEC 60947-1 IEC 60947-2 IEC 60947-3 IEC 61660-1 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4	IEC 60068-1 IEC 60364	IEC 60364 IEC 60947-1 IEC 60947-2 IEC 60947-3 IEC 61000-5 IEC 61140	IEC 60068-3-3 IEC 60780 IEC 60980	IEC 60364-4 IEC 60479 IEC 61140 NF C15-100		IEC 60664-1 IEC 60947-1 IEC 60947-2 IEC 60947-3 IEC 61000-4-2 IEC 61000-4-4 IEC 61000-4-8 IEC 61000-4-9 IEC 61000-4-10 IEC 61000-4-13 IEC 61000-6-2 IEC 61000-6-4

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
REGULATED UNINTERRUPTIBLE SYSTEM (UPS)							
	IEC 60664-1 IEC 60950-1 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 62040-1-1 IEC 62040-1-2 IEC 62040-2 IEC 62040-3 IEC 60950-1 EN 55022	IEC 60068-1 IEC 60364	IEC 60364-1 IEC 60364-4 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3 IEC 60780 IEC 60980	IEC 60364-4 IEC 60479 IEC 61140 IEC 62040-1-1 IEC 62040-1-2 NF C15-100		IEC 60664-1 IEC 61000-4-17 IEC 61000-6-2 IEC 61000-6-4 IEC 62040-2 IEC 62040-3 EN 55022
Static inverter							
	IEC 60146-2 IEC 60664-1 IEC 60950-1 IEC 61000-5 IEC 62040-1 IEC 62040-3 EN 55022	IEC 60364	IEC 60364-1 IEC 60364-4 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3 IEC 60980 IEC 60780	IEC 60364-4 IEC 60479 IEC 61140 IEC 62040-1-1 IEC 62040-1-2 NF C15-100		IEC 60664-1 IEC 61000-6-2 IEC 61000-6-4
Static transfer switch							

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
	IEC 60146-1-1 IEC 60146-1-3 IEC 60146-2 IEC 60439-1 IEC 60439-2 IEC 60439-3 IEC 60664-1 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 62310-1 IEC 62310-2 EN50178	IEC 60068-1 IEC 60364	IEC 60364 IEC 60439-1 IEC 60439-2 IEC 60439-3 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3 IEC 60780 IEC 60980	IEC 60364-4 IEC 60439-1 IEC 60479 IEC 60529 IEC 61140 IEC 62310-1 NF C15-100		IEC 60439-1 IEC 60664-1 IEC 61000-6-2 IEC 61000-6-4
Batteries (open vs. closed)							
	IEC 60896-11 IEC 60896-21 IEC 61056-1 IEC 61056-2 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4	IEC 60068-1 IEC 60364	IEC 60364 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3 IEC 60780 IEC 60980	IEC 60364-4 IEC 60479 IEC 61140 NF C15-100		IEC 60664-1 IEC 60695-11-10 IEC 60695-11-20 IEC 61000-4-17 IEC 61000-6-2 IEC 61000-6-4

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
LV POWER CABLES AND CONTROL CABLES							
	IEC 60227 IEC 60228 IEC 60245 IEC 60287-1-1 IEC 60304 IEC 60664-1 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61210 IEC 62440 HD 22.9.S3 HD 21.5 S 3 HD 21.3 S 3 HD 22.4S4 HD 22.6S2 HD 308 HD 361 HD 603 S1 NF C 30202 NF C 32070 NFC 32102.13 NF C 32323	IEC 60068-1 IEC 60364 IEC 60364-5-52 IEC 60364-4-43	IEC 60364 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3 IEC 60780 (SR) IEC 60980 (SR)	IEC 60364-4 IEC 60446 IEC 60479 IEC 61140 NF C15-100	IEC 60754-1 NF C 32070 EN 50267-2-1	IEC 60055 IEC 60093 IEC 60227 IEC 60243 IEC 60245 IEC 60250 IEC 60331 IEC 60332-1 IEC 60332-2 IEC 60332-3 IEC 60664-1 IEC 60684-2 IEC 60754-1 IEC 60754-2 IEC 60811 IEC 61000-6-2 IEC 61000-6-4 IEC 61034-1 IEC 61034-2 IEC 61210 EN 50266-1 EN 50266-2-2 EN 50266-2-3 EN 50266-2-4 EN 50266-2-5 EN 50267-1 EN 50267-2-1 EN 50267-2-2 NF C 20454 NF C 32070 NF C 32076

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
CABLE TRAYS							
	IEC 61537 NF P 92507 EN 10327 EN 12329 EN 12330 EN 10088-2	IEC 60068-1 IEC 60364 EN 10327 EN 12329 EN 12330 EN 10088-2	IEC 60364	IEC 60068-3-3 IEC 60780 (SR) IEC 60980 (SR)		IEC 60754-1 NF C 32070	EN 10327 EN 10088-2
LIGHTING SYSTEM							
LIGHTING							
Metal halide lamps							
	IEC 60664-1 IEC 60927 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61167 IEC 61347-1 IEC 61347-2-1 IEC 61547 EN 55015	IEC 60068-1 IEC 60364 IEC 60364-7-714	IEC 60364 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3	IEC 60364-4 IEC 60479 IEC 61347-1 IEC 61347-2-1 IEC 61140 IEC 61347-1 NF C15-100	IEC 60754 IEC 61249-2-21	IEC 60068-3-3 IEC 60664-1 IEC 60754 IEC 61000-6-2 IEC 61000-6-4 IEC 61167 IEC 61249-2-21 IEC 61547 EN 55015
High-pressure sodium vapour lamps							
	IEC 60662 IEC 60664-1 IEC 60923 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61347-2-9 IEC 61547 EN 55015	IEC 60068-1 IEC 60364 IEC 60364-7-714	IEC 60364 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3	IEC 60364-4 IEC 60479 IEC 61140 NF C15-100	IEC 60754 IEC 61249-2-21	IEC 60664-1 IEC 60754 IEC 61000-6-2 IEC 61000-6-4 IEC 61249-2-21 IEC 61547 EN 55015
Fluorescent lamps							

SSEN EQUIPMENT	Manufacturing Standard	Indoor / Outdoor Facilities	Site Installation Standard	Nuclear Safety	Personal Safety	Tokamak Complex	Test
LOW VOLTAGE							
	IEC 60081 IEC 60664-1 IEC 60901 IEC 60929 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61195 IEC 61347-1 IEC 61347-2-3 IEC 61547 EN 55015	IEC 60068-1 IEC 60364 IEC 60364-7-714	IEC 60364 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3	IEC 60364-4 IEC 60479 EN 60901 IEC 61140 IEC 61195 IEC 61199 IEC 61347-1 IEC 61347-2-3 NF C15-100	IEC 61249-2-21 IEC 60754	IEC 60664-1 IEC 60754 IEC 61000-6-2 IEC 61000-6-4 IEC 61249-2-21 IEC 61547 EN 55015
High frequency ballast lamps							
	IEC 60081 IEC 60664-1 IEC 60901 IEC 60929 IEC 61000-5 IEC 61000-6-2 IEC 61000-6-4 IEC 61347-1 IEC 61347-2-3 IEC 61547 EN 55015 EN 50294	IEC 60068-1 IEC 60364 IEC 60364-7-714	IEC 60364 IEC 61000-5 IEC 61140 NF C15-100	IEC 60068-3-3	IEC 60364-4 IEC 60479 EN 60901 IEC 61140 IEC 61347-1 IEC 61347-2-3 NF C15-100	IEC 61249-2-21 IEC 60754	IEC 60664-1 IEC 60754 IEC 61000-6-2 IEC 61000-6-4 IEC 61249-2-21 IEC 61547 EN 55015